

Minnesota Attorney General: Administrative Rules Proceedings

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Version 3
August 20, 2018

RULE REVIEW CHECKLIST

File No. 1379 Docket No. 05.0009.0700

DATE RECEIVED 6/24/87
REVIEW DATE 7/2/87
DUE DATE 7/8/87

APPROVED 7/8/87
DISAPPROVED
WITHDRAWN

ADOPTED W/O HEARING X
EMERGENCY RULE

REVISOR APPROVED X
REVISOR DISAPPROVED
FILED W/SEC. STATE
RETURNED TO AGENCY

✓ Rule as adopted (4 copies)

✓ Notice to Solicit Outside Information/Opinion
Yes — Date published in State Register
Yes — Comments

~~Petition for Adoption of a Rule~~

~~Board's Authorizing Resolution~~

✓ Proposed rule
Yes — Revisor's Certificate

✓ Notice of Intent to Adopt Rule
15A.914 + 116.07 — Statutory Authority
Yes — Small business statement
NO — Expenditure of public money statement
Yes — Signature

✓ Statement of Need and Reasonableness

✓ Affidavit of Mailing Notice of Intent to Adopt Rule
4/16/87 — Date (30/25 days before adoption

✓ Publication in State Register
4/20/87 — Date 30/25 days before adoption

~~Resolution Adopting~~

✓ Findings of Fact, Conclusions & Order Adopting
6/23/87 — Date

✓ Written requests, submissions or comments

✓ Declaration of attorney
Dwight Waynick — Name of SAAG representing agency

✓ Notice of Submission to Attorney General

✓ Affidavit of Mailing Notice to Attorney General

✓ Certificate

✓ affidavit

SF-00006-05 (4/86)

STATE OF MINNESOTA

Office Memorandum

DEPARTMENT : ATTORNEY GENERAL

DATE : July 10, 1987

TO : DWIGHT S. WAGENIUS
Special Assistant
Attorney General

FROM : MIKE MILES
Assistant Attorney General

PHONE : 6-6555

SUBJECT : In the Matter of the Adopted Rules Relating to Management of Waste Tires and the Permitting of Waste Tire Facilities.

The above-referenced rule has been approved as to its legality by the Attorney General on July 8, 1987.

Enclosed is the agency's copy of the approved rule. This office has already filed two copies with the Secretary of State, who will forward one copy to the Revisor of Statutes. The fourth is being retained by this division of the Attorney General's Office for its records.

Also enclosed are any petitions, requests, submission or comments received by the agency and any extra copies of documents which the agency submitted to the Attorney General.

In order for a permanent rule without a hearing to become effective, your agency must publish a notice of adoption in the State Register in accordance with Minn. Stat. § 14.27. An emergency rule becomes effective five working days after approval by the Attorney General; however, the agency must publish a notice in the State Register in accordance with Minn. Stat. § 14.34.

If you have any questions in this regard, please contact me.

JMM:nah

Enclosures

cc: Maryanne Hruby
Executive Director
Legislative Commission to Review
Adminsitrative Rules

Duane Harves
Chief Administrative Law Judge
Office of Administrative Hearings

STATE OF MINNESOTA
POLLUTION CONTROL AGENCY

In the Matter of Proposed Rules Governing the Management of Waste Tires and the Permitting of Waste Tire Facilities, Minn. Rules Pts. 7001.0020, 7001.0040, 7001.0050, 7001.0190, 7001.4000 to 7001.4150, and 7035.8200 to 7035.8710

NOTICE OF INTENT TO ADOPT RULES WITHOUT A PUBLIC HEARING AND NOTICE OF INTENT TO ADOPT RULES WITH A PUBLIC HEARING IF 25 OR MORE PERSONS REQUEST A HEARING

Notice is hereby given that the Minnesota Pollution Control Agency (Agency) intends to adopt the above-entitled rules without a public hearing following the procedures set forth in the Administrative Procedure Act for adopting rules without a public hearing in Minn. Stat. §§ 14.22 to 14.28 (1986). The Agency's authority to adopt the rules is set forth in Minn. Stat. §§ 115A.914, subd. 1, and 116.07, subd. 4 (1986).

All persons have until 4:30 p.m. on May 20, 1987 to submit comments in support of or in opposition to the proposed rules or any part or subpart of the rules. Comment is encouraged. Each comment should identify the portion of the proposed rules addressed, the reason for the comment, and any change proposed.

Any person may make a written request for a public hearing on the proposed rules within the comment period. If 25 or more persons submit a written request for a public hearing within the comment period, a public hearing will be held unless a sufficient number withdraw their requests in writing. Any person requesting a public hearing should state his or her name and address, and is encouraged to identify the portion of the proposed rules addressed, the reason for the request, and any change proposed. If a public hearing is required, the Agency will proceed pursuant to Minn. Stat. §§ 14.131 to 14.20 (1986).

PLEASE NOTE THAT IF 25 OR MORE PERSONS SUBMIT WRITTEN REQUESTS FOR A PUBLIC HEARING WITHIN THE 30-DAY COMMENT PERIOD, A HEARING WILL BE HELD ON JUNE 8, 1987 UNLESS A SUFFICIENT NUMBER WITHDRAW THEIR REQUEST, IN ACCORDANCE WITH THE NOTICE OF PUBLIC HEARING ON THESE SAME RULES PUBLISHED IN THE STATE REGISTER AND MAILED TO PERSONS REGISTERED WITH THE MINNESOTA POLLUTION CONTROL AGENCY. To verify whether a hearing will be held, please call Shelly Sporer, Minnesota Pollution Control Agency, between May 25, 1987 and June 5, 1987 at 612/296-7712.

Comments or written requests for a public hearing must be submitted to:

Shelly Sporer
Minnesota Pollution Control Agency
520 Lafayette Road
St. Paul, Minnesota 55155
612/296-7712

The proposed rules may be modified if the modifications are supported by data and views submitted to the Agency and do not result in a substantial change in the proposed rules as noticed.

The proposed rules, if adopted, will impose requirements on persons who generate, transport, collect, proccess, or store waste tires. One free copy of the rules is available upon request from Shelly Sporer at the address and telephone number stated above.

The purpose of the proposed rules is to establish a regulatory program for waste tire management. The proposed rules will govern all aspects of waste tire management, including waste tire generation, transportation, collection, processing, and storage, and will provide for the administration of the Agency's waste tire facility permit program. Persons involved in the management of waste tires may be affected by the proposed rules.

The proposed rules include: amendments to the Agency's current permit rules contained in Minn. Rules pts. 7001.0010 to 7001.0210; rules that address information and administrative requirements for a waste tire collector or processor to obtain a facility permit; and technical standards for waste tire transfer, processing, and storage facilities, including emergency procedures, record keeping and reporting requirements, closure procedures, and financial assurance requirements for facility closure. The proposed rules also address the regulation of persons who generate or transport waste tires.

Questions regarding the content of the proposed rules should be directed to Shelly Sporer at the address and telephone number stated above.

A Statement of Need and Reasonableness that describes the need for and reasonableness of each provision of the proposed rules and identifies the data and information relied upon to support the proposed rules has been prepared and is available from Shelly Sporer upon request.

Copies of the proposed rules and the Statement of Need and Reasonableness may also be viewed at the Agency regional offices at the following locations:

Duluth Region
Duluth Government Service Center
320 West Second Street, #704
Duluth, Minnesota 55802
218/723-4660

Brainerd Region
1601 Minnesota Drive
Brainerd, Minnesota 56401
218/828-2492

Detroit Lakes Region
714 Lake Avenue
Lake Avenue Plaza, #220
Detroit Lakes, Minnesota 56501
218/847-1519

Marshall Region
RLC Building
109 South Fifth Street
Marshall, Minnesota 56258
507/537-7146

Rochester Region
2116 Campus Drive, Southeast
Rochester, Minnesota 55904
507/285-7343

You are hereby advised, pursuant to Minn. Stat. § 14.115 (1986), "Small business considerations in rulemaking," that the proposed rules may have an effect on small businesses which engage in the management of waste tires, by imposing requirements on persons who generate, transport, collect, process, or store waste tires. For additional information regarding possible effects, please see part VI of the Statement of Need and Reasonableness.

If no hearing is required, upon adoption of the rules, the rules and the required supporting documents will be submitted to the Attorney General for review as to legality and form to the extent form relates to legality. Any person may request notification of the date of submission to the Attorney General. Persons who wish to be advised of the submission of this material to the Attorney General, or who wish to receive a copy of the rules, must submit the written request to Shelly Sporer.

Dated: April 6, 1987

for Barbara Lindsey Sims
Thomas J. Kalitowski
Executive Director

STATE OF MINNESOTA
POLLUTION CONTROL AGENCY

In the Matter of Proposed Rules Governing the Management of Waste Tires and the Permitting of Waste Tire Facilities, Minn. Rules Pts. 7001.0020, 7001.0040, 7001.0050, 7001.0190, 7001.4000 to 7001.4150, and 7035.8200 to 7035.8710

NOTICE OF HEARING AND NOTICE OF INTENT TO CANCEL HEARING IF FEWER THAN 25 PERSONS REQUEST A HEARING IN RESPONSE TO NOTICE OF INTENT TO ADOPT RULES WITHOUT A PUBLIC HEARING

Notice is hereby given that the Minnesota Pollution Control Agency (Agency) will hold a public hearing on the above-entitled matter at the Agency's Board Room, 520 Lafayette Road, St. Paul, commencing at 10:30 a.m. on Monday, June 8, 1987, and continuing in an evening session at the same location starting at 7:00 p.m. Additional days of hearing will be scheduled if necessary. All interested or affected persons will have an opportunity to participate by submitting either oral or written data, statements, or arguments. Statements or briefs may be submitted without appearing at the hearing.

PLEASE NOTE, HOWEVER, THAT THE HEARING WILL BE CANCELLED IF FEWER THAN 25 PERSONS REQUEST A HEARING IN RESPONSE TO THE NOTICE OF INTENT TO ADOPT THESE SAME RULES WITHOUT A PUBLIC HEARING PUBLISHED IN THE STATE REGISTER AND MAILED TO PERSONS REGISTERED WITH THE MINNESOTA POLLUTION CONTROL AGENCY. To verify whether a hearing will be held, please call Shelly Sporer, Minnesota Pollution Control Agency, between May 25, 1987 and June 5, 1987 at 612/296-7712.

The matter will be heard before Administrative Law Judge Allan Klein, Office of Administrative Hearings, 400 Summit Bank Building, 310 Fourth Avenue South, Minneapolis, Minnesota 55415, 612/341-7609. The rule hearing procedure is governed by Minn. Stat. §§ 14.131 to 14.20 (1986) and by the rules of the Office of Administrative Hearings, Minn. Rules pts. 1400.0200 to 1400.1200 (1985). Questions concerning the rule hearing procedure should be directed to the Administrative Law Judge at the address and telephone number stated above.

The subject of the hearing will be the proposed rules governing the management of waste tires and the permitting of waste tire facilities, Minn. Rules pts. 7001.0020, 7001.0040, 7001.0050, 7001.0190, 7001.4000 to 7001.4150, and 7035.8200 to 7035.8710. The proposed rules are authorized by Minn. Stat. §§ 115A.914, subd. 1 and 116.07, subd. 4 (1986). One free copy of the rules is available upon request by contacting:

Shelly Sporer
Minnesota Pollution Control Agency
520 Lafayette Road North
St. Paul, Minnesota 55155
612/296-7712

The purpose of the proposed rules is to establish a regulatory program for waste tire management. The proposed rules will govern all aspects of waste tire

management, including waste tire generation, transportation, collection, processing, and storage, and will provide for the administration of the Agency's waste tire facility permit program. Persons involved in the management of waste tires may be affected by the proposed rules.

The proposed rules include: amendments to the Agency's current permit rules contained in Minn. Rules pts. 7001.0010 to 7001.0210; rules that address information and administrative requirements for a waste tire collector or processor to obtain a facility permit; and technical standards for waste tire transfer, processing, and storage facilities, including emergency procedures, record keeping and reporting requirements, closure procedures, and financial assurance requirements for facility closure. The proposed rules also address the regulation of persons who generate or transport waste tires.

Questions regarding the content of the proposed rules should be directed to Shelly Sporer at the address and telephone number stated above.

Notice is hereby given that a Statement of Need and Reasonableness is now available for review at the Agency offices and at the Office of Administrative Hearings. The Statement of Need and Reasonableness includes a summary of all the evidence and argument which the Agency anticipates presenting at the hearing justifying both the need for and reasonableness of the proposed rules. Copies of the Statement of Need and Reasonableness may be reviewed at the Agency offices or at the Office of Administrative Hearings and copies may be obtained from the Office of Administrative Hearings at the cost of reproduction.

Copies of the proposed rules and the Statement of Need and Reasonableness may also be viewed at the Agency regional offices at the following locations:

Duluth Region
Duluth Government Service Center
320 West Second Street, #704
Duluth, Minnesota 55802
218/723-4660

Brainerd Region
1601 Minnesota Drive
Brainerd, Minnesota 56401
218/828-2492

Detroit Lakes Region
714 Lake Avenue
Lake Avenue Plaza, #220
Detroit Lakes, Minnesota 56501
218/847-1519

Marshall Region
RLC Building
109 South Fifth Street
Marshall, Minnesota 56258
507/537-7146

Rochester Region
2116 Campus Drive, Southeast
Rochester, Minnesota 55904
507/285-7343

Any person may present his or her views on the proposed rules in one or more of the following ways: by submitting written data to the Administrative Law Judge at any time before the close of the hearing; by submitting oral or

written data at the hearing; and by submitting written data to the Administrative Law Judge during the comment period following the hearing. The comment period will be not less than five working days after the public hearing ends. The comment period may be extended for a longer period not to exceed 20 calendar days if ordered by the Administrative Law Judge at the hearing. The written material received during the comment period shall be available for review at the Office of Administrative Hearings. Within three business days after the expiration of the comment period, the Agency and interested persons may respond in writing to any new information received during the comment period; however, no additional evidence may be submitted during this three-day period.

The Agency requests that any person submitting written views or data to the Administrative Law Judge prior to the hearing or during the comment period also submit a copy of the written data to Shelly Sporer at the address stated above.

The proposed rules may be modified if the data and views received during the hearing process warrant modification and the modification does not result in a substantial change in the proposed rules.

Any person may request notification of the date on which the Administrative Law Judge's report will be available, after which date the Agency may not take any final action on the rules for a period of five working days. If you desire to be so notified, you may request notification by sending a written request to the Administrative Law Judge. Any person may request notification of the date on which the rules are adopted and filed with the Secretary of State. The notice must be mailed on the same day that the rules are filed. If you want to be so notified you may so indicate at the hearing or send a request in writing to the Agency at any time prior to the filing of the rules with the Secretary of State.

You are hereby advised, pursuant to Minn. Stat. § 14.115 (1986), "Small business considerations in rulemaking," that the proposed rules may have an effect on small businesses which engage in the management of waste tires, by imposing requirements on persons who generate, transport, collect, process, or store waste tires. For additional information regarding possible effects, please see part VI of the Statement of Need and Reasonableness.

Please be advised that Minn. Stat. ch. 10A (1986) requires each lobbyist to register with the State Ethical Practices Board within five days after he or she commences lobbying. A lobbyist is defined in Minn. Stat. § 10A.01, subd. 11 (1986) as any individual:

(a) Engaged for pay or other consideration, or authorized by another individual or association to spend money, who spends more than five hours in any month or more than $250, not including his own travel expenses and membership dues, in any year, for the purpose of attempting to influence legislative or administrative action by communicating or urging others to communicate with public officials; or

(b) Who spends more than $250, not including his own travel expenses and membership dues, in any year, for the purpose of attempting to influence legislative or administrative action by communicating or urging others to communicate with public officials.

The statute contains certain exceptions. Questions should be directed to the Ethical Practices Board, 41 State Office Building, St. Paul, Minnesota 55155, telephone 612/296-5615.

Dated: April 6, 1987

for Barbara Lindsay Sims
Thomas J. Kalitowski
Executive Director

CERTIFICATE OF THE

MINNESOTA POLLUTION CONTROL AGENCY

AUTHORIZING RESOLUTION

I, Duane Dahlberg, do hereby certify that I am a member and the chairman of the Minnesota Pollution Control Agency, a board duly authorized under the laws of the State of Minnesota, and that the following is a true, complete, and correct copy of a resolution adopted at a meeting of the Minnesota Pollution Control Agency, duly and properly called and held on the 31st day of March, 1987, that a quorum was present, and that a majority of those present voted for the resolution which has not been rescinded or modified.

> BE IT RESOLVED, that the Executive Director of the Minnesota Pollution Control Agency (MPCA) is hereby granted the authority to sign and give notice of the MPCA's intent to adopt, without a public hearing, the attached proposed rules of the MPCA governing waste tire management and the permitting of waste tire facilities, Minn. Rules pts. 7001.0020, 7001.0040, 7001.0050, 7001.0190, 7001.4000 to 7001.4150 and 7035.8200 to 7035.8710, to all persons who have registered their names with the MPCA for that purpose and publish the notice and the rules in the State Register, and to perform any acts incidental thereto, including making any form changes in the rules that the Revisor of Statutes requires the MPCA to make in order to obtain the Revisor's certification as required by Minn. Stat. § 14.07, subd. 2 (1986).
>
> BE IT FURTHER RESOLVED, that in the event a public hearing becomes necessary, the Executive Director is hereby granted the authority and directed to call a hearing for the purpose of promulgating said rules as well as to perform any and all acts incidental thereto, including but not limited to signing an Order for and Notice of Hearing, as well as acting as the MPCA's representative at all hearings.

IN WITNESS WHEREOF, I have hereunto subscribed my name this 31st day of March, 1987.

Duane A Dahlberg

Duane Dahlberg
Chairperson

Linda Larson

Attest by one other Board member

Pollution Control Agency

Proposed Permanent Rules Governing the Management of Waste Tires and the Permitting of Waste Tire Facilities

Rules as Proposed

7001.0020 SCOPE.

Except as otherwise specifically provided, parts 7001.0010 to 7001.0210 apply to the following:

A. to K. [Unchanged.]

L. An agency permit required for the collection, deposit, storage, or processing of waste tires and tire-derived products.

7001.0040 APPLICATION DEADLINES.

Subpart 1. Application for new permit. Except as otherwise required by parts 7001.0530 and, 7001.1050, and 7001.4060, a permit application for a new facility or activity may be submitted at any time. However, it is recommended that the permit application be submitted at least 180 days before the planned date of the commencement of facility construction or of the activity.

Subp. 2. and 3. [Unchanged.]

7001.0050 WRITTEN APPLICATION.

A person who requests the issuance, modification, revocation and reissuance, or reissuance of a permit shall complete, sign, and submit to the director a written application. The person shall submit the written application in a form prescribed by the director. The application shall contain the items listed in items A to I unless the director has issued a written exemption from one or more of the data requirements. After receiving a written request for an exemption from a data requirement, the director shall issue the exemption if the director finds that the data is unnecessary to determine whether the permit should be issued or denied. The

Approved by Revisor

application must contain:

A. to H. [Unchanged.]

I. other information relevant to the application as required by parts 7001.0550 to 7001.0640, 7001.1050, 7001.1215, 7001.1290, 7001.4000 to 7001.4150, or 7040.0500 and 7040.0600.

7001.0190 PROCEDURE FOR MODIFICATION; REVOCATION AND REISSUANCE; AND REVOCATION WITHOUT REISSUANCE OF PERMITS.

Subpart 1. [Unchanged.]

Subp. 2. **Modification solely as to ownership or control.** Upon obtaining the consent of the permittee, the agency shall consider a request to modify a permit as to the ownership or control of a permitted facility or activity without following the procedures in parts 7001.0100 to 7001.0130 if the agency finds that no other change in the permit is necessary. If the permit is a permit described in part 7001.0020, item A or, B, or L, the agency shall also find that the agency has received a binding written agreement between the permittee and the proposed transferee containing a specific date for transfer of permit responsibilities and allocation of liabilities between the permittee and the proposed transferee. Within 60 days of receipt of a complete written application for modification as to ownership and control, the director shall place the matter on the agenda for consideration by the agency. The agency shall not unreasonably withhold or unreasonably delay approval of the proposed permit modification.

Subp. 3. **Minor modification.** Upon obtaining the consent of the permittee, the director may modify a permit to make the following corrections or allowances without following the procedures in parts 7001.0100 to 7001.0130:

A. and B. [Unchanged.]

C. to change a provision in the permit that will not result in allowing an actual or potential increase in the emission or discharge of a pollutant into the environment, or that will not result in a reduction of the agency's ability to monitor the permittee's compliance with applicable statutes and

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rules; and

D. if applicable, to make a change as provided in parts 7001.0730, subpart 3 and 7001.1350; and

E. if applicable, to make a change as provided in part 7001.4130, subpart 2.

Subp. 4. [Unchanged.]

Rules as Proposed (all new material)

7001.4000 SCOPE.

Except as otherwise provided, parts 7001.0010 to 7001.0210 and 7001.4000 to 7001.4150 govern the application procedures for the issuance of and the conditions relating to waste tire facility permits. Parts 7000.0100 to 7000.1100, 7001.0010 to 7001.0210, and 7001.4000 to 7001.4150 shall be construed to complement each other.

7001.4010 DEFINITIONS.

The definitions in part 7001.0010 of the agency's permitting rules, part 7035.8205 of the agency's waste tire rules, and Minnesota Statutes, section 115A.90, apply to the terms used in parts 7001.4000 to 7001.4150.

7001.4020 PERMITS.

Subpart 1. Permit required. Except as provided in subpart 2, no person may do any of the following without obtaining a waste tire facility permit from the agency:

A. store, process, or dispose of waste tires or tire-derived products; or

B. establish, construct, modify, own, or operate a waste tire facility.

Subp. 2. Exclusions. The following persons are not required to obtain a waste tire facility permit:

A. a retail tire seller for the retail selling site if no more than 500 waste tires are kept on the business premises;

B. an owner or operator of a tire retreading business

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for the business site if no more than 3,000 waste tires are kept on the business premises;

C. an owner or operator of a business who, in the ordinary course of business, removes tires from motor vehicles if no more than 500 waste tires are kept on the business premises;

D. a permitted landfill operator with less than 10,000 waste tires stored above ground at the permitted site;

E. a person using waste tires for agricultural purposes if the waste tires are kept on the site of use. Agricultural purposes do not include the burning of waste tires; or

F. a person conducting abatement activities under an abatement order or stipulation agreement entered into under part 7035.8020. This exemption does not exempt the person from the duty to obtain a waste tire facility permit for activities other than the abatement action.

Subp. 3. **Old waste tires.** An owner or operator of a waste tire facility is not eligible to obtain a waste tire facility permit for old waste tires located at the facility.

7001.4030 PERMIT BY RULE.

Subpart 1. **Facilities eligible.** The owner and operator of the following waste tire facilities shall be considered to have obtained a waste tire facility permit without submitting the application described in part 7001.4070 if the director has received the notification described in subpart 2:

A. a waste tire facility used for the storage of no more than 500 waste tires at any one time if the owner or operator, at least once per year, removes all the waste tires, and the facility is in compliance with the locational requirements of part 7035.8240, subpart 2;

B. a waste tire facility used for the processing of no more than 500 waste tires during any 30 days if the facility is in compliance with the locational requirements of part 7035.8240, subpart 2; or

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C. a waste tire facility used as a temporary location for mobile shredding or baling equipment if the equipment is located at the facility for 30 days or less, and all tire-derived products and residuals from processing are shipped from the facility within 30 days of completion of the shredding or baling operation.

Subp. 2. **Written notification.** To obtain permit by rule status, the owner and operator of a qualifying waste tire facility must submit the following information to the director. For an existing facility, the notification must be submitted within 90 days of the effective date of parts 7001.4000 to 7001.4150. For a new facility, the notification must be submitted 15 days before the operation begins. The notification must contain:

A. the name, address, and telephone number of the owner and operator of the facility; and the name, address, and telephone number of the facility;

B. a description of the general operation of the facility, including quantities of waste tires accumulated or processed per month;

C. a description of arrangements made to acquire fire protection services for the facility;

D. the township, range, and section numbers of the facility; and

E. a description of how the waste tires, tire-derived products, and residuals from processing will be disposed.

Subp. 3. **Termination of eligibility for permit by rule.** The agency shall terminate the eligibility of an owner or operator of a facility for permit by rule status after notice and opportunity for a contested case hearing or a public informational meeting if the agency finds that the facility does not qualify for permit by rule status or that the facility should be permitted to protect human health or the environment. When eligibility to be permitted under this part has been terminated, the owner and operator of the facility must apply for a waste tire facility permit under parts 7001.4000 to

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7001.4150 within 90 days or close the facility in compliance with part 7035.8250 and the applicable requirements of part 7035.8260.

7001.4035 NOTIFICATION BY EXISTING FACILITIES.

Subpart 1. **Notification.** The owner or operator of an existing waste tire facility must submit a signed, written notification to the director not more than 90 days after the effective date of parts 7001.4000 to 7001.4150. The written notification must include:

A. the name, address, and telephone number of the owner and operator of the facility; and the name, address, and telephone number of the facility;

B. a description of the facility and the type of operation, the maximum storage or processing capacity, and where the waste tires and tire-derived products are stored;

C. the approximate quantity and type of waste tires, designating passenger, truck, heavy equipment, or off-the-road tires, and tire-derived products stored on the site;

D. the township, range, and section numbers of the facility, and the zoning classification of the land; and

E. a statement indicating the intent of the owner or operator to continue to accept waste tires at the facility and to apply for a waste tire facility permit or to close the facility in compliance with parts 7035.8250 and 7035.8260.

Subp. 2. **Certification of written notification.** The owner or operator of a waste tire facility must sign the written notification and shall make the following certification: "I certify under penalty of law that this written notification was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete."

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by Revisor _____

Subp. 3. **Closure.** The owner or operator of an existing waste tire facility who has specified in the written notification an intent to close the facility, or who does not qualify for provisional status under part 7001.4040, must close the facility in accordance with parts 7035.8250 and 7035.8260.

Subp. 4. **Submittal of closure plan.** The owner or operator of an existing waste tire facility required to close under subpart 3 must submit to the director a closure plan in accordance with part 7035.8250 no later than 60 days after the date of receipt of a written request from the director for submission of the closure plan.

Subp. 5. **Compliance with standards.** The owner or operator of an existing waste tire facility must comply with the requirements specified in items A to C during the period from 90 days after the effective date of parts 7001.4000 to 7001.4150 until a permit is issued by the agency or closure is completed in compliance with parts 7035.8250 and 7035.8260, whichever occurs first.

A. Processes at the facility must be limited to those specified in the written notification.

B. Any waste tires accepted at the facility after the effective date of parts 7001.4000 to 7001.4150 must be stored in a new storage area according to the locational requirements of part 7035.8240, subpart 2, and the storage requirements of part 7035.8240, subpart 3, items D, F, and G.

C. Compliance with the financial assurance requirements of parts 7035.8400 to 7035.8590 must be maintained.

7001.4040 PROVISIONAL STATUS.

Subpart 1. **Scope.** The owner or operator of a waste tire facility that qualifies for provisional status shall be considered to have fulfilled the requirement to obtain a permit so long as provisional status is maintained. When requested by the director, the owner and operator of a facility with provisional status shall submit a permit application within the time period specified in part 7001.4060.

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Subp. 2. Qualifying for provisional status. To qualify for provisional status, an owner or operator of an existing waste tire facility shall submit the notification required under part 7001.4035. However, the notification must contain the information required by this subpart. During the period after the submission of the written notification to the director and until a permit is issued by the agency or closure is completed in compliance with parts 7035.8250 and 7035.8260, the owner or operator of an existing facility shall be considered to be in compliance with the requirement to obtain a permit and shall be considered to have provisional status. The written notification shall include:

A. the information required under part 7001.4035, subpart 1;

B. documentation that the facility is in compliance with the locational requirements of part 7035.8240, subpart 2. For existing facilities located in a 100-year floodplain, a plan meeting the requirements of part 7001.4070, subpart 6, must be submitted with the notification; and

C. documentation verifying that the owner or operator of the facility has informed the local fire protection agency of the facility's location, and describing the arrangements that have been made to immediately acquire fire protection services for the facility, if needed.

Subp. 3. **Termination of provisional status by permitting or closure.** Provisional status shall terminate when a permit is issued or when the director verifies that closure is complete.

Subp. 4. **Termination of provisional status for cause.** The following constitute justification for the director to commence proceedings to terminate provisional status:

A. the director discovers that the owner or operator of the facility has failed to fully disclose all the information required under subpart 2 or has submitted false or misleading information to the agency or the director;

B. the facility is not in compliance with the locational standards of part 7035.8240, subpart 2;

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C. the facility is not in compliance with any of the standards established in part 7001.4035, subpart 5;

D. the director has requested that the owner and operator of the facility submit a permit application and the owner and operator of the facility have failed to submit an application within the time period allowed; or

E. the director discovers that the facility threatens human health or the environment due to the activities conducted at the facility.

7001.4050 DESIGNATION OF PERMITTEE.

The agency shall designate all facility owners and operators of the waste tire facility as co-permittees when issuing a waste tire facility permit.

7001.4060 WASTE TIRE FACILITY PERMIT APPLICATION PROCEDURES.

Subpart 1. Form. The application for a waste tire facility permit consists of a general application, which includes the appropriate supporting documents, maps, and additional application information specific to the facility that is the subject of the application. The content requirements of the general permit application are set forth in part 7001.4070. The additional application information requirements specific to the facility type are set forth in parts 7001.4080, 7001.4090, and 7001.4100, and must be submitted with the general permit application.

Subp. 2. Copies required. An applicant for a waste tire facility permit shall submit four copies of the complete permit application to the director.

Subp. 3. Time of submittal. A person shall submit a permit application for a new or existing waste tire facility or for reissuance of an existing permit for a facility in accordance with items A to C.

A. For a new facility, a person shall submit a permit application at least 180 days before the planned date of the beginning of facility construction or the planned activity, whichever is earlier.

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B. For an existing facility, the owner or operator may submit a permit application at any time after the effective date of parts 7001.4000 to 7001.4150, except that upon the written request of the director for submission of a permit application, the owner or operator shall submit a permit application no later than 90 days after the date of receipt of the director's request.

C. For the reissuance of an existing permit, part 7001.0040, subpart 3, governs the submittal of an application except that if the applicant receives the written approval of the director, the applicant may submit an application to the agency for reissuance of an existing permit less than 180 days before the expiration of the existing permit.

Subp. 4. **Certification of permit applications and permit reports.** A person who signs an application for a waste tire facility permit, or any portion of it, or any report required by a permit to be submitted to the director or to the agency, shall make the certification required by part 7001.0070. If required by Minnesota Statutes, section 326.03, an engineer registered in the state shall certify all technical documents required to be submitted as part of a permit application or by permit conditions.

7001.4070 GENERAL INFORMATION REQUIREMENTS FOR A PERMIT APPLICATION.

Subpart 1. **Scope.** The information required by this part and the applicable provisions of part 7001.4080, 7001.4090, or 7001.4100, must be submitted for both new and existing waste tire facilities. The information in the permit application must address both existing and proposed operations, structures, and conditions. If a provision does not apply to the particular facility, the applicant must note this on the application.

Subp. 2. **General facility information.** The application shall contain the information in part 7001.0050, except item G, and shall indicate whether the facility to be permitted is new or existing, and whether the application is an initial or

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amended application.

Subp. 3. **Description of facility operation.** The application shall describe the location and operation of the facility. The application shall, at a minimum, include a description of the following:

A. the type of facility operation, the manner in which waste tires will be collected at the facility, and how those waste tires will be stored, processed, or used;

B. the maximum quantity and type of waste tires to be stored on the site at any time, specifying the quantity and type of waste tires stored on the site currently and the storage capacity of the facility;

C. the facility's ability to meet the storage requirements of part 7035.8240, subpart 3, items D, F, and G;

D. the present use of the land at the site of the facility and of the land within a one-quarter mile radius of the facility, identifying the landowners and their addresses, and zoning designations;

E. the access to the site by roads, including weight or other use restrictions;

F. surface water drainage, the slope of the land, and soil composition;

G. the location of the facility and whether that location complies with the restrictions established in part 7035.8240, subpart 2;

H. the types, sizes, conditions, and availability of equipment needed for operation and emergency response at the facility, and the functions of each piece of equipment described;

I. the security procedures and the location of fences, gates, and other access control measures;

J. the relationship of the facility to the applicable county solid waste management plan, and the area to be served by the facility; and

K. the expected operating life of the facility and how this number was calculated.

Subp. 4. **Topographic map.** The topographic map submitted

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as part of the general facility information required by subpart 2 shall show the facility and the area surrounding the facility for a distance of at least 1,320 feet using a scale of one inch equals 200 feet, and shall show, at a minimum, the following:

A. the date the map was prepared;

B. the map scale and directions;

C. wetlands, floodplains, shorelands, and surface waters, including permanent and intermittent streams and wetlands;

D. legal boundaries and land ownership, including county, township, and municipal boundaries; and township, range, and section numbers; and easements and rights-of-way;

E. the locations of wells, both operating and abandoned;

F. occupied dwellings; and

G. contours that show the pattern of surface water flow in and adjacent to the facility.

Subp. 5. **Development map.** A development map shall be submitted with the application. This map shall show the waste tire facility in detail. At a minimum, the development map shall show the following:

A. the facility design and the location of all waste tire storage areas and fire lanes;

B. all structures and buildings at the facility, including those used in collection, storage, or processing operations;

C. loading and unloading areas;

D. access and internal roads;

E. run-off control measures, ditches, and dikes;

F. the location of the area used for collection, storage, or processing of waste tires, tire-derived products, and residuals from processing; and the total land area in square feet used for storage of waste tires, tire-derived products, and residuals from processing; and

G. the location of water supplies.

Subp. 6. **Floodplains.** If the facility is located within a

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100-year floodplain, the application must describe the procedures that the applicant will follow to remove waste tires and tire-derived products to safety before the facility is flooded. The following information must, at a minimum, be included:

A. the timing of the removal relative to flood levels, showing that removal can be completed before floodwaters reach the facility;

B. the location of the facility or facilities to which the waste tires and tire-derived products will be moved and information indicating that these facilities will be able to receive waste tires and tire-derived products in accordance with parts 7001.4000 to 7001.4150, and parts 7035.8200 to 7035.8710; and

C. the planned procedures, equipment, and personnel to be used and how these resources will be made available when needed.

Subp. 7. **Closure.** The application shall include an estimate of the cost of closing the facility. This estimate shall be prepared following the procedures in part 7035.8430. The application shall also include a copy of the financial assurance mechanism required by part 7035.8420, and the closure plan required by part 7035.8250.

7001.4080 ADDITIONAL APPLICATION INFORMATION REQUIRED FOR WASTE TIRE TRANSFER FACILITIES.

The application for a waste tire transfer facility must include the following information in addition to the information required by part 7001.4070:

A. the types of vehicles intended to use the facility;

B. information on how the accumulation of waste tires at the transfer facility will be controlled so that no more than 10,000 passenger tires or the equivalent weight of other waste tires shall be present at the transfer facility at any time;

C. information on the type of storage that will be present at the facility, designating drop boxes, containers,

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trailers, or stockpiles; and

D. information on size, capacity, and volume of drop boxes, containers, and trailers to be maintained at the facility.

7001.4090 ADDITIONAL APPLICATION INFORMATION REQUIRED FOR WASTE TIRE PROCESSING FACILITIES.

The application for a waste tire processing facility must include the following information in addition to the information required by part 7001.4070:

A. the maximum quantity and type of tire-derived products and residuals from processing to be stored on the site at any time, specifying the quantity and type of tire-derived products and residuals from processing stored on the site currently and how they are being stored;

B. a description of the processes and procedures used at the facility for processing waste tires;

C. the processing capacity of the facility, and the number of tons of waste tires currently being processed;

D. a description of how the facility will comply with the 75 percent annual processing requirement of part 7035.8270, subpart 3, item B;

E. a description of how residuals from processing will be disposed;

F. the existing and proposed markets for the facility's tire-derived products; and

G. a copy of the emergency preparedness manual required by part 7035.8280, subpart 3.

7001.4100 ADDITIONAL APPLICATION INFORMATION REQUIRED FOR WASTE TIRE STORAGE FACILITIES.

Subpart 1. General information. The application for a waste tire storage facility must include the following information in addition to the information required by part 7001.4070:

A. the procedures that will be used at the facility to minimize or prevent mosquito and rodent breeding in the waste tire stockpiles;

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B. a copy of the emergency preparedness manual required by part 7035.8290, subpart 2;

C. a copy of the contingency plan required by part 7035.8290, subpart 5; and

D. information on how the accumulation of waste tires at the waste tire storage facility will be controlled so that no more than 500,000 passenger tires or the equivalent weight of other waste tires are ever stored at the facility.

Subp. 2. **Tire pile limitation exemption.** The owner or operator of a waste tire storage facility who seeks to obtain an exemption from the waste tire pile size or fire lane requirements established in part 7035.8240, subpart 3, items F and G, must demonstrate that compliance with the standards is not technically feasible and that alternative methods can be successfully used to reduce the danger of fires at the facility. The request for an exemption from either requirement shall accompany the permit application, and shall include the following information:

A. a statement of the reason compliance with the requirement cannot be achieved at the facility;

B. the proposed alternative methods for controlling the spread of fire at the facility; and

C. a statement from the fire marshal that the alternative methods have been approved for use at the facility.

If the director finds, based on the information submitted, that compliance with the standards is not technically feasible and that alternative methods can be successfully employed to reduce the danger of fires at the facility, the director shall issue a permit that specifies waste tire pile size and fire lane requirements that reduce to the maximum extent any danger from fire at the facility.

7001.4110 PUBLIC NOTICE OF PRELIMINARY DETERMINATION AND DRAFT PERMIT; PUBLIC COMMENTS.

In addition to the requirements of part 7001.0100, subpart 5, relating to the distribution of the public notice, the

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director shall mail a copy of the public notice to the governing body of each county and city or township that has jurisdiction over the waste tire facility.

7001.4120 TERMS AND CONDITIONS OF WASTE TIRE FACILITY PERMITS.

In addition to the terms and conditions in part 7001.0150, each draft and final waste tire facility permit shall require compliance with parts 7035.8200 to 7035.8710, unless an exemption is permitted under part 7001.4100, subpart 2.

7001.4130 MODIFICATION OF PERMITS; REVOCATION AND REISSUANCE OF PERMITS.

Subpart 1. **Scope.** In addition to the provisions of parts 7001.0170, 7001.0180, and 7001.0190, this part governs the modification, revocation, and reissuance of waste tire facility permits.

Subp. 2. **Minor modifications.** In addition to the authority to modify a permit under part 7001.0190, subparts 2 and 3, upon obtaining the consent of the permittee, the director shall have the authority, without following the procedures in parts 7001.0100 to 7001.0130:

A. to modify a permit to change an interim compliance date in a schedule of compliance provided the new date does not interfere with the attainment of the final compliance date; and

B. to amend the closure plan, emergency preparedness manual, or contingency plan for a waste tire facility.

7001.4140 INTERACTION OF PERMIT AND ABATEMENT RULES.

If a tire collector wishes to obtain an agency permit for a site that is the subject of an abatement action, the tire collector must notify the director of this intent within 90 days of the effective date of parts 7001.4000 to 7001.4150 or at the time the abatement plan is submitted, whichever is later, and agree to develop a plan for bringing the site into compliance with the technical rules for waste tire transfer, processing, or storage facilities. This shall not exempt the owner or operator of a facility that is the subject of an abatement action from

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the duty to obtain a permit by following the procedures established in parts 7001.4000 to 7001.4150 for activities other than the abatement action.

7001.4150 TRANSPORTER APPLICATION REQUIREMENTS.

Subpart 1. **Scope.** A person required to obtain an agency waste tire transporter identification number under part 7035.8710, subpart 3, must follow the procedures established in subpart 2.

Subp. 2. **Application.** To obtain an agency waste tire transporter identification number and approval to transport waste tires, a transporter shall submit a written application to the director. For a transporter currently transporting waste tires, the application must be submitted not more than 30 days after the effective date of parts 7001.4000 to 7001.4150. For a new transporter, the application must be submitted 15 days before the transporter begins transporting waste tires. The application must contain the following information:

A. the name, address, and telephone number of the person who will be transporting waste tires. If a company will be transporting waste tires, the name, address, and telephone number of the officers of the company must be submitted, along with an identification of the number of drivers that will be transporting tires for the company;

B. the geographical area that will be served;

C. the type of vehicle(s) or trailer(s) or both vehicle(s) and trailer(s) that will be used, the license number(s), and registered vehicle owner(s);

D. where the waste tires will be collected, and where delivered or deposited; and

E. an estimate of the quantity and type of waste tires that will be collected quarterly.

WASTE TIRE FACILITY STANDARDS

7035.8200 SCOPE.

Parts 7035.8200 to 7035.8590 apply to owners and operators of waste tire facilities except those who are exempt from the

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requirement to obtain a waste tire facility permit under part 7001.4020 or are permitted by rule under part 7001.4030. Parts 7035.8700 to 7035.8710 apply to persons who generate or transport waste tires.

7035.8205 DEFINITIONS.

Subpart 1. **Scope.** For the purposes of parts 7035.8200 to 7035.8710 and parts 7001.4000 to 7001.4150, the terms in subparts 2 to 28 have the meanings given them.

Subp. 2. **Agency.** "Agency" means the Minnesota Pollution Control Agency.

Subp. 3. **Closure.** "Closure" means the removal of all stockpiles of waste tires and other materials from the waste tire facility in compliance with the procedures established by statute, rule, or permit.

Subp. 4. **Director.** "Director" means the executive director of the Minnesota Pollution Control Agency.

Subp. 5. **Existing waste tire facility.** "Existing waste tire facility" means a waste tire facility which has received waste tires after November 21, 1985, and which is in existence on the effective date of parts 7035.8200 to 7035.8710.

Subp. 6. **Floodplain.** "Floodplain" means any land area that is subject to a one percent or greater chance of flooding in any given year from any source.

Subp. 7. **New waste tires.** "New waste tires" means waste tires accumulated at a waste tire facility after November 21, 1985.

Subp. 8. **Old waste tires.** "Old waste tires" means waste tires accumulated at a waste tire facility before November 21, 1985.

Subp. 9. **Operator.** "Operator" means the person responsible for the overall operation of the waste tire facility. An operator is a tire collector or tire processor as defined in Minnesota Statutes, section 115A.90, subdivisions 8 and 10 respectively.

Subp. 10. **Owner.** "Owner" means a person who owns, in

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whole or in part, a waste tire facility, the waste tires located at a facility, or the land on which the facility is located.

Subp. 11. **Person.** "Person" has the meaning given in Minnesota Statutes, section 115A.90, subdivision 5.

Subp. 12. **Processing.** "Processing" has the meaning given in Minnesota Statutes, section 115A.90, subdivision 6.

Subp. 13. **Ravine.** "Ravine" means a deep, narrow cleft or gorge in the earth's surface. A ravine cannot be smoothed out by ordinary tillage.

Subp. 14. **Residuals from processing.** "Residuals from processing" means the unusable material resulting from any chemical or physical processing of waste tires.

Subp. 15. **Shoreland.** "Shoreland" means land located within 1,000 feet from the normal high water mark of a lake, pond, or flowage, or land within 300 feet of a river or stream, or a floodplain as established by ordinance.

Subp. 16. **Sinkhole.** "Sinkhole" means a closed depression formed by subsidence of the underlying bedrock.

Subp. 17. **Tire.** "Tire" has the meaning given in Minnesota Statutes, section 115A.90, subdivision 7.

Subp. 18. **Tire collector.** "Tire collector" has the meaning given in Minnesota Statutes, section 115A.90, subdivision 8.

Subp. 19. **Tire-derived products.** "Tire-derived products" means usable materials produced from the chemical or physical processing of a waste tire.

Subp. 20. **Tire dump.** "Tire dump" has the meaning given in Minnesota Statutes, section 115A.90, subdivision 9.

Subp. 21. **Tire processor.** "Tire processor" has the meaning given in Minnesota Statutes, section 115A.90, subdivision 10.

Subp. 22. **Transporter.** "Transporter" means a person who removes waste tires from a source of generation, a tire dump, or a waste tire facility, and who has received an agency waste tire transporter identification number.

Subp. 23. **Waste tire.** "Waste tire" has the meaning given

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in Minnesota Statutes, section 115A.90, subdivision 11.

Subp. 24. **Waste tire facility or facility.** "Waste tire facility" or "facility" means any area where waste tires, including tire-derived products, are collected, deposited, stored, or processed. The incidental storage of tire-derived products at the site of final utilization or tire-derived oil at a refinery does not make the site a waste tire facility.

Subp. 25. **Waste tire processing facility.** "Waste tire processing facility" means any area where tires or tire-derived products are processed. A waste tire processing facility must meet the qualifications in part 7035.8270.

Subp. 26. **Waste tire storage facility.** "Waste tire storage facility" means any area where waste tires, or tire-derived products, are collected, deposited, or stored. A waste tire storage facility is a facility which does not meet the qualifications for regulation as a waste tire transfer facility or a waste tire processing facility.

Subp. 27. **Waste tire transfer facility.** "Waste tire transfer facility" means any area where waste tires are concentrated for transport to waste tire processing facilities. A waste tire transfer facility must meet the qualifications in part 7035.8270.

Subp. 28. **Wetland.** "Wetland" means any area that is covered by standing water during any portion of a year. Wetland includes, but is not limited to, wetlands as defined in Classification of Wetlands and Deep Water Habitats of the United States, 1979. This publication was issued by the United States Department of the Interior, Fish and Wildlife Service, Washington, D.C. 20402. This publication is available at the Minnesota State Government Law Library, Ford Building, 117 University Avenue, Saint Paul, Minnesota. This publication is incorporated into this definition by reference and is not subject to frequent change.

7035.8210 LAND DISPOSAL PROHIBITED.

Disposal of waste tires and tire-derived products in

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landfills is prohibited.

7035.8220 PERMIT REQUIRED.

An agency permit is required to establish, construct, modify, own, or operate a waste tire facility, unless that facility is exempt from the requirement to obtain a permit by statute or rule. The procedures that must be followed to obtain an agency permit, and the facilities that are exempt from the requirement to obtain an agency permit, are set out in parts 7001.4000 to 7001.4150.

7035.8230 RULE CONFLICTS.

Nothing in parts 7035.8200 to 7035.8710 shall relieve any person from obligations or duties imposed by any other laws, statutes, rules, standards, or ordinances of the federal, state, or local governments or any agency thereof now in effect or which become effective in the future. In the event parts 7035.8200 to 7035.8710 conflict with any such laws, statutes, rules, standards, or ordinances, the more stringent provisions shall apply.

7035.8240 GENERAL STANDARDS FOR PERMITTED FACILITIES.

Subpart 1. Scope. All permitted waste tire facilities must comply with the technical and operational standards in this part. In addition to the requirements in this part, each permitted facility must comply with requirements specific to the operation conducted at the facility and any special conditions established in a permit. Part 7035.8270 establishes qualifications for regulation as a waste tire transfer or processing facility. Facilities that do not meet the standards for regulation as a waste tire transfer or processing facility are subject to regulation as a waste tire storage facility and must comply with the standards of part 7035.8290.

Subp. 2. Location of facility. A waste tire facility shall not be constructed or operated in a wetland, sinkhole, shoreland, ravine, 100-year floodplain, or any area where it may be subjected to immersion in water. An existing facility may be

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located in a 100-year floodplain if the owner or operator submits to the director a plan meeting the requirements of part 7001.4070, subpart 6, with the permit application.

Subp. 3. **Operation.** A waste tire facility shall be operated in compliance with the following standards:

A. No operations involving the use of open flames, blow torches, or highly flammable substances shall be conducted within 50 feet of a waste tire pile.

B. An approach and access road to the waste tire facility shall be maintained passable for any vehicle at all times. Access to the facility shall be strictly controlled through the use of fences, gates, or other means of controlling access.

C. An attendant shall be present at all times the waste tire facility is open for business.

D. A waste tire storage area shall be designated. Only waste tires and tire-derived products may be stored in the designated waste tire storage area. This area must be maintained free of vegetation.

E. Waste tires stored indoors shall be stored under conditions that meet or exceed those in The Standard for Storage of Rubber Tires, NFPA 231D-1980 edition, written by the NFPA Committee on Standards for Rubber Tires, adopted by the National Fire Protection Association and published by the NFPA Standards Council (Dec. 18, 1980), San Diego, California. This publication is available at the Minnesota State Government Law Library, Ford Building, 117 University Avenue, Saint Paul, Minnesota; the Office of Public Safety, Fire Marshal Division; or any local fire department. This publication is incorporated by reference and is not subject to frequent change.

F. No waste tire pile shall have an area greater than 10,000 square feet or a vertical height greater than 20 feet, except as established in the permit as provided in part 7001.4100, subpart 2.

G. A 50-foot fire lane shall be placed around the perimeter of each waste tire pile, except as established in the

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permit as provided in part 7001.4100, subpart 2. Access to the fire lane for emergency vehicles must be unobstructed at all times. The fire lane shall be maintained free of rubbish and vegetation at all times.

H. All tire piles shall be maintained free of mosquitoes, through spraying or removal of water ponded in the waste tires.

I. All tire piles shall be maintained free of rodents.

J. Surface water drainage must be diverted around and away from the waste tire storage area.

Subp. 4. **Transfer of ownership or operation.** The permittee of a waste tire facility shall notify the director before transferring ownership or operation of a facility during its operating life. The permittee must also notify the new owner or operator in writing of the requirements of parts 7035.8200 to 7035.8710 and existing permit conditions. The requirements of parts 7035.8200 to 7035.8710 are transferred to the new owner or operator immediately upon the transfer of ownership or operation of the facility. A permittee's failure to notify the new owner or operator of these requirements does not relieve the new owner or operator of the obligation to comply with parts 7035.8200 to 7035.8710. No ownership or operation transfer may occur without a permit modification as required in part 7001.0190, subpart 2. The facility must be in compliance with all agency rules before transfer of the permit shall be approved.

Subp. 5. **Annual report.** A permittee of a waste tire facility shall submit a report containing the following information to the director annually, on March 1 of each year:

A. the facility name, address, and permit number;

B. the year covered by the report;

C. the total quantity and type of waste tires or weight of tire-derived products received at the facility during the year covered by the report;

D. the total quantity and type of waste tires or weight of tire-derived products shipped from the facility during

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the year covered by the report;

E. the total quantity and type of waste tires and weight of tire-derived products located at the facility on the date of reporting;

F. for all waste tires and tire-derived products shipped from the facility, the name and agency waste tire transporter identification number of the transporter who accepted the waste tires or tire-derived products for transport, and the quantity of waste tires or volume of tire-derived products shipped with that transporter. If the waste tires were shipped with a person who is not a waste tire transporter, the number of tires shipped, the person's name and telephone number, and the place where the tires were deposited should be noted;

G. for all waste tires and tire-derived products received at the facility, the name and agency waste tire transporter identification number of the transporter who delivered the waste tires or tire-derived products to the facility, and the quantity of waste tires or volume of tire-derived products received from that transporter. If the waste tires were delivered by a person who is not a waste tire transporter, the number of tires delivered, and the person's name and telephone number should be noted;

H. for all waste tires removed for recapping, the quantity and type removed, and the name and location of the recapping facility receiving the tires; and

I. the most recent closure cost estimate prepared using the criteria in part 7035.8430.

7035.8250 CLOSURE.

Subpart 1. **Closure conditions.** The owner or operator of a waste tire facility must cease to accept waste tires and must immediately close the facility in compliance with any special closure conditions established in the permit, this part, and part 7035.8260, if:

A. the owner or operator declares the facility closed;

B. the owner or operator fails to provide alternate

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financial assurance and obtain written approval of the financial assurance from the director within the specified time period as required by parts 7035.8400 to 7035.8590;

C. the agency permit for a facility expires and renewal of the permit is not applied for, or is applied for and denied;

D. the agency permit for the facility is revoked without reissuance;

E. an agency order to cease operations is issued;

F. an agency stipulation agreement specifies closure is to begin; or

G. the owner or operator of a permitted facility has failed to receive and ship waste tires for a continuous six-month period.

Subp. 2. **Submittal of closure plan.** The owner or operator of a waste tire facility shall submit to the director a closure plan with the permit application, upon request of the director, or as required by an order or stipulation agreement. The director shall approve the closure plan as part of the permit issuance procedure or as part of a submittal required by a stipulation agreement, or other enforcement action. Compliance with the approved closure plan shall be made a condition of any permit, order, or stipulation agreement. No closure plan shall be approved unless the closure plan is consistent with this part, and the applicable closure requirements of part 7035.8260.

Subp. 3. **Contents of closure plan.** A copy of the approved closure plan and all revisions to the plan must be kept at the facility until closure is completed and verified by the director. To be approved, a closure plan must identify steps needed to close the facility at any point during its intended operating life and to close the facility completely at the end of its operating life. The closure plan must include:

A. a description of the facility's operation, including the maximum inventory of waste tires and tire-derived products that will be collected at the facility at any time during the operating life of the facility;

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B. when or under what circumstances the facility will close;

C. how all waste tires and tire-derived products will be removed from the facility upon closure, and what end-use is planned for the waste tires and tire-derived products;

D. an estimate of the cost of closing the facility, including an itemized breakdown of the cost of transportation, tipping fees, and labor associated with closure of the facility; and

E. a schedule for the applicable closure procedures of part 7035.8260, including the time period for completing the closure procedures.

Subp. 4. **Amendment of plan.** The owner or operator may amend the closure plan at any time during the life of the facility. Any amendments to the closure plan must be submitted to and approved by the director before they become effective. The owner or operator must amend the closure plan and submit the amended plan to the director for approval whenever changes in the operating plan or facility design affect the closure procedures required, or whenever the expected year of closure changes.

7035.8260 CLOSURE PROCEDURES.

Subpart 1. **Time for completion of closure.** Within 90 days after closure of the facility must begin under part 7035.8250, the owner or operator of a waste tire facility shall complete the closure activities of this part. Additional procedures shall be completed as specified in the facility's approved closure plan. For waste tire processing or waste tire storage facilities, the director may approve a longer, specified period of time for completing the procedures set out in this part, provided the owner or operator demonstrates that all steps have been and will continue to be taken to minimize threats to human health, natural resources, and the environment, and the activities required by this part will take longer than 90 days to complete.

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Subp. 2. Closure procedures. If the conditions of part 7035.8250, subpart 1 exist, the owner or operator must:

A. close public access to the facility;

B. post a gate notice indicating to the public that the facility is closed and indicating the nearest facility where tires can be deposited;

C. notify the agency, local units of government, local land use authorities, and fire and health authorities of the closing of the facility;

D. remove all solid waste to a permitted solid waste facility;

E. remove all waste tires to a waste tire processing facility that has a permit or provisional status. If a waste tire processing facility is not available to accept the waste tires, the director shall approve shipment of the waste tires to a waste tire storage or transfer facility willing and able to accept the waste tires;

F. remove all tire-derived products to a market; and

G. notify the director when the closure activities are completed.

Subp. 3. Certification of closure. After receiving certification from the owner or operator of the facility that the closure procedures have been completed in accordance with subpart 2, the director shall inspect the facility site. If all procedures have been correctly completed, the director shall verify that the facility has been closed in compliance with parts 7035.8200 to 7035.8710, and that all duties established by parts 7035.8200 to 7035.8710, and by the facility permit, have been discharged.

7035.8270 QUALIFICATIONS FOR REGULATION AS A PERMITTED WASTE TIRE TRANSFER OR WASTE TIRE PROCESSING FACILITY.

Subpart 1. Scope. This part sets out the qualifications for regulation as a permitted waste tire transfer facility or waste tire processing facility. Facilities that do not meet the standards for regulation as a waste tire transfer or processing

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facility shall be subject to regulation as a waste tire storage facility.

Subp. 2. **Waste tire transfer facility qualifications.** To qualify for regulation as a permitted waste tire transfer facility, the following standards must be met:

A. Waste tires stored at the facility shall be limited to 10,000 passenger tires or the equivalent weight of other waste tires.

B. All waste tires received at the facility shall be transported to a permitted waste tire processing facility at least twice annually or as otherwise provided in the facility's waste tire transfer facility permit as necessary to protect human health, natural resources, or the environment.

Subp. 3. **Waste tire processing facility qualifications.** To qualify for regulation as a permitted waste tire processing facility, the following standards must be met:

A. Waste tires stored shall be limited to one waste tire pile meeting the limits in part 7035.8240, subpart 3, item F, of the general facility standards, which is approximately 70,000 passenger tires.

B. At least 75 percent of the waste tires and tire-derived products must be processed and removed from the waste tire processing facility during a calendar year. This 75 percent annual processing requirement applies to all waste tires and tire-derived products received or produced by the facility during a calendar year. Compliance with the 75 percent annual processing requirement is determined based on the amount of waste tires and tire-derived products that are at the facility at the beginning of the calendar year, that are received or produced at the facility during the calendar year, and that remain at the facility at the end of the calendar year. The volume of waste tires and tire-derived products processed shall be calculated based on weight. This requirement shall not apply to facilities that have a waste tire storage facility permit, or that have received from the director, through the petitioning process established in part 7035.8300, an exemption from the 75

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percent annual processing requirement.

7035.8280 WASTE TIRE PROCESSING FACILITY STANDARDS.

Subpart 1. Scope. This part sets out the standards that shall be applied to the operation of a permitted waste tire processing facility in addition to the general standards in part 7035.8240. To qualify for regulation as a waste tire processing facility, the standards in part 7035.8270 must be met.

Subp. 2. **Emergency preparedness.** Equipment for communications and the control of fires shall be provided and maintained at the waste tire processing facility at all times. Arrangements to acquire police and fire protection services for the waste tire processing facility shall be made with local police and fire protection authorities.

Subp. 3. **Emergency preparedness manual.** The permittee of the waste tire processing facility shall maintain an emergency preparedness manual at the facility. This manual shall be submitted to the director with the permit application. Once approved, the manual shall become part of the permit. This manual shall be updated if a change in the operations of the waste tire processing facility occurs, or if the director requires an update. This emergency preparedness manual must, at a minimum, contain:

A. a list of names and telephone numbers of persons to be contacted in the event of a fire, flood, or other emergency involving the waste tire processing facility;

B. a list of the emergency response equipment present at the waste tire processing facility or available for use at the facility, the location of the equipment, and how it should be used in the event of a fire or other emergency;

C. an assessment of the possible hazards to human health and the environment should an emergency occur;

D. the procedures to be followed by facility personnel from discovery of an emergency until the situation is corrected, including the measures that will be taken to minimize the occurrence, recurrence, or spread of fires, explosions, and

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releases;

E. the locations of known water supplies, fire hydrants, dry-chemical extinguishers, or other materials that may be used for fire fighting purposes; and

F. additional relevant information.

No emergency preparedness manual shall be approved unless the permittee demonstrates that arrangements to acquire police and fire protection services for the waste tire processing facility have been made.

Subp. 4. **Emergency procedures.** The permittee of the waste tire processing facility shall implement the emergency procedures of subpart 3, item D, in the event of a fire or other emergency.

Subp. 5. **Emergency notification and reports.** The permittee of the waste tire processing facility shall immediately notify the director in the event of a fire or other emergency with potential off-site impacts. Within one week of correcting an emergency situation at the waste tire processing facility, the permittee of the facility shall submit to the director a report on the emergency. This report shall set out the type of emergency, the date and time of the emergency, the origins of the emergency, the actions that were taken to respond to the emergency, the results of the actions that were taken, and an analysis of the success or failure of the actions.

Subp. 6. **Market information.** In addition to the information to be included in the annual report required under the general facility standards of part 7035.8240, subpart 5, the permittee of a waste tire processing facility shall include a list of markets for the product of the processing operation, and the form and quantity of the product shipped to the markets. The permittee of a waste tire processing facility shall also report on the quantity of residuals from processing produced at the facility, and how and where those residuals were disposed.

7035.8290 WASTE TIRE STORAGE FACILITY STANDARDS.

Subpart 1. **Scope.** This part sets out the standards that

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shall be applied to the operation of a permitted waste tire storage facility in addition to the general standards in part 7035.8240. A waste tire facility that cannot qualify for regulation as a waste tire transfer facility or as a waste tire processing facility shall comply with the standards in this part.

Subp. 2. **Emergency preparedness standards.** Waste tire storage facilities shall comply with the emergency preparedness standards for waste tire processing facilities in part 7035.8280, subparts 2 to 5.

Subp. 3. **Storage limitation.** No waste tire storage facility shall store more than 500,000 passenger tires or the equivalent weight of other waste tires or tire-derived products at any time.

Subp. 4. **Additional information.** In addition to the information required to be submitted in the annual report required under the general facility standards of part 7035.8240, subpart 5, the permittee of the waste tire storage facility shall submit:

A. information on the procedures used at the facility to minimize or prevent mosquito breeding and rodent infestation, including the dates when mosquito or rodent control operations were conducted; and

B. reports that identify all incidents that required implementing the contingency plan of subpart 5. The report must contain a description of the actions that have been taken to minimize hazards to human health and the environment since the emergency occurred, and what actions will be taken to continue to correct the emergency if the emergency has not been corrected.

Subp. 5. **Contingency plan.** The permittee of a waste tire storage facility that has more than one waste tire pile, shall prepare and maintain a contingency plan at the facility. This contingency plan must identify the procedures to be followed in the event an emergency causes a release of substances or pollutants that threaten human health, natural resources, or the environment. The contingency plan must include:

A. an identification of the events, including

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vandalism, spills, fires, explosions, or any incident that could cause a release of substances or pollutants that threaten human health, natural resources, or the environment;

B. a detailed description of the procedures that should be followed in the event of a release of substances or pollutants that threaten human health, natural resources, or the environment at the facility including the procedures that should be followed to prevent the contamination of soil and ground water from the release and run-off contaminated with substances discharged from the burning tires;

C. a description of how and where run-off contaminated with substances discharged from the burning tires will be confined and collected;

D. a description of how and where the contaminated run-off will be stored before it is treated, used, or disposed of; and

E. a description of the emergency equipment available on- or off-site to implement the contingency plan, the response time for any emergency equipment available off-site, and the function and capacity of the equipment.

Subp. 6. **Contingency plan submittal.** The contingency plan shall be submitted to the director with the permit application. Once approved, the plan shall become part of the permit. This plan shall be updated if a change in the operations at the waste tire storage facility occurs, or if the plan did not provide for an appropriate response to an emergency situation involving a release, or if required by the director to protect human health, natural resources, or the environment.

Subp. 7. **Contingency plan implementation.** The permittee of the waste tire storage facility shall implement the contingency plan of subpart 5 when needed to prevent, mitigate, or clean up a release of substances or pollutants that threaten human health, natural resources, or the environment.

Subp. 8. **Notification of implementation of contingency plan.** The permittee of the waste tire storage facility must immediately notify the director when the contingency plan is

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implemented.

Subp. 9. **Removal of contaminated soil.** If required by the director to protect human health, natural resources, or the environment, the permittee shall remove soil contaminated by substances released by an event specified in subpart 5. The action shall be taken in accordance with any applicable rules governing the removal, transportation, and disposal of the material.

7035.8300 PETITION PROCEDURES.

Subpart 1. **Scope.** This part sets out the procedures for submitting a petition for an exemption from the 75 percent annual processing requirement established by part 7035.8270, subpart 3.

Subp. 2. **Submission of the petition.** The permittee of a waste tire processing facility may petition the director for an exemption from the 75 percent annual processing requirement by submitting to the director a petition containing the information described in subpart 3, as soon as the permittee becomes aware that compliance with the 75 percent annual processing requirement cannot be achieved.

Subp. 3. **Information required.** The petition for an exemption from the 75 percent annual processing requirement shall contain information sufficient to allow the director to find:

A. that the 75 percent annual processing requirement will be met in the year following the year for which the exemption is obtained;

B. that an exemption from the 75 percent annual processing requirement will not cause the facility to be out of compliance with any other standard applicable to the facility; and

C. that an exemption from the 75 percent annual processing requirement will not cause the facility to become a hazard to human health, natural resources, or the environment.

Subp. 4. **Determination by the director.** If the director,

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upon evaluation of the information submitted as part of the petition, makes the findings listed under subpart 3, the director shall grant the petition. The director shall determine whether the petition shall be granted within 60 days of receiving a petition containing information sufficient for the director to make the required findings. An exemption granted under this part shall be valid for one year. The director shall not grant the permittee of a waste tire processing facility an exemption from the 75 percent annual processing requirement for any two consecutive years.

WASTE TIRE FACILITY
FINANCIAL ASSURANCE REQUIREMENTS

7035.8400 SCOPE.

Parts 7035.8400 to 7035.8590 apply to owners and operators of waste tire facilities, except those who are exempt from the requirement to obtain a waste tire facility permit under part 7001.4020, or are permitted by rule under part 7001.4030.

7035.8410 DEFINITIONS.

Subpart 1. **Scope.** When used in parts 7035.8400 to 7035.8590, the terms in subparts 2 and 3 have the meanings given them.

Subp. 2. **Closure plan.** "Closure plan" means the plan for closure as required in part 7035.8250, subpart 2, and the applicable requirements of parts 7035.8250 and 7035.8260.

Subp. 3. **Current closure cost estimate.** "Current closure cost estimate" means the most recent of the estimates prepared in accordance with part 7035.8430.

7035.8420 FINANCIAL ASSURANCE REQUIRED.

The owner or operator of a waste tire facility shall establish financial assurance for closure of the facility within the time periods established in part 7035.8450, by obtaining one or more of the financial assurance mechanisms described in parts 7035.8470, 7035.8480, 7035.8490, and 7035.8500, or a county-held financial assurance mechanism that meets the standards in part

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7035.8460. The financial assurance mechanism selected must provide the amount of financial assurance required by part 7035.8430. No financial assurance is required for old waste tires.

7035.8430 COST ESTIMATE FOR CLOSURE.

Subpart 1. **Amount.** The amount of financial assurance to be provided by the owner or operator of a waste tire facility shall be based on the estimates prepared under this part, and shall be established according to the time schedule in part 7035.8450.

Subp. 2. **Phase I waste tire collection estimate.** The owner or operator of a waste tire facility shall make a written estimate, in current dollars, of the cost of complying with closure standards in parts 7035.8250 and 7035.8260 for all waste tires that have been collected at the facility at any time since the effective date of parts 7035.8200 to 7035.8710 and that will be collected at the facility at any time during the period from July 1, 1988, to July 1, 1990.

Subp. 3. **Phase II waste tire collection estimate.** The owner or operator of a waste tire facility shall make a written estimate, in current dollars, of the cost of complying with closure standards in parts 7035.8250 and 7035.8260 for the maximum number of new waste tires that will be collected at the facility at any time during the operating life of the facility.

Subp. 4. **Submission to director.** The estimates prepared under subparts 2 and 3 shall be submitted to the director with the permit application or upon the request of the director.

7035.8440 ADJUSTMENTS TO FINANCIAL ASSURANCE LEVEL.

Subpart 1. **Yearly adjustment.** After July 1, 1990, the owner or operator of a waste tire facility shall recalculate annually the cost of closure for new waste tires using an inflation factor. This inflation factor shall be calculated using the Implicit Price Deflator for Gross National Product as found in the Survey of Current Business issued annually by the United States Department of Commerce. The inflation factor is

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the result of dividing the latest published annual deflator by the deflator for the previous year. Upon request, the director shall provide the inflation factor to the owner or operator. The closure cost estimate shall be recalculated by multiplying the latest closure cost estimate by the latest inflation factor. The financial assurance mechanism used by the owner and operator of the facility shall be adjusted to reflect changes in the cost of closure caused by inflation. The date upon which the owner or operator of a waste tire facility shall adjust the financial assurance mechanism shall be July 1 of each year.

Subp. 2. **Other revisions.** The owner or operator of the waste tire facility shall revise the closure cost estimate whenever a change in the closure plan changes the cost of closure. If the estimate of the cost of closure changes, the owner or operator of a waste tire facility shall increase or decrease the amount of financial assurance by following the procedures in part 7035.8470, 7035.8480, 7035.8490, or 7035.8500.

Subp. 3. **Record keeping.** During the operating life of the facility, the owner or operator of a waste tire facility shall keep a record of the latest adjusted closure cost estimate, and shall submit this record to the agency upon the request of the director.

7035.8450 SCHEDULE FOR ESTABLISHING FINANCIAL ASSURANCE.

Subpart 1. **Scope.** The owner or operator of a waste tire facility shall establish the required level of financial assurance under this part.

Subp. 2. **Phase I.** By July 1, 1988, the owner or operator of a waste tire facility shall establish financial assurance for all waste tires that have been collected since the effective date of parts 7035.8200 to 7035.8710, and for those waste tires that will be collected at the facility at any time during the next two years of operation. By July 1, 1988, the owner or operator of a waste tire facility shall submit to the director evidence that the financial assurance required under this subpart has been obtained.

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Subp. 3. **Phase II.** By July 1, 1990, the owner or operator of a waste tire facility shall establish financial assurance for the maximum number of new waste tires that will be collected at the facility at any time during the operating life of the facility. By July 1, 1990, the owner or operator of a waste tire facility shall submit to the director evidence that the financial assurance required under this subpart has been obtained.

7035.8460 COUNTY-HELD FINANCIAL ASSURANCE MECHANISM.

Subpart 1. **Scope.** An owner or operator of a waste tire facility may use a county-held financial assurance mechanism to satisfy the requirements of parts 7035.8400 to 7035.8590 if the county-held mechanism meets or exceeds the requirements of parts 7035.8400 to 7035.8590. The wording of the instruments used to satisfy parts 7035.8400 to 7035.8590 must be identical to the wording in parts 7035.8550 to 7035.8590, except that the language that appears in double brackets must be used.

Subp. 2. **Action by the county.** A county holding a financial assurance mechanism for a waste tire facility in lieu of the agency must take all actions needed to gain access to the funds available through the financial assurance mechanism when the owner or operator of the waste tire facility has failed to:

A. begin or complete closure as required by the permit or part 7035.8260;

B. provide alternate financial assurance and obtain written approval of the financial assurance from the director and the county within the time period required by parts 7035.8400 to 7035.8590; or

C. fund the standby trust fund within the specified time period as required by part 7035.8480.

Subp. 3. **Action by the director.** In the event that the county has failed to gain access to the funds available through the financial assurance mechanism within 30 days of the owner's or operator's failure to perform as specified in subpart 2, or if the county has failed to use any funds obtained under subpart

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2 to close the facility in compliance with the closure plan or part 7035.8260, including time schedules, the director shall be given access to the funds. The county shall take no action that interferes with the director's access to the funds, and shall cooperate with the director if necessary to allow the director to gain access to the funds.

Subp. 4. **Notice.** In the event that the director takes action under subpart 3, the director shall give notice of this action to the county and all other involved parties, including the owner or operator of the waste tire facility, and any trustee, surety, or letter of credit institution. Failure by the director to give notice shall not invalidate the director's actions under subpart 3.

7035.8470 CLOSURE TRUST FUND.

Subpart 1. **Scope.** Subparts 2 to 13 apply to closure trust funds. For trust funds held by a county under part 7035.8460, provisions in this part that refer to the director shall apply to both the director and the county.

Subp. 2. **Establishment of trust fund.** An owner or operator of a waste tire facility may satisfy the requirements of part 7035.8420 by establishing a closure trust fund that conforms to the requirements of subparts 2 to 13 and by submitting an originally-signed duplicate of the trust agreement to the director. The trustee shall be an entity that has the authority to act as a trustee and whose trust operations are regulated and examined by a federal or state agency. The owner or operator of the waste tire facility shall submit the originally-signed duplicate of the trust agreement to the director with the facility permit application, or in accordance with part 7035.8450.

Subp. 3. **Wording of trust agreement.** The wording of the trust agreement must be identical to the wording in part 7035.8550 and must be accompanied by a formal certification of acknowledgment as shown in part 7035.8560. The trust agreement must be updated within 60 days after a change in the amount of

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the current closure cost estimate covered by the agreement.

Subp. 4. **Pay-in period.** The owner or operator must make annual payments into the trust fund over the period for which the financial assurance is required, hereinafter called the pay-in period. After July 1, 1990, the pay-in period shall equal five years or the remaining operating life of the facility, whichever is shorter.

Subp. 5. **Payments.** For a new facility, the first payment must be made and a receipt submitted to the director before the initial receipt of waste tires. For an existing facility, the first payment must be made no later than 30 days after the originally-signed duplicate of the trust agreement is sent to the director. The first payment must at least be equal to the applicable current closure cost estimate, divided by the number of years in the pay-in period. Subsequent payments must be made no later than 30 days after each anniversary date of the first payment. The minimum amount of each subsequent payment must be determined by this formula:

$$\text{next payment} = \frac{CE - CV}{Y}$$

Where CE is the current closure cost estimate, CV is the current value of the trust fund, and Y is the number of years remaining in the pay-in period.

Subp. 6. **Establishment of trust fund as an alternate financial assurance mechanism.** If the owner or operator chooses to establish a closure trust fund after having used one or more alternate financial assurance mechanisms in parts 7035.8470 to 7035.8500, the first payment into the trust fund must be at least the amount that the fund would contain if the trust fund were established initially and annual payments made according to specifications of this part as applicable.

Subp. 7. **Additional payments.** If, after the pay-in period is completed, the sum of the current closure cost estimate changes, the owner or operator shall compare the new estimate

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with the trustee's most recent annual valuation of the trust fund. If the value of the fund is less than the amount of the new estimate, the owner or operator, within 60 days after the change in the cost estimate, shall either deposit an amount into the fund so that its value after this deposit at least equals the amount of the current closure cost estimate and submit a receipt from the trustee for this payment to the director, or establish other financial assurance mechanisms as specified in parts 7035.8470 to 7035.8500 to cover the difference.

Subp. 8. **Request for release of excess funds.** During the operating life of the facility, if the value of the trust fund is greater than the sum of the current closure cost estimate, the owner or operator may submit a written request, together with supporting documents to the director, for release of the amount in excess of the current closure cost estimate covered by the trust fund.

Subp. 9. **Substitution of alternate financial assurance mechanisms.** If an owner or operator substitutes other financial assurance mechanisms as specified in parts 7035.8470 to 7035.8500 in place of all or part of the trust fund, the owner or operator may submit a written request to the director for release of the amount in excess of the current closure cost estimate covered by the trust fund.

Subp. 10. **Release of funds.** Within 60 days after receiving a request from the owner or operator for release of funds specified in subpart 8 or 9, the director shall instruct the trustee to release any funds in excess of the latest closure cost estimate covered by the trust fund to the owner or operator.

Subp. 11. **Notification.** The trust fund instrument shall require the trustee to notify the owner or operator and the director by certified mail within ten days following the expiration of the 30-day period after the anniversary of the establishment of the trust if no payment is received from the owner or operator during the period. Within 60 days after receipt by the director of a notice of nonpayment of any payment required by this part, the owner or operator shall:

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A. make the required payment;

B. provide alternate financial assurance as specified in this part and obtain the director's written approval of the assurance provided; or

C. stop accepting waste tires and begin closure of the facility.

Subp. 12. **Reimbursement.** After beginning closure of the waste tire facility, an owner, operator, or other person authorized to perform closure may request reimbursement for completed closure expenditures by submitting itemized bills to the director. Within 60 days after receiving bills for completed closure activities, the director shall determine whether the closure expenditures are in accordance with the closure plan or are needed to ensure proper closure, and if so, the director shall instruct the trustee to make reimbursement in the amount the director specifies in writing. If the director has reason to believe that the cost of closure will be significantly greater than the value of the trust fund, the director may withhold reimbursement of the amount as considered prudent until it is determined, under part 7035.8530, that the owner or operator is no longer required to maintain financial assurance for closure.

Subp. 13. **Termination of trust fund.** The director shall agree to termination of the trust if:

A. an owner or operator substitutes alternate financial assurance as specified in parts 7035.8470 to 7035.8530; or

B. the director releases the owner or operator from the requirements of this part under part 7035.8530.

7035.8480 SURETY BOND GUARANTEEING PAYMENT INTO A STANDBY TRUST FUND.

Subpart 1. **Scope.** Subparts 2 to 10 apply to surety bonds that guarantee payment into a standby trust fund. For surety bonds held by a county under part 7035.8460, provisions in this part that refer to the director shall apply to both the director

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and the county.

Subp. 2. **Surety bond requirements.** An owner or operator may satisfy the requirements of part 7035.8420 by obtaining a surety bond that conforms to the requirements of subparts 2 to 10 and by submitting the bond to the director. The surety company issuing the bond must be among those listed as acceptable sureties on federal bonds in Circular 570, issued by the United States Department of the Treasury, as published annually in the Federal Register on July 1. An owner or operator shall submit the bond to the director with the permit application or under part 7035.8450.

Subp. 3. **Wording of surety bond.** The wording of the surety bond must be identical to the wording specified in part 7035.8570.

Subp. 4. **Establishment of standby trust fund.** The owner or operator who uses a surety bond to satisfy the requirements of part 7035.8420 shall also establish a standby trust fund. The bond shall require the surety to deposit all payments made under the bond directly into the standby trust fund in accordance with instructions from the director. An originally-signed duplicate of the trust agreement must be submitted to the director with the surety bond. The standby trust fund must meet the requirements of part 7035.8470, except that compliance with the requirements in items A to D is not required until the standby trust fund is funded under this part:

A. payments into the trust fund as specified in part 7035.8470;

B. updating of Schedule A of the trust agreement to show current closure cost estimates;

C. annual valuations as required by the trust agreement; and

D. notices of nonpayment as required by the trust agreement.

Subp. 5. **Performance guarantee.** The bond must guarantee that the owner or operator will:

A. pay into the standby trust fund an amount equal to

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the penal sum of the bond before the beginning of closure of the facility;

B. pay into the standby trust fund an amount equal to the penal sum within 15 days after an order to close the facility is issued by the director, the agency, or court of competent jurisdiction; or

C. provide alternate financial assurance as specified in parts 7035.8470 to 7035.8500 and obtain the director's written approval of the assurance provided, within 90 days after receipt by the director of a notice of cancellation of the bond from the surety.

Subp. 6. **Failure to perform.** Under the terms of the bond, the surety must become liable on the bond obligation when the owner or operator fails to perform as guaranteed by the bond.

Subp. 7. **Penal sum.** The penal sum of the bond must be at least equal to the sum of the applicable current closure cost estimate.

Subp. 8. **Changes to penal sum.** Within 60 days of an increase in the sum of the current closure cost estimate to an amount greater than the penal sum, the owner or operator shall either cause the penal sum to be increased to an amount at least equal to the sum of the current closure cost estimate and submit evidence of the increase to the director, or obtain other financial assurance as specified in parts 7035.8470 to 7035.8500 to cover the increase. Whenever the sum of the current closure cost estimate decreases, the penal sum may be reduced to the sum of the current closure cost estimate following written approval by the director.

Subp. 9. Notification. The bond must provide that the surety may cancel the bond only by sending notice of cancellation by certified mail to the owner or operator and the director. The bond must also provide that cancellation shall not be effective until 120 days after the director has received the notice of cancellation, as evidenced by the return receipt. For a surety bond held by a county under part 7035.8460, the bond must provide a 150-day cancellation period rather than a

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120-day period.

Subp. 10. **Cancellation of surety bond.** The owner or operator may cancel the bond if the director has given prior written consent. The director shall provide written consent if:

A. an owner or operator substitutes alternate financial assurance as specified in parts 7035.8470 to 7035.8500; or

B. the director releases the owner or operator from the requirements of this part in accordance with part 7035.8530.

7035.8490 LETTER OF CREDIT.

Subpart 1. **Scope.** Subparts 2 to 11 apply to closure letters of credit. For letters of credit held by a county under part 7035.8460, provisions in this part that refer to the director shall apply to both the director and the county.

Subp. 2. **Letter of credit requirements.** An owner or operator may satisfy the requirements of part 7035.8420 by obtaining an irrevocable letter of credit that conforms to the requirements of subparts 2 to 11, and by submitting the letter to the director. The issuing institution must be an entity that has the authority to issue letters of credit and whose letter of credit operations are regulated and examined by a federal or state agency. An owner or operator of a waste tire facility shall submit the letter of credit to the director with the facility permit application or under part 7035.8450.

Subp. 3. **Wording of letter of credit.** The wording of the letter of credit must be identical to the wording in part 7035.8490.

Subp. 4. **Establishment of standby trust fund.** An owner or operator who uses a letter of credit to satisfy the requirements of part 7035.8420 shall also establish a standby trust fund. Under the terms of the letter of credit, the issuing institution will deposit all amounts paid directly into the standby trust fund in accordance with instructions from the director. An originally-signed duplicate of the standby trust fund agreement must be submitted to the director with the letter of credit.

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The standby trust fund agreement must meet the requirements in part 7035.8470, except that compliance with the requirements in items A to D is not required until the standby trust fund is funded under this part:

A. payments into the trust fund as specified in part 7035.8470;

B. updating of Schedule A of the trust agreement to show current closure cost estimates;

C. annual valuations as required by the trust agreement; and

D. notices of nonpayment as required by the trust agreement.

Subp. 5. **Submittal.** The letter of credit submitted to the director must be accompanied by a letter from the owner or operator referring to the letter of credit by number, issuing institution, date of issuance, the name and address of the waste tire facility, and the amount of funds assured for closure of the facility by the letter of credit.

Subp. 6. **Notification.** The letter of credit must be irrevocable and issued for a period of at least one year. The letter of credit must provide that the expiration date will be extended automatically for a period of at least one year unless, at least 120 days before the current expiration date, the issuing institution notifies both the owner or operator and the director by certified mail of a decision not to extend the expiration date. Under the terms of the letter of credit, the 120 days must begin on the date when the director received the notice, as evidenced by the return receipt. For a letter of credit held by a county under part 7035.8460, the letter of credit must provide a 150-day expiration period rather than a 120-day period.

Subp. 7. **Amount of credit.** The letter of credit must be issued in an amount at least equal to the sum of the applicable current closure cost estimate.

Subp. 8. **Changes to amount of credit.** Within 60 days of an increase in the sum of the current closure cost estimate to

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an amount greater than the amount of the credit, the owner or operator shall either cause the amount of the credit to be increased to an amount at least equal to the sum of the current closure cost estimate and submit evidence of the increase to the director, or obtain other financial assurance as specified in parts 7035.8470 to 7035.8500 to cover the increase. Whenever the sum of the current closure cost estimate decreases, the amount of the credit may be reduced to the sum of the current closure cost estimate following written approval by the director.

Subp. 9. **Failure to perform.** The letter of credit must provide that the director may draw on the letter of credit, when the director has determined that the owner or operator has failed to perform closure when required to do so in accordance with the closure plan or part 7035.8260.

Subp. 10. **Failure to establish alternate financial assurance.** The director shall draw on the letter of credit if the owner or operator does not establish alternate financial assurance as specified in parts 7035.8470 to 7035.8500 and obtain written approval of alternate assurance from the director within 90 days after the director receives notice that the issuing institution has decided not to extend the letter of credit beyond the current expiration date. The director may delay the drawing if the issuing institution grants an extension of the term of the credit. During the last 30 days of any extension, the director shall draw on the letter of credit if the owner or operator has failed to provide alternate financial assurance as specified in parts 7035.8470 to 7035.8500 and obtain written approval of the assurance from the director.

Subp. 11. **Termination of letter of credit.** The director shall return the letter of credit to the issuing institution for termination if:

A. an owner or operator substitutes alternate financial assurance as specified in parts 7035.8470 to 7035.8500; or

B. the director releases the owner or operator from the requirements of this part in accordance with part 7035.8530.

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7035.8500 SURETY BOND GUARANTEEING PERFORMANCE OF CLOSURE FOR PERMITTED FACILITIES.

Subpart 1. Scope. Subparts 2 to 11 apply to surety bonds that guarantee performance of closure. Surety bonds that guarantee performance of closure can only be used for permitted facilities with approved closure plans. For surety bonds held by a county under part 7035.8460, provisions in this part that refer to the director shall apply to both the director and the county.

Subp. 2. Surety bond requirements. An owner or operator may satisfy the requirements of part 7035.8420 by obtaining a surety bond that conforms to the requirements of subparts 2 to 11 and by submitting the bond to the director. The surety company issuing the bond must be among those listed as acceptable sureties on federal bonds in Circular 570, issued by the United States Department of the Treasury, as published annually in the Federal Register on July 1. An owner or operator of a waste tire facility shall submit the bond to the director with the permit application or in accordance with part 7035.8450.

Subp. 3. Wording of surety bond. The wording of the surety bond must be identical to the wording specified in part 7035.8590.

Subp. 4. Establishment of standby trust fund. The owner or operator who uses a surety bond to satisfy the requirements of part 7035.8420 shall also establish a standby trust fund. The bond shall require the surety to deposit all payments made under the bond directly into the standby trust fund in accordance with instructions from the director. An originally-signed duplicate of the standby trust fund agreement must be submitted to the director with the surety bond. The standby trust must meet the requirements of part 7035.8470, except that compliance with the requirements in items A to D is not required until the standby trust fund is funded under this part:

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A. payments into the trust fund as specified in part 7035.8470;

B. updating of Schedule A of the trust agreement to show current closure cost estimates;

C. annual valuations as required by the trust agreement; and

D. notices of nonpayment as required by the trust agreement.

Subp. 5. **Performance guarantee.** The bond must guarantee that the owner or operator will:

A. perform closure in accordance with the closure plan, and other requirements of the permit for the facility whenever required to do so; or

B. provide alternate financial assurance as specified in parts 7035.8470 to 7035.8500 and obtain the director's written approval of the assurance provided, within 90 days after receipt by the director of a notice of cancellation of the bond from the surety.

Subp. 6. **Failure to perform.** Under the terms of the bond, the surety must become liable on the bond obligation when the owner or operator fails to perform as guaranteed by the bond. Following a determination by the director that the owner or operator has failed to perform closure in accordance with the closure plan, and other permit requirements, under the terms of the bond the surety shall deposit the amount of the penal sum into the standby trust fund.

Subp. 7. **Penal sum.** The penal sum of the bond must be at least equal to the sum of the applicable current closure cost estimate.

Subp. 8. **Changes to penal sum.** Within 60 days of an increase in the sum of the current closure cost estimate to an amount greater than the penal sum, the owner or operator shall either cause the penal sum to be increased to an amount at least equal to the sum of the current closure cost estimate and submit evidence of the increase to the director, or obtain other financial assurance specified in parts 7035.8470 to 7035.8500.

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Whenever the sum of the current closure cost estimate decreases, the penal sum may be reduced to the sum of the current closure cost estimate following written approval by the director.

Subp. 9. Notification. The bond must provide that the surety may cancel the bond only by sending notice of cancellation by certified mail to the owner or operator and to the director. The bond must also provide that cancellation shall not be effective until 120 days after the director has received the notice of cancellation as evidenced by the return receipt. For a surety bond held by a county under part 7035.8460, the bond must provide a 150-day cancellation period rather than a 120-day period.

Subp. 10. Cancellation of surety bond. The owner or operator may cancel the bond if the director has given prior written consent. The director shall provide written consent if:

A. an owner or operator substitutes alternate financial assurance as specified in parts 7035.8470 to 7035.8500; or

B. the director releases the owner or operator from the requirements of this part in accordance with part 7035.8530.

Subp. 11. Limitation on liability. The surety will not be liable for deficiencies in the owner's or operator's performance of closure after the director releases the owner or operator from the requirements of this part in accordance with part 7035.8530.

7035.8510 USE OF MULTIPLE FINANCIAL ASSURANCE MECHANISMS.

An owner or operator may satisfy the requirements of part 7035.8420 by establishing more than one financial assurance mechanism per waste tire facility. These mechanisms are limited to trust funds, surety bonds guaranteeing payment into a trust fund, and letters of credit. The mechanisms must be established as specified in parts 7035.8470, 7035.8480, and 7035.8490, except that it is the combination of mechanisms, rather than a single mechanism, that must provide financial assurance at least equal to the sum of the current closure cost estimate. If an

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owner or operator uses a trust fund in combination with a surety bond or a letter of credit, the owner or operator may use the trust fund as the standby trust fund for the other mechanisms. A single standby trust fund may be established for two or more mechanisms. The director may use any or all of the financial assurance mechanisms to provide for closure of the facility.

7035.8520 USE OF FINANCIAL ASSURANCE MECHANISM FOR MULTIPLE WASTE TIRE FACILITIES.

An owner or operator may use a financial assurance mechanism specified in parts 7035.8470 to 7035.8500 to meet the requirements of part 7035.8420 for more than one waste tire facility. Evidence of financial assurance submitted to the director must include a list showing, for each facility, the name, address, and the amount of funds for closure assured by the mechanism. The amount of funds available through the mechanism must be no less than the sum of funds that would be available if a separate mechanism had been established and maintained for each facility. When directing disbursement of funds for closure at any of the facilities covered by the mechanism, the director shall direct that only the amount of funds designated for that facility be disbursed unless otherwise agreed to by the owner or operator.

7035.8530 RELEASE OF OWNER OR OPERATOR FROM FINANCIAL ASSURANCE REQUIREMENTS.

When an owner or operator has completed, to the satisfaction of the director, all closure requirements in accordance with the closure plan or other closure requirements, the director shall notify the owner or operator in writing that financial assurance for closure of the waste tire facility is no longer required.

7035.8540 INCAPACITY OF OWNERS OR OPERATORS, GUARANTORS, OR FINANCIAL INSTITUTIONS.

Subpart 1. **Notification of bankruptcy.** An owner or operator shall notify the director by certified mail of the

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commencement of a voluntary or involuntary proceeding under United States Code, title 11, Bankruptcy, naming the owner or operator as a debtor, within ten days after commencement of the proceeding.

Subp. 2. **Incapacity of financial institutions.** An owner or operator who fulfills the requirements of part 7035.8420 by obtaining a trust fund, surety bond, or letter of credit will be considered to be without the required financial assurance in the event of bankruptcy of the trustee or issuing institution; or in the event that the authority of the trustee to act as trustee is revoked or suspended; or in the event that the institution's authority to issue the surety bond or letter of credit is revoked or suspended. The owner or operator shall establish other financial assurance within 60 days after such an event.

7035.8550 LANGUAGE REQUIRED FOR TRUST AGREEMENT.

A trust agreement for a trust fund as specified in part 7035.8470 must be worded as specified in this part. Instructions in brackets must be replaced with the relevant information and the brackets deleted. Instructions or language in double brackets shall be used when the instrument is to serve as a county-held financial assurance mechanism.

TRUST AGREEMENT

Trust Agreement, the "Agreement," entered into on [date] by [name of the owner or operator], a [name of state] [insert "corporation," "partnership," "association," or "proprietorship"], the "Grantor," and [name of corporate trustee], [insert "incorporated in the state of ....." or "a national bank"], the "Trustee."

RECITALS:

° The Minnesota Pollution Control Agency (Agency), an agency of the state of Minnesota, has established rules applicable to the Grantor, requiring that an owner or operator of a waste tire facility shall provide assurance that funds will be available when needed for closure for the facility.

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° The Grantor has chosen to establish a trust to provide the financial assurance for the facilities identified in this Agreement.

° The Grantor, acting through its duly authorized officers, has selected the Trustee to be the trustee under this Agreement, and the Trustee is willing to act as trustee.

AGREEMENT:

The Grantor and the Trustee agree as follows:

Section 1. **Definitions.** As used in this Agreement:

a. The term "Grantor" means the owner or operator who enters into this Agreement and any successors or assigns of the Grantor.

b. The term "Trustee" means the Trustee who enters into this Agreement and any successor Trustee.

c. The term "beneficiary" means the Minnesota Pollution Control Agency [[substitute "The term "1st beneficiary" means the [name of county]; the term "2nd beneficiary" means the Minnesota Pollution Control Agency" for the entire definition]].

Section 2. **Identification of Facilities and Cost Estimates.** This Agreement pertains to the facilities and cost estimates, if any, identified on attached Schedule A [on Schedule A, for each facility list the name, address, and the current closure cost estimate for which financial assurance is demonstrated by this Agreement].

Section 3. **Establishment of Fund.** The Grantor and the Trustee establish a trust fund, the "Fund," for the benefit of the Agency [[substitute "1st and 2nd beneficiaries" for "Agency"]]. The Grantor and the Trustee intend that no third party have access to the Fund except as provided in this Agreement. The Fund is established initially as the property, which is acceptable to the Trustee and described in Schedule B attached to this Agreement. This property and any other property subsequently transferred to the Trustee is referred to as the Fund, together with all earnings and profits, less any payments or distributions made by the Trustee under this Agreement. The Fund shall be held by the Trustee, IN TRUST, as

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provided in this Agreement. The Trustee shall not be responsible or undertake any responsibility for the amount or adequacy of, or any duty to collect from the Grantor, any payments necessary to discharge any liabilities of the Grantor established by the Agency.

Section 4. **Payment for Closure.** The Trustee shall make payments from the Fund as the Agency Director [[substitute "1st or 2nd beneficiary" for "Agency Director"]] shall direct, in writing, to provide for the payment of the costs of closure of the facilities covered by this Agreement. [[Add the following sentence "Direction to the Trustee shall be given by the 1st or 2nd beneficiary in accordance with Section 14."]] The Trustee shall reimburse the Grantor or other persons as specified by the Agency Director [[substitute "1st or 2nd beneficiary" for "Agency Director"]] shall direct in writing. In addition, the Trustee shall refund to the Grantor the amounts the Agency Director [[substitute "1st or 2nd beneficiary" for "Agency Director"]] specifies in writing. Upon refund, these funds shall no longer constitute part of the Fund.

Section 5. **Payments Comprising the Fund.** Payments made to the Trustee for the Fund shall consist of cash or securities acceptable to the Trustee.

Section 6. **Trustee Management.** The Trustee shall invest and reinvest the principal income of the Fund as a single fund in accordance with general investment policies and guidelines. In investing, reinvesting, exchanging, selling, and managing the Fund, the Trustee's duties with respect to the trust fund shall be discharged solely in the interest of the beneficiary [[substitute "1st and 2nd beneficiaries" for "beneficiary"]] and with the care, skill, prudence, and diligence under the circumstances then prevailing that persons of prudence, acting in a like capacity and familiar with such matters, would use in the conduct of an enterprise of a like character and with like aims; except that:

a. securities or other obligations of the Grantor, or any other owner or operator of the facilities, or any of their

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affiliates as defined in the Investment Company Act of 1940, United States Code, title 15, section 80a-2(a), shall not be acquired or held, unless they are securities or other obligations of the federal or state government;

b. the Trustee is authorized to invest the Fund in time or demand deposits of the Trustee, to the extent insured by an agency of the federal or state government; and

c. the Trustee is authorized to hold cash awaiting investment or distribution uninvested for a reasonable time and without liability for the payment of interest thereon.

Section 7. Commingling and Investment. The Trustee is expressly authorized in its discretion:

a. to transfer from time to time any or all of the assets of the Fund to any common, commingled, or collective trust fund created by the Trustee in which the Fund is eligible to participate, subject to all of the provisions thereof, to be commingled with the assets of other trusts participating therein; and

b. to purchase shares in any investment company registered under the Investment Company Act of 1940, United States Code, title 15, sections 80a-1 et seq., including one that may be created, managed, underwritten, or to which investment advice is rendered or the shares are sold by the Trustee. The Trustee may vote such shares in its discretion.

Section 8. Express Powers of Trustee. Without in any way limiting the powers and discretions conferred upon the Trustee by the other provisions of this Agreement or by law, the Trustee is expressly authorized and empowered:

a. to sell, exchange, convey, transfer, or otherwise dispose of any property held by it, by public or private sale. No person dealing with the Trustee may be bound to see to the application of the purchase money or to inquire into the validity or expediency of a sale or other disposition;

b. to make, execute, acknowledge, and deliver any and all documents of transfer and conveyance and any and all other instruments that may be necessary or appropriate to carry out

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the powers granted in this Agreement;

c. to register any securities held in the Fund in its own name or in the name of a nominee and to hold any security in bearer form or in book entry, or to combine certificates representing the securities with certificates of the same issue held by the Trustee in other fiduciary capacities, or to deposit or arrange for the deposit of the securities in a qualified central depository even though, when so deposited, the securities may be merged and held in bulk in the name of the nominee of the depository with other securities deposited therein by another person, or to deposit or arrange for the deposit of any securities issued by the United States Government, or any agency or instrumentality thereof, with a federal reserve bank, but the books and records of the Trustee shall at all times show that all these securities are part of the Fund;

d. to deposit any cash in the Fund in interest-bearing accounts maintained or savings certificates issued by the Trustee, in its separate corporate capacity, or in any other banking institution affiliated with the Trustee, in its separate corporate capacity, or in any other banking institution affiliated with the Trustee, to the extent insured by an agency of the federal or state government; and

e. to compromise or otherwise adjust all claims in favor of or against the Fund.

Section 9. **Taxes and Expenses.** All taxes of any kind that may be assessed or levied against or in respect of the Fund and all brokerage commissions incurred by the Fund shall be paid from the Fund. All other expenses incurred by the Trustee in connection with the administration of this Trust, including fees for legal services rendered to the Trustee, the compensation of the Trustee to the extent not paid directly by the Grantor, and all other proper charges and disbursements of the Trustee shall be paid from the Fund.

Section 10. **Annual Valuation.** The Trustee shall annually, at least 30 days prior to the anniversary date of establishment

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of the Fund, furnish to the Grantor and to the Agency Director [[substitute "1st and 2nd beneficiaries" for "Agency Director"]] a statement confirming the value of the Trust. Any securities in the Fund shall be valued at market value as of no more than 60 days prior to the anniversary date of establishment of the Fund. The failure of the Grantor to object in writing to the Trustee within 90 days after the statement has been furnished to the Grantor and the Agency Director [[substitute "1st and 2nd beneficiaries" for "Agency Director"]] shall constitute a conclusively binding assent by the Grantor, barring the Grantor from asserting any claim or liability against the Trustee with respect to matters disclosed in the statement.

Section 11. **Advice of Counsel.** The Trustee may from time to time consult with counsel with respect to any question arising as to the construction of this Agreement or any action to be taken hereunder. The Trustee shall be fully protected, to the extent permitted by law, in acting upon the advice of counsel.

Section 12. **Trustee Compensation.** The Trustee shall be entitled to reasonable compensation for its services as agreed upon in writing from time to time with the Grantor.

Section 13. **Successor Trustee.** The Trustee may resign or the Grantor may replace the Trustee, but the resignation or replacement shall not be effective until the Grantor has appointed a successor trustee and this successor accepts the appointment. The successor trustee shall have the same powers and duties as those conferred upon the Trustee hereunder. Upon the successor trustee's acceptance of the appointment, the Trustee shall assign, transfer, and pay over to the successor trustee the funds and properties then constituting the Fund. If for any reason the Grantor cannot or does not act in the event of the resignation of the Trustee, the Trustee may apply to a court of competent jurisdiction for the appointment of a successor trustee or for instructions. The successor trustee shall specify the date that it assumes administration of the trust in a writing sent to the Grantor, the Agency Director

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[[substitute "1st and 2nd beneficiaries" for "Agency Director"]] and the present Trustee by certified mail ten days before the change becomes effective. Any expenses incurred by the Trustee as a result of any of the acts contemplated by this Section shall be paid as provided in Section 9.

Section 14. Instructions to the Trustee. All orders, requests, and instructions by the Agency Director [[substitute "1st or 2nd beneficiary" for "Agency Director"]] to the Trustee shall be in writing, signed by the Agency Director [[substitute "a designee of the 1st or 2nd beneficiary" for "the Agency Director"]]; and the Trustee shall act and shall be fully protected in acting in accordance with the orders, requests, and instructions [[add, "except that the Trustee shall not act in accordance with the orders, requests, and instructions of the 1st beneficiary if the 2nd beneficiary notifies the Trustee, in writing, that the Trustee shall only act in accordance with the orders, requests, and instructions of the 2nd beneficiary. In the event that the Trustee has received such notice from the 2nd beneficiary, the Trustee shall only act in accordance with the orders, requests, and instructions from the 2nd beneficiary"]]. The Trustee shall have the right to assume, in the absence of written notice to the contrary, that no event constituting a change or a termination of the authority of any person to act on behalf of the Grantor or the Agency [[substitute "1st or 2nd beneficiary" for "Agency"]] under this Agreement has occurred. The Trustee shall have no duty to act in the absence of orders, requests, and instructions from the Agency Director, [[substitute "a designee of the 1st or 2nd beneficiary" for "the Agency Director"]] except as provided in this Agreement.

Section 15. Notice of Nonpayment. The Trustee shall notify the Grantor and the Agency Director [[substitute "1st and 2nd beneficiaries" for "Agency Director"]] by certified mail within ten days following the expiration of the 30-day period after the anniversary of the establishment of the Trust, if no payment is received from the Grantor during that period. After the pay-in period is completed, the Trustee shall not be

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required to send a notice of nonpayment.

Section 16. **Amendment of Agreement.** This Agreement may be amended by an instrument in writing executed by the Grantor, the Trustee, and the Agency Director or by the Trustee and the Agency Director, if the Grantor ceases to exist.

Section 17. **Irrevocability and Termination.** Subject to the right of the parties to amend this Agreement as provided in Sections 13 and 16, this Trust shall be irrevocable and shall continue until terminated at the written agreement of the Grantor, the Trustee, and the Agency Director [[substitute "1st and 2nd beneficiaries" for "Agency Director"]] or by the Trustee and the Agency Director [[substitute "1st and 2nd beneficiaries" for "Agency Director"]] if the Grantor ceases to exist. Upon termination of the Trust, all remaining trust property, less final trust administration expenses, shall be delivered to the Grantor or any successors or assigns of the Grantor.

Section 18. **Immunity and Indemnification.** The Trustee shall not incur personal liability of any nature in connection with any act or omission, made in good faith, in the administration of this Trust, or in carrying out any directions by the Agency Director [[substitute "1st or 2nd beneficiary" for "Agency Director"]] issued in accordance with this Agreement. The Trustee shall be indemnified and saved harmless by the Grantor or from the Trust Fund, or both, from and against any personal liability to which the Trustee may be subjected by reason of any act or conduct in its official capacity, including all expenses reasonably incurred in its defense in the event the Grantor fails to provide a defense.

Section 19. **Choice of Law.** This Agreement shall be administered, construed, and enforced according to the laws of the state of Minnesota.

Section 20. **Interpretation.** As used in this Agreement, words in the singular include the plural and words in the plural include the singular. The descriptive headings for each Section of this Agreement shall not affect the interpretation or the legal efficacy of this Agreement.

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The parties have caused this Agreement to be executed by their respective officers duly authorized and their corporate seals to be affixed and attested on the date first above written. The parties below certify that the wording of this Agreement is identical to the wording specified in Minnesota Rules, part 7035.8550, as the rules were constituted on the date of signing.

[SIGNATURE OF GRANTOR]

[TITLE]

Attest:

[TITLE]

[SEAL]

[SIGNATURE OF TRUSTEE]

Attest:

[TITLE]

[SEAL]

7035.8560 LANGUAGE REQUIRED FOR CERTIFICATE OF ACKNOWLEDGMENT.

This part contains an example of the certification of acknowledgment that must accompany the trust agreement for a trust fund as specified in part 7035.8470.

CERTIFICATION OF ACKNOWLEDGMENT

State of _____

County of _____

On this [date], before me personally came [owner or operator] to me known, who, being by me duly sworn, did depose and say that she/he resides at [address], that she/he is [title] of [corporation, proprietorship, local government entity], the entity described in and that executed the above instrument; that she/he knows the seal of said [corporation, local government entity]; that the seal affixed to the instrument is the [corporate, local government entity's] seal; that it was so affixed by order of the [Board of Directors, Board of Commissioners, City Council] of said [corporation, local government entity] and that she/he signed her/his name thereto by like order:

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_____

(signature of Notary Public)

7035.8570 LANGUAGE REQUIRED FOR SURETY BOND GUARANTEEING PAYMENT INTO A STANDBY TRUST FUND.

A surety bond guaranteeing payment into a trust fund as specified in part 7035.8480 must be worded as in this part. The instructions in brackets must be replaced with the relevant information and the brackets deleted. Instructions or language in double brackets must be used when the instrument is to serve as a county-held financial assurance mechanism.

FINANCIAL GUARANTEE BOND

Date bond executed: _____

Effective Date: _____

Principal: [Legal name and business address of owner or operator]

Type of organization: [insert "individual," "joint venture," "partnership," or "corporation"]

State of incorporation: _____

Surety(ies): [name(s) and business address(es)]

Name, address, and closure amount(s) for each facility guaranteed by this bond:

Total penal sum of bond: $_____

Surety's bond number: _____

Know All Persons By These Presents, That we, the Principal and Surety(ies) are firmly bound to the Minnesota Pollution Control Agency (hereinafter called Agency) [[and the [name of county] (hereinafter county)]] in the penal sum for the payment we bind ourselves, our heirs, executors, administrators, successors, and assigns jointly and severally; provided that, where the Surety(ies) are corporations acting as co-sureties, we, the Sureties, bind ourselves in the sum "jointly and severally" only for the purpose of allowing a joint action or actions against any or all of us, and for all other purposes each Surety binds itself, jointly and severally with the Principal, for the payment of the sum only as is set forth

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opposite the name of the Surety; but if no limit of liability is indicated, the limit of liability shall be the full amount of the penal sum.

Whereas said Principal is required to have a permit or provisional status in order to own or operate each waste tire facility identified above, and

Whereas said Principal is required to provide financial assurance for closure as a condition of the permit or provisional status, and

Whereas said Principal shall establish a standby trust fund as required when a surety bond is used to provide financial assurance;

Now, Therefore, the conditions of the obligation are such that if the Principal faithfully, before the beginning of closure of each facility identified above, funds the standby trust fund in the amount(s) identified above for the closure of the facility,

Or, if the Principal funds the standby trust fund in the amount(s) identified above for closure of the facility within 15 days after an order to begin closure is issued by the Agency Director, the Agency, [[county,]] or court of competent jurisdiction,

Or, if the Principal provides alternate financial assurance, as specified in parts 7035.8470 to 7035.8500 as applicable and obtains the Agency Director's [[and the county's]] written approval of assurance, within 90 days after the date the notice of cancellation is received by the Agency Director from the Surety(ies),

Then this obligation shall be null and void, otherwise it is to remain in full force and effect.

The Surety(ies) shall become liable on this bond obligation only when the Principal has failed to fulfill the conditions described above. Upon notification by the Agency Director [[or the county]] that the Principal has failed to perform as guaranteed by this bond, the Surety(ies) shall place funds in the amount guaranteed for the facility(ies) into the standby

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trust fund as directed by the Agency Director [[or the county]].

The liability of the Surety(ies) shall not be discharged by any payment or succession of payments hereunder, unless and until payment or payments shall amount in the aggregate to the penal sum of the bond, but in no event shall the obligation of the Surety(ies) hereunder exceed the amount of said penal sum.

The Surety(ies) may cancel the bond by sending notice of cancellation by certified mail to the Principal and to the Agency Director [[and to the county]]; provided, however, that cancellation shall not occur during the 120 [[substitute "150" for "120"]] days beginning on the date of receipt of the notice of cancellation by the Agency Director, as evidenced by the return receipt.

The Principal may terminate this bond by sending written notice to the Surety(ies); provided, however, that no such notice shall become effective until the Surety(ies) receive(s) written authorization for termination of the bond by the Agency Director [[and the county]].

(The following paragraph is an optional rider that may be included but is not required.)

The Principal and Surety(ies) agree to adjust the penal sum of the bond yearly so that it guarantees a new closure amount, provided that the penal sum does not increase by more than 20 percent in any year, and no decrease in the penal sum takes place without the written permission of the Agency Director [[and the county]].

The Principal and Surety(ies) have signed this Financial Guarantee Bond on the date set forth above.

The persons whose signatures appear below hereby certify that they are authorized to sign this surety bond on behalf of the Principal and Surety(ies) and that the wording of this surety bond is identical to the wording specified in Minnesota Rules, part 7035.8570, as the rules were constituted on the date this bond was signed.

Principal
[SIGNATURE(S)]

Approved
by Revisor _____

[NAME(S)]
[TITLE(S)]

Corporate Surety(ies)
[NAME AND ADDRESS]
State of incorporation: _____
Liability limit: $_____
[SIGNATURE(S)]
[NAME(S) AND TITLE(S)]
[For every co-surety, provide signature(s), and other information in the same manner as for Surety above.]

Bond premium: $_____

7035.8580 LANGUAGE REQUIRED FOR LETTER OF CREDIT.

A letter of credit, as specified in part 7035.8490, must be worded as specified in this part. The instructions in brackets must be replaced with the relevant information and the brackets deleted. The instructions or language in double brackets must be used when the instrument is to serve as a county-held financial assurance mechanism.

IRREVOCABLE STANDBY LETTER OF CREDIT

[Agency Director]
Minnesota Pollution Control Agency

[[county designee]]
[[(name of county)]]

Dear Director [[and county designee]]:

We hereby establish our Irrevocable Standby Letter of Credit No. _____ in your favor, at the request and for the account of [owner's or operator's name and address] up to the aggregate amount of [in words] U.S. dollars $_____, available upon presentation of:

1. your sight draft, bearing reference to this Letter of Credit No. _____, and

2. your signed statement reading as follows: "I certify that the amount of the draft is payable pursuant to the State of Minnesota's rules regarding the management of waste tires."

This letter of credit is effective as of [date] and shall expire on [date at least one year later], but the expiration date shall be automatically extended for a period of [at least one year] on [date] and on each successive expiration date, unless, at least 120 days before the current expiration date, we notify you by certified mail that we have decided not to extend

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this letter of credit beyond the current expiration date. In the event you are so notified, any unused portion of the credit shall be available upon presentation of your sight draft for 120 days after the date of receipt by you, as shown on the signed return receipt.

Whenever this letter of credit is drawn on and under and in compliance with the terms of this credit, we shall duly honor the draft upon presentation to us and we shall deposit the amount of the draft directly into the standby trust fund of [owner's or operator's name] in accordance with your instructions.

We certify that the wording of this letter of credit is identical to the wording specified in Minnesota Rules, part 7035.8580, on the date shown immediately below.

[SIGNATURE(S) AND TITLE(S) OF OFFICIAL(S) OF ISSUING INSTITUTION]
[DATE]

This credit subject to (insert "the most recent edition of the Uniform Customs and Practice for Documentary Credits, published by the International Chamber of Commerce," or "the Uniform Commercial Code published in Minnesota Statutes, chapter 336").

7035.8590 LANGUAGE REQUIRED FOR SURETY BOND GUARANTEEING PERFORMANCE OF CLOSURE.

A surety bond guaranteeing performance of closure as specified in part 7035.8500, must be worded as specified in this part. The instructions in brackets must be replaced with the relevant information and the brackets deleted. The instructions and language in double brackets must be used if the instrument is to serve as a county-held financial assurance mechanism.

PERFORMANCE BOND

Date bond executed: _____
Effective date: _____
Principal: [legal name and business address of owner or operator]
Type of organization: [insert "individual," "joint venture," "partnership," or "corporation"]
State of incorporation: _____
Surety(ies): [name(s) and business address(es)]
Name, address, and closure amount(s) for each facility guaranteed by this bond: _____

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Total penal sum of bond: $_____
Surety's bond number: _____

Know All Persons By These Presents, That we, the Principal and Surety(ies) are firmly bound to the Minnesota Pollution Control Agency (hereinafter called Agency) [[and the [name of county] (hereinafter called county)]], in the penal sum for the payment we bind ourselves, our heirs, executors, administrators, successors, and assigns jointly and severally; provided that, where the Surety(ies) are corporations acting as co-sureties, we, the Sureties, bind ourselves in the sum "jointly and severally" only for the purpose of allowing a joint action or actions against any or all of us, and for all other purposes each Surety binds itself, jointly and severally with the Principal, for the payment of the sum only as is set forth opposite the name of the Surety, but if no limit of liability is indicated, the limit of liability shall be the full amount of the penal sum.

Whereas said Principal is required to have a permit in order to own or operate each waste tire facility identified above, and

Whereas said Principal is required to provide financial assurance for closure; or closure action as a condition of the permit, and

Whereas said Principal shall establish a standby trust fund as is required when a surety bond is used to provide financial assurance;

Now, Therefore, the conditions of this obligation are such that if the Principal faithfully performs closure, whenever required to do so, of each facility for which this bond guarantees closure, in accordance with the closure plan and other requirements of the permit including any amendments, and pursuant to all applicable laws, statutes, rules, and regulations, as currently in force and as may in the future be in force.

Or, if the Principal provides alternate financial assurance as specified in Minnesota Rules, parts 7035.8470 to 7035.8500,

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and obtains the Agency Director's [[and the county's]] written approval of the assurance, within 90 days after the date the notice of cancellation is received by the Agency Director from the Surety(ies),

Then this obligation shall be null and void, otherwise it is to remain in full force and effect.

The Surety(ies) shall become liable on this bond obligation only when the Principal has failed to fulfill the conditions described above.

Upon notification by the Agency Director [[or the county]] that the Principal has been found in violation of the closure requirements for a facility that this bond guarantees performance of closure, the Surety(ies) shall either perform closure in accordance with the closure plan and other permit requirements or place the closure amounts guaranteed for the facility into the standby trust fund, as directed by the Agency Director [[or the county]].

Upon notification by the Agency Director [[or the county]] that the Principal has failed to provide alternate financial assurance as specified in Minnesota Rules, parts 7035.8470 to 7035.8500, and obtain written approval of the assurance from the Agency Director [[and the county]] during the 90 days following receipt by the Agency Director of a notice of cancellation of the bond, the Surety(ies) shall place funds in the amount guaranteed for the waste tire facility(ies) into the standby trust fund as directed by the Agency Director.

The Surety(ies) hereby waive(s) notification of amendments to closure plans, permits, applicable laws, statutes, rules, and regulations and agrees that no amendment shall in any way alleviate its (their) obligation on this bond.

The liability of the Surety(ies) shall not be discharged by any payment or succession of payments hereunder, unless and until the payment or payments shall amount in the aggregate to the penal sum of the bond, but in no event shall the obligation of the Surety(ies) hereunder exceed the amount of said penal sum.

The Surety(ies) may cancel the bond by sending notice of

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cancellation by certified mail to the owner or operator and to the Agency Director [[add "and the county"]], provided, however, that cancellation shall not occur during the 120 [[substitute "150" for "120"]] days beginning on the date of receipt of the notice of cancellation by the Agency Director, as evidenced by the return receipt.

The Principal may terminate this bond by sending written notice to the Surety(ies); provided, however, that no notice shall become effective until the Surety(ies) receive(s) written authorization for termination of the bond by the Agency Director [[add "and the county"]].

(The following paragraph is an optional rider that may be included but is not required.)

The Principal and Surety(ies) hereby agree to adjust the penal sum of the bond yearly so that it guarantees a new closure amount, provided that the penal sum does not increase by more than 20 percent in any one year, and no decrease in the penal sum takes place without the written permission of the Agency Director [[add "and the county"]].

The Principal and Surety(ies) have signed this Performance Bond on the date set forth above.

The persons whose signatures appear below hereby certify that they are authorized to sign this surety bond on behalf of the Principal and Surety(ies) and that the wording of this surety bond is identical to the wording in Minnesota Rules, part 7035.8590, as the rule was constituted on the date this bond was signed.

Principal
[SIGNATURE(S)]
[NAME(S)]
[TITLE(S)]

Corporate Surety(ies)
[NAME AND ADDRESS]
State of incorporation: _____
Liability limit: $_____
[SIGNATURE(S)]
[NAME(S) AND TITLE(S)]
[For every co-surety, provide signature(s), and other information in the same manner as for Surety above.]

Bond premium: $_____

REQUIREMENTS FOR WASTE TIRE

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GENERATION AND TRANSPORTATION

7035.8700 WASTE TIRE GENERATION.

Subpart 1. Scope. The requirements of subpart 2 apply to all persons who generate waste tires. The requirements of subpart 3 only apply to persons who generate more than 50 waste tires in a calendar year.

Subp. 2. Waste tire generation. Within 60 days of the effective date of parts 7035.8200 to 7035.8710, any person who generates waste tires, and who contracts or arranges with a person for their disposal, shall only contract or arrange for disposal of waste tires with a person displaying an agency waste tire transporter identification number, or a person exempt under part 7035.8710, subpart 2.

Subp. 3. Generator record keeping. All persons who generate more than 50 waste tires in a calendar year shall maintain a record of the quantity and type of waste tires sent for disposal. For shipments made in accordance with subpart 2, this record shall also note the name of the person transporting the waste tires, the identification number of the waste tire transporter, if applicable, and the date of the transaction. For persons who transport their own waste tires for disposal, this record shall also note the date of shipment, and the name of the waste tire facility where the waste tires were delivered. When requested by the director, this record shall be made available for inspection. This record shall be retained for three years from the date of the transaction.

7035.8710 WASTE TIRE TRANSPORTATION.

Subpart 1. Scope. This part sets out the requirements that shall be applied to persons who are in the business of transporting waste tires.

Subp. 2. Exempt persons. The requirements of this part shall not apply to:

A. a person who transports household quantities of waste tires incidental to municipal waste collection, and delivers those waste tires to a permitted solid waste facility,

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a waste tire facility with a permit or provisional status, or a waste tire facility that is exempt from the requirement to obtain a waste tire permit;

B. a person who receives waste tires incidental to the collection of recyclable materials and who delivers those waste tires to a permitted solid waste facility, a waste tire facility with a permit or provisional status, or a waste tire facility that is exempt from the requirement to obtain a waste tire facility permit;

C. a person transporting no more than ten waste tires to a permitted solid waste facility, a waste tire facility with a permit or provisional status, or a waste tire facility that is exempt from the requirement to obtain a waste tire facility permit;

D. a person transporting waste tires that will only be used for agricultural purposes which do not include burning;

E. a person transporting tire-derived products to a market; and

F. a person who generates waste tires and removes those waste tires from the waste tire generation site and delivers those waste tires to a waste tire facility.

Subp. 3. **Agency identification number required.** Except as exempt by subpart 2, any person who transports waste tires must obtain and display an agency waste tire transporter identification number when transporting waste tires. The information that must be submitted to the director to obtain an agency waste tire transporter identification number is specified in part 7001.4150.

Subp. 4. **Waste tire transportation.** A transporter who collects waste tires from a person who generates waste tires, a waste tire facility, or a tire dump must deliver the waste tires to a waste tire facility with a permit or provisional status, or a waste tire facility that is exempt from the requirement to obtain a waste tire permit.

Subp. 5. Record keeping. Transporters shall record and maintain the following information regarding their activities

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for each month of operation:

A. the type and quantity of waste tires collected;

B. where the waste tires collected were deposited, specifying the number and type deposited at each location; and

C. where or from whom the waste tires were collected.

Subp. 6. **Submittal of operating record.** Transporters shall submit to the director an operating record that identifies the transporter by name and identification number, and that summarizes the information accumulated under subpart 5 for the three months preceding the month the record is to be submitted. This record shall be submitted ten days after April 1, July 1, October 1, and January 1 of each year.

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by Revisor _____

Office of the Revisor of Statutes

Administrative Rules

TITLE: Proposed Permanent Rules Governing the Management of Waste Tires and the Permitting of Waste Tire Facilities

AGENCY: Pollution Control Agency

MINNESOTA RULES: Chapters 7001; and 7035

INCORPORATION BY REFERENCE:

Part 7035.8240, subpart 3	The Standard for Storage of Rubber Tires, NFPA231D-1980 edition, written by the NFPA Committee on Standards for Rubber Tires (Dec. 18, 1980)

The attached rules are approved for publication in the State Register

David S. Niss
Assistant Revisor

STATE OF MINNESOTA
MINNESOTA POLLUTION CONTROL AGENCY

In the Matter of the Proposed
Adoption of Rules Governing the
Management of Waste Tires and the
Permitting of Waste Tire Facilities,
Minn. Rules Pts. 7001.0020,
7001.0040, 7001.0050, 7001.0190,
7001.4000-7001.4150, and
7035.8200-7035.8710

STATEMENT OF NEED
AND REASONABLENESS

Minnesota Pollution Control Agency
520 Lafayette Road North
St. Paul, Minnesota 55155

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I. INTRODUCTION

Improper waste tire storage and disposal threatens natural resources and the quality of the environment, and endangers the public health, safety and welfare. Waste tires provide an ideal breeding habitat for mosquitoes which carry and transmit the LaCrosse Encephalitis virus, which endangers young people. Tires also become a major fire hazard when improperly stockpiled. Tires do not start on fire easily, but once a tire pile begins to burn, it is almost impossible to extinguish. In addition to the routine hazards created by a fire, combustion reactions within a tire pile generate a run-off containing pyrolytic oil (synthetic crude oil), gas, and carbon black. The generation of pyrolytic oil is a hazard to human health and the environment when allowed to contaminate surface and ground water. Because of the problems associated with improper management of waste tires, the Legislature has directed the Minnesota Pollution Control Agency (hereinafter "Agency") to issue permits to tire collectors and tire processors. Minn. Stat. § 115A.902 (1986).

The Agency is proposing rules for waste tire permits. These proposed rules apply to waste tire management activities conducted within the State of Minnesota. The rules are proposed for adoption pursuant to the Agency's authority under Minn. Stat. §§ 116.07, subd. 4 and 115A.914, subd. 1 (1986).

The statement is divided into nine parts. After this introduction, part II provides an overview of the proposed rules. Part III discusses the legal and historical background of the waste tire permit rules. Part IV contains the Agency's explanation of the need for the proposed rules. Part V contains the Agency's explanation, part by part, of the reasonableness of the proposed rules. Part VI documents how the Agency has considered the methods for reducing the impact of the proposed rules on small businesses, pursuant to the requirements

of Minn. Stat. § 14.115 (1986), Small Business Considerations in Rulemaking. Pursuant to Minn. Stat. § 116.07, subd. 6 (1986), part VII documents the economic impacts of the proposed rules. Part VIII contains the Agency's conclusion. Part IX contains a list of exhibits relied on by the Agency to support the proposed rules. The exhibits are available for review at the Agency's offices at 520 Lafayette Road North, St. Paul, Minnesota 55155.

II. OVERVIEW OF PROPOSED RULES

Minn. Stat. § 115A.902, subd. 1 (1986) provides that "A tire collector or tire processor with more than 500 waste tires shall obtain a permit from the agency unless exempted in subdivision 2. The agency may by rule require tire collectors or tire processors with less than 500 waste tires to obtain permits unless exempted by subdivision 2."

Minn. Stat. § 115A.902, subd. 2 (1986) goes on to state that:

A permit is not required for:

(1) a retail tire seller for the retail selling site if no more than 500 waste tires are kept on the business premises;

(2) an owner or operator of a tire retreading business for the business site if no more than 3,000 waste tires are kept on the business premises;

(3) an owner or operator of a business who, in the ordinary course of business, removes tires from motor vehicles if no more than 500 waste tires are kept on the business premises;

(4) a permitted landfill operator with less than 10,000 waste tires stored above ground at the permitted site; or

(5) a person using waste tires for agricultural purposes if the waste tires are kept on the site of use.

The proposed rules include permitting requirements, technical standards, and financial assurance requirements. The proposed rules contain amendments to

the Agency's current permit rules contained in Minn. Rules pts. 7001.0010 to 7001.0210. The proposed rules also contain the information and administrative requirements for a waste tire collector or processor to obtain a waste tire permit.

The proposed permit rules have been divided into 17 parts and are as follows. Minn. Rules pt. 7001.4000 (Scope) specifies the Minnesota rules that govern the application procedures for issuance of and the conditions relating to waste tire facility permits.

Minn. Rules pt. 7001.4010 (Definitions) specifies by reference which definitions are incorporated into these rules.

Minn. Rules pt. 7001.4020 (Permits) requires that persons conducting specific activities are required to obtain a waste tire facility permit. This part also exempts certain persons from the requirement to obtain a waste tire facility permit.

Minn. Rules pt. 7001.4030 (Permit by Rule) describes the requirements governing permit by rule status.

Minn. Rules pt. 7001.4035 (Notification by Existing Facilities) requires the owner or operator of an existing waste tire facility to notify the director regarding facility activities. This part also requires the facility owner or operator to comply with basic storage standards and the financial assurance requirements, and to properly close the facility.

Minn. Rules pt. 7001.4040 (Provisional Status) allows the owner or operator of an existing waste tire facility to obtain provisional status if compliance with specific standards is maintained. An owner or operator of a facility with

provisional status shall be considered to have fulfilled the requirement to obtain a permit so long as provisional status is maintained. Provisional status shall terminate once final disposition of the owner or operator's permit application is made or closure is completed in accordance with the applicable provisions.

Minn. Rules pt. 7001.4050 (Designation of Permittee) specifies that owners and operators of a waste tire facility will be designated as co-permittees when issuing a waste tire facility permit.

Minn. Rules pt. 7001.4060 (Waste Tire Facility Permit Application Procedures) describes the waste tire facility permit application requirements for new and existing waste tire facilities. This part also contains requirements regarding when a permit application must be submitted and certification of permit applications and permit reports.

Minn. Rules pts. 7001.4070, 7001.4080, 7001.4090, and 7001.4100 specify the permit application information requirements for new and existing waste tire facilities. Minn. Rules pt. 7001.4070 (General Information Requirements for a Permit Application) contains the general application requirements for all waste tire facilities. Minn. Rules pts. 7001.4080 (Additional Application Information Required for Waste Tire Transfer Facilities), 7001.4090 (Additional Information Required for Waste Tire Processing Facilities), and 7001.4100 (Additional Application Information Required for Waste Tire Storage Facilities) contain the additional application information requirements specific to the type of facility that is the subject of the application.

Minn. Rules pts. 7001.4110 (Public Notice of Preliminary Determination and

Draft Permits; Public Comments), 7001.4120, (Terms and Conditions of Waste Tire Facility Permits), and 7001.4130 (Modification of Permits; Revocation and Reissuance of Permits) broaden the requirements of the Agency's current permit rules contained in Minn. Rules pts. 7001.0010 to 7001.0210. These parts contain additional administrative requirements for waste tire collector and processor permits.

Minn. Rules pt. 7001.4140 (Interaction of Permit and Abatement Rules) establishes the requirements that must be met for tire collectors who wish to have their sites which are the subject of an abatement action become permitted waste tire facilities.

Minn Rules pt. 7001.4150 (Transporter Application Requirements) specifies the application information that a transporter must submit to obtain an Agency waste tire transporter identification number.

The proposed rules also contain the technical requirements for waste tire facilities. The proposed technical rules have been divided into 34 parts, Minn. Rules pts. 7035.8200 to 7035.8710. Minn. Rules pt. 7035.8200 (Scope) specifies the parts that apply to waste tire facilities, and to persons who generate or transport waste tires.

Minn. Rules pt. 7305.8205 (Definitions) contains definitions of specific terms used in the proposed waste tire permit rules.

Minn. Rules pt. 7035.8210 (Land Disposal Prohibited) prohibits the disposal of waste tires and tire-derived products in landfills.

Minn. Rules pt. 7035.8220 (Permit Required) specifies that a permit is required to establish, construct, modify, own or operate a waste tire facility.

Minn. Rules pt. 7035.8230 (Rule Conflicts) establishes that even though a person has met the obligations imposed by the Agency rules, that person must still comply with all other federal, State, or local rules that regulate how the facility will operate. Also, in the event the Agency rules conflict with other rules, the more stringent provisions shall apply.

Minn. Rules pt. 7035.8240 (General Standards for Permitted Facilities) requires the owner or operator of a permitted waste tire facility to comply with the standards set forth in this part. These standards specify where the facility can be located, how the facility must be operated, how transfer of the ownership or operation of the facility must occur, and annual reporting requirements.

Minn. Rules pts. 7035.8250 (Closure) and 7035.8260 (Closure Procedures) establish the standards applicable to the closure of all waste tire facilities and the procedures that must be followed to close a waste tire facility.

Minn. Rules pt. 7035.8270 (Qualifications for Regulation as a Permitted Waste Tire Transfer or Waste Tire Processing Facility) sets out the qualifications for regulation as a waste tire transfer or waste tire processing facility. Waste tire facilities which do not meet these qualifications are regulated as waste tire storage facilities.

Minn. Rules pts. 7035.8280 (Waste Tire Processing Facility Standards) and 7035.8290 (Waste Tire Storage Facility Standards) set out the standards with which a permitted waste tire processing facility or waste tire storage facility must comply.

Minn. Rules pt. 7035.8300 (Petition Procedures) establishes procedures for

petitioning the Agency for an exemption from the 75 percent annual processing requirement to reduce certain management requirements for waste tires that have accumulated at a waste tire processing facility.

Minn. Rules pts. 7035.8400 to 7035.8590 set out the financial assurance requirements that apply to all waste tire facilities. These parts establish the amount of financial assurance required, the time requirements for submittal of the financial assurance mechanism, the mechanisms that must be used in order to comply with the requirements of these parts, and the required language for the financial assurance mechanisms.

Minn. Rules pt. 7035.8700 (Waste Tire Generation) contains requirements for persons who generate waste tires. All persons who generate waste tires must only transact business with a person who has obtained an Agency waste tire transporter identification number or who is exempt from this requirement. This part also contains record keeping requirements.

Minn. Rules pt. 7035.8710 (Waste Tire Transportation) sets forth the standards applicable to persons who are in the business of transporting waste tires.

III. LEGAL AND HISTORICAL BACKGROUND OF THE PROPOSED RULES

In 1969, the Minnesota Legislature directed the Agency to regulate solid waste disposal methods and practices and to adopt standards, regulations, and variances regarding solid waste. Minn. Laws 1969, ch. 1046, codified as Minn. Stat. § 116.01 et seq. (1986).

The statutory authority of the Agency to adopt rules relative to the

collection, transportation, storage, and processing of solid waste is found in Minn. Stat. § 116.07, subd. 4 (1986), which provides in relevant part:

> Subd. 4. Rules and standards. . . . Pursuant and subject to the provisions of chapter 14, and the provisions hereof, the pollution control agency may adopt, amend, and rescind rules and standards having the force of law relating to any purpose within the provisions of Laws 1969, chapter 1046, for the collection, transportation, storage, processing, and disposal of solid waste and the prevention, abatement, or control of water, air, and land pollution which may be related thereto, and the deposit in or on land of any other material that may tend to cause pollution. . . . Without limitation, rules or standards may relate to collection, transportation, processing, disposal, equipment, location, procedures, methods, systems or techniques or to any other matter relevant to the prevention, abatement or control of water, air, and land pollution which may be advised through the control of collection, transportation, processing, and disposal of solid waste . . . and the deposit in or on land of any other material that may tend to cause pollution. . . .

In Minn. Laws 1973, ch. 412, codified as Minn. Stat ch. 116D, the Minnesota Legislature directed:

> In order to carry out the policy set forth in Laws 1973, chapter 412, it is the continuing responsibility of the state government to use all practicable means, consistent with other essential considerations of state policy, to improve and coordinate state plans, functions, programs and resources to the end that the state may:
>
> (a) Fulfill the responsibilities of each generation as trustee of the environment for succeeding generations;
>
> . . .
>
> (e) Encourage, through education, a better understanding of natural resources management principles that will develop attitudes and styles and living that minimize environmental degradation;
>
> . . .
>
> (k) Reduce wasteful practices which generate solid wastes;
>
> . . .
>
> (m) To conserve natural resources and minimize environmental impact by encouraging extension of product lifetime, by reducing the number of unnecessary and wasteful materials practices, and by recycling materials to conserve both materials and energy;
>
> . . . .

Minn. Stat. § 116D.02, subd. 2. (1986).

In the Waste Management Act of 1980, the Minnesota Legislature declared that the conservation and recovery of materials and energy from waste are desirable alternatives to the continued reliance on land disposal. The goal of the Waste Management Act was to improve waste management in the State to serve the following purposes:

(a) Reduction in waste generated;

(b) Separation and recovery of materials and energy from waste;

(c) Reduction in indiscriminate dependence on disposal of waste;

(d) Coordination of solid waste management among political subdivisions; and

(e) Orderly and deliberate development and financial security of waste facilities including disposal facilities.

Minn. Stat. § 115A.02 (1986).

In 1984, the Agency was directed to adopt rules for the administration of waste tire collector and processor permits. Minn. Laws 1984, ch. 654, art. 2, § 98 codified as Minn. Stat. § 115A.914, subd. 1. Minn. Stat. § 115A.914, subd. 1 provides:

> Subdivision 1. Agency rules. The Agency shall adopt rules for administration of waste tire collector and processor permits, waste tire nuisance abatement, and waste tire collection. Until December 31, 1985 the Agency may adopt emergency rules for these purposes.

Preparation of the proposed rules began in September 1984. At that time, Agency staff reviewed existing waste tire management programs throughout the United States to determine an appropriate direction for development of the

Agency's waste tire permitting program. During this review, Agency staff prepared a questionnaire on waste tire management issues, including questions specifically dealing with waste tire collector and processor permits. See Exhibit 1. The staff surveyed 49 state environmental protection agencies and the United States Environmental Protection Agency. Local government officials with experience in waste tire permitting were also contacted. A summary report was prepared to provide an overview of input. See Exhibit 2.

On October 1, 1984 the Agency published a Notice of Intent to Solicit Outside Opinion in the State Register. 9 SR 698. See Exhibit 3. The notice was mailed to 87 county solid waste officers, 167 sanitary and demolition landfill owners and operators, members of the Governor's Special Commission on Waste Tires, and 22 persons who requested to be placed on the Agency's mailing list for waste tire issues. The Agency staff sent a letter to this same group on September 28, 1984. This letter solicited information about the waste tire collectors and processors who would be required to obtain a permit, permit application requirements and procedures, standards or guidelines for operation of collection and processing facilities, permit fees, public participation, and permit issuance or denial procedures. See Exhibit 4.

Considering both the general waste tire permit requirements established by Minn. Stat. § 115A.902, subds. 1 and 2 and the information submitted to the Agency as a result of the Notice to Solicit Outside Opinion and the September 28, 1984 solicitation letter, the Agency staff prepared waste tire permit issue statements. See Exhibit 5. Based on the waste tire permit issue statements, Agency staff began drafting the waste tire permit rules in February

1985.

Throughout 1985, the Agency conducted an extensive internal review of the issues affecting waste tire management to determine an appropriate direction for the waste tire permit program. This included a review of the Agency's solid waste and hazardous waste programs and the issues and actions that are associated with management of these two programs. It also included discussions on the level of regulation that is necessary in order for a waste tire facility to be operated in a manner to protect human health and the environment. During these discussions, it became apparent that both permitting and technical rules needed to be developed, with financial assurance requirements included as part of the technical rules.

Agency staff also wrote two articles for the Operations/Training Unit newsletter, a publication that reaches an extensive audience, including every landfill operator and county solid waste officer in the State. The articles published in the January 1985 and August 1985 issues contained information on the draft waste tire permit rules and other areas of the Agency's waste tire management program.

On January 17, 1986, the Agency notified the interested parties on the waste tire program mailing list that the Agency Board Solid and Hazardous Waste Committee would meet on January 27, 1986, to discuss issues associated with drafting waste tire permit rules. At the January 27, 1986, committee meeting, staff presented the history of the development of the rules, a proposal on permitting procedures, and other issues related to the waste tire permit rules. Due to time constraints, not all issues presented in the January 23, 1986,

committee memorandum were discussed at the committee meeting. Therefore, another meeting of the Agency Board Solid and Hazardous Waste Committee was held on February 11, 1986 to continue the discussion regarding the waste tire permitting program.

On February 3, 1986, the Agency notified the interested parties on the waste tire program mailing list that the Agency Board Solid and Hazardous Waste Committee would meet on February 11, 1986 to continue the discussion regarding the waste tire permitting program. Copies of the committee memorandums for both the January 27, 1986, and February 11, 1986, meeting were enclosed with the notice of the meeting to provide a summary of the issues of concern. See Exhibit 6. At the February 11, 1986, committee meeting, staff presented the issues relating to financial assurance and the relationship between the waste tire permit program and the waste tire dump abatement program. Based on the staff's presentation and comments received from the public, the committee provided input and guidance on the development of the rules.

On April 15, 1986, the Agency sent to the interested parties on the waste tire program mailing list the draft waste tire permit rules, along with a summary of the financial assurance requirements that Agency staff recommended be included in the waste tire permit rules. A cover letter described the content of the draft rules. The staff also notified these interested parties that an informational meeting would be held on May 6, 1986, to present the draft waste tire permit rules to the public and solicit input and recommendations as to the content of the draft rules. Interested parties were also invited to send written comments and suggestions on the draft rules. See Exhibit 7.

On May 14, 1986, the Agency notified the interested parties on the waste tire program mailing list that the Agency Board Solid and Hazardous Waste Committee would meet on May 19, 1986. At the committee meeting, staff informed the committee of the issues discussed and the comments received at the May 6, 1986, informational meeting. See Exhibit 8. Based on the staff's presentation and comments received from the public, the committee directed staff to draft rules governing waste tire generators and transporters and to develop a new financial assurance summary.

On July 14, 1986, Agency staff conducted a public meeting to present the draft rules governing waste tire generators and transporters, along with the new summary of the financial assurance requirements. Staff notified approximately 325 persons regarding this meeting. Staff encouraged all interested parties to attend this meeting and to provide comments on the draft rules and the financial assurance summary. Interested parties were also encouraged to send written comments and suggestions on the draft rules. See Exhibit 9.

Prior to release of the draft rules regarding waste tire generators and transporters to the public on July 2, 1986, Agency staff presented these draft rules to representatives of the National Tire Dealers and Retreaders Association and the Minnesota State Service Station Association. Recommendations and comments from representatives of these two associations were incorporated into the draft rules. Copies of the draft rules for waste tire generators and transporters were also sent to the Minnesota Department of Transportation, and to the Minnesota Trucking Association for their review.

In addition to soliciting comments on the draft rules for waste tire

generators and transporters, staff encouraged interested parties to comment on the draft waste tire permit rules that were sent out on April 15, 1986.

At a meeting held August 25, 1986, the Agency staff informed the Solid and Hazardous Waste Committee of the Agency Board of the concerns and comments that were raised at the July 14, 1986 public meeting. See Exhibit 10. Staff also presented the draft financial assurance rules. Based on the staff's presentation and comments received from the public, the committee directed staff to re-draft the rules governing waste tire generators and transporters and to investigate options that would prevent duplication of State and county financial assurance requirements.

At a meeting of the Solid and Hazardous Waste Committee of the Agency Board held October 27, 1986, Agency staff presented four possible ways of preventing duplication of State and county financial assurance. See Exhibit 11. Staff recommended that the Agency should accept a county-held financial assurance mechanism that meets or exceeds the financial assurance provisions of the State rules as satisfying the State financial assurance requirements so long as the State could ultimately gain access to the funds. The committee agreed with this recommendation and directed staff to provide for such county-held financial assurance in the draft rule. At the October 27, 1986 committee meeting, staff also addressed the comments made at the August 25, 1986, Agency Board Solid and Hazardous Waste Committee meeting.

On February 23, 1987, Agency staff presented the Board Solid and Hazardous Waste Committee with the final draft waste tire permit and technical rules, including the financial assurance language addressing the duplication of State

and county financial assurance requirements. See Exhibit 12.

Following discussion, the committee recommended that the draft rules be presented to the Agency Board at its March 1987, meeting for authorization to enter into the rulemaking process.

IV. NEED FOR THE PROPOSED RULES

Minn. Stat. § 14.23 (1986) requires an agency to make an affirmative presentation of facts establishing the need for and reasonableness of the rules proposed. In general terms, this means that an agency must prove that in enacting rules the agency is not being arbitrary or capricious. To the extent that need and reasonableness are separate, need has come to mean that a problem exists that requires administrative attention and reasonableness means that the solution proposed by the Agency is a proper one.

The proposed rules are needed to assist the Agency in regulating the collection, transportation, storage, and processing of solid waste. The proposed rules are needed to make specific the permit requirements established by Minn. Stat § 115A.902 as required by Minn. Stat. § 115A.914, subd. 1 (1986). The rules are further needed to aid counties in developing solid waste management plans and ordinances for the management of waste tires as required by Minn. Stat. § 115A.914, subd. 2 (1986). The rules also respond to the legislative policy set out in Minn. Stat. § 116D.02, subd. 2(m) (1986): to conserve natural resources by recycling.

A. Minn. Stat. § 116.07.

The Minnesota Legislature has directed the Agency to adopt standards for

". . . the control of the collection, transportation, storage, processing, and disposal of solid waste . . . for the prevention and abatement of water, air, and land pollution. . . ." Minn. Stat. § 116.07, subd. 2 (1986). The Legislature has supplemented that basic provision and made it more specific with the following:

> Subd. 4. Rules and standards. . . . Pursuant and subject to the provisions of chapter 14, and the provisions hereof, the pollution control agency may adopt . . . rules and standards having the force of law relating to any purpose within the provisions of Laws 1969, chapter 1046, for the collection, transportation, storage, processing and disposal of solid waste and the prevention, abatement, or control of water, air, and land pollution which may be related thereto, and the deposit in or on land of any other material that may tend to cause pollution. . . . Without limitation, rules or standards may relate to collection, transportation, processing, disposal, equipment, location, procedures, methods, systems or techniques or to any other matter relevant to the prevention, abatement or control of water, air, and land pollution which may be advised through the control of collection, transportation, processing, and disposal of solid waste . . . and the deposit in or on land of any other material that may tend to cause pollution. . . .

Minn. Stat. § 116.07, subd. 4 (1986).

Waste tires are a solid waste. Moreover, when improperly managed, waste tires tend to cause pollution and are a threat to human health and the environment. The rules are needed to ensure that waste tires are managed in a comprehensive and efficient manner while promoting the protection of human health and the environment and the conservation of valuable material and resources.

In December of 1983, the Governor appointed a citizen's advisory committee called the Special Commission on Waste Tires (hereinafter "Commission"). The Commission's task was to recommend to the Governor ways to dispose of or recycle

waste tires. The Commission also addressed the development of legislation to enable the development of a statewide program to recycle waste tires or use them as an alternate energy source and legislation regarding the creation of collection and processing sites throughout the State, and funding of such a program.

During its investigation of the waste tire disposal problem, the Commission found that less than 20 percent of the waste tires generated annually in Minnesota end up at authorized landfills. When attempting to landfill tires, it was found that whole tires compacted in a sanitary landfill spring back to their former shape and tend to work up to the surface and disturb the cover material while the fill is settling. This disturbance in the cover material allows precipitation to infiltrate into the fill, generating leachate which may contaminate ground water. To reduce this infiltration, additional cover material needs to be placed on the fill whenever tires break through the cover. As a result, several landfill operators preferred tire stockpiling to burying. Tires are also resistant to natural decomposition, making them a permanent landfill problem.

The Commission found that tires that were not being landfilled were either indiscriminately discarded along roadways, streams and lakes, or deposited at unauthorized tire collection sites. Many owners of tire collection sites believed that someday their waste tires would become valuable. Because no existing rules prohibited or regulated the stockpiling of tires, these tire collection sites were growing and owners had no end-use for the waste tires, nor funds available to clean up the sites.

The Commission also found that persons who recap tires believed the present collection system allowed for the loss of a substantial number of casings that could be retreaded. Landfill owners and tire stockpilers had no incentive to inspect incoming tires to ascertain whether they were usable. A substantial number of recappable steel belted radial tires were being disposed rather than reused.

In addition to the findings of the Commission, Agency staff investigated other problems relating to the stockpiling of waste tires. One of these problems involves infestation by mosquitoes. According to the Metropolitan Mosquito Control District and State health officials, a mosquito which carries and transmits the LaCrosse Encephalitis virus, which endangers young people, is present in Minnesota. This mosquito is generally found in wooded areas, and typically breeds in water filled stumps and holes in trees. However, stagnant water in waste tires also provides an ideal breeding habitat and is preferred to tree holes when available. See Exhibits 13 and 14. Stockpiled tires also offer a refuge to vermin. These stockpiles can be made relatively safe from vermin and mosquitoes through proper vermin and mosquito control operations.

Tires become a major fire hazard when improperly stockpiled. Tires do not start on fire easily, but once a tire pile begins to burn, it is almost impossible to extinguish. In addition to the routine hazards created by a fire, combustion reactions within a tire pile generate a run-off containing pyrolytic oil (synthetic crude oil), gas, and carbon black. The generation of pyrolytic oil is a hazard to human health and the environment when allowed to contaminate surface and ground water.

In 1983, in the state of Virginia, a tire stockpile containing between seven to nine million waste tires caught on fire. The tire pile was 80 to 100 feet high in some places and covered land area in excess of four acres. The height of the tire pile caused it to burn with a chimney effect. The fire burned for over eight months. It cost the federal government 1.8 million dollars to fight the fire and clean up the area. Over 840,000 gallons of liquid containing pyrolytic oil were collected at the site.

The proposed rules for waste tire permits will provide for the permitting of waste tire collection and processing facilities. The proposed rules contain technical standards to ensure that facility operation is environmentally sound. Compliance with these standards should decrease the risk of fire and mosquito infestation at waste tire facilities. The rules also contain financial assurance requirements to ensure funds will be available when needed to properly close the facility. The proposed rules also contain requirements regarding waste tire generation and transportation. Persons who generate waste tires will be required to send the waste tires to a permitted waste tire facility, a waste tire facility with provisional status, or a waste tire facility that is exempt from the requirement to obtain a permit. Persons who are in the business of transporting waste tires will be required to notify the Agency of their activities, and to obtain an Agency waste tire transporter identification number. The proposed rules also contain record keeping requirements to enable easier enforcement of rules governing waste tire generation and transportation. Thus, the proposed rules will regulate the collection, transportation, storage, and processing of waste tires, which are a solid waste.

B. Minn. Stat. § 115A.914.

The Minnesota Legislature has directed the Agency to, ". . . adopt rules for administration of waste tire collector and processor permits, waste tire nuisance abatement, and waste tire collection. . . ." Minn. Stat. § 115A.914, subd. 1 (1986).

The proposed rules are needed to administer a permitting program for waste tire collectors and processors, who are by statute required to obtain a permit. Minn. Stat. § 115A.902, subd. 1 (1986). The rules for waste tire permits will establish a process through which the Agency will issue permits to waste tire collectors and processors.

C. Minn. Stat. § 115A.902 (Statutory Permit Process).

Minn. Stat. § 115A.902, subd. 1 (1986) establishes that:

> A tire collector or tire processor with more than 500 waste tires shall obtain a permit from the agency unless exempted in subdivision 2. The agency may by rule require tire collectors or tire processors with less than 500 waste tires to obtain permits unless exempted by subdivision 2.

Minn. Stat. § 115A.902, subd. 2 (1986) goes on to state that:

> A permit is not required for:
>
> (1) a retail tire seller for the retail selling site if no more than 500 waste tires are kept on the business premises;
>
> (2) an owner or operator of a tire retreading business for the business site if no more than 3,000 waste tires are kept on the business premises;
>
> (3) an owner or operator of a business who, in the ordinary course of business, removes tires from motor vehicles if no more than 500 waste tires are kept on the business premises;
>
> (4) a permitted landfill operator with less than 10,000 waste tires stored above ground at the permitted site; or
>
> (5) a person using waste tires for agricultural purposes if the waste tires are kept on the site of use.

The proposed rules make specific the permitting requirements established by Minn. Stat. § 115A.902, subds. 1 and 2 (1986). The proposed rules set out who is required to obtain a permit, the procedures that must be followed to obtain a permit, and the information that is to be contained in the permit application. In addition, technical rules containing facility standards, including financial assurance requirements, set out what is required of a tire collector or processor once a permit is issued for the facility. The proposed rules are needed to provide a waste tire permitting process which is specific, and consistently used.

In addition to the permitting requirements, technical requirements are needed to ensure that a facility operates in a manner that is not a threat to human health, natural resources and the environment. The proposed rules set out locational and facility operating standards, and general operating requirements that all facilities must comply with as well as specific requirements that apply to each type of facility: transfer, processing, and storage. The financial assurance requirements included in the technical rule are needed to ensure that tire collectors and processors will have sufficient money available at closure to provide for the removal of waste tires located at the facility either by having them processed or by delivering them to another waste tire facility that has been approved by the Agency director. Requiring financial assurance from tire collectors and processors will ensure that tire collectors will not lack money necessary to clean up the site at the end of its operating life.

D. Minn. Stat. § 115A.914 (Guidance to Counties).

Minn. Stat. § 115A.914, subd. 2 (1986) provides that:

> Counties shall include collection and processing of waste tires in the solid waste management plan prepared under sections 115A.42 to 115A.46 and adopt ordinances under sections 400.16 and 473.811 for management of waste tires that embody, but may be more restrictive than, agency rules.

Because the counties need to know how the Agency will act to permit waste tire collectors and processors in developing their waste tire management plans and county ordinances, the proposed rules are needed to aid the counties in developing these plans and ordinances.

E. Minn. Stat. ch. 116D.

Minn. Stat. ch. 116D sets forth the environmental policy of the State of Minnesota. In that chapter the Minnesota Legislature directs that, to the fullest extent practicable, the policies, regulations, and public laws of the State shall be interpreted and administered in accordance with the policies set forth in Minn. Stat. §§ 116D.01 to 116D.06. Minn. Stat. § 116D.03, subd. 1 (1986).

Under Minn. Stat. § 116D.02 (1986) the Minnesota Legislature directs State government to use all practicable means to improve and coordinate State plans, functions, programs and resources to the end that the State may conserve natural resources and minimize environmental impact by recycling materials to conserve both materials and energy. Minn. Stat. § 116D.02, subd. 2(m) (1986).

Technological advances have provided a use for waste tires. Energy and valuable materials can be conserved by the reuse and recycling of waste tires. The proposed rules promote the conservation of valuable materials and energy resources as directed by the Legislature.

F. Minn. Stat. § 115A.904.

Minn. Stat. § 115A.904 (1986) prohibits the disposal of waste tires in the land after July 1, 1985. The proposed rules prohibit the disposal of waste tires in landfills as is required by statute.

G. Summary.

The Agency believes the statutory authority set forth above establishes the need for rules governing the permitting of waste tire facilities. The proposed rules respond to that need.

V. REASONABLENESS OF THE PROPOSED RULES

A. Introduction.

The Agency is required to make an affirmative presentation of facts establishing the reasonableness of the proposed rules. Minn. Stat. § 14.23 (1986). Reasonableness is the opposite of arbitrariness and caprice and means that there is a rational basis for the Agency's proposed action. The purpose of this section is to demonstrate that each provision is a reasonable approach to its defined function.

Permitting Requirements.

In working to develop the waste tire permit rules, the Agency considered various alternatives based on the general permit process set down by Minn. Stat. § 115A.902, subds. 1 and 2 (1986). Minn. Stat. § 115A.902, subds. 1 and 2 (1986) state that:

> Subdivision 1. Permit required. A tire collector or tire processor with more than 500 waste tires shall obtain a permit from the agency unless exempted in subdivision 2. The agency may by rule require tire collectors or tire processors with less than 500 waste tires to obtain permits unless exempted by subdivision 2.

Subd. 2. Exemptions. A permit is not required for:

(1) a retail tire seller for the retail selling site if no more than 500 waste tires are kept on the business premises;

(2) an owner or operator of a tire retreading business for the business site if no more than 3,000 waste tires are kept on the business premises;

(3) an owner or operator of a business who, in the ordinary course of business, removes tires from motor vehicles if no more than 500 waste tires are kept on the business premises;

(4) a permitted landfill operator with less than 10,000 waste tires stored above ground at the permitted site; or

(5) a person using waste tires for agricultural purposes if the waste tires are kept on the site of use.

Under Minn. Stat. § 115A.902, subd. 1 (1986), the agency may by rule require tire collectors or tire processors with less than 500 waste tires to obtain a permit unless exempt by subdivision 2. Initially, the Agency had proposed that waste tire collectors with less than 500 waste tires stockpiled should not be required to obtain a waste tire permit or be subject to any other requirements. The Agency believed this to be a reasonable approach since the stockpiling of small numbers of waste tires is often incidental to other business activities and generally the waste tires are stored for short periods of time. However, at the January 27, 1986 Agency Board Solid and Hazardous Waste Committee meeting, interested parties commented that a permit exemption for the storage of less than 500 waste tires would encourage persons to establish numerous stockpiles of 500 waste tires without any intent to have the waste tires removed for processing. Based on these concerns and the statutory exemptions which address most situations where waste tires are stockpiled

incidental to other business activities, the Agency is proposing to regulate such storage.

However, due to the small size of such stockpiles the Agency is proposing to regulate them through a permit by rule. Under this provision, facilities with less than 500 waste tires which meet the requirements in the proposed rules, would be considered to be permitted without applying for a permit or following the permitting procedures. By limiting the type and duration of activities at the facility and requiring that the location standards be met, the proposed rules will provide a level of regulation appropriate to the facility's small size while prohibiting the establishment of numerous tire dumps of less than 500 waste tires. Also, by requiring that a written notification of these activities be submitted, the Agency will be able to inspect such facilities to ensure that compliance with the requirements is achieved. The Agency believes such an approach is reasonable since it recognizes the limited threat to human health, natural resources and the environment posed by such stockpiles, while addressing the main concern that the rules not encourage the establishment of numerous small tire dumps.

For all tire collectors and tire processors who are required to obtain a permit, a permit application must be submitted to the Agency within the time limits established in these proposed rules. For existing waste tire facilities, a phased-in approach to permit issuance has been developed. Under this approach, a tire collector or tire processor with an existing facility would provide written notification of activities to the Agency director within 90 days of the effective date of the rules. From the time the notification has been

received by the director, until a permit is either issued or denied, the tire collector or processor will be considered to be in compliance with the requirement to obtain a permit. During this time period the facility will be considered to have provisional status and will be an acceptable facility to receive waste tires. During provisional status, compliance with minimum operating standards must be maintained at the facility. The Agency believes this is a reasonable approach since it will provide an adequate level of regulation for all waste tire facilities while recognizing that it will take some time to actually issue or deny a permit for every waste tire facility.

Based on notifications received under provisional status, the Agency director will request the waste tire facility owner and operator to submit a permit application. Agency staff will then review the application and follow the permitting process specified in the waste tire permit rules.

The permit rules also include provisions for regulating waste tire transporters. Under Minn. Stat. § 116.07, subd. 4(a) (1986), the Agency is given broad authority to issue permits. This section gives the Agency the authority to ". . . issue . . . permits . . . for the storage, collection, transportation, processing, or disposal of waste. . . ."

The Agency has proposed to regulate persons in the business of transporting waste tires under the permit by rule approach. Under this approach, persons in the business of transporting waste tires will be required to notify the Agency of their activities at which time they will be issued an Agency waste tire transporter identification number. Exemptions are provided for persons hauling household quantities of waste tires and for persons hauling waste tires

incidental to another activity.

Persons who generate waste tires are not required to obtain a waste tire permit. However, they are regulated and must comply with certain technical standards including the requirement that the waste tires be sent to a permitted waste tire facility. The Agency believes it is reasonable to regulate the generation and transportation of waste tires to ensure that the waste tires are properly managed and delivered to acceptable waste tire facilities rather than indiscriminately dumped.

Technical Requirements.

In addition to the permitting rules, technical rules containing facility standards have been developed. Compliance with the technical standards is required as part of the permit conditions. Also, permit application information requirements are based on the requirements of the technical rules.

Waste tire facilities are classified into three categories: transfer facilities, processing facilities, and storage facilities. There are general technical requirements that all facilities must comply with as well as requirements that are specific to each facility type. The permit application requirements are also separated into two parts. One part requests general information from all facilities, while the second part requests information that is specific to the type of facility that is the subject of the application.

The most stringent technical requirements are imposed on storage facilities because the Agency believes they pose the greatest threat to human health, natural resources, and the environment. The technical requirements for processing facilities are not as comprehensive as the requirements for storage

facilities, but they do involve planning for emergency response situations and complying with storage standards. Also, if the quantity of tires stored at a processing facility exceeds a specified quantity identified in the technical rules, the facility will be classified as a storage facility. As such, the facility must be operated according to the technical requirements for waste tire storage facilities, and the permit will have to be modified. Transfer facilities have the least stringent requirements imposed upon them because of the small quantity of tires that are allowed to be stored there and the time interval allowed for storage. A facility does not have to be in compliance with the technical requirements until after the permitting process has been completed and a permit is issued.

Initially, the Agency had proposed that during provisional status, compliance with minimum operating standards would be required. These standards were different than the standards that a permitted facility had to meet. The Agency recognized that an existing facility would need time to achieve compliance with the technical rules and begin operating under conditions that protect human health and the environment. The Agency discovered that the two sets of general technical standards were confusing to interested parties. Therefore, the Agency has deleted the provisional status technical requirements. Now, during provisional status, there are specific provisions of the technical requirements that must be met and maintained. The Agency believes such an approach is reasonable, since it provides an adequate level of regulation prior to issuance or denial of individual waste tire facility permits in a manner consistent with the standards required for permitted waste tire facilities.

Also, under the technical requirements, persons in the business of transporting waste tires are required to report on their activities periodically. Persons who generate waste tires must only transact business with a transporter who has an Agency waste tire transporter identification number and must keep a record of this transaction.

B. Amendments to General Permit Rules, Minn. Rules Pts. 7001.0020, 7001.0040, 7001.0050 and 7001.0190.

The following discussion addresses the reasonableness of the proposed amendments to the Agency's general permitting rules on a part by part basis.

1. Minn. Rules Pt. 7001.0020 Scope.

This part sets out the applicability of Minn. Rules pts. 7001.0010 to 7001.0210 which contain the Agency's general permitting requirements. Items A to K of this part are existing rules and are unchanged, thus they are not in need of justification. Item L, however, is a proposed amendment to the Agency's existing permit rules. Item L is needed so that the Agency's current permit rules, Minn. Rules pts. 7001.0010 to 7001.0210, apply the Agency's standard procedures for permit issuance, modification, revocation and reissuance, and reissuance to waste tire facility permits. It is reasonable to amend the Agency's existing permit rules to include item L so that waste tire facility permits will be subject to the same procedures as other Agency permits. This amendment will ensure consistency between the waste tire facility permitting program and other Agency permitting programs. Also, the basic premises of the permitting procedures have always been followed by the Agency in issuing permits for major facilities of all types. Therefore, the adoption of this amendment

will not create any confusion for persons who are familiar with the Agency's current permitting procedures.

2. Minn. Rules Pt. 7001.0040 Application Deadlines.

This part sets out the application deadlines for submission of a permit application. Subp. 1 specifically sets out the application deadlines for a new permit. Subp. 1 provides that, except as otherwise required by Minn. Rules pts. 7001.0530 and 7001.1050, a permit application for a new facility or activity may be submitted at any time. However, it is recommended that applications for new permits be submitted at least 180 days before the planned date of the commencement of facility construction or of the activity. Minn. Rules pt. 7001.4060 provides that applications for new waste tire facility permits shall be submitted at least 180 days before the planned date of the commencement of facility construction or the planned activity, whichever is earlier. It is reasonable that the permit application for a new facility be submitted 180 days before the planned date of the commencement of facility construction or the planned activity to assure that the Agency will have adequate time to review permit applications and follow the permitting procedures. It is also to the applicant's advantage to submit the application allowing as much time as possible before the expected date of commencement of construction or the planned activity, whichever is earlier to avoid delays in beginning construction or operation of the facility due to the lack of a permit.

3. Minn. Rules Pt. 7001.0050 Written Application.

This part sets forth the information required to be submitted by the applicant in the permit application. It is reasonable to require the applicant

to submit sufficient information so that the Agency can determine whether or not the proposed facility will comply with all applicable statutes and rules. Therefore, it is also reasonable to amend item I to include the submission of information specific to waste tire facilities be submitted with the permit application.

4. Minn. Rules Pt. 7001.0190 Procedure for Modification; Revocation and Reissuance; and Revocation Without Reissuance of Permits.

This part establishes the procedures for modification, revocation and reissuance of permits, and revocation without reissuance of permits. Subp. 2 of this part provides that, upon obtaining the consent of the permittee, the Agency may modify a permit as to the ownership or control of a permitted facility or activity without following the procedures in Minn. Rules pts. 7001.0100 to 7001.0130 if the Agency finds that no other change in the permit is necessary and if the Agency has received a binding written agreement between the permittee and the proposed transferee containing a specific date for transfer of permit responsibilities and allocation of liabilities between the permittee and the proposed transferee.

The addition of Minn. Rules pt. 7001.0020, item L to this part will allow the Agency to make this type of modification for permittees of waste tire facilities. This is reasonable because if the proposed permit modification involves no change in the permitted facility or activity, there should be no change in the impact of the permitted facility or activity on the environment and thus no need to follow public notice procedures.

Subp. 3 specifies four types of corrections or allowances which can be made

to a permit without the requirement to follow the procedures of Minn. Rules pts. 7001.0100 to 7001.0130. These are considered minor modifications due to the low potential such changes have for adversely affecting human health or the environment.

Item E is an amendment which allows the Agency to make minor modifications of waste tire facility permits. This amendment is reasonable since the corrections and allowances in pt. 7001.4130, subp. 2 are minor modifications due to the low potential such changes have for adversely affecting human health or the environment. Therefore, it is not necessary for the Agency to follow public notice procedures.

C. Waste Tire Facility Permits, Minn. Rules Pts. 7001.4000 to 7001.4150.

The following discussion addresses the reasonableness of the proposed rules governing the issuance of waste tire facility permits on a part by part basis.

1. Minn. Rules Pt. 7001.4000 Scope.

This part references existing Agency rules governing permit application and issuance procedures, and makes those procedures applicable to waste tire facility permits. It is reasonable to make existing Agency rules applicable to the waste tire facility permitting process to promote consistency among the Agency's permitting programs.

2. Minn. Rules Pt. 7001.4010 Definitions.

This rule incorporates by reference definitions contained in Minn. Rules pts. 7001.0010 and 7035.8205. It also references the definitions in Minn. Stat. § 115A.90. Cross-referencing existing definitions is reasonable because it promotes consistent interpretation of terms.

3. Minn. Rules Pt. 7001.4020 Permits.

This part establishes the activities for which a waste tire facility permit is required.

Subp. 1. Permit required. Subp. 1 establishes the general requirement that a permit be obtained for the operation of a waste tire facility, and for the establishment of a waste tire facility. The rule requires that a permit be obtained to store, process or dispose of waste tires or tire-derived products, or to establish, construct, modify, own, or operate a waste tire facility.

The requirement that a permit be obtained is broad, to enable the Agency to regulate all forms of activity that might be associated with the collection or processing of waste tires, for which a permit is required to be obtained under Minn. Stat. § 115A.902. The broad requirement reflects a decision to include under the requirement to obtain a permit, as is specifically authorized by Minn. Stat. § 115A.902, tire processors and tire collectors with less than 500 waste tires. Including those with less than 500 waste tires in the general requirement is reasonable because, according to information available to the Agency, even a small facility can be, for example, a mosquito hazard. The Agency proposes to reduce the burdensomeness of the broad permit requirement by including a permit by rule provision applicable to the small facilities.

The Agency has also required those who store, process or dispose of tire-derived products to obtain a waste tire facility permit. This reflects the fact that tire-derived products, such as tire chips, should be regulated in the same manner as waste tires. Tire chips, for example, are flammable and could be a fire hazard if stored in large amounts in an uncontrolled manner. Tire chips

are also capable of being recycled or used, and thus should be regulated to encourage development of an ultimate end-use.

Subp. 2. Exclusions. Subp. 2 lists those activities and facilities for which a permit is not required. Four of these exemptions are identical to the statutory exemptions provided by Minn. Stat. § 115A.902, subd. 2 (1986). The fifth exemption regarding agricultural use of waste tires is based on a statutory exemption provided by Minn. Stat. § 115A.902, subd. 2 (1986), but has been modified to clarify that agricultural purposes do not include the burning of waste tires. The Agency believes that the use of waste tires on agricultural equipment or as ballast to retain objects are legitimate agricultural uses. However, the burning of waste tires is a disposal method not an agricultural use. The Agency believes it is reasonable to not exempt the burning of waste tires due to the environmental damage caused by burning waste tires. Burning tires produce gases, such as sulfur dioxide, and pyrolytic oil which can cause pollution of the air, soil and ground water. If burning is used to clear areas for agricultural use, materials other than waste tires should be used to fuel the fire to prevent environmental damage. Therefore, it is reasonable to limit the agricultural use exemption to non-burning uses.

The sixth exemption, listed in item F, is not a statutorily created exemption. Under item F, a person conducting abatement activities under an abatement order or stipulation agreement entered into under Minn. Rules pt. 7035.8020, is exempt from the requirement to obtain a permit for those activities. Under the waste tire dump abatement rules, Minn. Rules pts. 7035.8000 to 7035.8080, a person who is the owner or operator of a waste tire

dump that is the subject of an abatement action must enter into a stipulation agreement with the Agency or be issued an order by the Agency. In either case the abatement activities at the waste tire dump are regulated through the stipulation agreement or order. Therefore, it is reasonable to not require a person conducting such activities to obtain a permit. However, for other activities being conducted at the site a permit is required. This is reasonable since the abatement program only governs abatement activities.

Subp. 3. Old waste tires. Subp. 3 of this part establishes that a waste tire facility permit will not be issued for old waste tires, and that those tires will remain subject to the standards and procedures set out in the waste tire dump abatement rules, Minn. Rules pts. 7035.8000 to 7035.8080. The waste tire dump abatement rules provide for a mechanism to ensure that waste tires that are a nuisance will be removed and processed. It is anticipated that, following the procedures established in the abatement rules, the majority of old waste tires presently stored in the State will be removed and processed. Thus, it should not be necessary to permit these tires. Also, the issuance of a permit for a tire dump would disqualify the owner or operator from the ability to be reimbursed for abatement action costs. Therefore, it is reasonable to not issue permits for old waste tires.

4. Minn. Rules Pt. 7001.4030. Permit by Rule.

This part allows certain waste tire facilities to operate without having to go through the process of obtaining a permit. To allow the operation of certain facilities without a formal permit is reasonable because the activities at these facilities should not threaten human health, welfare or the environment,

provided certain minimal standards established in the permit by rule section are met. To allow the operation of certain facilities without a permit will reduce the burdensomeness of compliance with the rules where full regulation is not needed.

Subp. 1. Facilities eligible. Subp. 1 lists the types of facilities that are eligible for permit by rule status.

Under item A, a facility used for the storage of no more than 500 waste tires can qualify for a permit by rule, provided that the owner or operator removes all the waste tires at least once a year, and the facility is located in an area where it will not be subject to immersion in water. The Agency does not believe that a facility that meets these standards poses an environmental threat. Moreover, because so many persons stockpile small numbers of waste tires incidental to other business activities, it would be a waste of Agency resources to attempt to permit all these small stockpiles. The cutoff number, 500, is by statute the smallest number of tires that can be stored without a permit. The time limit for storage, one year, is reasonable to make sure that there is turnover in the tires, thus decreasing the chance that the pile could become infested with rodents or mosquitoes.

Under item B, the permit by rule approach is used to regulate a small processing facility. As with a small stockpile, the operation of a small, low-volume processing facility should pose little environmental danger. As above, the facility is required to be located where it will not be subject to immersion in water.

Under item C, the permit by rule approach is used to regulate mobile

processing equipment. As with a small stockpile, the operation of mobile processing equipment poses little environmental hazard, provided that the products produced from the operation of the equipment are removed. Because it is anticipated that the mobile shredding or baling equipment will be used to process stockpiles that are currently located in areas that violate the locational requirements, compliance with the locational requirement cannot be required. However, because the equipment is located at the site for a short period of time, 30 days, the risk of an environmental problem, such as flooding, is greatly reduced. It is reasonable to limit processing operations to 30 days because the intent of the permit by rule provision is to allow short-term mobile processing operations to be conducted without having to formally obtain a permit. The Agency believes that in most cases mobile processing operations will occur at tire dumps, permitted solid waste facilities or waste tire transfer facilities. Operations at tire dumps conducted under an abatement stipulation agreement or order are exempt under Minn. Rules pt. 7001.4020, subp. 2. Storage of waste tires at permitted solid waste facilities and waste tire transfer facilities is limited to 10,000 waste tires. Mobile baling equipment can process waste tires at approximately 250 tires per hour (40,000 waste tires per 20 working day month) and mobile shredding equipment has a processing rate of approximately 600 waste tires per hour, (96,000 waste tires per 20 working day month). See Exhibits 15 and 16. Allowing for set-up time and processing time, 30 days provides sufficient time to process and remove more than 10,000 waste tires, and is therefore a reasonable time limit.

Subp. 2. Written notification. Subp. 2 establishes that the owner and

operator of a facility that qualifies for permit by rule status must submit certain information to the Agency to obtain permit by rule status. The information is needed so that the Agency has a record of where the facilities are located, the types of operation at the facilities, that the owners and operators have made some arrangements to acquire fire protection services for the facilities, and that the owners and operators have made some arrangement to use or dispose of the waste tires, tire-derived products, or residuals from processing located at the facilities. To require such minimal information to be submitted is reasonable because it allows the Agency to ascertain that the small facilities are being managed correctly, and because it alerts the regulated community to the fact that their activities are subject to regulation, despite the fact that no permit is required.

Subp. 3. Termination of eligibility for permit by rule. Subp. 3 allows the Agency to terminate the permit by rule status of an owner or operator of an eligible facility if the Agency finds that the facility does not qualify for permit by rule status, or if the Agency finds that an individual permit is necessary for the facility to protect human health and the environment. Because the decision to terminate permit by rule status is based on factual findings, the owner or operator will be given notice and an opportunity to request a public informational meeting or a contested case hearing.

It is reasonable to terminate the permit by rule status of a facility which does not meet, or has violated, the requirements of subps. 1 and 2 of this part because compliance with these conditions and requirements serves as the basis for eligibility to be permitted by rule. It is also reasonable to

terminate the eligibility of a facility to be permitted by rule if it appears that further controls on the operation of the facility are necessary to protect human health or the environment.

5. Minn. Rules Pt. 7001.4035 Notification by Existing Facilities.

This part contains the notification requirements that must be met by owners and operators of existing waste tire facilities.

Subp. 1. Notification. Subp. 1 requires the owner or operator of an existing waste tire facility to submit to the director a written notification regarding the facility within 90 days of the effective date of this rule. The facility owner or operator has 90 days to submit the required information, which includes basic information about the facility and an indication from the facility owner or operator regarding their future plans for the facility, i.e., whether they intend to seek a permit or to close. Requiring the owner or operator to submit this information is reasonable because it is needed to enable the Agency to determine priorities for permitting. The information will also enable the Agency to ascertain that the facility owner or operator is aware that the facility is regulated. Because the information to be submitted is not lengthy or complicated, it is reasonable to require that this information be submitted within 90 days.

Subp. 2. Certification of written notification. Subp. 2 specifies who must sign the written notification. This subpart also requires the owner or operator of the waste tire facility to certify the truth and accuracy of the information in the written notification, based on the inquiry of the person or persons who manage the system, or those persons directly responsible for

gathering the information. It is reasonable to include this requirement so that owners or operators of waste tire facilities will be encouraged to inquire into the truth and accuracy of the information submitted.

Subp. 3. Closure. Subp. 3 requires the owner or operator of an existing waste tire facility who either intends to close rather than obtain a permit or does not qualify for provisional status to close the facility in accordance with the closure standards of Minn. Rules pts. 7035.8250 and 7035.8260. It is reasonable to require an owner or operator who intends to close the facility to do so in accordance with the rules in order to ensure the facility is properly closed and does not pose a threat to human health, natural resources or the environment. An owner or operator of an existing facility who does not qualify for provisional status is operating without a permit and is in violation of the rules. Since the owner or operator is provided the opportunity to obtain provisional status and has not done so, it is reasonable to require the owner or operator to close the facility in order to protect human health, natural resources and the environment.

Subp. 4. Submittal of closure plan. Subp. 4 requires the owner or operator of a waste tire facility required to close under subp. 3, to submit to the director a closure plan when requested by the director. Since Minn. Rules pt. 7035.8250 requires the submittal of a closure plan to ensure that the owner or operator has made adequate plans to provide for proper closure of the facility, it is reasonable to clarify that this requirement applies to an owner or operator who chooses to close rather than obtain a permit. The requirement that the closure plan be submitted when requested by the director is reasonable

since it allows the Agency to control the number of closure plans being reviewed, and should prevent unnecessary delay of closure plan review caused by lack of staff. The 60 day submittal period is reasonable because the information to be submitted is not lengthy and complicated. Since an owner or operator has 90 days to submit a full permit application including a closure plan, it should require less time to prepare only a closure plan. Therefore, 60 days should be sufficient.

Subp. 5. Compliance with standards. Subp. 5 specifies the technical standards for facility operation that apply to the operation of an existing waste tire facility.

Item A requires that processes at the facility must be limited to those specified in the written notification. It is reasonable to restrict activities to those specified because the intent of this rule is to allow owners and operators to continue operating existing facilities not to reconstruct or modify them. The addition of new or different processes at the facility is subject to the requirement that a permit be obtained prior to modification of the facility.

Item B requires that waste tires accepted at the facility after the effective date of the rules be stored in a storage area that meets the locational requirements of pt. 7035.8240, subp. 2, and the storage requirements of pt. 7035.8240, subp. 3, items D, F, and G. These standards are applied to ensure that basic environmental hazards are reduced at the facility until the facility is either permitted or required to close. Although waste tires at the facility received prior to the effective date of these rules may not be stored in compliance with the rules, it is reasonable to require that waste tires

accepted after the effective date are properly stored because the owner or operator will know what is required when the waste tires are accepted at the facility.

Item C requires compliance with the financial assurance requirements of pts. 7035.8400 to 7035.8590. The financial assurance requirements are applied in phases, and thus it is reasonable to require all facilities to comply, whether permitted or not, at the time the financial assurance requirement must be met. It is anticipated that existing facilities that cannot meet the financial assurance requirements will close and not be permitted.

6. Minn. Rules Pt. 7001.4040. Provisional Status.

This part contains the requirements that must be met in order for a facility to obtain provisional status.

Subp. 1. Scope. Subp. 1 establishes that the owner or operator of a waste tire facility that qualifies for provisional status will be considered to have fulfilled the requirement to obtain a permit as long as provisional status is maintained.

The rules provide for a provisional status period because it will take the Agency some time to process permit applications for all the waste tire facilities applying for a permit. While it is reasonable to allow existing facilities to operate until a final determination is made on their permit application, Minn. Stat. § 115A.902, subd. 1, requires tire collectors and processors to obtain a permit. Provisional status gives owners and operators what is, in effect, a permit by rule and allows owners and operators to be treated as having been issued a permit until final administrative disposition is

made of their permit application. Thus, provisional status both satisfies the mandate of Minn. Stat. § 115A.902, subd. 1, and relieves the owner or operator of a waste tire facility of the possibility of being prosecuted for operating without a permit. However, in allowing continued operation it is also reasonable to require facilities to comply with basic facility standards to ensure protection of human health, natural resources and the environment during the period of provisional status. Further, it is unlikely that waste tire facility owners and operators will be able to comply with all of the requirements of Minn. Rules pts. 7035.8200 to 7035.8590 when the rules become effective. Thus, providing for a period of provisional status is reasonable and needed to avoid administrative difficulties, and to provide for a smooth transition to full regulation.

When requested by the director, the owner or operator of a facility with provisional status shall submit a permit application within the time period specified in Minn. Rules pt. 7001.4060. This is reasonable because it allows the Agency to control the number of applications being reviewed, and should prevent unnecessary delay of application review caused by lack of staff.

Subp. 2. Qualifying for provisional status. Subp. 2 requires facility owners or operators to submit a signed, written notification within 90 days of the effective date of this rule in order to qualify for provisional status. This notification is to contain the information required under Minn. Rules pt. 7001.4035 and some additional information regarding compliance with the locational standards and efforts taken to provide fire protection. Requiring the owner or operator to submit this information is reasonable because

it enables the Agency to determine whether the facility is in compliance with the locational standards and fire prevention standards. Such compliance is needed to ensure that waste tires accepted at the facility after the effective date of these rules are properly stored to prevent adverse effects on human health, natural resources and the environment due to fire.

Subp. 3. Termination of provisional status by permitting or closure. Subp. 3 provides that provisional status terminates when a permit is issued for the facility or when closure is completed. Since provisional status means that the owner or operator is deemed to be in compliance with the requirement to obtain a permit, it is reasonable to terminate provisional status when final action is taken on the permit. It is also reasonable to terminate provisional status when closure of the facility is completed and certified, as the facility no longer exists.

Subp. 4. Termination of provisional status for cause. Subp. 4 sets forth the reasons for the director to commence proceedings to terminate provisional status.

Item A provides for termination of provisional status if the director discovers that the owner or operator of the facility has failed to fully disclose all the information required under subp. 2 or has submitted false or misleading information to the Agency or the director. Because eligibility for provisional status is based on the information submitted in the notification, it is reasonable to terminate provisional status if the required information was not submitted, or incorrect information was submitted.

Item B provides for termination of provisional status if the facility is

not in compliance with the locational standards. Because compliance with the locational standards is critical to finding that the facility can operate without threat to human health, it is reasonable to terminate provisional status if the facility is not in compliance with these standards.

Item C provides that the director can commence proceedings to terminate provisional status if the facility is in violation of the standards for existing facilities. This is reasonable because a facility that is not in compliance with the standards is potentially a threat to the environment, and should be permitted with a compliance schedule or closed.

Item D provides that the director can commence proceedings to terminate provisional status if the owner and operator fail to submit a permit application within the required time limits. Provisional status is not intended to substitute for permitted status. Rather, it exists as a means of implementing a permitting program while minimizing administrative disruption. Thus, it is reasonable to end provisional status when a permit application has been requested and has not been received.

Item E provides that the director can commence proceedings to terminate provisional status if the director discovers that the facility is a threat to human health and the environment due to the activities conducted at the facility. This provision allows the director to terminate the operation of a facility that is a threat to human health and the environment without requesting a permit application be submitted. The owner or operator of a facility with provisional status terminated under this section would be required to close the facility in accordance with the closure standards.

7. Minn. Rules Pt. 7001.4050 Designation of Permittee.

This part specifies that all owners and operators of the waste tire facility will be designated as co-permittees when a waste tire facility permit is issued by the agency. It is reasonable to require that all owners and operators be permittees to ensure that all who have control over the facility are directly responsible for compliance with the permit and rules. Permitting only facility operators would not be reasonable, because it would allow absentee owners to escape responsibility for use of their land. Similarly, permitting only facility owners would not place responsibility on those with day to day control responsibilities. Further, statutory provisions, such as those contained in Minn. Stat. § 116.07 subds. 4g and 4h apply to both facility owners and operators. Insofar as this rule interprets those statutory provisions, it is reasonable that all owners and operators fall within its scope.

8. Minn. Rules Pt. 7001.4060 Waste Tire Facility Permit Application Procedures.

Subp. 1. Form. Subp. 1 describes the application requirements for new and existing waste tire facilities. This part provides for the submission of a general permit application, and additional application information specific to the facility that is the subject of the application. A reference is given to additional application information requirements specific to facility types so that the applicant will be alerted that additional information may be required.

Subp. 2. Copies required. Subp. 2 requires four copies of the complete permit application to be submitted to the director. Four copies are required because two copies of the permit application will remain at the Agency's central

office, one copy of the application will be returned to the permittee, and one copy will be sent to the applicable Agency regional office.

Subp. 3. Time of submittal. Subp. 3 establishes when permit applications must be filed.

Item A applies to new facilities. A person who proposes to construct a new waste tire facility must submit a permit application at least 180 days before the planned date for beginning construction or the planned activity, whichever is earlier. The requirement is reasonable because the Agency needs time to review the application, to confer with the applicant regarding conditions and time schedules to be included in the permit, and to put the proposed permit on public notice and consider comments, and hearing and public informational meeting requests received. As indicated by the words "at least" the 180-day period is considered to be the minimum time needed to process a permit application. It is to the applicant's advantage to submit the application as soon as possible before the expected date of commencement of construction or the planned activity, to allow for unexpected delays in permit issuance, such as a hearing request.

Item B applies to existing facilities. It provides that the permit application can be submitted at any time after the effective date of the rules, except that upon the written request of the director, the permit application must be submitted no later than 90 days from the date of the request. Because the information required for the permit application is not complex, 90 days is a reasonable time period for requiring the preparation and submittal of an application.

Item C governs applications for reissuance of an existing permit. The time of application submittal for reissuance of existing permits is governed by pt. 7001.0040, subp. 3 except that the director may allow an application to be submitted less than 180 days before the expiration of the existing permit if the applicant receives written approval from the director. In allowing a reissuance application to be submitted less than 180 days before the expiration of the permit, the Agency recognizes that review and approval of an application from an existing permitted facility should be faster, and that thus allowing a variance from the 180 day rule is reasonable.

Subp. 4. Certification of permit applications and permit reports. Subp. 4 requires the applicant to certify the truth and accuracy of the information in the permit application as required by pt. 7001.0070. This subpart also provides that if required by Minn. Stat. § 326.03 a professional engineer registered in Minnesota must certify all technical documents required to be submitted as part of a permit application or by permit conditions. Requiring such certification is reasonable because that certification is presently required of all permit applicants under the Agency's existing rules, and is intended to ensure the accuracy of the information submitted.

9. Minn. Rules Pt. 7001.4070 General Information Requirements for a Permit Application.

This part specifies the information that must be submitted with all waste tire facility permit applications.

Subp. 1. Scope. Subp. 1 specifies the information that must be submitted for both new and existing waste tire facilities. Through cross-references, it

alerts the applicant that the applicable information of pts. 7001.4080, 7001.4090, 7001.4100 must also be submitted. The applicant is required to address both existing and proposed operations, structures, and conditions when completing the permit application.

The information required by the Agency in this part and pts. 7001.4080, 7001.4090, and 7001.4100 is needed to provide the Agency with information adequate to allow the Agency to determine whether to issue or deny a waste tire facility permit. Information on the facility's location, design, construction, and operation will serve both to allow the Agency to evaluate the facility's environmental impact and to provide a basis for the conditions in the permit. It is reasonable to require the submission of this information, because the information that must be submitted is needed to evaluate whether the technical standards of Minn. Rules pts. 7035.8200 to 7035.8710 can be met.

Subp. 2. General facility information. Subp. 2 requires the permit application to contain the information required under pt. 7001.0050, except item G. Item G is excluded because an environmental impact statement is currently not required to be prepared for waste tire facilities. The other information required under pt. 7001.0050 is standard background information needed to identify the applicants and the facility application that is sought. In addition to this general background information, this subpart also requires the applicant to indicate whether the facility to be permitted is new or existing, and whether the application is an initial or amended application. This information is reasonable because it is needed to enable the Agency to gather information on the regulatory history of the facility.

Subp. 3. Description of facility operation. Subp. 3 requires the applicant to describe the location and operation of the facility.

Item A is needed for the Agency to understand the basic operation of the facility. This information is reasonable because it will enable the Agency to judge the risk posed by the facility to human health and the environment, and how the facility should be regulated.

Item B is needed for the director to establish limits in the permit on the number of waste tires that will be maintained at the facility. Item C will enable the director to determine, based on the number of tires indicated in item B, that the storage requirements can be met. Since compliance with pt. 7035.8240, subp. 3, items D, F, and G is one of the conditions for issuance of a permit, it is reasonable to require the submission of information sufficient to allow the Agency to determine whether the facility will operate in compliance with these standards.

Item D requires the submission of a description of the present use of the land at the site of the facility and within a one-quarter mile radius of the facility. This information is needed to determine compliance with locational standards, and to evaluate the risk posed by the facility to neighboring land users. This information will allow the Agency to ensure that the facility does not become a nuisance. Requiring the applicant to provide the names of the adjacent landowners, along with their addresses, is reasonable because in an emergency at the facility such as a fire these individuals would need to be notified.

Item E requires submission of a description of the access roads to the

facility, including weight or other use restrictions. Requiring information on road conditions and capacities is reasonable because this information is necessary to determine whether the roads are adequate for the types of vehicles expected to use the facility. If the roads are not adequate, improvements may need to be made or limits may be placed in the permit on the types of vehicles that can use the facility.

Item F requires the submission of a description of surface water drainage, the slope of the land and the soil composition. Requiring this information is reasonable because a fire at the facility could produce run-off contaminated with substances generated from burning tires. The migration of these substances would be determined by the slope of the land, its soil composition and drainage. This information will allow the Agency to create permit conditions to minimize this hazard.

Item G requires a description of the location of the facility and a demonstration of compliance with the locational standards of pt. 7035.8240, subp. 2. It is reasonable to require locational information to determine whether the facility is in compliance with these standards.

Item H requires a description of the type, size, condition, and availability of the equipment needed for operation and emergency response at the facility, and the function of each piece of equipment described. Information on the equipment intended for use at the facility will allow the Agency to evaluate whether the facility has sufficient equipment for proper operation and emergency response.

Item I requires a description of the security procedures and the location

of fences, gates, and other access control measures. This information is required to help the Agency determine facility compliance with the access control requirements of pt. 7035.8240, subp. 3, item B. Based on this information, special conditions needed to ensure facility security could be included in the permit.

Item J requires a description of the facility's relationship to the applicable county solid waste management plan, and of the area to be served by the facility. It is reasonable to require this information be included in the application because the operation of the facility will be affected by county waste tire management plans. The information is also needed to determine if estimated tire volumes will be accurate.

Item K requires a submission of the description of the expected operating life of the facility and how this number was calculated. It is reasonable to require that this information be submitted for two reasons. First, it will enable the Agency to ascertain the size of the future waste tire management problem in the State. Second, this information is needed so that the Agency can use it to judge the accuracy of the closure plan submitted in compliance with pts. 7035.8250 and 7035.8260.

Subp. 4. Topographic map. Subp. 4 requires the submission of certain information on the topographic map submitted under subp. 2. A scale of 1 inch equals 200 feet is required. This scale is needed to ensure that the map is sufficiently detailed to show details accurately. Similarly, items A and B of this subpart are needed to enable accurate interpretation.

Item C requires the identification of all wetlands, floodplains,

shorelands, and surface waters, including permanent and intermittent streams and wetlands. It is reasonable for the map to show these areas because they are environmentally sensitive areas, that could be adversely impacted by the operation of a waste tire facility. They are also areas in which the facility may not be located.

Item D requires the map to display information on legal boundaries, land ownership, township, range, and section numbers, easements, and right-of-ways. This information is required so that the exact location of the facility can be determined. Based on this information, the Agency may determine the units of government that would have jurisdiction over the facility. These local governmental units would be recipients of public notices, as required in pt. 7001.4110.

Item E requires an identification of both operating and abandoned wells. This information is needed because these wells are potentially available for sampling, should a fire result in contamination from the facility.

Item F requires an identification of all occupied dwellings. This information is needed so that, in the event of an emergency, emergency response personnel and the Agency would know where people are likely to be present.

Item G requires the map to show contours. Contours are needed for determining surface water flow in and adjacent to the facility. This information will enable the Agency to determine where run-off from the facility will go.

Subp. 5. Development map. Subp. 5 requires the submission of a development map. It is reasonable to require a development map be submitted

since this drawing will provide the Agency with a detailed description of the facility that will enable the Agency to ensure that the facility can operate as proposed.

Items A, B, C, and D require the map to show various elements of facility design: the location of all waste tire storage areas and fire lanes, all structures and buildings at the facility, loading and unloading areas, and access and internal roads. During the permitting process, these features will be evaluated to ensure that the facility will be able to operate in compliance with the technical standards, and as designed.

Item E requires an identification of the run-off control measures, and ditches and dikes that are used at the facility. These structures will ensure that contaminated run-off will be controlled in the event of a fire. Thus, the requirement that the development map show these structures is reasonable to ensure proper design.

Item F requires the map to show the area used for collection, storage, or processing of waste tires, tire-derived products and residuals from processing. The total land area in square feet that will be used for storage of waste tires, tire-derived products, and residuals from processing must be shown. This information will allow the Agency to evaluate the operation of the facility specifically with regard to the material (waste tires, tire-derived products, and residuals from processing) that will be passing through the facility. This information will allow the Agency to ensure that adequate area has been allocated to the various functions.

Item G requires an identification of the location of water supplies. This

information is needed to ensure that the location of available water is known in case of a fire at the facility.

Subp. 6. Floodplains. Subp. 6 establishes special facility conditions for existing facilities located in 100-year floodplains. For facilities located in the floodplain, the applicant must describe the procedures that will be taken to remove waste tires and tire-derived products to safety before the facility is flooded. This information is necessary for determining compliance with pt. 7035.8240, subp. 2.

The Agency recognizes that some existing facilities are located in 100-year floodplains. Rather than require these facilities to close or relocate, the Agency developed the option of allowing the applicants to demonstrate that the facility could be operated in the floodplain such that the tires would not be subject to immersion. It is reasonable to allow applicants this option in recognition that, in the case of a small facility in the 100-year floodplain area, the danger of immersion is minimal.

Item A requires an identification of when the removal will occur relative to the flood levels. This is reasonable since the waste tires and tire-derived products must be removed before the facility is flooded.

Item B requires an identification of the location of the facility or facilities where the waste tires and tire-derived products will be taken. These facilities must be able to receive the waste tires and tire-derived products in accordance with pts. 7001.4000 to 7001.4150, and pts. 7035.8200 to 7035.8710. It is reasonable to require this information in the permit application to allow verification.

Item C requires an identification of the procedures, equipment, and personnel that will be used and how these resources will be made available when needed. It is reasonable to require this information in the permit application so that the Agency can verify that the removal plan is feasible.

Subp. 7. Closure. Subp. 7 requires the submission of the closure plan required by pt. 7035.8250. Requiring the submission of the closure plan with the permit is reasonable as compliance with the closure plan will be required under the permit. It is also reasonable to require the submission because the closure plan provides the basis for the cost estimate required under pt. 7035.8430, and will be needed by the Agency to verify that cost estimate.

10. Minn. Rules Pt. 7001.4080 Additional Application Information Required for Waste Tire Transfer Facilities.

This part sets out the information that is to be included in the permit application submitted for waste tire transfer facilities, in addition to the general permit application information.

Item A requires that the types of vehicles intended to use the facility be identified. This requirement is reasonable because this information is necessary to determine if the facility design and road conditions are adequate. If the facility design or roads are not adequate, improvements or changes may need to be required or limits on use placed in the permit.

Item B requires the applicant to demonstrate compliance with Minn. Rules pt. 7035.8270, subp. 2. This part requires waste tire transfer facilities to limit the quantity of waste tires stored at the facility to 10,000 passenger tires or the equivalent weight of other waste tires. Only a waste tire transfer facility

that can demonstrate that it can meet the standards established in pt. 7035.8270, subp. 2 will be permitted as a waste tire transfer facility.

Item C requires the applicant to identify the type of storage that will be present at the facility, and item D requires the applicant to provide information on the total storage capacity of the facility. This information is needed to assess whether the storage capacity is adequate.

11. Minn. Rules Pt. 7001.4090 Additional Application Information Required for Waste Tire Processing Facilities.

This part establishes the information that is to be included in the permit application for waste tire processing facilities.

Item A requires information on the quantity and type of tire-derived products and residuals from processing stored at the facility, and how they are being stored. Information on the types and quantities of tire-derived products and residuals from processing must be known in order for the Agency to assess the facility's potential to affect human health and the environment. In addition, this information is needed to determine if the facility can be operated in compliance with pt. 7035.8270, subp. 3, which requires that 75 percent of waste tires and tire-derived products stored at the facility be processed and removed each year.

Items B and C require submission of information on the waste tire processing processes and procedures used at the facility, and the processing capacity of the facility. Information on the processes and procedures utilized must be known for the Agency to assess the facility's potential to affect human health and the environment. In addition, processing capacity directly affects

the facility's ability to comply with the 75 percent annual processing requirement. Thus, this information is needed so that the Agency can assess whether that standard can be met.

Item D requires the applicant to explain how compliance with pt. 7035.8270, subp. 3, item B, the 75 percent annual processing requirement, will be achieved. This requirement is reasonable as it will enable the Agency to consider the applicant's opinion when ascertaining whether the facility can qualify for permitting as a waste tire processing facility.

Item E requires the submittal of information on how residuals from processing will be disposed. It is reasonable to require information on how residuals from processing will be managed to ensure that the facility will use proper disposal methods, that minimize adverse affects to human health and the environment.

Item F requires that information on markets for the tire-derived products produced at the facility be included in the application. This information is needed for the Agency to evaluate whether the facility will be able to comply with pt. 7035.8270, subp. 3, item B.

Item G requires the submission of the emergency preparedness manual required by pt. 7035.8280, subp. 3. This manual establishes procedures that will be followed at the facility in an emergency. Because this manual will be incorporated into the permit, it is reasonable to require the manual be submitted for Agency review. If the manual is inadequate or contains improper response procedures, Agency staff will be able to work with the applicant to amend the manual.

12. Minn. Rules Pt. 7001.4100 Additional Application Information Required for Waste Tire Storage Facilities.

Subp. 1. General information. Subp. 1 establishes the additional information that is to be included in the permit application for waste tire storage facilities.

Item A requires a description of the procedures that will be used to minimize or prevent mosquito breeding and rodent infestation of the waste tire stockpiles. This information is needed in order for the Agency to determine whether the facility will be operated in compliance with pt. 7035.8240, subp. 3, items H and I.

Item B requires the submission of the emergency preparedness manual required by pt. 7035.8290, subp. 2. This manual establishes procedures for responding to an emergency at the facility. Because compliance with the procedures established in this manual will be made a condition of the permit, it is reasonable to require that the manual be submitted for Agency review with the application. If the manual is inadequate or contains improper response procedures, Agency staff will be able to work with the applicant to amend the manual.

Item C requires that the contingency plan required by pt. 7035.8290, subp. 5 be included in the application. This plan establishes procedures for responding to an emergency in which a release of substances or pollutants is possible. Because compliance with this plan will be made a condition of the permit, it is reasonable to require the plan be submitted for Agency review with the application. If the plan is inadequate or contains improper management or

response procedures, Agency staff will be able to work with the applicant to amend the plan.

Item D requires the applicant to demonstrate that the facility will be operated in compliance with pt. 7035.8290, subp. 3, which limits the quantity of waste tires stored at the facilty to 500,000 passenger tires or the equivalent weight of other waste tires or tire-derived products. To be permitted, a waste tire storage facility must meet this standard. Thus, it is reasonable to require this information to be submitted with the application.

Subp. 2. Tire pile limitation exemption. The Agency recognizes that compliance with the technical requirements for tire pile dimensions may not always be feasible, and that some tire piles that violate the standard might not pose a greatly increased risk to human health and the environment. Subp. 2 enables waste tire storage facilities that cannot comply with the waste tire pile size or fire lane requirements of pt. 7035.8240, subp. 3, items F and G to avoid application of those requirements, if the owner or operator can demonstrate that compliance with the standards is not technically feasible and that alternative methods can be successfully employed to reduce the danger of fires at the facility. If the director finds that the required demonstration has been made, the director must establish alternative tire pile limitations in the permit that reduce to the maximum the risk of fire. This is reasonable because an exemption to a technical requirement can only be granted if the exemption does not pose a significant risk to human health or the environment.

Item A requires a description of the reason why the waste tire pile size or fire lane requirement(s) cannot be complied with at the facility. It would not

be reasonable for the Agency to allow a facility not to comply with the requirements unless compliance is infeasible.

Item B requires a description of the proposed alternative methods that will be used for controlling the spread of fire at the facility. It would not be reasonable for the Agency to allow a facility not to comply with the requirements unless the Agency is sure that all measures to protect human health and the environment have been taken.

Item C requires a statement from the fire authority having jurisdiction over the facility that the alternative methods that will be used for controlling the spread of fire at the facility have been approved by the authority. It is reasonable that the applicant discuss the proposed methods with the fire authority having jurisdiction over the facility and obtain approval of the proposed methods prior to submitting the information to the Agency, because it is the fire protection authority that will have to respond to a fire at the facility.

13. Minn. Rules Pt. 7001.4110. Public Notice of Preliminary Determination and Draft Permit; Public Comments.

This part broadens the public notice provisions of pt. 7001.0100, subp. 5 to require that the public notice be mailed to the governing body of each county and city or township that has jurisdiction over the waste tire facility. This expansion is reasonable because these local governmental units should be made aware that a facility will be operating in their jurisdictions, to allow for the exercise of local authority.

14. Minn. Rules Pt. 7001.4120 Terms and Conditions of Waste Tire Facility Permits.

This part establishes that a waste tire facility permit will contain all of the general conditions established in the Agency's general permit rule, Minn. Rules pt. 7001.0150. This is reasonable because those conditions establish important legal limitations on the duties and rights conveyed with the issuing of the permit. This part also builds upon pt. 7001.0150, subp. 2 by requiring that a waste tire facility permit require compliance with the technical standards. This is reasonable to ensure that the permittee will be on notice of the duty to comply with all rules and regulations, and not merely those established specifically in the permit. The rule is reasonable in that it recognizes the exemption that has been provided in pt. 7001.4100, subp. 2.

15. Minn. Rules Pt. 7001.4130 Modification of Permits; Revocation and Reissuance of Permits.

Subp. 1. Scope. Subp. 1 is reasonable in that it indicates that this part supplements existing requirements.

Subp. 2. Minor modifications. Subp. 2 establishes that the director may, upon consent of the permittee, modify a permit to change an interim compliance date if the final compliance date is not affected. Allowing the director to have this power is reasonable because, so long as the change in the compliance date has no affect on the date of ultimate compliance, it should have no impact on the environment. Requiring formal modification procedures to be followed for such changes would be administratively burdensome.

Subp. 2 also establishes that, upon consent, the director may amend a

closure plan, emergency preparedness manual or contingency plan. Allowing the modification of plans contained in permits in this manner is reasonable because it ensures that the plans can be kept up to date with changes in the operation of the facility that do not require permit modification. The technical rules require periodic update of manuals and plans; the provision allowing consensual modification assures that this updating will not be burdensome and that permits will be up-to-date.

16. Minn. Rules Pt. 7001.4140 Interaction of Permit and Abatement Rules.

This part is needed to clarify that, in an abatement action in which the tire collector has elected to operate a permitted facility after the completion of the abatement activity, that tire collector must follow the procedures established in this rule. This is reasonable because it will be necessary for the tire collector to submit the information required by this rule in order for the Agency to have the information needed to determine whether a permit can be issued for the facility, and what conditions that permit should contain.

The requirement that the owner or operator notify the director of the intent to obtain a permit is reasonable since it informs the director of the intent and enables the director to review the abatement plan with the understanding that a permit may be issued to the facility. The time limit for submittal of 90 days after the effective date of the rules or with the abatement plan, whichever is later, is reasonable since it allows the owner or operator to make the decision regarding permitting when decisions regarding abatement activities are being made. However, owners or operators who have already submitted their abatement plans are given 90 days to provide such notification.

Because the information to be submitted is minimal but does require some planning and decision making, the 90-day time limit is reasonable. Also, this time period is consistent with that allowed for notification by existing facilities under Minn. Rules pt. 7001.4035. Stipulation agreements and orders for abatement actions do not address other activities at the facility. Therefore, it is reasonable to require the owner or operator to obtain a permit for activities other than the abatement action. Such a requirement will ensure that the activities are regulated.

17. Minn. Rules Pt. 7001.4150 Transporter Application Requirements.

This part establishes the information that the Agency will require before issuing a waste tire transporter identification number.

Subp. 1. Scope. Subp. 1 references the requirement, found in pt. 7035.8710, subp. 3, that certain individuals obtain a waste tire transporter identification number.

Subp. 2. Application. Subp. 2 establishes that transporters, who are required to obtain the Agency identification number, must submit a written application to the director within 30 days of the effective date of the rule for existing transporters or 15 days before beginning to transport waste tires for new transporters. These times are reasonable because the information to be submitted is not complex. The information that must be submitted is listed in items A through E of this subpart, and consists of information that the Agency will need to know for issuing and regulating the use of the identification number.

Item A, name, address, and telephone number, is reasonable because the

Agency needs to know who will be using the identification number to prevent fraudulent use of that number.

Item B, geographical area to be served, is reasonable because knowing the area in which the number will be used will enable the Agency to prevent improper use of that number.

Item C, vehicle identification information, is reasonable because it will facilitate regulation of the use of the identification number.

Item D, where tires are to be collected and delivered, will enable the Agency to ascertain that the waste tires collected by the transporter were disposed of properly.

Item E, estimate of the quantity and type of tires to be collected, is reasonable because it will enable the Agency to ascertain approximately the number of tons of waste tires that should be disposed by the transporter.

D. Waste Tire Facility Standards, Minn. Rules Pts. 7035.8200 to 7035.8300.

The following discussion addresses the reasonableness of the proposed rules regarding waste tire facility standards on a part by part basis.

1. Minn. Rules Pt. 7035.8200 Scope.

This part, which specifies to whom the requirements of the proposed rules apply, is reasonable because it informs affected persons, the public, and other governmental units of the applicability of the proposed rules. It is reasonable to provide this information so that persons managing waste tires will know with which parts of the proposed rules they are required to comply.

2. Minn. Rules Pt. 7035.8205 Definitions.

This part contains the definitions of key words and phrases used in the

waste tire permit rules. The definitions are needed so that the rule may be subject to consistent interpretation. The definitions of person, processing, tire, tire collector, tire dump, tire processor, and waste tire reference the statutory provision where the definitions of these terms can be found. It is reasonable to include these definitions so that persons covered by these rules know where to look to find the definition of the terms used in these rules. The definitions of Agency, director, flood plain, ravine, residuals from processing, shoreland, sinkhole, tire-derived products and wetland are identical to the definitions of these terms as they are used in the Agency rules governing the abatement of waste tire dumps. It is reasonable to use the same definitions in both sets of rules since they both relate to the regulation of waste tires. To use different definitions would cause confusion for persons subject to both sets of rules. The reasonableness of the remaining definitions is set out below.

Subp. 2. Closure. A definition of closure is given to clarify what the Agency means when it requires a facility owner or operator to provide financial assurance for closure of the waste tire facility. This definition is reasonable because the Agency wants the facility owner or operator to provide for the removal of waste tires and other materials when the facility closes. The Agency is concerned that owners or operators of waste tire facilities might cease operation and leave stockpiles of waste tires and other materials at the site. The Agency wants the facility to be cleaned up when operations cease at the facility.

Subp. 4. Existing waste tire facility. The definition of existing waste tire facility is given to clarify which facilities are covered by these rules.

This definition is reasonable because it provides waste tire collectors and processors with an easily applied method of determining if their site is an existing facility. The condition that waste tires be received after November 21, 1985 is based on the distinction between the tire dump abatement program and the waste tire permitting program, which is discussed under subps. 6 and 7. The condition that the facility be in existence on the effective date of these rules is to ensure that the rules address actual facilities. By specifying a set date, the owner or operator is informed that as of that date the facility is subject to regulation. This allows the owner or operator the opportunity to avoid regulation by closing the facility and removing all waste tire materials prior to the effective date of the rules.

Subps. 6 and 7. New waste tires and old waste tires. Because these terms are unique to the waste tire permit rules, it is necessary to define them. The rules establish different levels of regulation depending on when waste tires were accepted at a site. The date of November 21, 1985 is used because that was the effective date of the waste tire dump abatement rules (emergency). Since the waste tire permitting program is designed to address ongoing generation of waste tires, it is reasonable to make a distinction between waste tires covered by the abatement program and those waste tires received after the effective date of that program which are subject to the waste tire permitting program.

Subp. 8. Operator. The definition of operator is given to clarify who is the operator of a waste tire facility. Under the waste tire permit rules, operators are co-permittees of a facility. The reference to the statutory definitions of tire collector and tire processor is provided to alert operators

to their responsibility under the statute.

Subp. 9. Owner. The definition of owner is included to alert tire collectors and tire processors as to who the Agency will consider an "owner" and thus responsible for obtaining a permit from the Agency as required by statute.

Subp. 21. Transporter. A definition of transporter is provided because this term is unique to the waste tire permit rules. The definition clarifies who is subject to certain provisions of the proposed rules, thus it is reasonable.

Subp. 23. Waste tire facility. The definition is needed to clarify a term unique to the waste tire permit rules. The definition should provide tire collectors and tire processors with an easily applied method of determining if their site is a waste tire facility, and thus subject to regulation. The definition encompasses all types of waste tire facilities. Because the definition can be easily applied, it is reasonable.

Subp. 24. Waste tire processing facility. The definition is needed to clarify a term unique to the waste tire permit rules and is also needed to distinguish the type of activity being conducted at the facility. Because the definition can easily be applied, it is reasonable.

Subp. 25. Waste tire storage facility. The definition is needed to clarify a term unique to the waste tire permit rules. The definition is also needed to distinguish the type of activity being conducted at the facility. Because the definition can easily be applied, it is reasonable.

Subp. 26. Waste tire transfer facility. The definition is needed to clarify a term unique to the waste tire permit rules. The definition is also

needed to distinguish the type of activity being conducted at the facility. Because the definition can easily be applied, it is reasonable.

3. Minn. Rules Pt. 7035.8210 Land Disposal Prohibited.

Minn. Stat. § 115A.904 prohibits the disposal of waste tires in the land. This rule extends the prohibition on land disposal to include tire-derived products, i.e., tires that are halved, quartered, or chipped. The general Agency and State policy is to minimize the dependence on land disposal of wastes. As stated under Minn. Stat. § 116D.02, subd. 2:

> In order to carry out the policy set forth in Laws, 1973, Chapter 412, it is the continuing responsibility of the state government to use all practicable means, consistent with other essential considerations of state policy, to improve and coordinate state plans, functions, programs and resources to the end that the state may: . . . conserve natural resources and minimize environmental impact by encouraging extension of product lifetime, by reducing the number of unnecessary and wasteful materials practices, and by recycling materials to conserve both materials and energy. . . .

Tires, whether whole or in pieces, are recyclable. Since public opposition to landfill sites is increasing, it is reasonable to prohibit the landfilling of waste tires in any form to encourage recycling and to maximize reduction of the amount of waste entering a landfill.

4. Minn. Rules Pt. 7035.8220 Permit Required.

This part explains that an Agency permit is required to establish, construct, modify, own, or operate a waste tire facility. Minn. Rules pts. 7001.4000 to 7001.4150 should be used as a reference to inform affected persons, the public, and other governmental units of who is responsible for obtaining a permit and the procedures that must be followed to obtain an Agency permit. Minn. Rules pts. 7001.4000 to 7001.4150 will also explain who is excluded from

coverage or subject to only limited provisions of these rules. It is reasonable to provide this information in this part so that facility owners or operators covered by this rule will know if they are required to meet the standards contained in these rules before proceeding to the remaining text of the rules.

5. Minn. Rules Pt. 7035.8230 Rule Conflicts.

This part states that even though a person has met the obligation imposed by the Agency rules, that person must still comply with all other federal, State, or local rules that regulate how the facility will operate. This is reasonable since the Agency does not control the regulatory operations of other forms of government.

This part also states that in the event the Agency rules conflict with other rules, the more stringent provisions shall apply. This is reasonable because it clarifies which provisions apply and eliminates the need to amend the rule if conflicts should occur.

6. Minn. Rules Pt. 7035.8240 General Standards for Permitted Facilities.

This part contains the general standards that apply to all waste tire transfer, processing, and storage facilities. This part contains basic performance standards and relevant technical factors that relate to those performance standards. This part also references the criteria that the Agency will use in determining if a facility qualifies for regulation as a waste tire transfer, processing, or storage facility. The reasonableness of these standards is set out below.

Subp. 1. Scope. This subpart specifies that permitted waste tire facilities are regulated under this part. The Agency believes it is reasonable

to clearly specify to whom the requirements apply so that facility owners and operators will know what is required of them.

Subp. 2. Location of facility. The requirements set forth in this subpart ensure that the waste tire facility will not be located in an area unsuitable for the storage of waste tires or where the storage of waste tires could cause damage to the environment. The main concern is that the waste tire facility not be subject to flooding and that the waste tires will not be subject to immersion in water. If immersed in water, waste tires may become mosquito breeding grounds. Also, if a waste tire facility becomes immersed in water, it will become difficult to perform the operations necessary for the facility to function. Sinkholes, shorelands, ravines, and wetlands are environmentally sensitive areas. Therefore, it is reasonable for the Agency to require that waste tire facilities not be located in these areas.

Under the proposed rule an existing facility may continue to be located in a floodplain if during the permitting process the owner or operator demonstrates that technologies used at the facility will prevent the immersion of waste tires and tire-derived products in water. Since the proposed rule requires that the owner or operator manage the facility in a manner protective of the environment and address the Agency's concerns regarding immersion of waste tires in water, it is reasonable to provide an exemption for existing facilities.

Subp. 3. Operation. Subp. 3 of this part is divided into items A to J which set out the minimal operational standards that must be met at a permitted waste tire facility. The standards set forth in this subpart are designed to ensure that a waste tire facility is operated in an environmentally sound

manner.

Item A (burning prohibited) is needed to reduce the danger of fire at a waste tire facility. By restricting the use of open flames within 50 feet of a tire pile, the danger of accidental fire should be reduced. Due to the environmental damage which could result from a fire at the facility it is reasonable to restrict activities which could cause a fire.

Item B (access control) requires that the approach and access road to the facility be maintained to ensure that emergency vehicles have access to the site. Access to the facility must be controlled to ensure that illegal dumpers or other persons cannot reach the site when it is not in operation. Since the owner or operator is required to operate the facility in a manner protective of human health, natural resources and the environment and in compliance with the proposed rules, it is reasonable to require access control to ensure that unauthorized persons are not allowed to enter the facility and cause noncompliance with the rules. Also, considering the environmental damage which could result from a fire at the facility, it is reasonable to ensure that emergency vehicles can get to the facility in case of fire and to control access in order to reduce the risk of a fire at the facility.

Item C (attendant on duty) is needed to ensure that there is a person available to conduct the operations necessary for the facility to operate.

Item D (storage area) requires a specific area to be designated at the facility for storage of waste tires and tire-derived products. This area must be maintained free of vegetation. First, it is reasonable that a specific area be designated for storage because a waste tire facility may be part of a solid

waste facility or a recycling center. Since waste tires need to be handled differently than other solid waste, it is reasonable that the waste tires be segregated. Also, the purpose of this item is to make it easier to combat an emergency occurring at the waste tire facility by limiting the waste materials that emergency personnel will have to manage in the event of an emergency. Dry vegetation would allow a small fire to spread rapidly through the waste tire stockpile area thus increasing the possibility of a large waste tire fire occurring. Therefore, it is reasonable to require the storage area be maintained free of vegetation in order to reduce the risk of fire at the facility.

Item E (indoor storage) is needed to minimize the hazards posed by the storage of waste tires indoors. The standard referenced in this subpart is used in all areas of the United States and is generally accepted by fire protection agencies. Therefore, to promote consistency, it is reasonable to utilize nationally acceptable standards governing the indoor storage of waste tires. See Exhibit 17.

Items F and G (tire pile limitation and fire lane) set forth standards that will ensure that the danger posed by a fire at a waste tire facility is minimized. These items establish that the permittee shall construct waste tire stockpiles and fire lanes that meet the following requirements. Tire piles must have an area not greater than 10,000 square feet and a vertical height not greater than 20 feet. A minimum 50-foot fire lane between the stockpiles must be created and maintained free of rubbish, and vegetation at all times. Access to the fire lane for emergency vehicles must also be unobstructed at all times.

Tire pile size limitations and the requirement that fire lanes be maintained are fire protection agency accepted methods of limiting the spread of fires. The tire pile size limitations and the fire lane requirements are identical to those used in the Agency rules governing the abatement of waste tire dumps. These requirements are reasonable because they are accepted in other jurisdictions and are needed to enable fire fighters to work efficiently.

Connecticut and New Hampshire have guidelines that tire stockpiles cannot exceed a 100 x 100 foot area. In addition, Connecticut requires a 50-foot fire lane between the piles, and restricts tire pile height to 20 feet.

Two other states which have guidelines for tire stockpiles are New York and Washington. New York requires that tires cannot be stacked higher than ten feet. Washington has proposed that individual stockpiles cannot be greater than one-half acre in size with fire lanes proportionate to the height.

The Minneapolis Fire Prevention Bureau investigates fire hazards as they become aware of them. The only requirement of the Minneapolis Fire Prevention Bureau is to have at least a 20-foot fire lane between tire piles. A 20-foot fire lane would allow enough space for emergency equipment to enter the area. However, the lane would not be wide enough to prevent the fire from spreading to adjacent piles due to the heat generated from the burning tires. Further, a 20-foot fire lane only allows for one direction of travel. The Minnesota Fire Marshal's Office suggested that the use of both portable and stationary equipment to develop a "water curtain" between the piles is needed to absorb heat. A 50-foot fire lane is needed for this equipment. This action may help to contain a fire to a single pile.

Since a solid stream of water can be sprayed 100 feet, the tire pile size limitation is needed so that water needed to dissipate heat can reach all parts of the tire pile. Even though a solid stream of water does not dissipate much heat, the tire pile size proposed is reasonable because there is also equipment available that can reach 65 to 110 feet both vertically and horizontally.

The height of the tire stockpile is definitely a factor when fighting a fire. If the stockpile is high, the fire will burn like a chimney and spread upward and outward, faster and hotter. The Minneapolis Fire Prevention Code, Article 173, section 27.203 restricts tire pile height to 20 feet. Tire fires are hard to fight because tires are basically waterproof. A high stockpile further complicates matters because water cannot reach the tires to cool them down adequately. Therefore, it is reasonable to restrict tire pile height to 20 feet.

Items H and I (mosquito control and rodent control) are needed to ensure that waste tire stockpiles are maintained free of mosquitoes and rodents. Due to health concerns regarding mosquitoes and rodents, it is reasonable to require controls.

Item J (surface water drainage) is necessary to ensure that surface water run-on is diverted from the waste tire storage area to reduce the collection of rainwater in the waste tires. Since waste tires immersed in water may become mosquito breeding grounds, it is reasonable to require surface water run-on to be diverted from the waste tire storage area.

Subp. 4. Transfer of ownership or operation. Subp. 4 requires the permittee of a waste tire facility to notify the Agency prior to transferring

ownership or operation of a facility. This requirement is reasonable since no ownership or operation transfer may occur without a permit modification as required in Minn. Rules pt. 7001.0190, subp. 2. It is also reasonable for the facility to be in compliance with all Agency rules prior to transfer. Since the waste tire facility owner or operator is required to be in compliance with the rules or on a schedule of compliance when the permit is issued, it is reasonable to require compliance with the rules at the time of permit transfer. This will ensure that the new owner or operator is in compliance with the rules when the permit transfer occurs.

This subpart also requires a permittee to notify the new owner or operator of the applicability of the waste tire permit rules before transferring ownership or operation. This requirement is included to minimize the possibility that an unsuspecting buyer may purchase a facility not knowing that this purchase entails his having to comply with these rules.

Subp. 5. Annual report. Subp. 5 requires the permittee of a waste tire facility to submit an annual report to the director. This subpart is needed to allow the permittee and the director to evaluate the facility's compliance with the other requirements of this rule.

Items A and B are needed so that the director can distinguish which permittee and facility are covered by the annual report.

Items C, D, and E are needed so that the director and permittee can ensure that the stockpile size restrictions for the facility are being met. The documentation of the quantity of tires received, shipped, and stored at a facility is essential especially if the facility is a processor and subject to

the 75 percent annual processing requirement of pt. 7035.8270, subp. 3.

It is also necessary to document the types of tires received because of the special handling requirements that truck, heavy equipment, and off-the-road tires require. Also, truck and heavy equipment tires will need more storage space, and the design of the facility may have to be adjusted accordingly. Also, shredders are not usually equipped to process tires other than passenger tires. Thus, the tire collector will have to demonstrate that there is an end-use for the tires.

It is necessary to document the quantity and type of tires shipped from the facility so that the director can ensure that the facility is meeting the storage pile limitations set out in pt. 7035.8270, subps. 2 or 3.

Items F, G, and H regarding receipt, shipment, and removal of waste tires at the facility are needed to verify compliance with the storage and processing requirements of pts. 7035.8240, subp. 3, and 7035.8270, subps. 2 and 3. Also, the information regarding transporter identification numbers is needed to verify compliance with pts. 7035.8700 and 7035.8710 regarding the transportation of waste tires and the shipment of waste tires to acceptable waste tire facilities. It is reasonable to require such information in order for the Agency to determine facility compliance with applicable rules.

Item I regarding the most recent closure cost estimate is needed to ensure that the closure cost estimate has been updated as required by pt. 7035.8480. Also, the Agency needs to know the most recent closure cost estimate to verify that sufficient financial assurance is provided for the facility. It is reasonable to require such information in order to verify compliance with the applicable rules.

7. Minn. Rules Pt. 7035.8250 Closure.

This part sets out the standards applicable to the closure of all waste tire facilities. The objective of this part is to require facilities to close in the manner necessary to protect human health and the environment.

Subp. 1. Closure conditions. Subp. 1 sets forth the standards that outline when closure of a facility occurs. It is reasonable to include this provision so that the Agency, and persons covered by this rule know the conditions under which closure of a facility will occur.

Subp. 1 of this part also requires the owner or operator of the facility to cease accepting waste tires and to immediately close the facility if any of the conditions established in this subpart exist. Additionally, this subpart requires that the facility be closed in compliance with any special closure conditions established in the permit, this part, and pt. 7035.8260 which specifies the actions that must be taken and the procedures that must be followed if closure occurs. The closure procedures are necessary to ensure the facility is closed so that human health and the environment are protected. It is also reasonable to have general closure procedures and standards that apply to all facilities because there are activities which need to be conducted at the time of closure at all facilities, and owners or operators should be made aware of them in the rules. Specific closure standards that are established in the permit and apply to each facility's type of operation are reasonable in order to address specific conditions that exist at a particular facility.

Item A acknowledges that the owner or operator may elect to close a facility at any time. This is reasonable since there is no obligation on the

owner or operator to continue business once a decision is made to close the facility.

Item B is necessary since the financial assurance requirements of pts. 7035.8400 to 7035.8590 require owners or operators to maintain financial assurance for closure of the facility. The financial assurance mechanisms are set up to require closure or funds for closure if certain events occur. One of these events is failure to provide alternate financial assurance when required to do so. This closure provision is reasonable since it is consistent with the requirements of pts. 7035.8400 to 7035.8590 and clearly informs the owner or operator of the duty to close.

Items C and D are based on the status of the facility's permit from the Agency. Item C applies if the permit expires and the permittee does not apply for renewal of the permit, or the permit is applied for and denied. Item D applies if the permit is revoked without reissuance. Since a facility owner or operator is required to obtain a permit in order to operate the facility, it is reasonable to require closure of the facility once the facility no longer has the necessary permit.

Items E and F apply when direct enforcement actions are taken by the Agency. These provisions are reasonable since a facility that endangers human health and the environment will not be allowed to operate. It is reasonable to include these provisions under the closure conditions in order to inform owners and operators that if such action is taken by the Agency, the facility is to be closed in accordance with the procedures and standards specified in the rules and the permit.

Item G requires a facility that has not received or shipped tires in a continuous six-month period to close. The Agency believes this is reasonable in order to address the concern that a facility could cease operation without any assurance that the facility would resume in the future, thus avoiding the requirement that the facility be properly closed. It is reasonable to require that if operations cease the facility should then close. The Agency does recognize that there may be times when operation of the facility will cease for a short period of time due to equipment failure, lack of tires, or other situations. The Agency believes that a six month period is sufficient to address such situations.

Subp. 2. Submittal of closure plan. Subp. 2 is needed to ensure that all waste tire facilities close in the manner necessary to protect human health and the environment. The Agency believes that to accomplish this objective, it is necessary that facilities plan in advance of closure the manner in which they will remove waste tires, tire-derived products and residuals from processing from the facility. Therefore, facility owners and operators are required to prepare and submit a closure plan to the director for review and approval.

It is reasonable to require a closure plan from facilities that manage waste tires because preplanning is essential in estimating the type and quantity of waste tires, tire-derived products and residuals from processing that must be properly utilized or disposed of at the appropriate facility at the time of closure. Without adequate planning, waste tires may be left at facilities for long periods of time thereby increasing the chances for damage to human health and the environment. The closure plan provides the Agency with an opportunity

to prevent any damage to human health and the environment which might occur from facilities that did not plan ahead for the inventories of waste tires and tire-derived products which would be present at closure and how proper removal of these waste tires and tire-derived products should take place.

Subp. 3. Contents of closure plan. Subp. 3 requires a copy of the closure plan to be retained at the facility until closure is completed and certified by the facility owner or operator. Since the owner or operator will have to follow the closure plan in order to properly perform closure, it is reasonable that a copy of the closure plan be maintained at the facility.

In order for the Agency to approve a closure plan, the plan must identify steps needed to close the facility at any point during its intended operating life, and to completely close the facility at the end of its operating life. To make this evaluation, the Agency needs to know how and when the facility will be closed, the ultimate disposition of the waste tires, and tire-derived products, and an estimate of the maximum inventory of waste tires, and tire-derived products in storage at any time during the life of the facility. The Agency also needs to know the cost estimate for closure of the facility, and the schedule for the closure procedures of pt. 7035.8260 to ensure that adequate funds for closure will be available and that closure will be done in compliance with the requirements of pt. 7035.8260. It is reasonable to require such information so that the Agency will be able to review and approve the plan to ensure that closure activities will take place in a timely manner and will close the facility in a manner protective of human health, natural resources, and the environment.

Subp. 4. Amendment of plan. Subp. 4 is needed to ensure that the closure plan can be amended if the owner or operator determines it is necessary. It also requires that the plan be amended if changes in the operating plan or facility design affect the closure procedures, or if the expected year of closure changes. These requirements are reasonable because the circumstances affecting the facility may change during the life of the facility, and a provision is needed in the rule to allow for this change to be made. The amended plan must be submitted to the director for review and approval. Since the Agency is responsible for reviewing and approving the initial plan, it is reasonable that amendments to the plan also be subject to review and approval to ensure that such amendments provide for proper and timely closure of the facility.

8. Minn. Rules Pt. 7035.8260 Closure Procedures.

This part sets out the procedures necessary to close a waste tire facility in a manner protective of human health, natural resources and the environment.

Subp. 1. Time allowance to complete closure activities. Subp. 1 establishes the time limit for completion of closure activities at a facility and the procedures for extension of this time limit. This subpart requires that all facility closure activities required by this part must be completed within 90 days after closure of the facility must begin under pt. 7035.8250. Additional procedures must be completed as specified in the approved closure plan. It is reasonable to place time constraints on the completion of closure activities since the longer a facility is left unattended, the greater the possibility of damage to human health and the environment. Also, due to the

financial assurance requirements of pts. 7035.8400 to 7035.8590, it is reasonable to have time constraints so that there is a defined time period during which the owner or operator must complete closure so that if the owner or operator fails to comply the director may gain access to the funds.

This subpart also provides for additional closure procedures to be established during the permitting process. This is reasonable since each facility's operation will be different, and it is essential that a provision be included in this part to allow for closure requirements specific to each facility to be included in the approved closure plan.

Subp. 1 also includes provisions for extending the closure time if the facility owner or operator can demonstrate why the closure activities will take longer than the allotted 90 days to complete. The owner or operator must also demonstrate that all steps have been and will continue to be taken to minimize threats to human health, natural resources and the environment. This is reasonable since it provides measures to prevent damage to human health, natural resources and the environment from unnecessary delays in closure, yet it allows for circumstances that may cause closure activities to take longer than the prescribed time.

Subp. 2. Closure procedures. Subp. 2 sets forth the procedures necessary to close the facility to protect human health, natural resources, and the environment.

Item A, which requires that public access to the facility be closed, is reasonable because during closure waste tires are not being accepted at the facility so provisions should be taken to prevent unauthorized dumping of waste

tires.

Item B requires that a gate notice be posted indicating that the facility is closed and the location of the nearest facility where waste tires can be deposited. It is reasonable to require such a notice in order to inform the public that the facility is closed and will not be accepting waste tires, and also where the tires can be taken for disposal at another facility. Such information will enable persons bringing waste tires to the facility to properly dispose of them.

Item C requires that notice of the facility's closing be given to various governmental agencies. Such notification is reasonable so that each agency which either is responsible for regulation of the facility or is concerned about the facility for fire or health reasons is informed that the facility is closing. Such notification will allow the agencies to oversee closure activities in order to ensure the facility is properly closed.

Items D, E, and F require the removal and proper disposal of solid waste, waste tires and tire-derived products from the facility. Such removal is necessary to ensure that the facility is completely cleaned up and that the materials are properly managed. Since the facility will no longer be operating, there is no need for these materials to remain at the facility site after closure. Also, one of the main purposes of the waste tire permit program is to prevent the establishment of additional tire dumps. Therefore, it is reasonable to require that all waste tire materials be removed when the facility closes.

Item G requires the owner or operator to notify the director when closure activities are completed. It is reasonable to require such notification, so

that the director will be able to inspect the facility as required by subp. 3 of this part, to ensure that closure has been completed in accordance with all applicable requirements.

Subp. 3. Certification of closure. Subp. 3 is needed to ensure that closure of the facility has been completed properly. It is reasonable that Agency staff have an opportunity to inspect the facility so that closure may be verified and to ensure that all duties of the owner or operator required by these rules and by the facility permit have been discharged. Also, due to the financial assurance requirements of pts. 7035.8400 to 7035.8590 it is reasonable to have a certification of closure so that the director will be able to release the owner or operator from the financial assurance requirements once closure has been completed.

9. Minn. Rules Pt. 7035.8270 Qualifications for Regulation as a Permitted Waste Tire Transfer or Waste Tire Processing Facility.

This part sets out the qualifications for regulation as a permitted waste tire transfer or waste tire processing facility. If a waste tire facility does not meet the requirements established in this part, the waste tire facility will be regulated as a waste tire storage facility.

Subp. 1. Scope. Subp. 1 which specifies what this part contains is reasonable because it informs persons that facilities will be regulated based on their ability to meet certain qualifications.

Subp. 2. Waste tire transfer facility qualification. Subp. 2 sets forth the standards that must be met in order to qualify for regulation as a permitted waste tire transfer facility. Under this subpart, a storage limitation is

imposed on the quantity of tires stored at the transfer facility. There are also removal requirements that must be met in order to qualify as a waste tire transfer facility.

First, the waste tire storage limitation imposed on the facility is 10,000 passenger tires or the equivalent weight of other tires. The number 10,000 was chosen by the Agency because the maximum number of tires that can be stored at a landfill pursuant to Minn. Stat. § 115A.902, subd. 2 without the owner or operator having to obtain a waste tire facility permit is 10,000 tires. Since the storage of waste tires at a transfer facility is comparable to the storage of waste tires at a permitted solid waste facility, the Agency believes it is reasonable to have the same limit of 10,000 waste tires. The Agency believes that in some cases waste tire transfer facilities will be located at permitted solid waste facilities due to the existing solid waste collection system. The Agency believes that it is reasonable to allow waste tire transfer facilities not located at a permitted solid waste facility to store the same amount of waste tires. Therefore, it is reasonable that the number 10,000 be used as the storage limitation for waste tires at waste tire transfer facilities. Considering the substantial differences in sizes between various types of tires, a standard size should be used in the rules to better address storage site limitations. Since passenger tires constitute the vast majority of waste tires, it is reasonable that passenger tires should be used as the standard, with other size tires having limitations based on an equivalent weight of passenger tires.

Second, this subpart provides that all waste tires received at the transfer facility must be shipped to a processing facility at least twice annually or in

accordance with the plan approved during the permitting process. The concept of a transfer facility is to accumulate enough tires to make it economically feasible to move the tires to an end-use facility. Therefore, waste tire transfer facilities should be allowed to accumulate a sufficient amount of waste tires to make transportation to a processing facility economical. However, in order to ensure waste tires are being accumulated for shipping purposes rather than storage, it is reasonable to require that the waste tires be shipped.

The Agency believes that it is reasonable to require shipment twice annually to address concerns regarding mosquito and rodent infestation. By shipping twice a year, waste tires will not sit at the facility for long periods of time, thus discouraging such infestation to occur. The Agency believes that requiring shipments twice a year should address infestation concerns and allow for seasonal considerations without being overly burdensome. However, the Agency does realize that there may be facility-specific situations which would require different shipment requirements. Therefore, a provision is included which allows different shipping requirements to be included in the permit as necessary to protect human health, natural resources or the environment. The Agency believes it is reasonable to address such conditions through the permitting process because at that time conditions specific to the facility can be better addressed.

Subp. 3. Waste tire processing facility qualifications. Subp. 3 sets forth the standards that must be met in order to qualify for regulation as a permitted waste tire processing facility. Under this subpart, a storage limitation is imposed on the quantity of tires stored at the processing

facility. The limit of one waste tire pile meeting the limits stated in pt. 7035.8240, subp. 3, item F of the general facility standards was chosen by the Agency due to concerns regarding fire at the facility. By limiting storage to one stockpile, the problem of a tire fire spreading throughout the facility is prevented. Since one stockpile would contain approximately 70,000 passenger tires, the Agency believes one stockpile would provide sufficient storage capacity.

In conversations held with people who are involved in waste tire processing, it was determined that surge piles at processing facilities range from none to 30,000 waste tires. Surge piles are stockpiles of waste tires which serve to offset variations in the receipt of waste tires at the facility by providing a constant supply of waste tires to the processing operation. Waste Recovery, Inc. located in Portland, Oregon has little to no accumulation of waste tires at their Portland, Oregon facility. However, at their Houston, Texas facility, they have a waste tire stockpile of 30,000 tires. Rubber Research Elastomerics of Babbitt, Minnesota has maintained that they will have little to no waste tire storage at the facility once they begin processing operations.

The Agency recognizes that a waste tire processing facility will at times accumulate waste tires. This can occur at planned times when the facility is down for maintenance or if there is a sudden influx of waste tires at the facility due to peak tire generation periods. Therefore, it is reasonable that provisions be made at the facility to stockpile tires. It is also reasonable that a limitation be placed on the quantity of tires that can be stockpiled at

the facility. Since the tire pile limits stated in pt. 7035.8240, subp. 3, item F are easily applied, and address concerns regarding the spread of fire, the Agency believes it is reasonable to limit storage to one stockpile. Also, if additional storage capacity is needed at the facility, the owner or operator may apply for a storage facility permit and comply with the storage facility standards which better address storage of more than one stockpile.

The other qualification that waste tire processing facilities must meet is that at least 75 percent of the waste tires and tire-derived products are processed and removed from the facility during the calendar year. The 75 percent annual processing requirement applies to all waste tires and tire-derived products received or produced by the facility during a calendar year. Compliance with the 75 percent annual processing requirement is determined based on the amount of waste tires and tire-derived products that remain at the facility at the beginning of the calendar year, that are received or produced at the facility during the calendar year, and that remain at the facility at the end of the calendar year. This requirement is calculated based on weight and does not apply to facilities that received an exemption under pt. 7035.8300 or who have a waste tire storage facility permit.

The 75 percent annual processing requirement is reasonable in order to prevent the facility owner or operator from accumulating waste tires and tire-derived products with the intent of storing the waste tires and tire-derived products for unknown periods of time without a storage permit at the risk of human health and the environment. Since the facility standards for processing facilities are designed to address concerns regarding processing and

incidental short-term storage, it is reasonable that if the facility owner or operator is not processing and removing sufficient amounts of waste tires and tire-derived products, then the owner or operator is operating a storage facility and should be subject to the storage facility standards and be required to obtain a storage facility permit, or an exemption under pt. 7035.8300. The required processing level of 75 percent is reasonable because it allows for facility down time due to equipment maintenance or repair or other causes, while still requiring a sufficient amount of processing to occur. The Agency believes that a 75 percent annual processing requirement is reasonable to address concerns while not being overly burdensome. Also, the rule provides that an exemption can be granted under pt. 7035.8300 if certain conditions are met. The Agency believes that it is reasonable to provide such an exemption on a case-by-case basis since the Agency will be better able to address facility specific concerns and situations through the petition process. Also, since a facility which cannot meet this processing requirement has the option of obtaining a storage facility permit and operating in compliance with the facility storage standards, it is reasonable to have such a processing requirement.

10. Minn. Rules Pt. 7035.8280 Waste Tire Processing Facility Standards.

This part sets out the standards that shall be applied to the operation of a permitted waste tire processing facility. Compliance with the specific standards of this part as well as the general standards for all waste tire facilities set out in pt. 7035.8240 is required. This part also requires that the qualifications of pt. 7035.8270 must be met in order for a facility to

qualify for regulation as a waste tire processing facility.

Subp. 1. Scope. This subpart which specifies the applicability of the standards contained in this part is reasonable because it informs persons that processing facilities must be operated in compliance with these standards.

Subp. 2. Emergency preparedness. Subp. 2 is needed to ensure that should an emergency occur at a facility, services are available to minimize adverse effects to human health and the environment. Specifically, equipment to control fires must be maintained at the facility. This is reasonable since if a fire does begin at the facility, immediate efforts to bring it under control can be taken. Such efforts may be able to prevent the fire from spreading or burning out of control. Communications equipment must be provided and maintained at the facility because should a tire fire or other emergency occur, local fire protection authorities or other emergency personnel can be quickly contacted and will respond as needed. The permittee is also required to make arrangements with the local police and fire protection authorities to acquire their services in case an emergency should occur. It is reasonable that local authorities who may have to respond to an emergency at the facility have prior knowledge of the conditions and type of operation at the facility. Then, they can estimate the potential services that will be needed at the facility, and if an emergency should occur, they will be able to respond quickly to minimize adverse effects to human health and the environment.

Subp. 3. Emergency preparedness manual. Subp. 3 requires that an emergency preparedness manual be prepared. This manual is submitted to the director along with the permit application. Once the director approves the

manual, it becomes a condition of the facility permit and must be maintained at the facility. This is reasonable since this manual is needed to ensure that the operating personnel know what to do and who to contact in the event that there is a fire or other emergency at the facility. Also, it is reasonable that the Agency review the manual to determine the adequacy of the procedures that are proposed to be followed by the owner or operator in the event of an emergency at the facility.

The emergency preparedness manual shall be updated if a change in the operations at the waste tire processing facility occurs. The director can also require an update. This is reasonable because the circumstances affecting the facility may change during the life of the permit, and the director is in the best position to respond to new information affecting the facility.

This manual should ensure that the permittee, emergency personnel, and the Agency understand the actions to be taken at the facility in the event of an emergency at the facility so that a cooperative effort may be made to successfully minimize adverse effects to human health and the environment.

Under subp. 3 of this part, items A to F set out the emergency information and procedures to be contained in the manual. It is required that the manual include a list of names and telephone numbers of persons to be contacted in the event of an emergency at the facility; the equipment available on or off-site to respond to the emergency, and a brief description as to how the equipment will be used; an assessment of the possible hazards to human health and the environment should an emergency occur; the procedures to be followed by facility personnel during an emergency; the locations of known water supplies or other

materials that may be used for fire fighting purposes; and any additional relevant information. Items A to F of this subpart are reasonable because they will enable the permittee to respond to an emergency situation in an expeditious and responsible manner. It is also reasonable that the local police and fire protection authorities be contacted by the owner or operator prior to the development of the emergency preparedness manual. Since these are the people who will be responding to an emergency at the facility, prior knowledge of the conditions and type of operation at the facility will enable them to estimate potential services needed at the facility if an emergency should occur. This should minimize adverse effects to human health and the environment should an emergency occur.

Subp. 4. Emergency procedures. Subp. 4 requires the permittee to implement the emergency procedures in the event of an emergency. Since the intent of developing emergency procedures is to inform facility personnel of what to do during an emergency, it is reasonable to require that the procedures be implemented during an emergency.

Subp. 5. Emergency notification and reports. Subp. 5 requires that the permittee notify the director in the event of a fire or other emergency. This is reasonable because Agency personnel could assist the permittee in responding to the emergency. This part also requires the permittee to submit a report regarding the emergency to the Agency director. This report is needed to enable the director to evaluate whether the emergency preparedness properly addressed the emergency and whether a change in the emergency preparedness manual is warranted.

Subp. 6. Market information. Subp. 6 requires the permittee to record a list of markets for the tire-derived products, and the form and quantity of the products shipped to market. It also requires the permittee to record the quantity of residuals produced during the processing operation, and how and where those residuals were disposed. This information is required to be included in the annual report of pt. 7035.8240, subp. 5. It is reasonable to require this information to enable the director to determine whether the permittee is properly processing and disposing of waste tires, tire-derived products and residuals from processing, and is in compliance with the 75 percent annual processing requirement of pt. 7035.8270.

11. Minn. Rules Pt. 7035.8290 Waste Tire Storage Facility Standards.

This part sets out the standards that shall be applied to the operation of a permitted waste tire storage facility. Compliance with the specific standards of this part as well as the general standards for all waste tire facilities set out in pt. 7035.8240 is required. This part also regulates all waste tire facilities that do not qualify for regulation as a waste tire transfer or waste tire processing facility.

Subp. 1. Scope. This subpart, which specifies the applicability of the standards contained in this part, is reasonable because it informs persons that storage facilities must be operated in compliance with these standards.

Subp. 2. Emergency preparedness standards. Subp. 2 requires the permittee of a waste tire storage facility to comply with the emergency preparedness standards for waste tire processing facilities set out in pt. 7035.8280, subps. 2 to 5. The reasonableness of pt. 7035.8280, subps. 2 to 5 is discussed under

section 10 and will not be repeated here.

Subp. 3. Storage limitation. Subp. 3 requires that no more than 500,000 passenger tires or the equivalent weight of other tires or tire-derived products are stored at the facility at any one time. The largest known tire dump located in the State of Minnesota during the development of these rules had a little over 500,000 waste tires stored on site. Legislation directs the Agency to develop a waste tire program which addresses the abatement of tire dumps and the permitting of waste tire collectors and processors. The Agency's abatement rules require the cleanup of tire dumps. The permitting rules address the management of waste tires not covered by the abatement rules. The Agency believes that the intent of the permitting program is to prevent the establishment of additional tire dumps, and to encourage the processing and utilization of waste tires. To that end, the Agency believes it is reasonable to place limits on the amount of waste tires stored at a facility. The Agency believes that a limit of 500,000 waste tires addresses the need to discourage the establishment of large stockpiles while not placing a burden on the regulated community. In most cases, the 500,000 waste tire limit will simply prevent new and existing facilities from accumulating large amounts of waste tires. For the few tire dumps which might have more than 500,000 waste tires, the abatement program will be addressing such storage and will require the old waste tires be cleaned up independent of the permitting program.

Also, considering the substantial differences in size between various types of tires, a standard size should be used in the rules to better address storage site requirements. Since passenger tires constitute the vast majority of waste

tires, it is reasonable that passenger tires should be used as the standard, with other size tires being converted to equivalent weights of passenger tires when determining storage limitations.

Subp. 4. Additional information. Subp. 4 requires the permittee to submit the following information in the annual report in addition to the information required by pt. 7035.8240, subp. 5. The permittee must submit information on the procedures used at the facility to minimize or prevent mosquito and rodent infestation in the waste tire stockpiles including the dates when mosquito and rodent control operations were conducted. Part 7035.8240, subp. 3 requires that mosquito and rodent control operations be conducted at the facility. It is reasonable to require such information be included in the annual report to ensure that the facility is in compliance with pt. 7035.8240, subp. 3.

This subpart also requires the permittee to include in the annual report all incidents that required implementing the contingency plan for the waste tire storage facility. It is reasonable to require such information to enable the director to review the contingency plan and determine whether changes in the contingency plan are warranted as provided in subp. 6 of this part.

Subp. 5. Contingency plan. Subp. 5 requires that a contingency plan be prepared if the facility has more than one waste tire stockpile. The contingency plan is needed to minimize the potential hazards from fires, explosions, and other conditions leading to the release of substances or pollutants. This plan provides the operating personnel with information on what to do and who to contact in the event that there is a fire or other emergency at the facility.

The contingency plan must identify the events or incidents which could cause a release, and describe the procedures to be followed in the event of a release. It is reasonable to require such information to ensure that adequate planning has been done so that if an emergency occurs which could cause a release, immediate efforts are taken to minimize contamination of soil and ground water. By increasing facility personnel's awareness of the types of emergencies which might occur and the proper response procedures, the occurrence of such emergencies can be prevented or minimized, and the emergency response time can be minimized.

The plan must also describe how and where run-off contaminated with substances discharged from the burning tires will be confined and collected, and how and where the contaminated run-off will be stored before it is treated, utilized or disposed. Since combustion reactions created during a tire fire generate a substantial amount of runoff containing pyrolytic oil (synthetic crude oil) which may contaminate ground water, it is reasonable that facilities are required to have procedures to address containment and storage of contaminated run-off.

The contingency plan must describe the emergency equipment available on-site and off-site, the response time for obtaining off-site equipment, and the function and capacity of the equipment. Such information is reasonable to ensure proper equipment is available to respond to an emergency and that facility personnel are aware of what equipment is to be used in response to an emergency.

Subp. 6. Contingency plan submittal. This subpart requires that the

contingency plan be submitted with the permit application for review and approval through the permitting process. Since the contingency plan is designed to prevent and minimize releases caused by emergencies, it is essential that procedures adequately address such emergencies. In order to ensure that the proper procedures have been developed, it is reasonable to require that the plan be reviewed and approved. Also, since the specific conditions at the facility are best addressed through the permitting process, it is reasonable to require the plan be part of the permit application. In order to protect human health, natural resources and the environment, it is reasonable to require the plan be updated to address changes at the facility or deficiencies in the plan.

Subp. 7. Contingency plan implementation. Subp. 7 requires that the contingency plan be implemented when needed to prevent, mitigate or clean up a release of substances or pollutants which threaten human health, natural resources or the environment. Since the intent of developing a contingency plan is to provide for a proper response to emergencies, it is reasonable to require that the procedures be implemented when needed.

Subp. 8. Notification of implementation of contingency plan. Subp. 8 requires that the permittee notify the director in the event the contingency plan is implemented. This is reasonable because Agency personnel could assist the permittee in responding to the emergency.

Subp. 9. Removal of contaminated soil. Subp. 9 provides that, if required by the director, any soil contaminated by substances released by an event requiring the implementation of the contingency plan must be removed. Such action shall be taken in accordance with any applicable rules governing the

removal, transportation, and disposal of such material. Requiring removal is reasonable since contaminated soil can result in ground water contamination. The director is in the best position to determine if the soil can be disposed of on-site or must be removed in order to protect human health, natural resources or the environment. Therefore, it is reasonable to have the decision made by the director.

12. Minn. Rules Pt. 7035.8300 Petition Procedures.

This part establishes the procedures for submitting a petition for an exemption from the 75 percent annual processing requirement. It also sets forth the standards and criteria to be applied in determining whether an exemption should be granted.

Subp. 1. Scope. This subpart specifies the applicability of the petition procedures. This is reasonable to inform persons of the opportunity to petition for an exemption to the 75 percent annual processing requirement.

Subp. 2. Submission of the petition. Subp. 2 allows a permittee to petition the director for an exemption from the 75 percent annual processing requirement. A permittee who fails to process and remove 75 percent of the waste tires and tire-derived products received or produced at the facility during a calendar year may petition for an exemption under this part. Minn. Rules pt. 7035.8270, subp. 3 requires a waste tire processor who does not process and remove 75 percent of the waste tires and tire-derived products received or produced over the period of a year to be regulated as a storage facility under pt. 7035.8290 and to obtain a storage facility permit. However, in certain situations, there may be valid reasons why compliance with this

requirement was not achieved. These reasons could include equipment failure, market failure, or a large influx of tires due to waste tire dump abatement activities. Under such circumstances, it may be appropriate to exempt the facility from regulation as a storage facility. Therefore, it is reasonable to have a provision which allows a permittee to petition for an exemption from the processing requirement. It is also required that the petition be submitted as soon as the permittee becomes aware that compliance with the 75 percent annual processing requirement cannot be achieved. Since noncompliance with the rules is grounds for enforcement action, it is reasonable to require the permittee to seek an exemption prior to noncompliance occurring, if at all possible. The Agency believes that in some cases the permittee will know that compliance will not be achieved prior to the end of the year due to such situations as equipment failure or marketing problems. However, in many cases the permittee will not know such noncompliance has occurred until the annual report is prepared. If this is the case, the petition may be submitted with the annual report.

Subp. 3. Information required. Subp. 3 sets forth the information that shall be included in the petition. The rule needs to specify under what conditions a petition will be granted. This is accomplished by specifying the findings the director must make in order to grant the petition. The petition must contain information sufficient to allow the director to make the findings necessary to either grant or deny the petition. Therefore, it is reasonable to require that the petition contain sufficient information to make the necessary findings.

Item A specifies that the 75 percent annual processing requirement must be

met for the year following the year for which the exemption is obtained. This is reasonable because the intent of the exemption is to address the situation where a permittee did not meet the processing requirement due to an unusual or unexpected occurrence not an ongoing problem at the facility. Since petitions are granted for a one-year period and cannot be granted for two consecutive years, the permittee of a facility which cannot meet the processing requirement the next year should be applying for a storage permit to address the situation rather than an exemption.

Item B requires that the exemption not cause the facility to be out of compliance with any other standard applicable to the facility. The exemption applies only to the 75 percent annual processing requirement. The facility is still required to comply with all other applicable standards even if the exemption is granted. Therefore, it is reasonable to require that the granting of the petition will not cause noncompliance with any other applicable requirements.

Item C requires that the exemption not cause the facility to become a hazard to human health, natural resources or the environment. Since the intent of the permitting program is to protect human health, natural resources and the environment, it is reasonable that compliance with that intent be maintained even if an exemption is granted.

The Agency believes that the type of information required to make the needed findings would include the following: the quantity of waste tires and tire-derived products present at the facility and expected to be received or produced at the facility during the calendar year; the quantity of waste tires

and tire-derived products to be processed and removed during the calendar year; the reason compliance with the 75 percent annual processing requirement was not met; and the methods to be used to ensure compliance with all applicable facility standards. Specific information requirements will vary based on the situation at the facility and the need to make the necessary findings.

Subp. 4. Determination by the director. Subp. 4 is needed to inform the permittee of the action the director will take in deciding whether to grant the petition. Once sufficient information has been submitted, the director will either grant or deny the petition within 60 days. Since the petition process will include a site inspection and possible contact with other regulatory agencies, the Agency believes a 60-day review period is needed to process a petition in order to adequately evaluate the information and make determinations regarding the findings. If a petition is processed in less than 60 days, the director can grant or deny the petition sooner than the end of the 60-day time period.

This part also provides that if a petition is granted, the exemption is valid only for one year and that exemptions cannot be granted for two consecutive years. It is reasonable to limit the time period for the exemption because the exemption is intended to address short-term situations at the facility not an on-going problem regarding processing capabilities. For an on-going problem regarding processing capabilities, the permittee should apply for a storage facility permit rather than an exemption.

E. Waste Tire Facility Financial Assurance Requirements, Minn. Rules Pts. 7035.8400 to 7035.8590.

Pts. 7035.8400 to 7035.8590 include financial assurance requirements for waste tire facilities. The objective in requiring financial assurance is to ensure that funds will be available to remove all stockpiles of waste tires and tire-derived products at closure. The Agency has attempted to assure that proper closure occurs without placing an undue economic burden on the owner or operator.

The current management system for waste tires does not guarantee or encourage removal and proper management of the waste tires. Under the current system, tire collectors have created tire dumps. This resulted in the legislation that directed the Agency to develop and administer a tire dump abatement program to clean up existing tire dumps. The Agency believes it is reasonable for the proposed rules to contain financial assurance requirements to prevent creating additional tire dumps which would need State funds for their cleanup. Facility closure cost is a normal business cost. It is reasonable to require facility owners and operators to establish funds to meet this cost and to ensure closure is completed in accordance with the applicable closure standards.

The proposed rules contain a schedule to phase in the financial assurance requirements. Waste tire facility owners and operators must meet the Phase I requirement by July 1, 1988. In Phase I, owners or operators of facilities will be required to obtain financial assurance for waste tires received during the period from the effective date of the rules until July 1, 1990. The Phase II

requirement must be met by July 1, 1990. In Phase II, financial assurance is required for all waste tires received at the facility since November 21, 1985 and that will be received at the facility at any time in the future. It is reasonable to phase in the financial assurance requirements to allow owners and operators time to comply. This is necessary since most tire collectors and processors have not accumulated sufficient funds to pay for closure. In addition, there has been a lack of sufficient waste tire processing capacity in Minnesota. This has contributed to the accumulation of large stockpiles and may make it difficult for facility owners or operators to reduce their waste tire stockpiles in the immediate future. The Agency believes owners and operators should be encouraged to process rather than stockpile waste tires. By phasing the financial assurance provisions, there is time for owners or operators to process waste tires and not have to provide financial assurance. The Agency believes that prior to July 1990, sufficient processing capacity will be available in the State to allow waste tire stockpiles to be processed before compliance with the financial assurance requirements is required.

Financial assurance is not required for waste tires accepted at a facility prior to November 21, 1985 (old waste tires). Old waste tires accepted at a facility prior to November 21, 1985 are regulated under the Agency's tire dump abatement program. The Agency considered recommending that the amount of financial assurance required for facilities be the difference between closure cost and the reimbursement amount available under the waste tire abatement program. This approach had to be rejected because the Agency received a legal opinion that reimbursement is only available at tire dumps. Minn. Stat.

§ 115A.90, subd. 9 defines tire dump to mean "an establishment, site, or place of business without a required tire collector or tire processor permit. . . ." Since reimbursement is only available at tire dumps, once a permit is issued, a site looses its tire dump status. To avoid having a tire collector loose the reimbursement option, the Agency is no longer considering the requirement that financial assurance be required for old waste tires. The Agency believes it is reasonable that these waste tires remain in the tire dump abatement program and that only waste tires accepted after the effective date of the abatement rules be subject to the waste tire permitting program.

The Agency also investigated the possibility of requiring financial assurance for waste tire transporters in response to comments received on the April 15, 1986 draft waste tire permit rules. The commenters believed that if a transporter is required to demonstrate financial assurance, the chance of tires being indiscriminately dumped is small. The commenters also indicated that if tire collectors and processors are required to provide financial assurance, it seems justified that persons hauling tires should be responsible for their role in waste tire management.

The Agency believes that financial assurance is to ensure site cleanup, not enforce litter laws. To draw on a financial mechanism, the transporter would have to be caught dumping tires. This would be very difficult to do. Moreover, if a transporter is caught dumping tires, the transporter would be subject to an Agency enforcement action. Another problem is the difficulty in determining the dollar amount of the mechanism. Since the amount to clean up each tire dump is different, and the transporter may bring tires to several dumps, it would be

impossible to determine the amount of the financial assurance mechanism. Therefore, the dollar amount of financial assurance required would be arbitrarily set and would only serve to exclude certain transporters from the system.

For these reasons, the Agency has chosen not to require financial assurance of waste tire transporters. The Agency believes that it is reasonable at this time to not require financial assurance for waste tire transporters.

The financial assurance mechanisms allowed by these rules are the same as those allowed by the Agency's hazardous waste rules which are currently in effect. The provisions of these rules parallel the provisions of the hazardous waste rules and the U.S. Environmental Protection Agency's hazardous waste regulations. While the hazardous waste financial assurance rules provide for proper management at hazardous waste facilities, the proposed financial assurance rules provide for proper management at waste tire facilities. The Agency's experience with the hazardous waste rules shows that these mechanisms and provisions work as a means of providing financial assurance for closure. Also, the Agency is developing solid waste rules which contain the same type of financial assurance requirements. The Agency believes it is reasonable to require financial assurance for closure by allowing the use of specific mechanisms which are required under other Agency programs. Such an approach provides for consistency between programs while allowing for differences in the amount of financial assurance required.

The following discussion addresses the reasonableness of the proposed financial assurance rules on a part by part basis.

1. Minn. Rules Pt. 7035.8400 Scope.

This part informs affected persons, the public, and other governmental units of the application of the financial assurance requirements, Minn. Rules pts. 7035.8400 to 7035.8590. It is reasonable to inform affected parties of the scope of the rules.

This part also provides that the financial assurance requirements do not apply to waste tire facility owners and operators who are exempt from the requirement to obtain a permit or who are permitted by rule. Minn. Stat. § 115A.902, subd. 1 states that, ". . . a tire collector or tire processor with more than 500 waste tires shall obtain a permit from the Agency unless exempted in subdivision 2." Subd. 2 lists five exemptions. Since statutory language does not provide the Agency with the authority to require permits for exempted facilities, it is reasonable to not require financial assurance because the financial assurance requirements are part of the permit process. Since facilities which are eligible for permit by rule status are limited in the amount and duration of storage of waste tires and tire-derived products, it is reasonable to exempt the facility owner or operator from the financial assurance requirements.

2. Minn. Rules Pt. 7035.8410 Definitions.

This part defines two phrases that are used in the waste tire facility financial assurance rules. The definitions are needed so that those subject to the rules will understand the meaning of the terms used.

Subp. 1. Closure plan. This definition refers the reader to other parts of the rules, Minn. Rules pts. 7035.8250 and 7035.8260. This definition is

reasonable because it makes it clear to the reader where the relevant information exists in the rules.

Subp. 2. Current closure cost estimate. This definition provides the reader a reference, Minn. Rules pt. 7035.8430, which identifies a specific estimate developed in compliance with facility closure requirements. The definition also makes it clear that, if the owner or operator has made more than one estimate, this phrase refers to the latest of these estimates. This definition is reasonable because it makes it clear to the reader where the relevant information exists in the rules.

3. Minn. Rules Pt. 7035.8420 Financial Assurance Required.

This part requires waste tire facility owners or operators to obtain financial assurance for closure of their facilities as part of the permitting process. The reasonableness for requiring financial assurance of waste tire facility owners or operators was discussed previously.

This part also refers the reader to pt. 7035.8450 which sets out the time periods for establishing financial assurance; pts. 7035.8460, 7035.8470, 7035.8480, 7035.8490, and 7035.8500 which describe in detail the financial assurance mechanisms allowed to be used to comply with the rules; and pt. 7035.8430 which establishes the amount of financial assurance required. The reasonableness of the time schedule, the financial assurance mechanisms, and the amount of financial assurance required are discussed in detail under their respective parts. These references are provided in this part to make it clear to owners and operators that the steps and conditions they must follow and operate under are limited and fully contained within the rules. The rules thus

give owners and operators a reasonable guide which will help them understand how to operate under the new law.

4. Minn. Rules Pt. 7035.8430 Cost Estimate for Closure.

As was previously discussed, the financial assurance requirements are divided into two phases. The reasonableness of using this approach in the rules was also discussed. This part requires owners or operators of waste tire facilities to make a written estimate of the cost of closing their facility under Phase I and Phase II (subp. 2 and 3, respectively). This part also describes the criteria for calculating the cost estimate for closure for each phase.

The rules require waste tire facility owners or operators to demonstrate that they can provide for facility closure. That is, they must prove they have the financial resources and the means to meet the closure needs when they occur. The owner or operator needs a method to measure the adequacy of the proof. Cost estimates for facility closure will provide the needed measure. These cost estimates will be compared with the owner's or operator's demonstrated resources to determine whether the owner or operator has complied with the rules.

The methods used to estimate costs must be the same for all sites. If different methods are used at different sites, then cost estimates will vary between sites. This introduces variations in total costs and in waste tire facility disposal rates. The final result would be to afford less protection to some facility users and to induce unnecessary changes in waste tire flows.

The problem with using different cost estimating methodologies makes it reasonable to require all waste tire facility owners or operators to use the

same methods when they make their cost estimates. This part of the rules provides owners and operators with the guidance they need to estimate costs in a consistent manner and to demonstrate to the Agency that they have complied with the rules under both Phase I and Phase II of the financial assurance requirements.

This part also requires that basic cost estimates be stated in current dollar terms. This means that estimators should not adjust their estimates for inflation. Pt. 7035.8440 provides estimators with guidelines for making inflation adjustments.

Requiring that cost estimates be stated in current dollar terms does not allow cost estimates to be stated in present value terms. Present value estimates consider the time value of money. The value of money is sensitive to time because the value of a future dollar is less than the value of a present dollar. This proposition holds because the future is uncertain. Risk erodes the value of the future dollar. No one can be certain that a given financial event will occur. This uncertainty is risk, although measurement criteria allow for distinction between the two terms. Interest compensates investors for assuming risk. The investor foregoes the use of current resources for the promise of repayment, plus some extra return from interest earnings. This means that the investor promised a ten percent return on an invested dollar must receive $1.10, if the term of the investment is one year. Therefore, the present value of $1.10 invested for one year at ten percent interest is $1.00. Likewise, the present value of a dollar received under the same conditions is $.0.91. Present value analysis is a commonly used tool of financial planners.

Planners need to be able to set rates and charges so that investments earn maximum returns, consistent with other policy goals.

Although present value analysis proves useful in financial planning, it is unnecessary in these rules. The rules are set up so that all financial values are in the current period. Adjustments for inflation and interest earnings are made only after they are realized. This means that adjusted cost estimates will lag behind actual values by about a year. Contingency factors built into the cost estimating guidelines can make up for this lag.

The individual waste tire facility owner or operator may want to develop a present value analysis to assist with financial planning. The rules will not require this analysis. Since there is no need to adjust initial cost estimates for inflation and interest earnings, it is reasonable to define the initial estimates in current dollars terms.

This part also requires that waste tire facility owners or operators submit Phase I and Phase II closure cost estimates, as prepared under this part, to the Agency director with the permit application or upon the director's request. Requiring closure cost estimates to be submitted with the permit application is reasonable because the closure plan is also submitted at this time (Minn. Rules pt. 7035.8250). Therefore, the submittal of closure cost estimates will enable the Agency to determine the adequacy of the closure plan.

The rules require waste tire facility owners or operators to provide Phase I and Phase II financial assurance according to the time schedules established under pt. 7035.8450. The rules provide that all facility owners or operators must provide Phase I and Phase II financial assurance according to the

time schedules regardless of permit status. The reasonableness of this approach is discussed earlier.

In summary, this approach provides an equally competitive environment for all facility owners and operators. Under this approach, Phase I and Phase II financial assurance requirements may be implemented before owners or operators are required to submit their permit applications. This circumstance may develop because staff limitations warrant that the Agency consider permit applications on a call-in basis where facility owners or operators are not required to submit their permit applications until requested to do so by the Agency director. Once the rules become effective, owners or operators of existing waste tire facilities are required to submit to the director a written notification. Facility owners or operators submitting this notification may be given provisional status until a final determination is made on the permit application or the facility is closed in accordance with applicable requirements. It is, therefore, reasonable to require owners or operators of those facilities that have not submitted a permit application to submit closure cost estimates upon request by the director. This allows the director to evaluate the adequacy of the amount of financial assurance at the time that Phase I and Phase II requirements are implemented.

5. Minn. Rules Pt. 7035.8440 Adjustments to Financial Assurance Level.

This part provides for adjustments to the amount of financial assurance required of a facility owner or operator due to inflation and other changes in closure costs.

Subp. 1. Yearly adjustment. This subpart requires that after July 1,

1990, facility owners or operators must annually adjust the cost estimates to consider changes induced by inflation. The financial assurance mechanism used by facility owners or operators must then be adjusted for changes to cost estimates caused by inflation. This is reasonable because inflation will erode the value of the fund established to cover closure costs. If no adjustment for change is made, the financial assurance mechanism for closure costs will be inadequate.

By July 1, 1990, waste tire facility owners or operators must establish financial assurance for the maximum number of waste tires that will accumulate during the operating life of the facility. The amount of financial assurance established by July 1, 1990 is based on current dollar estimates. However, these current dollar estimates will erode over time due to inflation. July 1, 1990 is therefore the point in time where consideration for inflation begins. It is therefore reasonable to require annual inflation adjustments following the July 1, 1990 deadline because it is the most logical point from which to measure inflation.

This subpart also requires the estimator to base the annual inflation adjustment on current data available through the United States Department of Commerce. The department's publication, "Survey of Current Business," provides a statistic called the "implicit price deflator for gross national product." This is a measure of the inflation that has occurred throughout the national economy over the reported period. This implicit price deflator is an index number.

Index numbers are relative value measures. They compare, usually over

time, measured values in a base case with measured values in other observable cases. The base year for the statistic used is 1982. For example, a report index value of 111.7 in 1985 indicates that prices rose by 11.7 percent during the period 1982-1985. The index numbers can be used to determine inflation for any reported periods. The reported values for 1980 and 1984 are 86.1 and 108.5. The inflation that occurred during that period is [(108.5/86.1) - 1] x 100 = 26.0 percent. The methods used to calculate annual inflation must be the same for all facilities. If different methods are used at different facilities, then annual inflation will vary between facilities. This introduces variations in total costs and in waste tire facility disposal rates. The final result would be to afford less protection to some facility users and to induce unnecessary changes in waste tire flows.

The problem with using different inflation methodologies makes it reasonable to require all waste tire facility owners or operators to use the same methods when they make their inflation adjustments. Therefore, requiring all facility owners or operators to use the Department of Commerce inflation index for calculating annual inflation is reasonable because it provides for inflation adjustments to be calculated on a consistent basis for all facilities. This provides for an equitable business environment for all facilities. The Department of Commerce constructs this index from surveys of goods and services purchased throughout the economy. It is reasonable to require the use of the Department of Commerce inflation index because it is based on current available information needed to calculate the inflation factor, and this index is widely used and accepted by the business sector.

The proposed rules require an adjustment of the closure costs on an annual basis for inflationary changes reported up to the year in which the facility closes. The estimator thus sets the expected inflation rate equal to the rate current in the year of closure. This procedure does not assume that future rates will actually equal current rates as inflation rates constantly change. The procedure instead assumes that the earnings rate for invested funds will exceed future inflation. This assumption is well-accepted in economic theory. The amount by which earnings exceed inflation is referred to as the real rate of return. Analytical tests of the real rate hypothesis have confirmed that a real rate exists. The tests tend to find the real rate in the two to three percent range. See Exhibit 18. Statistical tests of documented historical evidence support the assumption that earnings will exceed inflation. Therefore, it is reasonable to incorporate this assumption into the cost estimating procedures required under the proposed rules.

This subpart also requires the Agency director, upon request, to provide waste tire facility owners and operators the inflation factor needed to adjust their closure cost estimates. This is reasonable as it saves facility owners and operators time and money.

Subp. 2. Other revisions. This subpart requires facility owners or operators to make changes in their closure cost estimates and, subsequently, their financial assurance mechanism, if changing facility conditions lead to closure cost changes. This provision considers the possibility that, at some time during a facility's operating life, circumstances could change significantly. For example, local government policies could introduce

substantial changes through planning efforts that either decrease or increase the importance of a facility in the county's solid waste management system. This may occur because of the possibilities that accompany the development of a dynamic system. Since change is very likely to occur, it is reasonable to require that facility closure cost estimates and financial assurance mechanisms consider change.

This subpart also requires facility owners or operators, who are making revisions to their financial assurance mechanism, to follow the procedures in pts. 7035.8470, 7035.8480, 7035.8490, or 7035.8500. These four parts describe in detail the means, the financial arrangements and contracts for establishing an adequate financial assurance mechanism. This makes it clear to facility owners and operators that the steps they must follow in establishing financial assurance are limited and contained within the rules. The rules thus give facility owners and operators a reasonable guide for making revisions to their financial assurance mechanism when closure costs change at facilities.

Subp. 3. Record keeping. This subpart requires facility owners or operators to maintain cost estimate records. Owners or operators must maintain records of the latest adjusted closure cost estimate. This requirement forces a waste tire facility owner or operator to be responsible for the cost estimates. The cost estimates will be valuable planning tools for facility owners and operators. The estimates will also be useful to the director when examining on-site conditions during the facility's operating life. Conversely, if the estimates are not available, facility operations, planning and regulatory inspections will be more difficult.

6. Minn. Rules Pt. 7035.8450 Schedule for Establishing Financial Assurance.

This part describes the time schedule for a facility owner or operator to establish financial assurance for the facility. It is reasonable to provide a time schedule in the rules so that facility owners and operators know when they must comply with the rules and, therefore, plan appropriately.

Subp. 1. Scope. This subpart requires facility owners or operators to establish the required financial assurance according to the time schedules in subps. 2 and 3 of this part. The reasonableness of requiring financial assurance is discussed earlier. The reasonableness of the time schedules is discussed below in the subps. 2 and 3 discussion. This subpart is reasonable because it provides facility owners and operators with a better understanding of how to comply with the rules.

Subp. 2. Phase I. This subpart requires the facility owner or operator to establish financial assurance by July 1, 1988 for waste tires that have accumulated at the facility since the effective date of these rules, and for the waste tires that the owner or operator estimates will be accumulated at the facility between July 1, 1988 and July 1, 1990. The reasonableness of requiring financial assurance in a two-phase approach was discussed earlier. In summary, the two-phased approach protects the interests of facility users, facility neighbors, and the Agency by providing financial assurance to ensure that the facility is properly cleaned up as required. At the same time, this approach recognizes that waste tire collectors and processors were previously working in an unregulated environment which did not provide standards for properly

conducting their activities.

It is reasonable to establish July 1, 1988 as the date for submitting Phase I financial assurance because it allows facility owners and operators a reasonable amount of time in which to plan and carry out this requirement. Limiting the amount of financial assurance under Phase I to those wastes tires accumulated at the facility since the effective date of the rules to two years following July 1, 1988 is reasonable for the following reasons. This limitation does not include waste tires accumulated at the facility before the effective date of the rules. Financial assurance for these waste tires will be required under Phase II on July 1, 1990. This exemption under Phase I financial assurance provides the facility owner or operator with an additional two years in which to provide financial assurance for these waste tires. Since facility owners and operators were operating in an unregulated environment and were not afforded any guidelines for proper waste tire management prior to the effective date of the rules, this exemption is reasonable because it allows facility owners and operators an extra two years to adjust to the new rules and guidelines. It is reasonable to exclude waste tires accumulated at the facility after July 1, 1990 from Phase I financial assurance because these waste tires will be covered under Phase II financial assurance which is to be established by July 1, 1990. This subpart also requires the facility owner or operator to submit to the director evidence that Phase I financial assurance has been obtained. This is reasonable because it enables the director to determine if the requirements of the rules have been met.

Subp. 3. Phase II. This subpart requires the facility owner or operator

to establish financial assurance by July 1, 1990 for the maximum number of new waste tires that will accumulate at the facility at any one time during the facility's operating life. This subpart is reasonable because the amount of financial assurance required will provide for proper closure of the facility, when required. The interests of facility users, facility neighbors, and the Agency are therefore protected. Also, the requirement provides facility owners or operators with flexibility in determining the amount of financial assurance required by allowing them to decide how many tires they will accumulate at the facility at any one time. This subpart also requires the facility owner or operator to submit to the director evidence that Phase II financial assurance has been obtained. This is reasonable because it enables the director to determine if the requirements of the rules have been met.

7. Minn. Rules Pt. 7035.8460 County-Held Financial Assurance Mechanism.

Subp. 1. Scope. This subpart establishes that a facility owner or operator may use a county-held financial assurance mechanism to be in compliance with the rules. This subpart also establishes the criteria for a county-held financial assurance mechanism to be acceptable.

Counties have the authority to require financial assurance of facility owners or operators. If the Agency did not allow county-held financial assurance mechanisms to be used to comply with the rules, facility owners or operators would need to establish two financial assurance mechanisms, one for the county and one for the Agency. This would be very burdensome and costly to facility owners and operators. Therefore, this subpart reasonably protects the interests of facility users and the Agency by establishing the criteria

(compliance with the rules) for accepting a county-held financial assurance mechanism, while limiting the facility owner or operator's burden and cost of providing financial assurance.

Subp. 2. Action by the county. This subpart establishes the circumstances (items A, B and C) when a county holding a financial assurance mechanism must gain access to the mechanism's funds. Providing this criteria in the rules is reasonable because it allows a county holding a financial assurance mechanism to understand the specific circumstances by which they are required to gain access to the closure funds. This provides for a clear understanding and consistent action under the rules.

Item A. This item requires that a county must gain access to a county-held financial assurance mechanism's funds if the facility owner or operator fails to begin or complete closure as required. By not beginning or completing closure as required, the facility owner or operator is in violation of the rules and the Agency and facility users do not have assurance that the facility will be cleaned up appropriately. Therefore, this item is reasonable to provide for closure of the facility through obtaining access to closure funds where the facility owner or operator has already failed to close in compliance with the applicable rules.

Item B. Under the circumstance provided by this item, the county must gain access to a county-held financial assurance mechanism when the facility owner or operator is in violation of the rules by not establishing approved alternate financial assurance within the time schedules established. The Agency has no assurance that the facility owner or operator will establish acceptable

alternate financial assurance before the existing financial assurance mechanism ceases to cover closure costs. Therefore, this item is reasonable to ensure that access to the financial assurance mechanism is obtained prior to expiration of the existing financial assurance mechanism so that closure may be completed.

Item C. This item provides that a county must gain access to a county-held financial assurance mechanism's funds if the owner or operator fails to fund the standby trust fund. Pt. 7035.8480 requires the facility owner or operator to fund the standby trust fund according to the time schedules established in these rules. Failure to do so would constitute a violation of the rules. Therefore, this item is reasonable to protect the interests of the Agency, the county, and facility users by providing access to the funds for closure of the facility where the facility owner or operator has already failed to comply with the rules.

Subp. 3. Action by the director. This subpart establishes that the Agency director will gain access to a county-held financial assurance mechanism when the county either fails to obtain access within 30 days of the facility owner or operator's failure to perform as specified in subp. 2 or fails to use the funds for proper closure of the facility. Allowing the county 30 days to obtain access to the funds is a reasonable amount of time for the county to act considering the circumstances involved. The Agency will then provide for closure of the facility, when the facility owner or operator and the county have failed to comply with the rules.

The funds in a financial assurance mechanism are there to provide proper

closure of the facility, if required. If the county obtains access to a county-held financial assurance mechanism and uses the fund for some purpose other than the facility closure or for improper closure, then there is no assurance that the proper amount of financial assurance remains to be used to close the facility which is the goal of these rules. Therefore, it is reasonable to allow the director access to the funds once the county has misused them to provide for proper closure.

Subp. 4. Notice. This subpart requires the Agency director to inform the county, the facility owner or operator, and all affected financial institutions of action taken under subp. 3 of this part. This provision is reasonable because everyone concerned will be informed of the current situation at a facility.

8. Minn. Rules Pt. 7035.8470 Closure Trust Fund.

Facility owners or operators may comply with the rules by using a trust fund. A trust agreement is the contract which initiates the trust fund and governs administration of the fund. The trust agreement involves three or more persons. The person who finances the trust is the grantor. The fund's administrator is the trustee. The trustee holds legal title to the property in the trust. The trustee also holds and administers the trust for the benefit of one or more persons, referred to as the beneficiary or beneficiaries. The trustee charges a fee for services.

A general description of how this relationship will work for waste tire facilities may prove helpful, before detailed consideration of the trust agreement. If a facility owner or operator chooses to comply with the rules by

using a trust fund, the owner or operator must choose a trustee who is empowered by State law to administer trusts. The owner or operator will make regular payments to the trust. The amount of payment is determined by the cost estimates developed under pts. 7035.8430 and 7035.8440. These payments will be set at levels that make the trust, at the time of facility closure, equal to the closure costs. Disbursements from the fund require approval from the Agency director. The director will give approval after reviewing evidence that qualifying expenses have been paid. Qualifying expenses are those associated with elements of the closure plans developed for the facility. The rules provide for the owner or operator to be released from financial assurance responsibilities once the goals of the plan have been met. Any balance remaining in the trust fund after the facility owner or operator has been released from financial assurance responsibilities will be returned to the grantor.

Subp. 1. Scope. This subpart references parts of the rules that relate to trust funds, subps. 2 through 13 of this part. This informs waste tire facility owners and operators of the steps they must follow to establish a trust fund for financial assurance. The steps are limited and are contained in the rules. The rule gives facility owners and operators a guide for establishing a trust fund for financial assurance. This subpart also establishes that provisions in this part which refer to the director also apply to the county for trust funds held by a county. Since the rules allow for a county-held financial assurance mechanism (pt. 7035.8460), this provision is reasonable so that the county may be in compliance with the rules when holding a trust fund financial

assurance mechanism for a facility.

Subp. 2. Establishment of the trust fund. This subpart references the parts of the rules that relate to trust funds, subps. 2 through 13 of this part. The facility owner or operator is required to send the Agency director an originally-signed duplicate of the trust agreement. This requirement is reasonable because the Agency must know when and under what conditions the owner or operator has complied with the rule. Also, it is reasonable to require an originally-signed duplicate of the trust agreement be submitted to ensure that the Agency is able to gain access to the funds if required.

This subpart also limits the facility owner or operator's choice of trustees. Not all financial institutions in the State have the authority to administer trust agreements. Financial institutions that want to do trust business must comply with reserve and reporting requirements. This limitation helps facility owners and operators exercise care when choosing a trustee. The limitation is reasonable to keep facility owners and operators from wasting time setting up trust agreements with financial companies that legally cannot administer trusts.

This subpart also requires that a copy of the trust agreement accompany the facility permit application or be submitted to the Agency director in accordance with the time schedule for establishing financial assurance (pt. 7035.8450). This means that a facility owner or operator who wants to obtain a waste tire facility permit must provide evidence of compliance with the applicable financial assurance requirements. This requirement provides the owner and operator of a waste tire facility with reasonable notice that compliance must be

achieved before the permit can be issued.

Subp. 3. Wording of the trust agreement. This subpart refers the facility owner and operator to two other parts of the rules. These parts contain models of a trust agreement and a certification document. The rules require that the facility owner or operator's financial instruments duplicate the models provided in pts. 7035.8550 and 7035.8560. This requirement is reasonable to limit the type of trust arrangements that facility owners and operators can establish. If all owners or operators use the same form, then waste tire facility planning and financial management will have the same basis at these facilities. This is another provision that helps avoid potential disruptions. It also helps to ensure equitable treatment of all facilities.

A certification of acknowledgement is required to ensure that the specifics of the execution of the agreement have been documented. This is a reasonable requirement for several reasons. First, it enables the Agency to determine if the time schedules and related requirements in the rules have been complied with. Second, there will be fewer disputes over the adequacy of the financial instrument. Third, it is reasonable for the Agency to request a copy of the certificate be submitted with the financial agreement so that it may be kept on file for reference.

This subpart also requires the trust agreement to be updated within 60 days after a change in the current closure cost estimate established in the trust agreement. This provision is reasonable because an updated trust fund is needed to reflect changes in closure costs. This will provide for the proper amount of financial assurance for a facility.

Subp. 4. Pay-in period. This subpart requires facility owners or operators to make uniform annual payments into the trust fund. Periodic or annual payments will make fund development orderly and systematic. Payment schedules that vary could cause disruptions in the waste tire management system. It is reasonable to require steady and consistent fund development.

This subpart also establishes that, for a trust fund, the pay-in period after July 1, 1990 shall be five years or the remaining operating life of the facility, whichever is shorter. As discussed earlier, the goal of the financial assurance rules is to ensure that waste tire facility owners or operators have adequate funds available to clean up the waste tires located at their facility when the facility ceases operation. This is important whether operations ceased because the permit has expired and is not renewed or because the facility owner or operator decides to close the facility. Therefore, since an Agency waste tire facility permit is issued for a period of five years, this provision is reasonable to meet the objective of providing adequate financial assurance should the facility cease operations. Also, July 1, 1990 is when financial assurance for the maximum number of waste tires to be accumulated at the facility is required. Therefore, it is reasonable to establish the described pay-in period after July 1, 1990 in order for facility owners or operators to meet the objective of providing adequate financial assurance.

Subp. 5. Payments. This subpart sets forth the payment schedule for new and existing waste tire facility owners or operators. For new facilities, the owner or operator must make the first payment into the trust fund before beginning to receive waste tires at the facility. The rules require new

facility owners or operators to "prepay" part of the financial assurance responsibility. This is similar to other customary business arrangements. Insurance and rent, for example, are ordinarily prepaid. The requirement is reasonable because it puts financial assurance expenses on the same basis as other normal business costs.

The rules require the facility owner or operator to send the Agency director a trustee's receipt for the first payment made into the trust fund. This gives the director a means to determine whether and when the facility owner or operator has complied with the rules. It is a reasonable requirement because the director must have a means to administer the rules and the owner or operator has that information.

For existing facilities, the owner or operator must make the first payment into the trust fund within 30 days after submitting the originally-signed duplicate of the trust agreement to the Agency director. This provision provides a reasonable amount of time for facility owners or operators to submit their first payment. Requiring the submittal of an originally-signed duplicate of the trust agreement to the Agency director is reasonable because it gives the Agency director a means to determine whether and when the facility owner or operator complies with the rules.

This subpart also informs the facility owner or operator how to calculate the amount of the trust fund payment. The first payment must equal the sum of the cost estimate divided by the number of periods available for payment. There is no need to consider inflation and earnings for the first payment because they are handled in the calculation methods for subsequent payments. Again, the

requirement is reasonable because it puts all facility owners or operators on the same accounting basis, thus avoiding disruptive differences in rates and billing systems among facilities.

The rules require that subsequent payments be made no later than 30 days after each anniversary date following the first payment. That is, if the first payment is made on March 1, all following payments must be made by March 31 of each subsequent year. This requirement is designed to make sure that the process of developing trust funds proceeds in an orderly manner.

The rules provide a formula to assist facility owners and operators in calculating the size of trust fund payments after the first payment. The basic estimating formula is:

$$\text{Next Payment} = \frac{CE - CV}{Y}$$

in which: CE = the sum of the current closure cost estimate,

CV = the current value of the trust fund, and

Y = the number of years remaining in the pay-in period

This formula is straightforward. It calculates uniform payments that, over a fixed period, will yield a target sum. The adjustments to cost estimates (pt. 7035.8440) will build inflationary and cost changes into the CE variable. Annual reports from the trustee (pt. 7035.8550, section 10) will build fund earnings into the CV variable. This formula is reasonable because it is straightforward and will enable facility owners and operators to calculate their payments into the trust funds on an equitable basis. This formula is also

provided in the Agency's hazardous waste rules for hazardous waste facilities to calculate payments into their trust funds (Minn. Rules pt. 7045.0504, subd. 2).

Subp. 6. Establishment of trust fund as an alternate financial assurance mechanism. This subpart relates to cases where facility owners or operators begin to comply with the rules by using an alternative financial instrument and switch to using a trust fund. This subpart requires facility owners or operators, who switch to a trust fund, to make their first deposit equal to the amount that would have been in trust if they had chosen a trust fund from the beginning.

For example, assume a facility owner or operator first submits a surety bond in compliance with the rules and maintains the bond for three years. If the owner or operator then establishes a trust fund, the calculation of the first payment made into the trust fund will vary from the provisions written in subp. 5. The owner or operator will follow the directions provided in subp. 5, but the pay-in period assumptions change. The owner or operator must make the pay-in period from the initial point of compliance, i.e., the date the surety bond was first submitted. Given a pay-in amount determined from the initial compliance date, the owner or operator then must multiply that amount by the number of periods in which trust fund payments were not made. This makes the payment equal to the amount that would have been in the fund had the owner or operator initially chosen to develop the trust fund.

This provision further allows facility owners and operators flexibility in financial planning, while protecting the interests of facility users. This subpart allows facility owners and operators to use the set aside funds in a

"productive" manner, with the understanding that they must be prudent as the funds will eventually be used to finance closure costs.

For example, a facility owner or operator can execute a surety agreement for the entire period of the facility's operating life. They can, at the same time, set aside closure funds that remain under their control. Once closure occurs, the facility owners and operators can then execute a trust agreement and place in trust all the funds reserved for closure.

This provision reasonably protects the interests of all parties. The facility owners and operators retain use of set aside funds. Facility users get the protection offered by the surety, during the operating life of the facility. When the facility has closed, a trustee provides the needed security. The same advantage exists if facility owners or operators choose to purchase a letter of credit. The arrangement is formalized in pt. 7035.8480. This provision is needed to provide facility owners and operators with as much flexibility as possible.

Subp. 7. Additional payments. This subpart covers situations where cost estimates change. Provisions in this subpart give waste tire facility users and the Agency a reasonable assurance that change will be taken into account when developing trust funds.

If a change occurs that increases costs, the facility owner or operator has 60 days to make appropriate adjustments. The owner or operator can either adjust the trust fund amount or rely on other financial instruments to cover the difference. This requirement gives facility users and the Agency a reasonable assurance that the trust fund will be developed to reflect current conditions.

Subp. 8. Request for release of excess funds. This subpart gives facility owners and operators the same assurances provided to facility users and the Agency under subp. 7. This provision makes it possible for a facility owner or operator to get a refund if conditions change and the value of the trust fund exceeds cost estimates.

The facility owner or operator must send the Agency director a written request for release of the excess funds. The owner or operator must submit evidence of the difference between the cost estimates and the fund balance. This provision is reasonable because facility owners and operators should not have to set aside more resources than are needed.

Subp. 9. Substitution of alternate financial assurance mechanisms. This subpart allows the facility owner or operator to substitute another financial instrument for the trust fund. For this to occur, the owner or operator must establish the alternate mechanism and then send the Agency director a written request to release funds held in trust. This provision is reasonable because once the facility owner or operator has executed an acceptable alternate instrument, there is no further need for the trust fund.

Subp. 10. Release of funds. This subpart sets limits on the time the Agency director has to respond to requests submitted under subps. 8 and 9. This is reasonable because facility owners and operators should not have to wait indefinitely for excess funds to be returned. This subpart requires the Agency director to instruct the trustee to release the requested funds within 60 days after the Agency director receives the request. The release is limited to the amount in excess of current closure cost estimates.

Subp. 11. Notification. This subpart relates to missing or late trust fund payments. If a facility owner or operator misses a scheduled trust fund payment, the trustee has to notify both the facility owner or operator and the Agency director within ten days. This requirement is customary and reasonable. Representatives of trust companies have indicated that they can easily manage this reporting requirement.

The facility owner or operator has 60 days after the director receives notice of nonpayment to make up the payment. This can be done by making the required payment (item A) or by providing an alternate financial assurance mechanism (item B). This allows the facility owner or operator a reasonable time to correct the error.

This subpart also provides that the facility owner or operator may not accept additional waste tires and must begin facility closure if the required payment or alternate financial assurance mechanism is not provided within the 60 days of its due date (item C). This requirement is an incentive for the facility owner or operator to make up the missing payment. This provision is reasonable because orderly development of the trust fund is important to assure that the money to finance closure is available. The requirement presents the facility owner and operator with a disincentive. The disincentive is that the owner and operator cannot continue to do business. The alternative to this requirement is allowing the facility to stay open. This would simply worsen the problem caused by missing trust fund payments. If the facility remains open it would continue to accumulate waste tires thus adding to closure costs at a time when the facility owner or operator is not setting aside funds to cover those

costs. It is reasonable to close a facility when a facility owner or operator refuses to continue to develop the trust fund.

Subp. 12. Reimbursement. This subpart describes trust fund use. This subpart specifies that trust money can only be used to reimburse incurred expenses. This means that the money cannot be released in advance of expenses.

This provision is reasonable for two reasons. First, contractors are not ordinarily paid in advance. Instead, they receive regular payments for orderly progress on a specified work schedule or they are paid as they complete specified major features of the project. Second, the contractors do not have to be paid directly from the trust fund. The preferred arrangement is to have the facility owner or operator pay the contractor. The trust would then reimburse the facility owner or operator. Facility owners or operators could incur financing expenses under this arrangement, but they should plan for this cost.

This may increase cost estimates by an amount that represents the short-term (60-day) opportunity cost incurred while the contractor or the owner or operator waits for reimbursement. This amount will not likely grow to any large fraction of total project costs. The savings in reduced risk justify the nominal cost increases. Risk decreases because the potential to withhold funds is a powerful incentive for facility owners and operators and contractors to do a good job. This disincentive should also encourage contractors to avoid "front-end loading." This happens when the contractor schedules the largest costs during the early part of the project period. This lets the contractor recoup the greatest portion of cost during the early phase of a project. This dilutes performance incentives during later phases.

Advance payment would also add substantial risk of fund shortfalls if the work is done so poorly that it incurs added cost or has to be done over. This causes the portion of the trust fund advanced to be lost. The trust would then be underfunded. Reserving trust fund resources for reimbursement is a prudent and reasonable measure.

This subpart also allows the Agency director up to 60 days to approve the release of funds. This time is allowed so that the Agency director can review the requests for reimbursement and inspect the site to make sure that work is properly done. Sixty days is needed to make sure reviews and inspections can be accomplished with due care. Although review and inspection at an individual facility may not take long, the Agency has responsibility for facilities throughout the State. The demand on Agency staff time could well be too great at any given point to perform needed review and inspection in less than 60 days. The 60-day review period is reasonable because any shorter period could easily do a disservice to facility users and neighbors.

Once the Agency director is satisfied that the reimbursement request is proper, the trustee releases the funds to the facility owner, operator or an authorized contractor. However, if the Agency director has reason to believe that closure costs will exceed the value of the trust fund, reimbursement may be withheld. This provision is designed to protect the integrity of the trust fund. If closure operations have begun and it becomes obvious that the work has been inadequate, the resources of the trust fund should not be used to pay for inadequate work. Inadequacies should be the responsibility of the facility owner, operator or contractor who made the error. Using the fund resources to

assume normal contracting risks dilutes needed incentives. Instead, the fund's resources should be used to accomplish closure goals. The Agency must take a conservative approach when approving disbursements. Requests for reimbursement for completed work must be carefully reviewed to make sure that expenses are appropriate and that, once an expense is incurred, it will not occur again.

The goal of the trust fund is to pay for expenses incurred for work that will make the facility more secure. It is not reasonable to use the trust fund to assume contractors', owners' and operators' risks.

If the fund were to be used for making advance payments or if there were no provision for withholding funds, then the facility owner, operator or contractor doing the work would operate under a riskless condition. There would be much less incentive to do a proper job. This provision of the rules is a reasonable measure designed to conserve fund assets so that they are available when needed.

Subp. 13. Termination of the trust fund. This subpart describes the conditions under which the Agency director must allow the trust agreement to end. The first condition occurs if the facility owner or operator substitutes another allowable instrument for the trust fund. The second condition occurs if the Agency releases the facility owner and operator from responsibility to comply with the financial assurance rules under pt. 7035.8530. Both conditions describe circumstances under which the trust fund serves no purpose. It is reasonable to end the trust agreement when it is not needed.

9. Minn. Rules Pt. 7035.8480 Surety Bond Guaranteeing Payment Into a Standby Trust Fund.

Facility owners or operators may comply with the rules by using a surety bond to guarantee that, before the facility is closed, the facility owner or operator will establish a trust fund. Facility owners or operators who choose this option can control their funds. Facility owners or operators can use the funds to their benefit until facility closure. At closure, the owner or operator must place the full amount of the current closure cost into a trust fund. This option is reasonable as it allows the owner or operator to maintain control of the resources while providing users and the Agency the assurance needed to assure proper facility closure.

A discussion of how surety bonds will function will be helpful. The contract used to execute the surety agreement refers to the owner or operator as the "principal." The agreement specifies actions that the principal will perform. In this case, it is development of a standby trust fund. If the principal fails to perform, the Agency director can "call in" the bond and the surety must place the specified amount, the "penal sum," in a standby trust fund. This fund is established when the surety agreement is executed. The Agency can direct the work to be financed from the trust fund. This leaves the surety with a loss that will be recouped from the principal. Sureties charge for assuming risk. The cost of a surety bond ranges from one to three percent of the bond's penal sum. Sureties may also require other conditions, such as collateral, before they will execute the surety agreement.

Subp. 1. Scope. This subpart references parts of the rules that relate to

surety bonds, subps. 2 through 10 of this part. This clarifies the steps that must be followed to establish a surety bond for financial assurance. The rules give owners and operators a reasonable guide to establish a surety bond. This subpart also establishes that provisions which refer to the director also apply to the county if the surety bond is held by a county. Since the rules allow for a county to hold the financial assurance mechanism (pt. 7035.8460), this provision is reasonable so counties can comply by holding a surety bond as the financial assurance mechanism.

Subp. 2. Surety Bond Requirements. This subpart limits the owner's and operator's choice of sureties and establishes a compliance schedule. The limit on choice refers the owner or operator to a federal document, Circular 570, from the Department of the Treasury. This document lists the sureties acceptable to bond writers for federal projects. See Exhibit 19. This list includes almost 300 companies. Over 30 companies are located in Minnesota. This circular will help facility owners and operators to choose a responsible firm. It also relieves the Agency of the need to develop a certification program for these firms. This requirement is reasonable because it takes advantage of certification work done by the federal government.

The compliance schedule in this subpart is identical to the compliance schedule of pt. 7035.8470, subp. 2. That is, owners or operators must send their bonds to the Agency director with their permit application or be submitted to the Agency director in accordance with the time schedule for establishing financial assurance (Minn. Rules pt. 7035.8450). The rationale for this provision duplicates that provided for the schedule in pt. 7035.8470, subp. 2.

Subp. 3. Wording of the Surety Bond. This subpart requires that the surety bond duplicates a model provided in pt. 7035.8570. This requirement is reasonable as it limits the owner's and operator's choice to ensure uniformity and equity.

Subp. 4. Establishment of a Standby Trust Fund. This subpart requires that the facility owners and operators who choose surety agreements must also establish standby trust funds which meet the requirements of pt. 7035.8470. This requirement is included as a practical matter. State agencies cannot take and manage money as though it were their own. All receipts must become a part of general revenues. Minn. Stat. § 16A.72 (1986). This means that if the standby trust fund were not required, payments made by sureties to the Agency must be transferred to the State's general fund. There would be no guarantee that the payments by a surety would be appropriated to the Agency and needed work would be done. The standby trust fund offers the surety a way to honor its commitment without having the Agency receive money. If the Agency director has to call in a bond, the trustee of the standby trust fund receives the payment. The fund is then administered under pt. 7035.8470. This provision is reasonable because statutes prohibit the Agency from managing funds that are not appropriated to the Agency.

Subp. 5. Performance Guarantee. This subpart specifies the actions that the surety will guarantee. The surety is required to guarantee that:

- the facility owner or operator will assure that the standby trust has a value at least equal to the penal sum of the bond before the owner or operator begins to close the facility;

- the facility owner or operator will put into the standby trust an amount equal to the penal sum within 15 days after the director, the Agency or a court issue an order to close the facility; or

- the facility owner or operator will provide alternate financial assurance to comply with the rule within 90 days after the surety sends the owner or operator a notice of cancellation.

The first requirement is reasonable to ensure that there is the proper amount of funds available to close the facility before the owner or operator begins closure. Without proper funding being established up-front, there is no assurance that enough money will be provided for completion of closure in the proper manner.

Under the second requirement, once the director, the Agency or a court issues an order to close the facility, proper funding must be established in order to provide for closure of the facility. This provision ensures this will happen. It is reasonable because it ensures funds will be available for closure once it is deemed that the facility must close. Providing 15 days for establishing the proper funding for closure after being issued an order is reasonable considering the enforcement circumstances.

The third provision is reasonable because it establishes continuity in the coverage of obligation. The reasonableness of allowing the facility owner or operator 90 days is discussed under the reasonableness for subp. 9 of this part.

These conditions specify the circumstances that the facility owner and operator, the Agency and the surety want to occur. If these conditions are met, there is no need to call in the bond. The surety promises that a trust fund

will be developed or the surety will pay for closure. These conditions are reasonable because they provide for continuity in the coverage of obligations. It is reasonable to provide the surety with a description of the circumstances that lead to the surety becoming liable.

Subp. 6. Failure to Perform. This subpart notifies the surety of its liabilities. If any of the conditions described in subp. 5 are not met, the surety is liable for the penal sum. The surety's liability is limited to the amount of the penal sum. The surety must pay, into the standby trust fund, an amount that equals the value of the latest cost estimates if:

- the facility owner or operator does not adequately fund the standby trust before the facility closes; or

- the facility owner or operator does not adequately fund the standby trust within 15 days after receiving a closure order; or

- the facility owner or operator does not provide alternate financial assurance in compliance with the rules within 90 days after receiving a cancellation notice.

This subpart amounts to a restatement, in the negative, of subp. 5. It is reasonable because it clarifies the conditions where the surety incurs cost. This is reasonable as it helps all parties understand their responsibility. Ambiguities lead to unreasonable delays and unnecessary cost. The reasonableness of these conditions was discussed under the reasonableness of subp. 5 of this part.

Subp. 7. Penal Sum. This subpart specifies the amount of the bond's penal sum. The penal sum must equal the current closure cost estimate. All parties

interests are protected when the surety, the facility owner and operator and the Agency know the extent of the surety's liabilities. This provision is a reasonable limit on the surety's liability.

Subp. 8. Changes to the Penal Sum. This subpart covers situations where the current closure cost estimate changes. If the current closure cost estimate increases, the facility owner or operator has 60 days to increase the bond penal sum or find an alternative means to cover the difference. This allows the owner or operator a reasonable time to make up the gap in coverage. If the current closure cost estimate decreases, the facility owner or operator can reduce the bond's penal sum with written approval from the Agency director. This provision is reasonable as it allows the owner or operator to reduce the level of coverage that is not needed. The interests of facility users are protected by making the reduction contingent on the Agency director's approval.

Subp. 9. Notification. This subpart specifies the conditions when the surety may cancel the bond. The surety must notify the Agency director and the facility owner or operator if the bond is to be cancelled. The notices must be sent by certified mail. The cancellation cannot be effective until 120 days after the Agency director receives the notice. Return receipts will provide evidence of when the Agency director receives the notice.

This provision ensures that there will be no gaps in coverage caused by the surety's decision to cancel. The period between notification and final effect allows the facility owner or operator time to find another surety or means to comply with the rule. This period is 30 days longer than the time period set in subp. 5, item C. The extra 30 days gives the Agency director time to call in

the bond. During this 30-day period, the surety is liable under the bond's conditions.

An example will help to understand the process. A facility owner or operator receives notice that the surety bond will be cancelled. If the facility owner or operator finds an acceptable alternative financial mechanism within 90 days, then the bond can be cancelled 30 days later with no effect. There will be no gap in coverage. However, if the owner or operator does not find an acceptable alternative mechanism, this means that the costs of closure will not be covered by any instrument. The Agency can then call in the bond, since one condition is that the facility owner or operator provide an acceptable alternate financial assurance mechanism within 90 days.

This provision is reasonable to ensure that coverage will not lapse. Either the surety will guarantee that the owner or operator will fund the trust, or the trustee will manage the trust after the surety pays into the fund.

This subpart also requires a surety bond held by a county to provide a 150-day cancellation period. This provision ensures that there will be no gaps in coverage caused by the surety's decision to cancel. This period is 30 days longer than the time period allowed if the Agency held the surety bond. The extra 30 days is needed because pt. 7035.8460, subp. 3 does not allow the Agency director access to the surety bond until the county has failed to gain access to the funds provided by the surety bond within 30 days following the 90-day period allowed a facility owner or operator to provide an acceptable alternate financial assurance mechanism.

An example will help to understand this reasoning. Assume that a facility

owner or operator receives notice that the surety bond will be cancelled. If the facility owner or operator finds an acceptable alternative financial mechanism within 90 days, then the bond can be cancelled 60 days later with no effect. There will be no gap in coverage. However, if the owner or operator does not find an acceptable alternative mechanism within 90 days, the cost of closure will not be covered by any instrument. Therefore, under these circumstances, pt. 7035.8460, subp. 3 allows the county 30 days to gain access to the surety bond for facility closure. However, there is no assurance that the county will gain access to the funds for closure. Therefore, the rules provide the Agency the final 30 days of the 150-day period in which to call in the bond before coverage ends.

This provision is reasonable to ensure that, once begun, coverage will not lapse at facilities where the county chooses to hold the financial assurance mechanism.

Subp. 10. Cancellation of the Surety Bond. This subpart describes the conditions under which the facility owner or operator can cancel the bond. The bond can be cancelled by the owner or operator providing evidence that an alternative mechanism is in effect or if closure of the facility is complete in accordance with the closure plan. Once the facility owner or operator sends such evidence to the Agency director, the director's written approval will allow the facility owner or operator to cancel the bond. This is another provision which reasonably enables the Agency to ensure that there are no gaps in coverage.

10. Minn. Rules Pt. 7035.8490 Letter of Credit.

Waste tire facility owners and operators may choose to comply with the rules by using an irrevocable letter of credit. A letter of credit extends the credit of one individual or organization (normally a bank) which is superior to that of a second individual or organization (the facility owner or operator), to a third individual or organization (the Agency).

A discussion of how a letter of credit will function will be helpful. The letter of credit will operate like the surety bond. A bank issues the facility owner or operator credit equal to the sum of the current closure cost estimate. The letter of credit will remain in effect until the facility owner or operator is released from responsibility to comply with the rules. While the letter is in effect, the bank will honor any draft properly presented by the Agency director. The director can only present a draft if the facility owner or operator has failed to perform the specified closure actions. If the director presents a draft to the bank, the bank deposits the sum into a standby trust fund. A bank will recover the extended credits from the facility owner or operator. Banks charge for letters of credit at rates comparable to rates charged for surety bonds. Banks also charge interest on the outstanding balance of extended credit.

Except as noted below, the requirements of subps. 1-10 of this part are substantively the same as the requirements of subps. 1-10 of pt. 7035.8480. The discussion of the reasonableness of the requirements of subps. 1-10 of pt. 7035.8480 also supports the reasonableness of subps. 1-10 of this part and is hereby incorporated by reference.

Subp. 5. Submittal. This subpart requires that the facility owner or operator carefully identify the institution issuing the letter of credit. This requirement is reasonable because the agreement needed to issue a letter of credit is not nearly as detailed as are the instruments used to execute trusts or surety bonds. The facility owner or operator must send the Agency director a letter containing:

- the identification number of the letter of credit,
- the name of the issuing institution,
- the date on which the letter is issued,
- the name and address of the facility, and
- the amount of the current closure cost estimate.

This information is reasonable to provide the Agency director with the data needed to administer the rules.

Subp. 6. Notification. This subpart specifies the conditions under which the bank may cancel the letter of credit. The letter of credit must be irrevocable for at least one year. This requirement is reasonable to give the facility owner or operator and the Agency director certainty about coverage. The letter of credit must also be extended automatically for one year following the expiration date. This extension is not absolute. It would not be reasonable to make the bank extend credit indefinitely. Banks can cancel the letter of credit through proper notification.

The bank must notify the Agency director and the facility owner or operator if the letter of credit is to be cancelled. The notices must be sent by certified mail. The cancellation cannot become effective until 120 days

after the Agency director receives the notice and 150 days for a letter of credit held by a county. As discussed in connection with pt. 7035.8480, subp. 9, this provision ensures that there will be no gaps in coverage caused by the bank's decision to cancel.

Subp. 9. Failure to Perform. This subpart specifies the conditions where the Agency director shall draw on the letter of credit. If the facility owner or operator does not perform closure according to the closure plan or permit conditions, the Agency director shall draw on the letter of credit. This provision is reasonable because it clarifies the conditions under which the bank will incur cost. This specification is reasonable to help all parties understand their responsibility. Ambiguities in this area would lead to unreasonable delays and unnecessary cost.

Subp. 10. Failure to Establish Alternate Financial Assurance. This subpart describes another condition where the director shall draw on the letter of credit. This subpart gives the facility owner or operator 90 days after receiving a cancellation notice to find another means to comply with the rules. If the owner or operator does not find an alternate mechanism, the Agency director must draw on the letter of credit. The director may delay this drawing if the bank further extends the letter of credit. However, the director must draw on the letter of credit during the last 30 days of any extension if the facility owner or operator has not established another financial mechanism. These provisions are reasonable to ensure that coverage of closure costs will not lapse. The requirements are reasonable to specify the conditions where a letter of credit will be used and give facility users the assurance needed that

closure costs will be financed.

Subp. 11. Termination of the Letter of Credit. This subpart places a further limit on the bank's liability. The facility owner or operator will, at some point, be released from responsibility to comply with the rules. The conditions for such release are in pt. 7035.8530, and will be discussed below. If the owner or operator is released from financial assurance responsibilities, the Agency director must return the letter of credit to the bank. This subpart is reasonable to release the bank from responsibility after the Agency director relieved the facility owner or operator of compliance. There is no reason to carry the letter of credit after the Agency has said there is no need to continue the financial assurance requirement.

11. Minn. Rules Pt. 7035.8500 Surety Bond Guaranteeing Performance of Closure for Permitted Facilities.

Facility owners or operators may choose to comply with the rules by using a surety bond that is somewhat different than the bond described in pt. 7035.8480. The surety is required, under this part, to guarantee that the facility owner or operator will perform facility closure as specified in the closure plan. The bond allowed under pt. 7035.8480 uses balances held in trusts at specified times as the measure of the surety's liability. The bond described in this part requires performance of specified acts. Setting aside this difference, the two bonds operate in the same manner. The requirements of subps. 1-10 of this part are substantially the same as subps. 1-10 of pt. 7035.8480. The discussion of the reasonableness of the requirements of subps. 1-10 of pt. 7035.8480 also supports the reasonableness of subps. 1-10 of this part and is hereby

incorporated by reference.

Subp. 11. Limitation on Liability. This subpart places a further limit on the surety's liability. Eventually, the facility owner or operator will be released from responsibility to comply with the rules. The conditions for release are found in pt. 7035.8530. This subpart releases the surety from responsibility for the facility owner's or operator's actions after the director has waived their compliance responsibility. It is reasonable to cancel the surety bond agreement after the Agency has determined there is no need to continue the financial assurance requirement.

12. Minn. Rules Pt. 7035.8510 Use of Multiple Financial Assurance Mechanisms.

This part allows the facility owner or operator to comply with the rules by using more than one financial mechanism. Facility owners or operators can use any combination of trust funds, letters of credit or surety bonds that guarantee payment into trust funds. The instruments must conform to applicable parts of the rules.

This provision is included to help facility owners and operators manage changing circumstances. For example, an owner or operator may have a bond or a letter of credit and a short-term condition arises which changes the closure cost estimate. The surety or bank may not want to extend the terms of its agreement on short notice. The facility owner or operator may then find another instrument or alter an existing instrument so that the total once again complies with the rules. This provision is reasonable since it gives flexibility to the facility owners or operators without compromising the goals of the rules.

The list of available instruments excludes the surety bond that guarantees performance. If there is default, combining a performance bond with funds from other instruments would become extremely complex. This exclusion is reasonable because other instruments are available to allow facility owners and operators the range of choice they will need.

If the facility owner or operator chooses to use more than one financial instrument, the combined value of these instruments must equal the current closure cost estimate. This provision is reasonable because the Agency must make sure that the instruments afford complete coverage of the costs.

If a trust fund is used in combination with other instruments, it can serve as the standby trust for the bond or letter of credit. A single standby trust can be used for two or more instruments. This is reasonable because it helps the facility owners or operators reduce the costs of compliance.

The director is not restricted in the use of financial instruments to accomplish closure. Other arrangements would require setting an order of priority among the various instruments. Given a priority ranking, disputes could cause delays while conditions at the facility get worse. This provision is reasonable to allow the Agency director to act quickly to correct emergency conditions. The director should have a wide range of choices for action.

13. Minn. Rules Pt. 7035.8520 Use of Financial Assurance Mechanism for Multiple Waste Tire Facilities.

This part allows facility owners or operators who have more than one facility to use a single financial instrument to cover all sites. The face value of that instrument must equal the total value that would result if all

facilities had been covered by individual instruments. For example, a facility owner or operator may have three facilities and the current closure cost estimate is $500,000 at each facility. A single letter of credit for $1.5 million can be used to cover all three facilities.

Facility owners or operators who choose this option must identify the facilities covered and the extent of coverage for each facility. This is needed for the Agency director to know the limits to which the instrument can be used for each facility. The director must know these limits because the rules constrain the use of the instrument to only those amounts specified for coverage at each facility. Referring to the previous example, the rules would allow the director to draw $500,000 for each facility. This is a reasonable precaution that will help avoid situations where the users of one facility are billed for costs incurred at another facility.

14. Minn. Rules Pt. 7035.8530 Release of Owner or Operator From Financial Assurance Requirements.

As noted earlier, there will be a time when there is no need for financial assurance at the facility. The owner or operator should be released from financial assurance responsibility at this time. This part establishes the satisfactory closure of the facility as the condition for such a release. It is reasonable to release facility owners and operators from responsibility for financial assurance for closure once closure is completed and financial assurance is no longer needed.

15. Minn. Rules Pt. 7035.8450 Incapacity of Owners or Operators, Guarantors, or Financial Institutions.

This part describes the facility owner's or operator's obligations if bankruptcy occurs. The Agency, as regulator of and beneficiary of financial instruments, will have interests to maintain if either the facility owner or operator or one of its financial intermediaries fails.

Bankruptcies occur because business firms cannot pay their debts. Bankruptcy proceedings are usually referred to according to the chapter of the federal Bankruptcy Code under which they appear. Chapter 7 proceedings involve complete liquidation of a firm's assets. Creditors in these cases are reimbursed from the distribution of the bankrupty's property. Chapter 11 proceedings involve debt reorganization. Reorganization provides creditors with a plan that will allow debt repayment from future earnings.

The ability of State environmental agencies to gain compliance in bankruptcy proceedings is not successful. See Exhibits 20 and 21. The Bankruptcy Code is designed to give debtors a fresh start, while at the same time protecting the interests of creditors. This goal can conflict strongly with environmental protection goals. If a facility owner or operator begins bankruptcy proceedings, it is reasonable that the Agency be notified so that the Agency can actively participate in the proceedings. The Agency's interests will be substantial, since the outcome may determine if proper closure will be done.

Subp. 1. Notification of Bankruptcy. The facility owner or operator must notify the Agency director within ten days after bankruptcy proceedings have begun. The notice has to be sent by certified mail.

Subp. 2. Incapacity of Financial Institutions. If the financial intermediary becomes bankrupt or loses authority to conduct business, the facility owner or operator is without financial assurance. In this case, the facility owner or operator has 60 days to find another intermediary and execute an acceptable financial instrument. This provision is reasonable to ensure that coverage will not lapse.

16. Minn. Rules Pt. 7035.8550 Language Required for Trust Agreement.

This part gives facility owners and operators the language required if they choose to develop trust funds or if they need to establish a standby trust in connection with other instruments. The rule instructs facility owners and operators to include appropriate language for descriptive terms (names, titles, etc.) that are written between brackets and double brackets in the model. This provision is reasonable to tell facility owners and operators how to adapt the instrument to their individual needs.

It is reasonable to dictate the format of a trust or standby trust fund agreement for several reasons. First, requiring the same format ensures that all facility owners and operators provide financial assurance on an equitable basis. This provides for an equal regulatory environment in which all facilities may operate. Second, requiring the same format allows facility owners, operators, financial institutions, and the Agency to interpret the adequacy of the financial assurance mechanism on a consistent basis. Third, providing a format specifically sets out for facility owners, operators, and financial institutions what is required of them in order to be in compliance with the rules. This saves them the time and, therefore, the money to draft

such documents. Fourth, a set format saves the Agency the time and money that would be spent analyzing the adequacy of a wide range of financial agreements that would otherwise be submitted. The set format provides for a timely and consistent Agency review.

The introductory section of the trust agreement provides basic information that is needed to make the contract enforceable. The instrument is dated and all parties to the contract are named and described.

The introductory section also describes the conditions that have caused the grantor and the trustee to enter into the contract. These conditions are:

- the Agency's promulgation of rules requiring the facility owner or operator to demonstrate the ability to meet specified costs;

- the facility owner's or operator's choice of a trust fund as the means to comply with the referenced rules;

- the facility owner's or operator's choice of trustee; and

- the trustee's willingness to enter into the contract.

After the introduction, the named sections describe the specific conditions of the contract.

Section 1. Definitions. This section describes the parties to the contract in the words they are referred to in the body of the agreement. The facility owner or operator is defined as "grantor," the trustee is defined as "trustee" and the Agency or the county, for county-held financial assurance, is defined as "beneficiary."

These parties must be identified if a trust is to be enforceable. The last definition is one that has caused some concern among local government officials.

The Association of Minnesota Counties provided a statement of this concern in its 1987 legislative platform.

> Counties strongly oppose provisions of the draft rule that name the PCA as legal beneficiary of local solid waste financial assurance trust funds. This is an infringement upon local control of locally collected revenues. Counties must retain the right to negotiate the types and costs of remedial actions needed to achieve the desired environmental standard.

Minnesota Counties, V30, No. 10, December 19, 1986.

The rules take this concern into account by naming the county as the first beneficiary for facilities where the county holds the trust fund.

Section 2. Identification of Facilities and Cost Estimates. This section further defines the scope of the trust agreement. Detailed specifications serve all interests because they clarify the rights and duties of all parties. An attachment (Schedule A), required by this section, will describe in detail the facility or facilities covered by the agreement and the amount of costs covered under the agreement.

Section 3. Establishment of Fund. This section describes how the trust fund is to be set up and developed. It includes a notice that restricts third party access to the fund unless specified in the contract. This provides protection for the fund in the event that either the facility owner, operator or the trustee fail. This statement of intent secures the fund's assets against creditors' claims under bankruptcy proceedings. The Government Accounting Office (GAO) has researched the question of bankruptcy and environmental regulation. See Exhibit 20. The GAO found that bankruptcy has given responsible parties an escape route by which to avoid compliance with

environmental regulations. State authorities seeking to compel action have had little success in securing the assets of a bankrupt business to pay for cleanup. These cases demonstrate both the need for and reasonableness of provisions designed to protect funds reserved for closure.

The wording of the grantor's and trustee's intent also provides facility owners and operators the protection that they indicate are needed. This contract phrase is a binding limitation on the Agency's use of reserved funds. Later parts of the contract specify the Agency's role in the agreement. The intent language prohibits the Agency from using reserved funds unless described in the contract.

The attachment required by this section (Schedule B) describes in detail the financing and scheduled development of the trust fund. The fund consists of initial deposits, future deposits, earnings and interest on earnings minus payments or distributions made by the trustee. This provision establishes how the fund's balance is determined.

A final provision relieves the trustee of duties exercised by the Agency. This includes tracking compliance with the rules by ensuring that fund balances are adequate to meet future needs and that payment rates are correct. It is reasonable to require the Agency to do this and exempt the trustee from the requirements.

Section 4. Payment for Closure. This section describes the conditions under which the trustee can release funds. The trustee releases funds in response to a written order from the Agency director. The fund is limited to payment for closure. This provides facility owners, operators, and the Agency

with assurance that the funds will not be spent for purposes other than those specified in the closure plans.

The Agency director specifies who is to receive reimbursement. This may be the grantor or contractor who has conducted facility closure work. Contractors may become involved if a facility owner or operator refuses to do the required work. This provision gives the trustee the ability to perform if the owner or operator does not.

The agreement also allows the trustee to make refunds to the grantor. This could occur if the fund balance becomes greater than the projected need. A change in conditions could cause the cost of closure to decrease. If the fund is larger than needed, there is no reason to retain excess funds. Any surplus funds should be returned to the grantor.

Section 5. Payments Comprising the Fund. This section restricts payments into the fund to those forms the trustee is willing to accept. Cash is acceptable. Trustees may not want to accept securities. The trustee's fiduciary responsibilities constrain investment strategies toward conservation. Many securities are too risky to be considered as qualifying payment into the trust. They could lose value once they become part of the fund, and cause a disruption in the orderly development of the fund. Trustees are in a position to assess the risk of investments. The contract is reasonable to allow trustees the option to refuse securities they consider risky.

Section 6. Trustee Management. The introduction to this section describes legal constraints referred to as "the prudent man rule." This provision limits the investment strategies that trustees may use. The limitations favor

conservative investments. Such constraints are proper and reasonable because growth and income are not appropriate goals for these trust funds. Instead, the trustee's goal should be the facility owner's or operator's need to set aside funds for closure activities. The trustee should not invest funds held in trust on risky ventures. Conservative investments and management are more likely to maintain the integrity of reserved funds.

Specific prohibitions and authorizations are added to encourage fund conservation.

a. The trustee is not allowed to accept securities or notes from the grantor as payments into the fund. This would amount to accepting a liability rather than an asset. The fund would then have a obligation from the grantor to pay the value of the note or security. It is reasonable to prohibit trustees from accepting these instruments.

b. Trustees are allowed to place funds in checking accounts (demand deposits) and savings accounts (time deposits). Trustees may need to do this so that they can make business transactions. However, these deposits are limited to the amount insured by the Federal Deposit Insurance Corporation (FDIC). The FDIC ensures deposits from a single depositer in a single bank up to $100,000. This limit is consistent with other conservative restrictions placed on the trustee's management of funds.

c. Trustees are allowed to hold cash from the fund for short periods of time, if needed to make investments or disbursements. Trustees are not liable for interest earnings in these circumstances. This provision is written to give trustees the reasonable and needed discretion to carry out routine transactions.

Section 7. Commingling and Investment. This section allows trustees to add assets developed by the grantor with assets from other trusts to form larger, "collective" trusts. Section 6 constrains the extent of activities, within the limits of the prudent man rule. This section enables trustees to take advantage of scale economies in investment. Brokerage fees on investment transactions vary with the size of the transaction.

A large purchase incurs a similar unit-base fee. These savings reduce administrative charges, which will allow more earnings to be retained in the trust funds. There are enough trustees to increase the possibility that no single trustee will incur windfall profits. Trustees can get other advantages from increasing their scale of operations. Larger funds enable trust managers to diversify investments to minimize risk and maximize returns. The result of optimization improves as the amount of the fund invested increases.

It is reasonable to give trustees the ability to better manage trust funds. The flexibility helps to lower administrative costs, decrease risk and increase returns.

Section 8. Express Powers of Trustee. This section provides further specification of the actions and judgments conferred on the trustee. This section does not limit any of the other provisions of the agreement. Instead, it provides all parties with a more detailed description of the trustee's management activities and responsibilities. The provisions of this section empower the trustee to make normal market transactions with the properties held in trust. This section also releases the grantor from any obligation to oversee the daily operations of the trust. This provision is reasonable as it defines

the responsibilities of the trustee and the grantor with respect to routine financial management.

Section 9. Taxes and Expenses. This section allows for payment of the ordinary expenses incurred through the formation and operation of the trust. Assessed taxes are paid from the fund. The issue of taxation has come up several times during discussion of the proposed solid waste rules. The Agency staff has sought an opinion from both the Internal Revenue Service and the Minnesota Department of Revenue. See Exhibits 22 and 23. Neither agency has yet given an opinion on the question of whether trust fund earnings should be taxed. If the tax agencies decide that trust fund earnings are taxable, the fund will pay these taxes.

This provision clarifies that the trustee should recover all reasonable administrative costs from the fund if not paid directly by the grantor. The Agency expects that trustees will be paid directly from the fund. The expenses described are assessed against the fund, since it is the fund that incurs the expense. It is reasonable to provide a mechanism to recover the cost of fund management.

Section 10. Annual Valuation. This section requires the trustee to make annual reports on the financial condition of the trust fund. The trustee will send these reports to the facility owner or operator and the Agency director. Reporting is needed to evaluate and adjust payments to equal estimated costs. The trustee is required to use current market data in evaluating securities. This provision ensures that decisions made by the Agency and the permittee will be based on current data.

The grantor is given 90 days to contest the trustee's valuations. If the grantor does not send a written objection to the trustee within 90 days, the grantor agrees with the evaluation. This provision makes the process of fund evaluation manageable for both the grantor and the trustee. Both parties know what they must do and when they must do it. It is reasonable to evaluate the fund and make timely adjustments.

Section 11. Advice of Counsel. This section clarifies that the trustee has an option to seek independent legal advice. This provision is included for the information of the grantor more than to protect the right of the trustee. The grantor is aware that the trustee may seek outside advice on interpretations of the duties and responsibilities defined in the agreement.

If the trustee acts on independent legal advice, the trustee is protected to the fullest extent allowed under the law. This provision is reasonable as it specifies the trustee's legal rights under the agreement.

Section 12. Trustee Compensation. This section informs facility owners and operators that the trustee is entitled to payment for service. It also places reasonable limits on compensation. This is another provision that makes explicit ordinary rights and duties. This is reasonable as it helps ensure that all parties know their commitment when entering into the agreement.

Section 13. Successor Trustee. This section describes how one trustee resigns in favor of another trustee. The process set up is deliberate and orderly. No transfer may occur until a successor trustee accepts the appointment. It is reasonable to require transfers to include all currently held funds and assets.

There may be an occasion where a facility owner or operator takes no action after a trustee presents a resignation notice. If this happens, the agreement specifies these provisions. The trustee is allowed to request that a court assign a successor trustee or provide the current trustee with other instructions. This provision is reasonable as it gives all parties the assurance that this situation can be resolved and funds will continue to be available for closure even if the current trustee wants to be released from the contract.

The Agency director, the facility owner or operator and the current trustee must receive certified notice of the date when the successor trustee will assume responsibility for the trust. The successor trustee sends notice at least ten days before the effective date. This provision is reasonable as it ensures that there will be no gap in the coverage.

A final provision specifies that the fund will pay for transaction costs incurred in transfers from one trustee to another. This provision is included to make sure that all parties understand that transfer costs are considered as ordinary costs reimbursable in the same way as taxes and other expenses.

Section 14. Instructions to the Trustee. This section limits the trustee's duties and responsibilities to those written in the trust agreement or transmitted by the appropriate authority. This provision is reasonable as it gives the trustee a reasonable protection from expectations that the trustee respond to informal or unspecified instructions. The trustee's main responsibility is financial management and disbursement. These responsibilities are important enough that there should be no room for error in the interpretation

of instructions. It is reasonable that the trustee not accept verbal instructions when managing the trust, as errors are more likely to occur.

Section 15. Notice of Nonpayment. This section requires the trustee to notify the Agency director if a facility owner or operator misses a scheduled payment. The director will need this notice to determine whether facility owners and operators are complying with the rules. If a facility owner or operator misses a payment, enforcement measures in pt. 7035.8470 begin. Discussions with trust company officials indicate that they believe this is a reasonable requirement and will not impose a burden on trustees.

Section 16. Amendment of Agreement. This section makes provision for needed changes to be made in the agreement. All affected parties must agree before changes can be made. This requirement is reasonable as it protects the interests of all parties.

Section 17. Irrevocability and Termination. This section requires that all affected parties must agree before the trust can terminate. Surplus funds are distributed to the facility owners or operators or their successors or heirs. This requirement is reasonable as it protects the interests of all parties.

Section 18. Immunity and Indemnification. This section protects the trustee from liability from non-negligent acts. This is further notice that the trustee's responsibilities do not extend beyond financial management and reporting. It is a reasonable protection afforded the trustee, whose role is limited to holding and protecting financial assets. This provision does not exempt the trustee from liability for negligent acts.

Section 19. Choice of Law. This section requires that the trust

agreement be interpreted according to Minnesota law. The requirement is reasonable to provide all parties with the legal reference needed to understand and manage the trust.

Section 20. Interpretation. This section places limits on the understanding of the language of the agreement. Singular and plural words included in the agreement are said to "include each other." This means, for example, that if there are two grantors to the trust, the provisions of the trust apply equally to both even though the agreement refers consistently to "the grantor." This provision also makes it clear that section headings are not to be understood as substantive elements of the agreement. This section is reasonable to clarify linguistic matters that could lead to confusion in the interpretation of the agreement.

Summary language and provisions for appropriate signatures follow section 20 of the agreement.

17. Minn. Rules Pt. 7035.8560 Language Required for Certificate of Acknowledgment.

This part provides the language required in the certification of acknowledgment that accompanies the copy of the trust agreement sent to the Agency director. The need for this certification was discussed in the reasonableness discussion under Minn. Rules pt. 7035.8470 and will not be repeated here.

18. Minn. Rules Pt. 7035.0570 Language Required for Surety Bond Guaranteeing Payment Into a Standby Trust Fund.

This part provides the language required in a surety bond that guarantees

development of an approvable trust fund at the time of facility closure. It is reasonable to dictate the format of a surety bond agreement guaranteeing payment into a standby trust fund for several reasons. First, requiring the same format ensures that all facility owners and operators provide financial assurance on an equitable basis. This provides for a just business environment for all facilities to operate in. Second, requiring the same format allows facility owners, operators, financial institutions, and the Agency to interpret the adequacy of the financial assurance mechanism on a consistent basis. Third, providing a format specifically sets out for facility owners, operators, and financial institutions what is required of them in order to be in compliance with the rules. This saves them the time and, therefore, the money to draft such documents. Fourth, a set format saves the Agency the time and money that would be spent analyzing the adequacy of a wide range of financial agreements that would otherwise be submitted. The set format provides for a timely and consistent Agency review.

The first section of the bond is devoted to basic data.

1. The date the bond is executed by the principal and the surety.

2. The date on which the terms of the bond become effective.

3. The name of the principal. This is normally the facility owner or operator.

4. A descriptive name for the facility owner's or operator's organization (e.g., individual, corporation, etc.).

5. The state in which the corporation is incorporated.

6. The name and business address of the surety.

7. Names and identification numbers for all facilities covered and each individual facility's estimated costs for closure.

8. The total amount to be covered by the bond.

The data provided set the parameters of the agreement. They are needed and reasonable to enforce the contract.

The first paragraph defines the extent of the surety's commitment to the Agency. This paragraph establishes the surety's liability. If there are joint surety's, the liability is joint and several but limited to actions arising from the described activities. This requirement is reasonable to provide the surety and the facility owner or operator with notice of the extent of the surety's liability.

The next two paragraphs describe the conditions which have caused the facility owner or operator and the surety to enter into the agreement.

The next paragraph describes the facility owner's or operator's intention to establish a standby trust fund. This is a requirement under pt. 7035.8480. The need for and reasonableness of this requirement is provided in the discussion for that part and will not be repeated here.

The next five paragraphs describe the conditions that the surety will guarantee. If these conditions do not occur, the surety will be required to deposit the penal sum of the bond in the standby trust fund. The conditions guaranteed are:

- that the facility owner or operator will develop a trust fund equal to the estimated cost of closure;

- that the fund will be fully developed either before the facility closes

or within 15 days after the owner or operator receives a proper order to begin one of the specified activities; or

- that the facility owner or operator will provide an approvable alternate financial assurance instrument if the bond is cancelled.

The next paragraph is a positive statement of the conditions under which the surety becomes liable on the bond obligation. There is also a positive statement of the surety's responsibility to make deposits into the standby trust following proper notice from the Agency director.

The next paragraph further specifies the limits of the surety's liability. This liability does not end until the sum of payments into a standby trust equals the penal sum. A further statement explicitly limits the surety's liability to the amount of the penal sum.

The next paragraph provides for the surety to cancel the bond. The surety must notify the facility owner or operator and the Agency director of the intent to cancel. Cancellation is not effective until 120 days after the Agency director receives notice or 150 days for facilities which the county holds the surety bond. The reasonableness of these arrangements is provided under the discussion for Minn. Rules pt. 7035.8480, subp. 9 and will not be repeated here.

The next paragraph provides for the facility owner or operator to cancel the bond. Cancellation may occur only if the Agency director sends the surety a written authorization to end the bond.

The next paragraph is optional and may be included at the desire of the surety and the facility owner or operator. This paragraph provides for an annual adjustment in the penal sum of the bond. The provision limits the extent

of the increase to 20 percent. There is also a requirement that the penal sum may not be decreased without the Agency director's written permission.

The final two paragraphs certify the date of signing and the signatures of the surety and the principal.

19. Minn. Rules Pt. 7035.8580 Language Required for Letter of Credit.

This part provides the facility owner and operator with the language needed in the financial instrument if the facility owner or operator complies with the rules by using a letter of credit. The letter is like a normal business letter. Many of the identification requirements of other instruments are omitted from the letter of credit. These identification requirements must be met by the facility owner or operator pursuant to pt. 7035.8490, subp. 5.

It is reasonable to dictate the format of a letter of credit agreement for several reasons. First, requiring the same format ensures that all facility owners and operators provide financial assurance on an equitable basis. This provides for a just business environment for all facilities to operate in. Second, requiring the same format allows facility owners, operators, financial institutions, and the Agency to interpret the adequacy of the financial assurance mechanism on a consistent basis. Third, providing a format specifically sets out for the facility owners, operators, and financial institutions what is required of them in order to be in compliance with the rules. This saves them the time and, therefore, the money to draft such documents. Fourth, a set format saves the Agency the time and money that would be spent analyzing the adequacy of a wide range of financial agreements that would otherwise be submitted. The set format provides for a timely and

consistent Agency review.

The first paragraph of the letter identifies the instrument and states that credit is extended in favor of the Agency on behalf of the facility owner or operator. This paragraph also identifies the amount of credit extended. This amount equals the sum of the current closure cost estimate. The credit becomes available when the Agency director presents a draft to the bank which: a) references the letter's identification number, and b) certifies that conditions defined in the rules have occurred which call for the Agency director to draw on the credit extended. It is reasonable to require this information in a letter of credit to ensure that the financial instrument meets the requirements specified in the rules.

The next paragraph provides the effective date of the letter and requires that its term be at least one year. The letter is extended automatically each year. The letter can be cancelled if a) the bank sends the facility owner or operator and the Agency director notice of its intent to cancel, and b) this notice is sent 120 days before the current expiration date. It is reasonable to require this information in the financial instrument so that all affected parties know when the agreement has been executed. It is reasonable to state the criteria for cancelling the agreement in order for the agreement to be in compliance with the rules.

The next paragraph states the bank's intention to honor any properly presented drafts. To honor the draft, the bank deposits the amount required into the standby trust fund. It is reasonable to provide this information in the financial agreement in order to ensure that the requirements of the rules

are carried out.

There is a final certification that the language of the letter is the same as the language required by the rule. This is followed by signature blocks and a reference to the section of the Uniform Commercial Code to which the letter is subject. It is reasonable to include signatures and the reference to applicable codes.

20. Minn. Rules Pt. 7035.8590 Language Required for Surety Bond Guaranteeing Performance of Closure.

This part provides the language required in a surety bond that guarantees that the facility owner or operator will perform specified activities. The provisions of this bond are the same as the provisions in the financial guarantee bond except that different conditions apply in determining the surety's liability.

It is reasonable to dictate the format of a surety bond agreement guaranteeing performance of closure for several reasons. First, requiring the same format ensures that all facility owners and operators provide financial assurance on an equitable basis. This provides for a just business environment in which all facilities may operate. Second, requiring the same format allows facility owners, operators, financial institutions, and the Agency to interpret the adequacy of the financial assurance mechanism on a consistent basis. Third, providing a format specifically sets out for the facility owners, operators, and financial institutions what is required of them in order to be in compliance with the rules. This saves them the time and, therefore, the money to draft such documents. Fourth, a set format saves the Agency the time and money that

would be spent analyzing the adequacy of a wide range of financial agreements that would otherwise be submitted. The set format provides for a timely and consistent Agency reivew.

If the facility owner or operator chooses to comply with the rules by using a performance bond, then the surety must guarantee that the facility owner or operator will perform closure according to the closure plan and Agency directives. If the facility owner or operator does not perform the needed activities, then the surety becomes liable on the bond obligation. It is reasonable to include this language to inform parties of their responsibilities.

F. Requirements for Waste Tire Generation and Transportation, Minn. Rules Pts. 7035.8700 to 7035.8710.

1. Minn. Rules Pt. 7035.8700 Waste Tire Generation.

This part sets out the requirements that apply to all persons who generate waste tires.

Subp. 1. Scope. Subp. 1, which specifies who is subject to the requirements of this part, is reasonable because it informs persons who is subject to this rule.

Subp. 2. Waste tire generation. Subp. 2 requires that any person who generates waste tires and contracts for their disposal must contract with a person who has been issued an Agency waste tire transporter identification number or a person exempt under Minn. Rules pt. 7035.8710, subp. 2. This requirement ensures that the person transporting the waste tires has notified the Agency of such activities and is therefore being regulated by the waste tire management program. This requirement is reasonable to ensure that generators

use transporters who properly manage waste tires in compliance with the applicable rules and in a manner which is not a threat to human health and the environment.

Subp. 3. Generator record keeping. Subp. 3 requires persons who generate more than 50 waste tires per year to document all transactions involving disposal of the waste tires. The Agency chose 50 waste tires per year as a cut-off level for regulation under subp. 3 because the statute uses the amount of 50 in defining tire collector. The Agency believes it is reasonable to use the same amount to ensure consistency in regulation. For amounts less than 50, the person still must properly manage the waste tires but record keeping is not required. The goal of the waste tire management program is to protect the environment and the public from the mismanagement of waste tires. In order to do this, the Agency must track all waste tires from their source to their final disposition. This tracking system involves the keeping of records by generators, transporters and facility owners and operators. Therefore, it is reasonable to require the generator to record all transactions with a transporter or facility owner or operator to minimize the possibility for illegal or improper disposal of waste tires. It is also reasonable that the generator retain the transaction record and make this record available to Agency staff for inspection, since the Agency must be able to ensure that generators and transporters are managing waste tires in compliance with the applicable rules and in a manner that is protective of human health, natural resources, and the environment.

2. Minn. Rules Pt. 7035.8710 Waste Tire Transportation.

This part sets out the requirements that apply to persons in the business of transporting waste tires.

Subp. 1. Scope. Subp. 1 is needed so that persons governed by this rule are aware that it applies to them.

Subp. 2. Exempt persons. Subp. 2 is needed to inform affected persons that they are exempt from the requirements of this part. Items A to F set forth the persons who are not subject to this rule.

Under item A, a person who transports household quantities of waste tires incidental to municipal waste collection, and who delivers those tires to a permitted solid waste facility or waste tire facility is exempt from the requirements of this part. This is reasonable since the transportation of waste tires is not the primary objective of these individuals. Also, the Agency does not want to discourage the continued collection of household quantities of waste tires through the existing solid waste collection system. Use of this existing system is very effective and efficient for small amounts of waste tires generated by households, and is encouraged. Therefore, it is reasonable to exempt such transporters from the requirements of this part.

Item B addresses persons or organizations that receive waste tires incidental to the process of collecting recyclable materials. It is reasonable to exempt these persons and organizations from the requirements of this part as long as the tires are delivered to a permitted solid waste facility or a waste tire facility, and as long as the transportation of tires is incidental to collecting recyclable materials since these persons are not in the business of

transporting waste tires. The Agency realizes that such incidental transportation of waste tires will occur and does not want to discourage the collection of recyclable materials. Therefore, to encourage such activities, it is reasonable to exempt such persons from regulation under this part provided the waste tires are properly managed.

Under item C, persons transporting no more than ten waste tires at any one time are exempt from the requirements of this part. The Agency chose the number ten because many households have two cars, which would account for ten waste tires if all the tires were replaced at the same time. Therefore, it is reasonable that a person transporting no more than ten waste tires be exempt from the requirements of this part provided the waste tires are properly managed.

Item D exempts persons who are transporting waste tires to be used for agricultural purposes from the requirements of this part. Since the legislation exempts a person using waste tires for agricultural purposes from the requirement to obtain a permit, the Agency believes it is reasonable to allow the person transporting the waste tires to the site of use to also be exempt from regulation.

Item E exempts persons transporting tire-derived products to a market from the requirements of this part. Since persons transporting tire-derived products to a market are not in the business of transporting waste tires, but rather are in the business of transporting products, it is reasonable to exempt them from regulation under this part. Also, the Agency does not want to discourage persons in the transportation business from handling tire-derived products due

to regulation beyond applicable Minnesota Department of Transportation regulation.

Item F of this subpart exempts a waste tire generator from the requirements of this part if the generator removes the waste tires from the generator's site and delivers those tires to a waste tire facility. Since the generator is only transporting the generator's waste tires and is not in the business of transporting waste tires generated by other persons, it is reasonable to not require this person to obtain an Agency waste tire transporter identification number. Since this person is subject to regulation under Minn. Rules pt. 7035.8710, additional record keeping requirements are not necessary.

Subp. 3. Agency identification number required. Subp. 3 requires persons not exempt under subp. 2 who transport waste tires to obtain an Agency waste tire transporter identification number. As the waste tire permit rules were developed, concerns were raised regarding the development of a regulatory program which addressed waste tire management activities for waste tire generators, transporters and facilities. In order to have a comprehensive program, all persons involved in waste tire management need to be subject to some regulation. However, such regulation must take into consideration the type of activity and the level of regulation needed to address specific concerns.

The system the Agency developed involves requiring that all waste tires be delivered to acceptable facilities, and that generators, transporters and facilities keep records in order to document shipments of waste tires. For this system to function, a generator needs to be assured that the transporter is aware of the requirement that the waste tires must be properly managed. This

could be done either by permitting transporters or by establishing another regulatory system. The Agency believes that a permitting program is not appropriate for transporters due to their mobility and the variability of their activities. The Agency has chosen to develop a simple manner of regulation involving the use of Agency waste tire transporter identification numbers. By requiring a transporter to obtain an identification number and to properly manage the waste tires, and generators to only use transporters with identification numbers, a system is established which ensures proper management of waste tires.

The Agency believes this approach is reasonable because it addresses the concern of requiring proper waste tire management in a manner which does not place a burden on either the generator or the transporter. Therefore, in order for the system to function, it is reasonable to require persons who transport waste tires to obtain an Agency waste tire transporter identification number.

Subp. 4. Waste tire transportation. Subp. 4 requires persons who transport waste tires to deliver the waste tires to a waste tire facility with a permit or provisional status, or one which is exempt from the permit requirement. As discussed under subp. 3 above, it is reasonable to require such delivery in order for the system to function. Also, since the intent of the waste tire permitting program is to ensure proper waste tire management, it is reasonable to require that the waste tires be delivered to an acceptable facility rather than indiscriminately dumped.

Subp. 5. Record keeping. Subp. 5 requires transporters to maintain records regarding waste tire shipments. As discussed under subp. 3 in order for

the waste tire regulatory system to operate, records of waste tire shipments must be maintained. Based on these records, the Agency will be able to determine compliance with the applicable rules. The information required under items A to C is necessary and reasonable so that the flow of waste tires can be tracked from generator to transporter to facility.

Subp. 6. Submittal of operating record. Subp. 6 requires transporters to submit an operating record containing the information required under subp. 5 above. This record is to be submitted quarterly. It is reasonable to require the submittal of records so that the Agency can determine compliance with applicable rules. The Agency believes that such records must be submitted more frequently than annually due to concerns that the Agency be well informed of the waste tire management system and to respond quickly to situations of possible noncompliance. However, a monthly submittal period was considered to be too frequent to allow staff to review and act on the records. Therefore, a quarterly time period was chosen. The Agency believes this is reasonable because it will allow sufficient staff time to review and act on the records while still providing a fairly current representation of what is occurring in the waste tire management system. Considering that the waste tire program is new and that it will take some time to fully implement the program, it is reasonable to require quarterly reports so that the Agency can take appropriate and timely actions necessary to ensure compliance with the rules.

VI. SMALL BUSINESS CONSIDERATIONS

Minn. Stat. § 14.115, subd. 2 (1986) requires State agencies proposing new

rules which affect small businesses to consider the following methods for reducing the impact of the rules on small businesses:

> (a) the establishment of less stringent compliance or reporting requirements for small businesses;
>
> (b) the establishment of less stringent schedules or deadlines for compliance or reporting requirements for small businesses;
>
> (c) the consolidation or simplification of compliance or reporting requirements for small businesses;
>
> (d) the establishment of performance standards for small businesses to replace design or operational standards required in the rule; and
>
> (e) the exemption of small businesses from any or all requirements of the rule.

Minn. Stat. § 14.115, subd. 2 (1986).

The statute requires agencies to incorporate into proposed rules any of the methods listed in subd. 2 that it finds to be feasible, unless doing so would be contrary to the statutory objectives that are the basis of the proposed rulemaking. Minn. Stat. § 14.115, subd. 3 (1986).

Minn. Stat. § 115A.902, subd. 2 (1986) provides that:

> A permit is not required for:
>
> (1) a retail tire seller for the retail selling site if no more than 500 waste tires are kept on the business premises;
>
> (2) an owner or operator of a tire retreading business for the business site if no more than 3,000 waste tire are kept on the business premises;
>
> (3) an owner or operator of a business who, in the ordinary course of business, removes tires from motor vehicles if no more than 500 waste tires are kept on the business premises;
>
> (4) a permitted landfill operator with less than 10,000 waste tires stored above ground at the permitted site; or
>
> (5) a person using waste tires for agricultural purposes if the waste tires are kept on the site of use.

The Agency may not require a waste tire facility owner or operator to obtain a permit for a waste tire facility which is exempted from the statutory requirement to obtain a permit from the Agency. All of the exemptions listed above pertain to small businesses and reduce the impact of the rules on these businesses.

In drafting the proposed waste tire permit rules, the Agency gave consideration to small businesses consistent with items (b), (d) and (e) above. For example, Minn. Stat. § 115A.902, subd. 1 (1986) provides that:

> A tire collector or tire processor with more than 500 waste tires shall obtain a permit from the agency unless exempted in subdivision 2. The agency may by rule require tire collectors or tire processors with less than 500 waste tires to obtain permits unless exempted by subd. 2.

The provision allows the Agency by rule to require tire collectors or tire processors with less than 500 waste tires to obtain permits unless exempted by subdivision 2. The Agency chose not to issue permits to tire collectors or tire processors with less than 500 waste tires because the risk of environmental damage due to such a small number of waste tires is minimal and concerns regarding these small stockpiles could be addressed through specific requirements in the rules. Instead, an owner or operator of a facility with less than 500 waste tires may be granted a permit without making application for it and going through the permitting process provided the facility complies with specific requirements. This is known as a permit by rule. The Agency is convinced that, without sacrificing environmental protection, this permit by rule approach will save the regulated community the costs and efforts involved in applying for an individual permit. Many waste tire facilities with less than

500 tires are small businesses. Therefore, the permit by rule approach will reduce the impact of the rules on these businesses.

In addition to the permitting rules, technical rules containing facility standards have been developed. Compliance with the technical standards is required as part of the permit conditions. These rules classify waste tire facilities into three categories: transfer facilities, processing facilities, and storage facilities. There are general technical requirements that all facilities must comply with as well as requirements that are specific to each facility type. The general technical requirements allow tire collectors and tire processors to propose the means for achieving compliance with these requirements. The Agency believes that by establishing general requirements, the proposed rules address the concerns of small businesses to the maximum extent possible without undermining the goals of Minn. Stat. § 115A.902 (1986) or posing a threat to human health, the environment, or natural resources.

Minn. Stat. § 14.115 assumes that if small businesses are affected by new rules, the impact will be negative. The law requires an agency to mitigate the negative impact if possible. While these proposed rules may have a negative impact, they also provide a substantial positive impact on small businesses. As the waste tire permit rules begin to be implemented, the system will offer increased opportunities for entrepreneurship such as in the construction of new facilities; collection of waste tires; transfer, processing, and storage systems for waste tires and tire-derived products; and utilization of transportation services and equipment. Also, the proposed rules may offer opportunities to consultants and other technical professional services to assist in implementing

the proposed rules, resulting in increased activity and opportunities for that portion of the small business sector.

The waste tire facilities to which waste tires will be transported will also benefit financially from the added influx of waste tires. The increased number and supply of waste tires flowing to these facilities will contribute greatly to the overall economic viability and success of these facilities.

The Agency actively sought and encouraged input from the regulated community, including affected businesses, during the drafting of the proposed rules. This activity was discussed in part III of this document. Many comments were received during this process from small businesses, and the rules were drafted to take many of these comments into account. However, the objective of Minn. Stat ch. 116 and §§ 115A.90 - 115A.95 is to protect the public health and welfare and the environment from the adverse effects which will result when solid waste is mismanaged. Therefore, except for the provisions discussed above, applying less stringent requirements to the management of waste tires by small businesses, irrespective of quantity, would be contrary to the Agency's mandate since small businesses' wastes can cause the same environmental harm as that of larger businesses.

To reiterate, the Agency believes the proposed rules address the concerns of the small business to the maximum extent possible without undermining the goals of Minn. Stat. §§ 115A.90 - 115A.95 and ch. 116 (1986).

VII. ECONOMIC CONSIDERATIONS

Minn. Stat. § 116.07, subd. 6 (1986) requires the Agency to consider

economic factors in exercising its rulemaking process. Minn. Stat. § 116.07, subd. 6 states as follows:

> In exercising all its powers the pollution control agency shall give due consideration to the establishment, maintenance, operation and expansion of business, commerce, trade, industry, traffic, and other economic factors and other material matters affecting the feasibility and practicability of any proposed action, including, but not limited to, the burden on a municipality of any tax which may result therefrom, and shall take or provide for such actions as may be reasonable, feasible, and practical under the circumstances.

This statute, by its terms, applies to all actions of the Agency. In rulemaking, this statute has been interpreted by the Agency to mean that, in determining whether to adopt proposed rules, the Agency must consider, among other evidence, the impact which economic factors may have on the feasibility and practicability of the proposed rules and amendments.

The economic factors associated with the adoption of the proposed waste tire permit rules involve: (1) those additional economic costs which the regulated community may incur to meet the standards imposed by the proposed rules and (2) the economic benefits which will be realized as a result of the better management of waste tires. Both these costs and benefits are difficult to quantify. For example, it is difficult to determine the health cost implications of Encephalitis due to improper waste tire storage in dollar terms or the economic consequences of waste tire mismanagement on air, land, and water resources. Too many assumptions must be made to allow for firm cost estimates on these subjects. Similarly, it is difficult to firmly estimate the cost of a pollution control program on a given industry or within a particular facility. Those costs also depend on a number of choices which the industry or regulated

community may make as to the most cost-effective operation of business.

Although these economic impacts are difficult to quantify, they should still be considered in determining whether to adopt the proposed waste tire permit rules. Where specific reliable dollar values are not available, the Agency must consider qualitative judgements as to the economic factors affecting the feasibility and practicability of the proposed rules. The discussion below describes, in both quantitative and qualitative terms, the economic impact of the proposed rules.

In evaluating the economic impact of the proposed waste tire permit rules, it is essential to recognize that a system already exists involving the generation, transportation, storage, and processing of waste tires. The proposed rules will implement a regulatory system for the different aspects of waste tire management thereby protecting human health and the environment. The proposed rules set up uniform requirements based upon an individual's or company's activities regarding waste tire management. Therefore, the economic impacts and economic advantages should be similar for individuals or companies performing similar activities.

The cost impact on waste tire facilities of complying with the standards imposed by the waste tire permit rules can be divided into two areas: the establishment of a financial assurance mechanism to provide for closure of the facility, and the cost of complying with the facility standards.

A. Cost of Compliance with Financial Assurance Requirements.

The proposed rules require owners or operators of waste tire facilities to prepare a cost estimate for closure of the facility and to provide financial

assurance for closure of the facility. The financial assurance requirements are divided into two phases. Phase I applies to owners or operators of facilities on July 1, 1988. The amount of the financial assurance mechanism under Phase I is the closure cost for the maximum amount of waste tires accumulated at a facility since the effective date of the permit rules and for waste tires expected to be accumulated at the facility between July 1, 1988 and July 1, 1990. Phase II applies to owners and operators of facilities by July 1, 1990. The amount of the financial assurance mechanism under Phase II is the closure cost for the maximum number of waste tires expected to be accumulated at a facility during the operating life of the facility, including all waste tires received since November 21, 1985. No financial assurance is required for waste tires accepted at a site prior to November 21, 1985. The November 21, 1985 date is the day on which the waste tire dump abatement emergency rules became effective. Since a tire collector who conducts cleanup activities for waste tires accepted at a site prior to November 21, 1985 may be eligible for a partial reimbursement for such cleanup costs, the Agency believes that financial assurance is not needed for these waste tires. Financial assurance is not required for persons who either generate or transport waste tires, or who own or operate a facility which is permitted by rule. Also, the financial assurance requirements apply whether or not a waste tire facility permit has been issued for the facility. Therefore, the financial assurance requirements do not cause an economic advantage or disadvantage for any facility owner or operator who is required to obtain a waste tire facility permit.

When determining the amount of the financial assurance mechanism, the owner

or operator of the facility must include the cost of transportation to the appropriate facility for waste tires, tire-derived products, and residuals from processing, tipping fees, and labor associated with closure of the facility. Table 1 presents an estimate of closure costs for facilities located at various sites in the State based on the two existing processing operations located in the State and assuming a primary haul. A primary haul involves the use of a transportation vehicle dedicated to only hauling waste tires to a waste tire facility. A secondary haul involves the use of a transportation vehicle to haul waste tires to a waste tire facility one way and to back haul some other materials on the return trip. Table 2 presents an estimate of closure costs assuming a secondary haul. Both tables assume five factors: (1) the tires will be transported in a vehicle capable of holding 1,000 tires; (2) it costs $1.25 per mile to operate the vehicle; (3) there are 100 tires per ton; (4) it costs $.10 per tire for labor to load and unload the tires; and (5) the tipping fee at Andover is $.30 per tire, while there is no tipping fee at Babbitt. The closure costs represented in Tables 1 and 2 are based on information provided in the Scrap Tires in Minnesota study. See Exhibit 15.

Table 3 presents the one-way mileage from the six locations to the processing facilities at Andover and Babbitt.

Table 1. Primary Haul (1987)

	Andover	Babbitt
Twin Cities	$ .54	$ .71
Duluth	$ .96	$ .39
Brainerd	$ .78	$ .59
Detroit Lakes	$ .95	$ .69
Marshall	$ .90	$1.02
Rochester	$ .75	$ .90

Table 2. Secondary Haul (1987)

	Andover	Babbitt
Twin Cities	$ .52	$ .40
Duluth	$ .68	$ .24
Brainerd	$ .64	$ .34
Detroit Lakes	$ .73	$ .40
Marshall	$ .70	$ .56
Rochester	$ .62	$ .50

Table 3. Mileage

	Andover	Babbitt
Twin Cities	15 miles	244 miles
Duluth	149 miles	115 miles
Brainerd	125 miles	194 miles
Detroit Lakes	197 miles	237 miles
Marshall	146 miles	366 miles
Rochester	83 miles	318 miles

Tables 1 and 2 represent the current costs of waste tire management activities in Minnesota. The six locations were used as focal points because they represent all areas of the State. The costs stated for each area represent the minimum amount per tire that must be accounted for in the financial assurance mechanism. The costs represented in Tables 1 and 2 are current costs for proper waste tire management. The transportation, loading and unloading costs should not change due to the proposed rules, since the only applicable

requirement is for transporters to obtain an identification number. The tipping fee may change due to the cost of complying with the proposed rules. However, the exact amount cannot be determined due to many variables and factors. The Agency believes the cost of compliance will be very small relative to current processing costs. Therefore, any increase in the tipping fee should be small. Also, the proposed rules encourage the processing of waste tires, and waste tire processing facilities may benefit economically from the added influx of waste tires. Such economic benefits may offset the cost of compliance. For example the Babbitt facility has a break even point of 500,000 waste tires. However, the processing capacity of the facility will be three million waste tires by 1990. The added profit due to the additional waste tires should more than offset the cost of compliance with the proposed rules.

The Agency recognizes that the proposed financial assurance rules will have a direct economic impact on owners or operators of waste tire facilities. However, it is necessary to provide financial assurance to ensure that proper management of waste tires occurs and that money is available when needed to perform and complete closure activities at the facility. Otherwise, waste tires may be improperly managed and the cost to clean up a tire dump will be increased due to the double-handling and transportation necessary to remove the waste tires to an appropriate facility. Also, the Agency believes that the intent of the proposed rules is to prevent the establishment of additional tire dumps and to encourage the processing and utilization of waste tires.

The demonstration of financial assurance is not unique to the proposed rules. For solid and hazardous waste facilities, the demonstration of financial

assurance is already factored into the operating cost of the facility and is a business expense. In order to protect human health and the environment, waste tires must be properly disposed of; therefore, financial assurance for closure is a legitimate expense. Under the proposed rules, once closure is required, the owner or operator must have funds available to perform closure activities. Therefore, the owner or operator needs to make arrangements during the facility's operating life to assure that funds will be available when closure becomes necessary. Since the cost of closure is a normal operating expense for the owner or operator of a facility, it is not a burden to require financial assurance for closure action.

The proposed rules set forth three financial assurance mechanisms for owners and operators to choose from to provide financial assurance which are: letters of credit, surety bonds, and trust funds. The difference in cost between utilizing any of the financial assurance options allowed under the proposed rules is very dependent on the facility type, the quantity of waste tires and tire-derived products managed, and the location of the facility. Therefore, no exact cost estimate can be prepared regarding compliance with these rules. However, the proposed rules provide several options for the owner or operator to demonstrate financial assurance. It is up to the facility owner or operator to select the option which best addresses the owner's or operator's needs. Utilization of a trust fund is probably the most expensive because of the record keeping and administrative duties by both the trustee and the owner or operator of a facility. Utilization of a surety bond does not consume large amounts of capital. However, the following three conditions must be met by an

owner or operator of a facility in order to obtain a bond: (1) the owner or operator of the facility must have a net worth of approximately ten times the face value of the bond; (2) the owner and operator of the facility must co-sign for the bond; and (3) a financial statement must be submitted to demonstrate financial stability. The utilization of a letter of credit to demonstrate financial assurance will probably be the least expensive option for owners or operators of waste tire facilities.

Table 4 provides an example of the approximate bond cost based on a minimum amount of $0.55 per tire that would be demonstrated in the financial assurance mechanism. The costs represented in Table 4 are based on information provided in the Scrap Tires in Minnesota study. See Exhibit 15.

Table 4. Bonding Requirements

Tire Stockpile (Tires)	Cost to Clean Up $.55 per Tire	Approximate Bond Cost	Collector or Collection Sites Net Worth Required
1,000 or less	$ 302.50	$ 25.00	$ 3,025.00
5,000	2,750.00	35.00	27,500.00
10,000	5,500.00	69.00	55,000.00
20,000	11,000.00	138.00	110,000.00
30,000	16,500.00	206.00	165,000.00
40,000	22,000.00	275.00	220,000.00
50,000	27,500.00	344.00	275,000.00
60,000	33,000.00	412.00	330,000.00
70,000	38,500.00	481.00	385,000.00
80,000	44,000.00	550.00	440,000.00
90,000	49,500.00	618.00	495,000.00
100,000	55,000.00	688.00	550,000.00

The proposed waste tire permit rules, Minn. Rules pts. 7001.4000 to 7001.4150, and Minn. Rules pts. 7035.8200 to 7035.8710 apply to all waste tire facilities. Based on information regarding the current waste tire management

system, it is estimated that the financial assurance requirements of the proposed rules will apply to: 15 to 20 waste tire transfer facilities; 3 to 5 waste tire processing facilities; and 5 to 7 waste tire storage facilities.

B. Facility Standards.

Proposed rules, Minn. Rules pts. 7035.8200 to 7035.8710 establish standards for the management of waste tire facilities. These standards will increase the cost of owning and operating a waste tire facility, and will therefore indirectly increase the cost of waste tire management. This is particularly true for existing waste tire facilities that do not meet the standards in the proposed rules. In this case, the owner or operator of the facility may incur some cost for retrofitting or modifying the facility to meet the standards. The exact cost of the modification is not possible for the Agency staff to estimate because it will depend upon the choices made by the regulated community as to the most cost-effective business operation. However, if an owner or operator can work efficiently to bring the waste tire facility into compliance with these rules, the actual costs incurred may be minimal.

Even though the standards in the proposed rules will indirectly increase the cost of waste tire management, the Agency believes that the cost to modify the facility to make it environmentally secure is more cost-effective than having to perform corrective action at the facility. The costs to perform corrective action at a waste tire facility are very expensive. For example, in 1983 a tire fire occurred in Winchester, Virginia. It cost the federal government $1.8 million to fight the tire fire and clean up the area. The money was used for "site security, fire control, runoff collection, air and water

monitoring, technical support, and construction of a new containment pond with impervious liners, a new siphon dam, and access roads to handle the influx of heavy equipment." See Exhibit 24. The money spent to clean up the site and fight the fire came from the U.S. Environmental Protection Agency (hereinafter "EPA") Superfund. Therefore, the EPA has the authority to force the individual or group it deems responsible for the fire to repay the funds.

Corrective action to clean up a tire fire was also performed in Somerset, Wisconsin in 1986. It cost over $100,000 to fight the tire fire and clean up the area. The money was used for fire control, run-off collection, air monitoring, technical support, equipment, and evacuation of nearby residents. The money spent to clean up the site and fight the fire came from the Wisconsin Department of Natural Resources, St. Croix County, and the City of Somerset. The Wisconsin Department of Natural Resources is still in the process of determining the exact amount of money spent to clean up the site and fight the fire, and deciding how they intend to seek to recover funds spent at the site.

C. Economic Benefits.

As the proposed rules begin to be implemented, the system will offer increased opportunities for entrepreneurship such as in the construction of new facilities; collection of waste tires; transfer, processing, and storage systems for waste tires and tire-derived products; and utilization of transportation services and equipment. Also, the proposed rules may offer opportunities to consultants and other technical professional services to assist in implementing the proposed rules, resulting in increased activity and opportunities for the business sector.

The waste tire facilities to which waste tires will be transported will also benefit financially from the added influx of waste tires. The increased number and supply of waste tires flowing to these facilities will contribute greatly to the overall economic viability and success of these facilities.

The Agency believes the proposed rules address economic concerns to the maximum extent possible without undermining the goal of Minn. Stat. § 115A.902, subds. 1 and 2 (1986).

VIII. CONCLUSION

The Agency staff has in this document and its exhibits made its presentation of facts establishing the need for and reasonableness of the proposed waste tire permit rules. This document constitutes the Agency's statement of need and reasonableness for the proposed waste tire permit rules.

IX. LIST OF EXHIBITS

In drafting the proposed rules, the Agency relied on technical documents prepared by a number of sources. The following documents were used by Agency staff in developing these rules and are relied on by the Agency as further support for the reasonableness of the proposed rules. These documents are available for review at the Agency's Public Information Office at 520 Lafayette Road North, St. Paul, Minnesota 55155.

Agency Ex. No.	Title
1	Division of Solid and Hazardous Waste. 1984. Questionnaire on Waste Tire Management Issues. Minnesota Pollution Control Agency. Unpublished.

2 Division of Solid and Hazardous Waste. 1984. "Report on Other State Activities Regarding Waste Tire Management." Minnesota Pollution Control Agency. Unpublished.

3 Notice of Intent to Solicit Outside Opinion. October 1, 1984. State Register. 9 SR 698.

4 Letter from Minnesota Pollution Control Agency to Interested Parties dated September 28, 1984.

Responses:
A. October 5, 1984 letter from Lake County
B. October 5, 1984 letter from Walfred Pilquist
C. October 6, 1984 letter from Iron Range Township
D. October 8, 1984 letter from Waseca County
E. October 10, 1984 letter from Ziegler Tire Service Company
F. October 12, 1984 letter from Rubber Research Elastomerics, Inc.
G. October 18, 1984 letter from the East Mesaba Sanitary Disposal Authority
H. November 1, 1984 letter from Amex Tire
I. November 5, 1984 letter from Nicollet County.

5 Solid and Hazardous Waste Division. 1985. "Issue Statements for Waste Tire Stockpile Rule Development." Minnesota Pollution Control Agency. Unpublished.

6 Memorandums from Minnesota Pollution Control Agency staff to members of Minnesota Pollution Control Agency Board Solid and Hazardous Waste Committee dated January 23,1986 and February 3, 1986.

7 Letter from Minnesota Pollution Control Agency to interested parties dated April 15, 1986 and response - May 6, 1986 letter from Waste Recovery, Inc.

8 Memorandum from Minnesota Pollution Control Agency staff to members of Minnesota Pollution Control Agency Board Solid and Hazardous Waste Committee dated May 15, 1986.

9 Letter from Minnesota Pollution Control Agency to interested parties dated July 2, 1986.

Responses:

A. July 9, 1986 letter from Waseca County
B. July 11, 1986 letter from Indianhead Truck Line, Inc.
C. July 18, 1986 letter from Semcac, Inc.
D. August 11, 1986 letter from Ramsey County.

10 Memorandum from Minnesota Pollution Control Agency staff to members of the Minnesota Pollution Control Agency Board Solid and Hazardous Waste Committee dated August 18, 1986.

11 Memorandum from Minnesota Pollution Control Agency staff to members of the Minnesota Pollution Control Agency Board Solid and Hazardous Waste Committee dated October 21, 1986.

12 Memorandum from Minnesota Pollution Control Agency staff to members of the Minnesota Pollution Control Agency Board Solid and Hazardous Waste Committee dated February 17, 1987.

13 Division of Disease Prevention and Control. 1979. "The Association of Artificial Containers and LaCrosse Encephalitis Cases in Minnesota." Minnesota Department of Health. Published.

14 Science Magazine. 1984. "The Tire Trap." Published.

15 Waste Recovery, Inc. 1985. Scrap Tires in Minnesota. Minnesota Pollution Control Agency. Published.

16 Minnesota Department of Energy and Economic Development Interoffice Memorandum from Marion Kloster to Jeanne Endahl Dated December 16, 1986. "International Baler Corporation."

17 National Fire Protection Association. 1980. The Standard for Storage of Rubber Tires. NFPA 231D-1980 Edition. Published.

18 Jack Hirschleifer, Price Theory and Applications, Prentice Hall, Inc. 1976. pp. 427-430.

19 U.S. Environmental Protection Agency. "Background Document: Standards Applicable to Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities under RCRA, Subtitle C, Section 3004," 40 CFR Parts 264 and 265, Subpart H, December 1980. pp. I-91 - I-101.

20 U.S. General Accounting Office. February, 1986. "Hazardous Waste: Environmental Safeguards Jeopardized when Facilities Cease Operating."

21 Memorandum from Paul Bailey, et. al., ICF, Inc. to Carole Ansheles and Debra Wolfe, U.S. Environmental Protection Agency dated June 28, 1985. "Preliminary Results of Case Studies of Bankrupt TSDF's (Transfer, Storage, and Disposal Facilities)."

22 Letter from Minnesota Pollution Control Agency staff to the Internal Revenue Service dated January 14, 1987.

23 Letter from Minnesota Pollution Control Agency staff to the Minnesota Department of Revenue dated April 12, 1985.

24 EPA Journal. December 1983. "Tire Fire Lights Up A National Problem." Susan Tejada.

Date: 3/23/87

Michael Robertson
for Thomas J. Kalitowski
Executive Director

STATE OF MINNESOTA
POLLUTION CONTROL AGENCY

In the Matter of the Proposed Rules Governing the Management of Waste Tires and the Permitting of Waste Tire Facilities, Minn. Rules Pts. 7001.0020, 7001.0040, 7001.0050, 7001.0190, 7001.4000 to 7001.4150, and 7035.8200 to 7035.8710

AFFIDAVIT OF MAILING

STATE OF MINNESOTA)
) SS.
COUNTY OF RAMSEY)

Ronald Linn, being duly sworn, deposes and says:

That on the 16 day of April, 1987, at the City of St. Paul, County of Ramsey, State of Minnesota, s/he served the attached Notice of Hearing and Notice of Intent to Cancel Hearing if Fewer than 25 Persons Request a Hearing in Response to Notice of Intent to Adopt Rules Without a Public Hearing, and Notice of Intent to Adopt Rules Without a Public Hearing and Notice of Intent to Adopt Rules with a Public Hearing if 25 or More Persons Request a Hearing, by depositing in the State of Minnesota Central Mail System or in the United States mail for first class mailing at said City of St. Paul, a copy thereof, properly enveloped, with postage prepaid, on all persons and associations listed on the attached mailing list who have expressed interest to Minnesota Pollution Control Agency staff regarding the proposed rules.

Ronald Linn

Subscribed and sworn to before me
this 16 day of April, 1987

Cynthia B. Gillingham
Notary Public

CYNTHIA B. GILLINGHAM
NOTARY PUBLIC - MINNESOTA
HENNEPIN COUNTY
My commission expires 10-3-91

STATE OF MINNESOTA
POLLUTION CONTROL AGENCY

In the Matter of the Proposed Rules Governing the Management of Waste Tires and the Permitting of Waste Tire Facilities, Minn. Rules Pts. 7001.0020, 7001.0040, 7001.0050, 7001.0190, 7001.4000 to 7001.4150, and 7035.8200 to 7035.8710

CERTIFICATE

I hereby certify that the list of persons, associations, and other interested groups who have requested, pursuant to Minn. Stat. § 14.14 (1986) that their names be placed on file with the Minnesota Pollution Control Agency for the purpose of receiving notice of the proposed adoption of rules by the Minnesota Pollution Control Agency is accurate and complete as of this 16th day of April, 1987.

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Hartford, CT 06106
Attn: Paul Perlsweig

Cotton Area Landfill Authority
Cotton
Minnesota 55724

County of Renville
Olivia, Minnesota 56277
Attn: Kevin Halliday, Assistant Administrator

Craig, Fritz
Rural Route 1
Park Rapids, MN 56470

Crain's Tire Business
34 North Hawkins Avenue
Akron, OH 44313
Attn: Lloyd Stoyer/Bruce Davis

Crow Wing Sanitary Landfill
Courthouse
Brainerd, MN 56401
Attn: Otto Schalow

D and H Tire
Route 2, Box 444
Cambridge, MN 55008
Attn: David/Harold Selix

D and N Tire
Post Office Box 112
Forest Lake, Minnesota 55025
Attn: Duane

D.O.M.
Price, Jack
5311 36th Avenue North
Minneapolis, MN 55422

Dakota County Community
Health Services
1600 West Highway 55
Hastings, MN 55033
Attn: Ronald Spong

DBA-Chemical Consultant
Formulators, Inc.
7465 Harold Ave. North
Mpls., MN 55427
Attn: Mel Davis

Department of City Services
1000 Throckmorton
Fortworth, TX 76112
Attn: Chris Taylor

Department of Energy
785 Doe Place
Idaho Falls, ID 83402
Attn: Dave Blanchfield

Dick's Auto Wrecking
Highway 71 South
Park Rapids, Minnesota 56470
Attn: Dick Rude

Dillon's Auto Salvage
Box 198, Rural Route 2
Byron, MN 55920
Attn: Robert Saterdalen

Division of Public Health Labs
1571 Perry Street
P.O. Box 2568
Columbus, Ohio 43266
Attn: Richard Berry

Duhamel, Bob
445 Glen Street North
Hutchinson, MN 55350

Dupage County Development
421 North County Farm Road
Wheaton, IL 60187
Attn: Scott Snyder

E G and G, Idaho Inc.
1955 Freemont Avenue/P.O. Box 1625
Idaho Falls, ID 83415
Attn: Julianne Dodds

E G and G, Idaho Inc.
P.O. Box 1625
Idaho Falls, ID 83415
Attn: Frank Bradburn

EAC Engineering
88-36 77th Avenue
Glendale, NY 11385
Attn: Mr. Walter Karle

East Bethel Landfill
c/o Richard Ellingson
Highway 65 at 221 Avenue Northeast
Cedar, Minnesota 55011

Easy Willy's Salvage
101 Spring Street
Duluth, MN 55806
Attn: Scott Greer

Electric Forklift Supply
211 105th Avenue Northeast
Blaine, MN 55434
Attn: Neil Denne

Elk River Sanitary Landfill
22460 Highway 169, Northwest
Elk River, MN 55330
Attn: Chris Kreger

ENERCO
9 South Main Street
Yardly, PA 19067
Attn: Miles Thompson

Englested, Robert
1506 South 12th Street
Moorhead, MN 56560

Erie Mining Company
Manager of Technical Services
Post Office Box 847
Hoyt Lakes, MN 55750
Attn: Toivo Maki

Fargo Tire
601 Birch Lane
Moorhead, MN 56560
Attn: Marty Johanson

Farmers Home Administration
214 Northwest Railroad
Mora, Minnesota 55051
Attn: Darrell G. Kringen

Exhibit 16

STATE OF MINNESOTA

Office Memorandum

DEPARTMENT : DEED/Energy Division

PHONE : 7-1960

DATE : December 16, 1986

TO : Jeanne Endahl, Loan Officer
Financial Management Division
Office of Business Finance

FROM : Marion Kloster

SUBJECT : International Baler Corp.
Tire Baler, OK Tire Retreading Plant
4415 North Westshore; Tampa, Florida 33614
813/872-0404

Foreword

The OK plant was visited November 3, 1986 and owner-operator Charles King demonstrated operation of the baler for me.

Objectives of the visit were as follows:

- Objective A: To become familiar with baler operation.
- Objective B: To reach opinion of practicality of making the tire baler mobile.
- Objective C: To determine worth of volume reduction through baling.

Objective A: Baler Operation:



where is it?

Exhibit A, enclosed, is an outline specification of the baler, and lists information important to the understanding of the machine.

The following include descriptions of the operating crew required, how the baler operates, its capacity, and cost of baling:

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Crew:

One tire and bale handler:

- Transports tires from stockpile with front end loader to baler supply stockpile.
- Assists in charging baler chamber by handling tires to baler operator.
- Transports bales from baler to bale stack.
- Load bales to over-the-road truck.

One baler operator:

- Charges baler chamber and patterns layers of tires.
- Operates baler hydraulic compression cylinders.
- Repeats charging cycle until bale is complete.
- Secures four bale wire ties.
- Ejects bale to front-end loader.

Bale Patterns:

- Thirty tires are placed in the baler chamber in an interlocking manner and compressed.
- Additional layers, though including fewer tires, are also placed in an interlocking manner and compressed.

Holding Mechanism:

- When hydraulic rams compress the charge of tires into a flat layer, spring loaded dogs allowing downward thrust but resisting upward movement are activated holding each layer compressed while following layers are placed and compressed.

Baling Cycle:

1st charge, 30 tires in layer pattern.
2nd charge, 15 tires in layer pattern.
3rd charge, 10 tires in layer pattern.
4th charge, 10 tires in layer pattern.
5th charge, 6 tires in layer pattern.
6th charge, 8 tires in layer pattern.
7th charge, 6 tires in layer pattern.
8th charge, 6 tires in layer pattern.

Wire Ties:

- Four wire ties are threaded through grooves in upper and lower compression platens.
- Preformed fasteners are secured.

Bale Dimensions:

- Nominal 4' x 4' x 5'

Vertical Alignment:

- Front and back hinged doors are closed for baling operation and provide vertical alignment.
- Doors provide support for holding dogs.

Charging Baler Chamber:

- Front hinged door consists of two sections.
- Upper hinged door provides access for charging baler chamber.

Bale Ejection:

- Chains at rear, attached to upper compression platen and to bale, eject bale to front-end loader for transport to storage.

Baling Capacity:

- Baling capacity as observed is about two and one-half bales per hour or about 250 tires or 2.5 tons per hour.

Bale Storage

According to Mr. King about 7,000 bales are stored in the stack piled about 8 deep, 5 high, 150' wide. The bale storage appeared neat, free of odors, insects, standing water and mud, and certainly was in no way offensive to the senses.

Bale Loading:

Truck loading was not observed but a simple, two high pattern could be employed with a flatbed trailer carrying the full load of 24 tons allowed by the State of Minnesota. Note that use of covered van trailers would require dock high facilities and fork lift trucks light enough to be used in the vans or use of a conveyor with hand loading.

Objective B: Baler Mobility

Two suggestions for making the tire baler mobile include the following:

- Construction of a tire baler employing horizontal compaction rather than vertical.

- Construction of a tire baler allowing for a horizontal mode while in transit and vertical while in use. The baler could be hinged on one side and equipped with a self-erecting hydraulic cyclinder.

In addition to the baler, generator, feeder conveyor, and front-end loader will require transport.

Each of the suggestions for making the baler mobile is considered practical and the manufacturer has been asked to furnish proposals.

Comparison of costs listed in enclosed Exhibits and in the comparison matrix indicate proprietary trucks and trailers have an economic advantage over chartered. While use of proprietary baler has an economic advantage over chartered trucks, baling loses its advantage when proprietary equipment is considered. However, baling tires offers other advantages including:

- Drainage of water, controlling mosquitoes.
- Labor savings in sightly stacking piles.
- More sightly storage piles.
- Lesser fire hazard due to reduced exposed surface area.

Objective C: Worth of Tire Volume Reduction through Baling

To measure worth of tire volume reduction through baling with mobile equipment, cost estimates for hauling and handling with the following methods may be compared:

- Loading tires with conveyor into standard van type truck with labor stacking and placing. A front-end loader would be employed for tire handling and labor would feed the conveyor. Estimates of cost for both chartered and proprietary tractors and trailers are compared. Unloading a van trailer as compared with bulk van or baled tires presents a meaningful expense and in comparing total cost is given weight.
- Loading tires with front-end loader into special bulk, self-unloading trailers. Estimates of cost for both chartered and proprietary tractors are compared. Proprietary trailers are assumed for both methods.
- Baling tires with a special, mobile tire baler to reduce handling expenses. A special, flat-bed trailer to accommodate baler, generator, and front-end loader would be transported by chartered tractor. Estimates of cost for both chartered and proprietary tractors and trailers for hauling are compared.

A scenario of remote tire dumps to be cleared and the tires transported to a processor located at a distance of 150 miles may be assumed. Only direct costs will be considered. No allowance for G&A nor profit will be made. Difference in incremental costs will be considered as motivation for investment.

To accommodate rugged operating conditions anticipated at remote tire dumps, it is assumed that only 225 operating days and a total handle of 450,000 tires per year may be attained.

Handling costs at processor from storage pile to process are labor, fuel, and a share of machinery operating cost. With planning this cost may be avoided. However, whether bulk or bale, handling is a part of the processing cost and is considered essentially about equal with the machinery employed. Note: It is assumed that baled tires, although deformed, may be processed into "Tirecycle".

Estimate for equipment and operating cost for the aforementioned three methods are displayed in the enclosed Exhibits C, D, and E, and are compared in the following matrix:

	Chartered Trucks			Proprietary Trucks		
	Van Trailer	Bulk Trailer	Mobile Baler	Van Trailer	Bulk Trailer	Mobile Baler
Equipment cost	$65,000	$100,000	$140,000	$150,000	$130,000	$175,000
Baling cost (per tire)	--	--	$ 0.19	--	--	$ 0.19
Retrieval and Loading Cost (per tire)	$ 0.17	$ 0.13	$ --	$ 0.17	$ 0.13	--
Hauling Cost (per tire)	$ 0.20	$ 0.30	$ 0.12	$ 0.18	$ 0.16	$ 0.10
Unloading Cost (per tire)	$ 0.04	--	--	$ 0.04	--	--
Total Operating Cost (per tire)	$ 0.41	$ 0.43	$ 0.31	$ 0.39	$ 0.29	$ 0.29

Discussion:

For charfered truck operations:

Van trailer operations demonstrate a $0.02 per tire advantage over bulk trailer use even if consideration is given to the cost of unloading the van trailer at the processor because of greater pay load resulting in less mileage.

However, substantial reduction in loading, hauling, and unloading costs with baled tires presents an opportunity in spite of investment required for mobile baling machinery. Additional investment of $75,000 is certainly warranted by $45,000 cost reduction.

For proprietary truck operations:

Cost reduction of $0.02 per tire or $9,000 per year for proprietary van truck operation is considered unattractive in light of additional investment of $85,000 required.

Additional investment for proprietary bulk trailer operations as compared with chartered van or bulk trailers is certainly warranted by cost reduction of over $60,000. Cost reduction of about $45,000 will warrant choice of bulk trailer over van trailer operation with proprietary equipment at essentially equal investment.

Mobile baling operations lose their incremental cost advantage when proprietary trucking operations are employed over bulk trailer. However, other considerations may be given weight, including mosquito control, labor savings should additional handling be contemplated, sightliness, and reduced fire hazard.

Conclusion:

Given the conditions considered in this paper, it is concluded self-unloading bulk trailer operations with proprietary equipment, including tractors, are those of choice for clearing remote tire dumps and hauling to processors located some distance away. Incremental costs are the same for baling as for bulk trailer operations at greater investment and involving single purpose machinery.

MK/mo
Enclosures

EXHIBIT B: ESTIMATE OF FREIGHT VAN EQUIPMENT, CHARTERED TRACTORS & TRAILERS, & LOADING, HAULING, & UNLOADING INCREMENTAL COSTS

EQUIPMENT:

o RETRIEVAL, FRONT END LOADER	$60 000.
o VAN LOADING CONVEYOR	5000
TOTAL	$65,000

INCREMENTAL COST OF RETRIEVAL & VAN LOADING.

o TRAINED OPERATOR/MANAGER	$20,000
o SUBSISTENCE $60 · 225 DAYS	14000
o LOADING LABOR, TWO MEN, 4 HOURS PER VAN OF 1500 TIRES 300 TRUCK LOADS, 2400 MH @ $	20,000
o MAINTENANCE 5% $65,000	3000
o FUEL 5 GAL/HR 225 DAYS	3000
o INSURANCE 2% 65000	1000
o TAXES 2% 65,000	1000
o DEPRECIATION 10% 65000	7000
TOTAL RETRIEVAL & LOADING COST	$75000 PER E...
UNIT	$15.67 PER ...
OR	$0.167 PER ...

EXHIBIT B: (CONT.)

HAULING COST: (CHARTERED)

- 150 MILES LOADED $2.00/MILE

300 TRIPS. $90,000 PER YEAR

UNIT $20.00 PER TON

OR 0.20 PER TIRE

UNLOADING COST

- LABOR TWO MEN 4 HRS PER TRUCK,

300 TRUCKLOADS 2400 MH @ 8.00 $20,000

- MAINTENANCE (IN LOADING)
- FUEL 3HP MOTOR 1200 HRS NEGLIGIBLE
- INSURANCE (IN LOADING)
- TAXES (IN LOADING)
- DEPRECIATION (IN LOADING)

TOTAL UNLOADING COST $20,000 PER YEAR

UNIT 4.44 PER TON

OR 0.044 PER TIRE

RECAP - CHARTERED TRUCKS

TOTAL COST $185,000 PER YEAR

UNIT $41.11 PER TON

OR 0.41 PER TIRE

EXHIBIT B: ESTIMATE OF FREIGHT VAN EQUIPMENT, PROPRIETARY TRACTORS & TRAILERS, & LOADING, HAULING, & UNLOADING INCREMENTAL COSTS

EQUIPMENT:

◦ RETRIEVAL, FRONT END LOADER	$60,000
◦ VAN LOADING CONVEYOR, W/ENGINE	5,000
◦ TWO TRACTORS THREE VANS, USED	85,000
TOTAL	$150,000

INCREMENTAL COST OF RETRIEVAL & VAN LOADING (WILL REQUIRE MORE THAN TWO VANS)

◦ TRAINED OPERATOR/MANAGER	$ 20,000
◦ SUBSISTENCE $60, 225 DAYS	14 000
◦ LOADING LABOR, TWO MEN, 4 HOURS PER VAN OF 1500 TIRES 300 TRUCKLOADS, 2400 MH @ $	20,000
◦ MAINTENANCE 5% $65000	3000
◦ FUEL 5/HR 225 DAYS	3000
◦ INSURANCE 2% $65000	1000
◦ TAXES 2% $65000	1000
◦ DEPRECIATION 10% 65000	7000
TOTAL, RETRIEVAL & LOADING COST	$75,000 PER YEAR
	$16.67 PER TON
UNIT	
OR	$0.167 PER TIRE

EXHIBIT B: (CONT.)

HAULING COST:

o TWO DRIVERS $8/HR 10 HOURS PER VAN 300 VANS	$24000
o MAINTENANCE 5% 85000	4000
o FUEL 10¢/HR 10 HRS PER VAN 300 VANS	30,000
o INSURANCE 2% 85,000	2000
o TAXES 2% 85,000	2000
o DEPRECIATION 5 YEARS $85,000	17,000
TOTAL HAULING COST	79,000 PER YEAR
UNIT	17.56 PER TON
OR	0.176 PER TIRE

UNLOADING COST:

o LABOR TWO MEN 4 HRS PER TRUCK 300 TRUCKLOADS 2400 MH @ $8	$20,000
o MAINTENANCE - (IN LOADING)	
o FUEL 3H MOTOR, 1200 HRS POWER NEGLIGIBLE	
o INSURANCE - (IN LOADING)	
o TAXES - (IN LOADING)	
o DEPRECIATION - (IN LOADING)	
TOTAL UNLOADING COST	$20000 PER YEAR
UNIT	$4.44 PER -
OR	$0.044 PER TIRE

RECAP - PROPRIETARY TRUCKS

TOTAL COST	$174,000 PER YEAR
UNIT	$38.67 PER TON
OR	$0.387 PER TIRE

EXHIBIT C: ESTIMATE OF PROPRIETARY SELF-UNLOADING TRAILERS, RETRIEVAL AND LOADING EQUIPMENT, CHARTERED TRACTORS, & LOADING, HAULING, & UNLOADING INCREMENTAL COSTS

EQUIPMENT:

o RETRIEVAL, FRONT END LOADER	$60,000
o LOADING USE FRONT END LOADER	-
o BULK TRAILERS, SELF UNLOADING	40,000
TOTAL	$100,000

INCREMENTAL COST OF RETRIEVAL & BULK TRAILER LOADING

o TRAINED OPERATOR/MANAGER	$20,000
o SUBSISTENCE $60 · 225 DAYS	14000
o LOADING BY TRAINED OPERATOR/MGR	
o MAINTENANCE 5% $100,000	5000
o FUEL $5/HR - 2 HRS/DAY 225 DAYS	2000
o INSURANCE 2% 100,000	2000
o TAXES 2% 100,000	2000
o DEPRECIATION 10% 60000 & 20% 40,000	14000
TOTAL LOADING COST	$59,000 PER
UNT	$13.11 PER
OR	0.131 PER

EXHIBIT C: (CONT.)

HAULING COST

a 150 MILES LOADED @ 2¢/MILE

10 TONS/TRAILER 450 TRIPS

$135,000 PER YEAR

$30.00 PER TON

$0.30 PER TIRE

UNIT

OR

UNLOADING COST — NEGLIGIBLE

RECAP BULK SELF UNLOADING

TRAILER - CHARTERED TRACTORS

TOTAL COST

$134,000 PER YEAR

$43.10 PER TON

$0.431 PER TIRE

UNIT

OR

EXHIBIT C: ESTIMATE OF PROPRIETARY TRACTORS, BULK SELF UNLOADING TRAILERS, RETRIEVEL AND LOADING EQUIPMENT, & LOADING HAULING & UNLOADING COSTS

EQUIPMENT:

o RETRIEVEL, FRONT END LOADER	$60,000
o LOADING; USE FRONT END LOADER	
o BULK TRAILERS, SELF UNLOADING	$40,000
o TRACTORS USED	30,000
TOTAL	$130,000

INCREMENTAL COST OF RETRIEVAL & BULK TRAILER LOADING

o TRAINED OPERATER/MANAGER	$20,000
o SUBSISTENCE $60, 225 DAYS	14,000
o LOADING BY TRAINED/OPERATOR	
o MAINTENANCE 5% $100,000	5000
o FUEL 5/HR 2 HRS/DAY 225 DAYS	2000
o INSURANCE 2% $100000	2000
o TAXES 2% 100000	2000
o DEPRECIATION 10% 60.000 & 20% 40000	14000
TOTAL LOADING COST	$59,000 PER YEAR
UNIT	$13.11 PER TON
OR	0.131 PER TIME

EXHIBIT C: (CONT)

HAULING COST

- TRAINED OPERATOR ALSO DRIVES
- DRIVER $8-10 HRS PER TRIP 225 TRIPS $18000
- MAINTENANCE 5% 30,000 2000
- FUEL 10 T/HR 10 HRS PER TRIP 450 TRIPS 45000
- INSURANCE 2% 30000 1000
- TAXES 2% 30000 1000
- DEPRECIATION 5 YR, 30,000 6000

TOTAL $73,000 PER YEAR

UNIT $16.22 PER TON

OR 0.162 PER TIRE

UNLOADING COST NEGLIGIBLE

RECAP

TOTAL COST $140.000 PER YEAR

$. PER TON

$. PER TIRE

EXHIBIT D: ESTIMATE OF COST OF BALING TIRES WITH PROPRIETARY MOBILE BALER & COST OF EQUIPMENT RETRIEVAL, LOADING, & HAULING COSTS - WITH CHARTERED TRACTORS AND FLAT BED TRAILERS

BALING EQUIPMENT

o SPECIAL TRAILER	$30,000
o BALER, MOBILE	75,000
o GENERATOR	10,000
o CONVEYOR	5000
o FRONTEND LOADER (USED)	20,000
TOTAL COST	$140,000

OPERATING COST, RETRIEVAL & BALING

o TRAINED OPERATOR	$20,000
o SUBSISTENCE 60 - 225 DAYS	14000
o LABOR 8$/HR 225 DAYS	14000
o MAINTENANCE 5% 140 000	7000
o FUEL 5$/HR 225 DAYS	9000
o INSURANCE 2% 140 000	3000
o TAXES 2% 140 000	3000
o DEPRECIATION 10% 140,000	14000
TOTAL	$84,000 PER YEAR
UNIT	$18.67 PER TON
OR	$0.187 PER TIRE

EXHIBIT D: (CONT) CHARTERED TRACTOR & TRAILER RETRIEVEL & LOADING COST (NOTE: OPERATOR HAS TIME DURING BALING PROCEDURES TO LOAD A TRAILER IN REASONABLE TIME PERIOD)

EQUIPMENT

- RETRIEVAL - IN BALING
- LOADING - IN BALING

COST OF LOADING - NO OUT OF POCKET COST

HAULING

- 150 MILES LOADED @ $2.- PER MILE

24 TON TRAILER 188 TRIPS — $56,000 PER YEAR

UNIT — $12.44 PER TON

OR — $0.124 PER TIRE

UNLOADING — NEGLIGIBLE

RECAP: CHARTERED TRUCK & TRAILER

TOTAL COST — $140,000 PER [illegible]

UNIT — $31.11 PER [illegible]

OR — $0.311 PER [illegible]

EXHIBIT D: (CONT.) PROPRIETARY TRACTORS & TRAILERS

RETRIEVAL & LOADING COST (BY TRAINED OPERATOR)

EQUIPMENT

o RETRIEVAL IN BALING	
o LOADING IN BALING	
o TRACTOR & TRAILER	$35,000
TOTAL ADDITIONAL EQUIPMENT	$35,000

HAULING

o DRIVER 8 X 10 X 188	$15,000
o MAINTENANCE 5% $35000	2 000
o FUEL 10 GAL/HR 10 HRS 188 TRIPS	19.000
o INSURANCE 2% 35000	1000
o TAXES 2% 35000	1000
o DEPRECIATION 35000 5 YRS	7000
TOTAL HAULING COST	45000 PER YEAR
UNIT	$10.00 PER TON
OR	$0.10 PER TIRE

UNLOADING — NEGLIGIBLE

RECAP PROPRIETARY TRUCK & TRAILER

TOTAL COST	$129,000 PER YEAR
UNIT	$28.67 PER TON
OR	$0.287 PER TIRE

Exhibit 17

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Standard for
Storage of Rubber Tires

NFPA 231D-1980

1980 Edition of NFPA 231D

This 1980 edition of NFPA 231D, *Standard for Storage of Rubber Tires*, was prepared by the Technical Committee on Storage of Rubber Tires and was adopted by the National Fire Protection Association, Inc. on November 18, 1980, at its Fall Meeting in San Diego, California. It was released for publication by the Standards Council on December 10, 1980.

It has been approved by the American National Standards Institute.

Origin and Development of NFPA 231D

A tentative standard on the storage of rubber tires was developed by a Subcommittee of the Committee on General Storage and adopted by the National Fire Protection Association, Inc. at the 1974 Annual Meeting in Miami Beach, Florida.

The first official edition of NFPA 231D was prepared by the Committee on General Storage. It included revisions made to the tentative standard, and was adopted by the Association at the 1975 Fall Meeting in Pittsburg, Pennsylvania.

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Paul A. Mehringer, Salinas City Fire Department

This list represents the membership at the time the Committee was balloted on the text of this edition. Since that time, changes in membership may have occurred.

NOTE: Membership on a Committee shall not in and of itself constitute an endorsement of the Association or of any document developed by the Committee on which the member serves.

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Standard for
Storage of Rubber Tires

NFPA 231D-1980

NOTICE: An asterisk (*) following the number designating a paragraph or section in the text indicates explanatory material on that paragraph or section in Appendix A.

A dagger (†) following the number designating a paragraph or section in the text indicates additional suggestions with regard to that paragraph or section in Appendix B.

Chapter 1 Introduction

1-1 Scope.

1-1.1 This standard applies to the storage of rubber tires when stored indoors.

1-1.2 The provisions contained in this standard apply to new facilities for tire storage and when converting existing buildings to tire storage occupancy. It may be used as a basis for evaluating existing storage facilities.

1-1.3 This standard is not intended to apply to small scale storage as defined in Section 1-2.

1-2 Definitions.

Approved. Means "acceptable to the authority having jurisdiction."

NOTE: The National Fire Protection Association does not approve, inspect or certify any installations, procedures, equipment, or material, nor does it approve or evaluate testing laboratories. In determining the acceptability of installations or procedures, equipment or materials, the authority having jurisdiction may base acceptance on compliance with NFPA or other appropriate standards. In the absence of such standards, said authority may require evidence of proper installation, procedure or use. The authority having jurisdiction may also refer to the listings or labeling practices of an organization concerned with product evaluations which is in a position to determine compliance with appropriate standards for the current production of listed items.

Authority Having Jurisdiction. The "authority having jurisdiction" is the organization, office or individual responsible for "approving" equipment, an installation or a procedure.

NOTE: The phrase "authority having jurisdiction" is used in NFPA documents in a broad manner since jurisdictions and "approval" agencies vary as do their responsibilities. Where public safety is primary, the "authority having jurisdiction" may be a federal, state, local or other regional department or individual such as a fire chief, fire marshal, chief of a fire prevention bureau, labor department, health department, building official, electrical inspector, or others having statutory authority. For insurance purposes, an insurance inspection department, rating bureau, or other insurance company representative may be the "authority having jurisdiction." In many circumstances the property owner or his designated agent assumes the role of the "authority having jurisdiction"; at government installations, the commanding officer or departmental official may be the "authority having jurisdiction."

Available Height for Storage. The maximum height at which tires can be stored above the floor and still maintain adequate clearance from structural members and the required clearance below sprinklers.

Bundled Tires. A storage method in which a number of tires are strapped together. (*See Figure 1-2.8.*)

Conventional Pallet. A material handling aid designated to support a unit of load with stringers to provide support for material handling devices.

Horizontal Channel. Any uninterrupted space in excess of 5 ft (1.5 m) in length between horizontal layers of stored tires. Such channels may be formed by pallets, shelving, racks or other storage arrangements.

Labeled. Equipment or materials to which has been attached a label, symbol or other identifying mark of an organization acceptable to the "authority having jurisdiction" and concerned with product evaluation, that maintains periodic inspection of production of labeled equipment or materials and by whose labeling the manufacturer indicates compliance with appropriate standards or performance in a specified manner.

Listed. Equipment or materials included in a list published by an organization acceptable to the "authority having jurisdiction" and concerned with product evaluation, that maintains periodic inspection of production of listed equipment or materials and whose listing states either that the equipment or material meets appropriate standards or has been tested and found suitable for use in a specified manner.

NOTE: The means for identifying listed equipment may vary for each organization concerned with product evaluation, some of which do not recognize equipment as listed unless it is also labeled. The "authority having jurisdiction" should utilize the system employed by the listing organization to identify a listed product.

On-floor Storage. Tires stored directly on the floor without horizontal channels. Such storage may utilize boards, cardboard tubes or similar storage aids, but not pallets or racks.

On-side Storage. Tires stored horizontally or flat. (See Figure 1-2.6.)

On-tread Storage. Tires stored vertically or on their treads. (See Figure 1-2.7.)

Palletized. Storage on portable racks of various types utilizing a conventional pallet as a base.

Pyramid Storage. On-floor storage in which tires are pyramided to provide pile stability.

Rack. Any combination of vertical, horizontal and diagonal members which support stored materials. Racks may be fixed or portable. A fixed rack is a supporting framework which remains in a fixed position within the warehouse during normal usage and into which the placement and retrieval of storage is through the handling of tires individually or in pallets loads. (See Figures 1-2.1 to 1-2.8.)

Rubber Tires. Pneumatic tires for passenger automobiles, aircraft, light and heavy trucks, trailers, farm equipment, construction equipment (off-the-road) and buses.

Shall. Indicates a mandatory requirement.

Should. Indicates a recommendation or that which is advised but not required.

Small Scale Storage. Storage of less than 10,000 units.

Storage Aids. Commodity storage devices such as shelves, pallets, dunnage, separators and skids.

Units (equivalent passenger)*. One average size passenger tire weighing approximately 25 lb (11 kg).

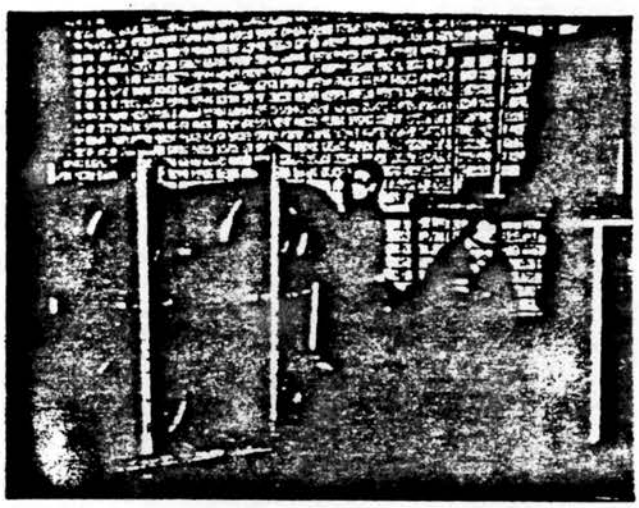


Figure 1-2.3 Open Portable Racks

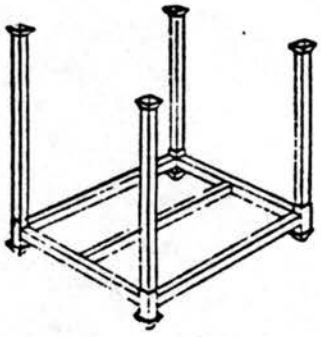


Figure 1-2.1 Open Portable Rack Unit

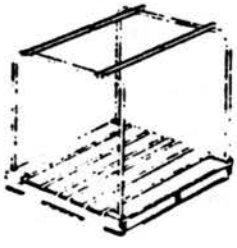
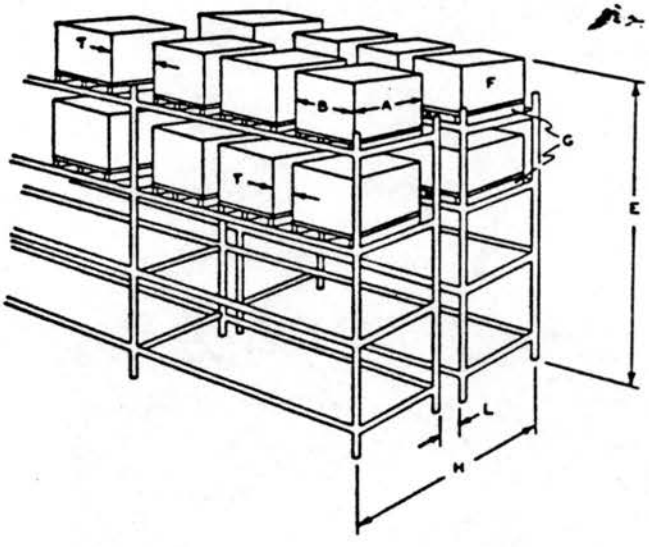


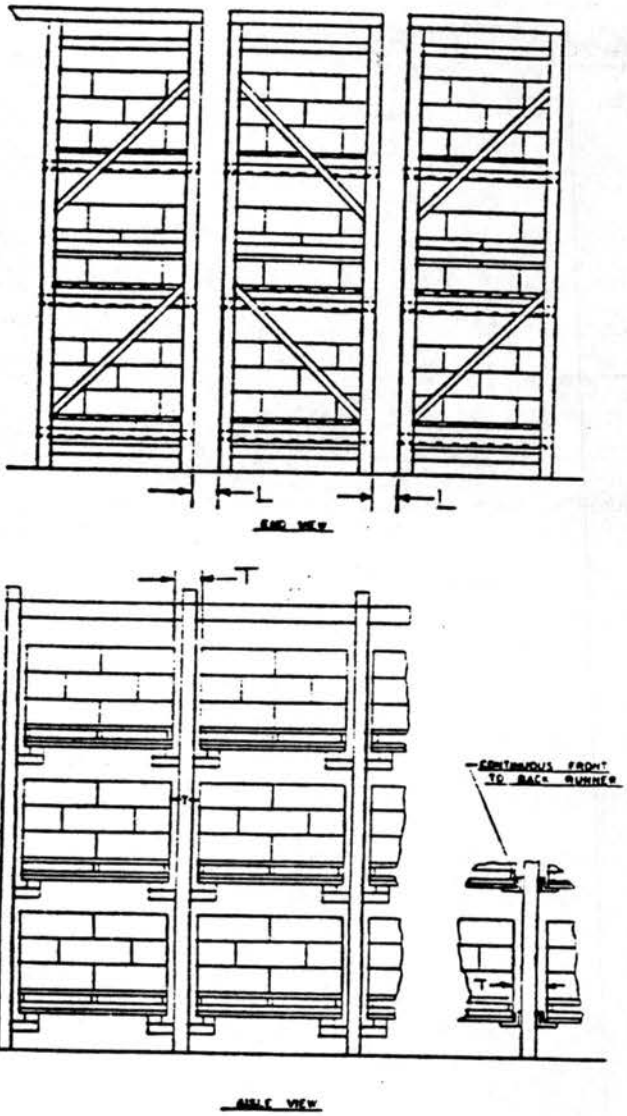
Figure 1-2.2 Palletized Portable Rack Unit



Legend

A — Load Depth
B — Load Width
T — Transverse Flue Space
L — Longitudinal Flue Space
E — Storage Height
F — Commodity
G — Pallet
H — Rack Depth

Figure 1-2.4 Double Row Racks without Solid or Slatted Shelves



Legend

L — Longitudinal Flue Space T — Transverse Flue Space

Figure 1-2.5 Multiple-Row Rack

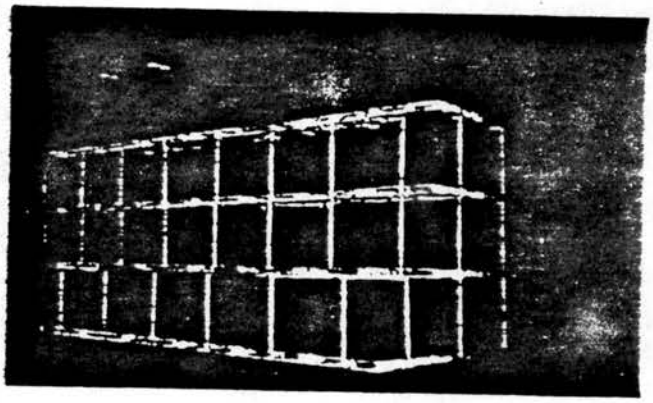


Figure 1-2.6 Palletized Portable Rack On-Side Storage Arrangement

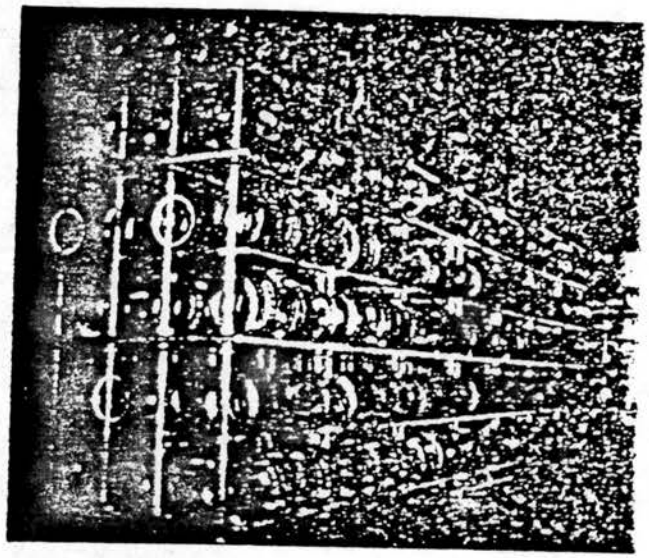


Figure 1-2.7 Open Portable Rack On-Tread Storage Arrangement

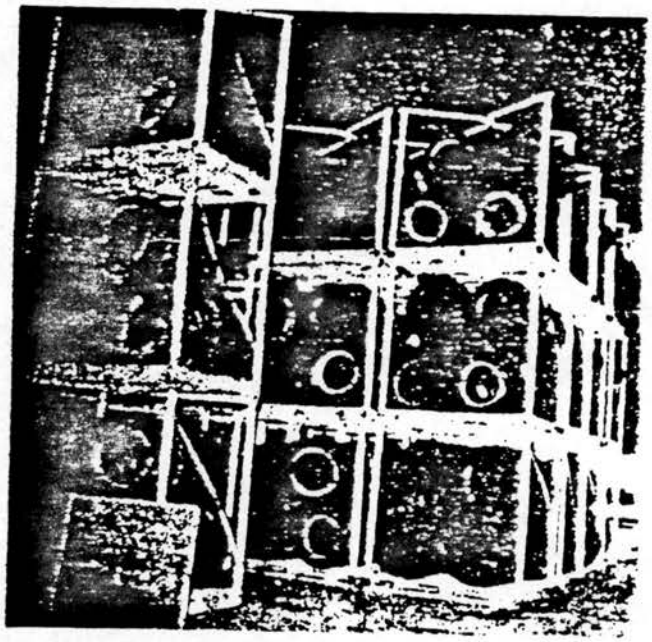


Figure 1-2.8 Bundled Tires — Palletized — Portable Rack On-Tread Storage Arrangement

Chapter 2 Building Arrangement

2-1 Construction.

2-1.1* Buildings used for the storage of tires which are protected according to this standard may be of any of the types described in NFPA 220, *Standard Types of Building Construction.*

2-1.2 Steel columns shall be protected according to the following:

(a) Storage exceeding 15 ft (4.6 m) through 20 ft (6 m) in height.

One hour fireproofing or one sidewall sprinkler head directed to one side of the column at 15 ft (4.6 m) level.

(b) Storage exceeding 20 ft (6 m) in height.

Two hour fireproofing for the entire length of the column, and including connections with other structural members; or two sidewall sprinkler heads, one at the top of the column and the other at the 15-ft (4.6-m) level, both directed to the side of the column.

Exception: The above protection is not required where storage in fixed racks is protected by in-rack sprinklers.

2-2* Emergency Smoke and Heat Venting.

2-3 Fire Walls.

2-3.1 Where protection in accordance with Section 4-1 is provided, stored tires shall be segregated from other combustible storage by aisles at least 8 ft (2.4m) wide. Where not so protected, stored tires shall be cut off by fire walls.

2-3.2 When tires are stored up to 15 ft (4.6 m) high, walls between adjacent warehouse areas and between manufacturing and warehouse areas shall have not less than a 4-hr fire rating. When tires are stored over 15 ft (4.6 m) high, walls between manufacturing and warehouse areas shall have a fire rating of not less than 6 hrs.

Chapter 3 Storage Arrangement

3-1 Piling Procedures.

3-1.1 Piles shall be not more than 50 ft (15 m) in width except that piles along a wall shall not be more than 25 ft (7.6 m) in width.

Exception: Where tires are stored on tread, the dimension of the pile in the direction of the wheel hole shall be not more than 50 ft (15 m).

3-1.2 The width of main aisles between piles shall be not less than 8 ft (2.4 m).

3-2 Clearances.

3-2.1 The clearance from the top of storage to sprinkler deflectors shall be not less than 3 ft (.9 m).

3-2.2 Storage clearance in all directions from roof structures shall be not less than 3 ft (.9 m).

3-2.3 Storage clearance from ducts shall be maintained in accordance with NFPA 91, *Blower and Exhaust Systems*, Section 240.

3-2.4 Storage clearance from unit heaters, radiant space heaters, duct furnaces and flues shall not be less than 3 ft (.9 m) in all directions, or shall be in accordance with the clearance shown on the approval agency label.

3-2.5 Clearance shall be maintained to lights or light fixtures to prevent possible ignition.

3-2.6 Not less than 24 in. (.6 m) clearance shall be maintained around the path of fire door travel unless a barricade is provided.

Chapter 4 Fire Protection

4-1 Automatic Sprinkler Systems.

4-1.1 Automatic sprinklers, where provided, shall be installed in accordance with NFPA 13, *Standard for Installation of Sprinkler Systems*, except as modified in this chapter.

4-1.2* Sprinkler discharge densities and areas of application shall be in accordance with Table 4-1.2.

4-1.3 System Requirements.

4-1.3.1 For the purpose of selecting sprinkler spacings in hydraulically designed sprinkler systems, to obtain a stipulated density, 60 lb (4 atmospheres) per square in. (414 kPa) shall be the maximum discharge pressure used at the calculation starting point.

4-1.3.2 In buildings which are occupied in part for tire storage, where only a portion of the sprinkler system is hydraulically designed, the design area shall extend not less than 15 ft (4.6 m) beyond the area occupied by the tires.

4-1.4 In-Rack Sprinkler System Requirements.

4-1.4.1 The area protected by a single system of sprinklers in racks (in-rack sprinklers) shall not exceed 40,000 sq ft (3716 m^2) of floor area occupied by the racks, including aisles, regardless of the number of intermediate sprinkler levels.

4-1.4.2 When sprinklers are installed in racks, separate indicating gate valves and drains shall be provided for ceiling sprinklers and sprinklers in racks, except such drains and valves are not required for small in-rack installations of less than 20 sprinklers.

4-1.4.3 Water demand of sprinklers installed in racks shall be added to ceiling sprinkler water demand at the point of connection.

4-1.4.4 Sprinklers in racks shall be ordinary temperature classification with nominal ½ in. (12.7 mm) orifice pendent or upright.

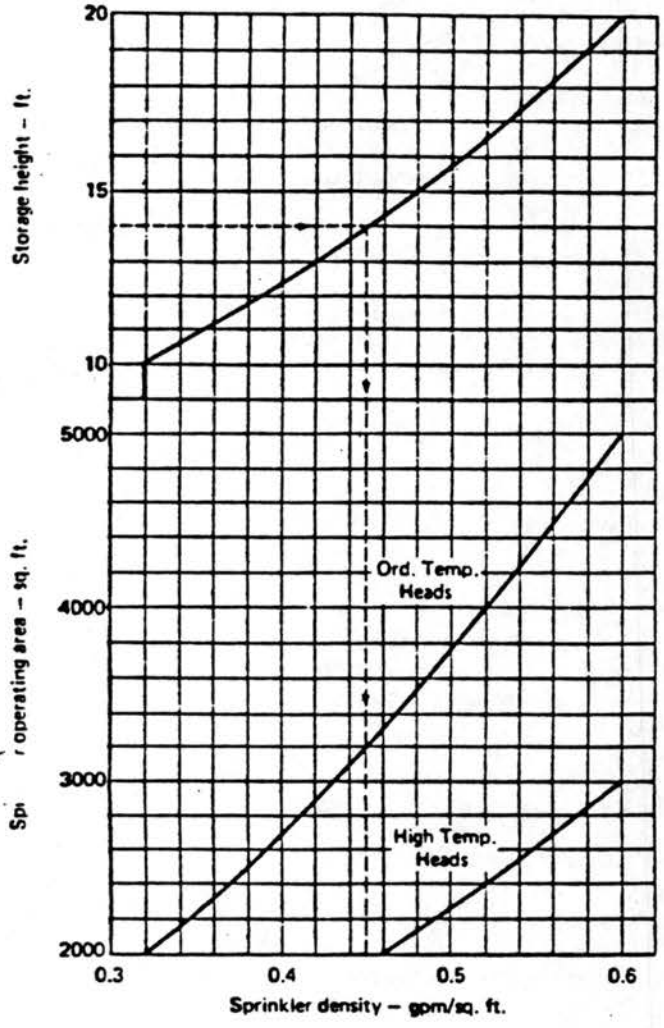


Figure 4-1.2 Sprinkler System Design Curves for Palletized Storage and Fixed Rack Storage with Pallets.

To use curves, enter at storage height (example 14 ft) (4.3 m); read density (0.45) then down to sprinkler operating area; 3200 sq ft (297 m²) for ordinary heads, 2000 sq ft (186 m²), for high temperature heads.

4-1.4.5 The number of sprinklers and the pipe sizing on a line of sprinklers in racks is restricted only by hydraulic calculations, and not by any piping schedule.

4-1.4.6 Water shields shall be provided directly above in-rack sprinklers, or listed sprinklers equipped with water shields shall be used when there is more than one level of in-rack sprinklers.

4-1.4.7 In-rack sprinkler deflectors shall be located at the same level as the bottom of the pallet support to maintain an unobstructed clear space of at least 4 in. (102 mm). In-rack sprinklers shall be located at least 2 ft (0.6 m) from rack uprights.

4-1.4.8 In-rack sprinklers at one level only for storage up to and including 20 ft (6 m) high shall be located at one half to two thirds of the storage height.

4-1.4.9 Maximum horizontal spacing of sprinklers in racks shall be 8 ft (2.4 m).

4-1.4.10 Sprinklers in racks shall discharge at not less than 30 psi (207 kPa) for all classes of commodity.

4-1.4.11 Water demand for sprinklers installed in racks shall be based on simultaneous operation of the most hydraulically remote 12 sprinklers when only one level is installed in racks.

4-2 High Expansion Foam Systems.

4-2.1* High expansion foam systems installed in accordance with NFPA 11A, *Standard for High Expansion Foam Systems*, as modified herein, may be installed in addition to automatic sprinklers. When so installed, a reduction in sprinkler discharge density to one half the density specified in Table 4-1.2 or 0.24 gal per min per sq ft [9.78 (L/min)/m²], whichever is higher, will be allowed.

4-2.2 High expansion foam systems shall be automatic in operation.

4-2.3 Detectors shall be listed and shall be installed at the ceiling at one half listed spacing in accordance with NFPA 72E, *Standard for Automatic Fire Detectors*.

4-2.4 Detection systems, concentrate pumps, generators and other system components essential to the operation of the system shall have an approved standby power source.

4-3 Water Supplies.

4-3.1 The rate of water supply shall be sufficient to provide the required sprinkler discharge density over the required area of application plus provision for generation of high expansion foam and in-rack sprinklers when used.

4-3.2 Total water supplies shall include provision for not less than 750 gal/min (2835 L) for hose streams, in addition to that required for automatic sprinklers and foam systems. Water supplies shall be capable of supplying the demand for sprinkler systems and hose streams for not less than 8 hrs.

4-3.3* Where dry pipe systems are used, the area of sprinkler application shall be increased by not less than 30 percent.

4-4 Manual Inside Protection.

4-4.1 Where automatic sprinkler protection is provided, small hose (1½ in.) (38 mm) shall be provided to reach any portion of the storage area. Small hose may be supplied from

(a) Hydrants, or

(b) A separate piping system for small hose stations, or

(c) Valved hose connections on sprinkler risers where such connections are made upstream of sprinkler control valves, or

(d) Adjacent sprinkler systems.

Table 4-1.2

Piling Method	Piling Height Feet	Sprinkler Discharge Density — Gallons Per Minute Per Square Foot (See Notes 1 and 2)	Areas of Application Square Feet (See Note 1) Ord. Temp. Heads	High Temp. Heads
1. On Floor				
a. Pyramid piles	Up to 5	See NFPA #13, Standard For Installation of Sprinkler Systems		
b. Other arrangement such that no horizontal channels are formed	5 + to 7	0.24	2,000	2,000
	7 + to 8	0.26	2,000	2,000
c. Tires piled on floor on tread (*See Note 3*)	8 + to 10	0.28	2,000	2,000
	10 + to 12	0.32	2,000	2,000
d. Off the road tires				
2. Palletized				
On side or tread	9 to 20	See Figure 4-1.2		
	20 + to 30	0.3 plus high expansion foam	3,000	3,000
3. Open Portable Rack Storage	Up to 12	0.6	5,000	3,000
On side or tread	12 to 20	0.6	(*See Note 4*)	5,000
		0.9	(*See Note 4*)	3,000
		or 0.3 plus high expansion foam	3,000	3,000
4. Double & Multi-row Fixed Rack Storage on Pallets	9–20	See Fig. 4-1.2	—	—
On side or tread	20	0.4 plus 1 line in-rack sprinklers	3,000	3,000
		or 0.3 plus high expansion foam	3,000	3,000
5. Double & Multi-row Fixed Rack Storage Without Pallets or Shelves	Up to 12	0.6	5,000	3,000
On side or tread	12 to 20	0.6	(*See Note 4*)	5,000
		0.9	(*See Note 4*)	3,000
		or 0.3 plus high expansion foam	3,000	3,000
		or 0.4 plus 1 line in-rack sprinklers	3,000	3,000

Notes:

1. Sprinkler discharge densities and areas of application are based on a maximum clearance of 10 feet between sprinkler deflectors and the maximum available height of storage.
2. Densities in table are based on standard sprinklers. In buildings where "old style" sprinkler heads exist, discharge densities shall be increased by 25%.
3. Piles not to exceed 25 feet in direction of wheel holes.
4. Water supply shall fulfill both requirements.

4-4.2* In locations where small hose is provided, portable fire extinguishers for Class A fires may be omitted in storage areas.

4-5 Hydrants. At locations without public hydrants, or where hydrants are not within 250 ft (76 m), private hydrants shall be installed in accordance with NFPA 24, *Standard for Outside Protection*.

4-6 Alarm Service.

4-6.1 Automatic sprinkler systems and foam systems where provided shall have approved central station, auxiliary, remote station or proprietary waterflow alarm service.

Exception: Local waterflow alarm service may be provided where recorded guard service is also provided. (See NFPA 601.)

4-6.2 Alarm service shall comply with one of the following: NFPA 71, 72A, 72B, 72C or 72D.

4-7*† Fire Emergency Organization.

4-7.1 Arrangements shall be made to permit rapid entry into the premises by the municipal fire department, police department, or other authorized personnel in case of fire or other emergency.

4-7.2 Plant emergency organizations where provided shall be instructed and trained in the following procedures:

(a) Maintaining the security of the premises.

(b) Means of summoning outside aid immediately in an emergency.

(c) Use of portable extinguishers and small hose lines or small fires and mop-up operations.

(d) Operation of the sprinkler system and water supply equipment.

(e) Use of material handling equipment while sprinklers are still operating to effect final extinguishment.

(f) Supervision of sprinkler valves after the system is turned off so that the system can be reactivated if rekindling occurs.

4-7.3 A fire watch shall be maintained when the sprinkler system is not in service.

Chapter 5 Building Equipment, Maintenance and Operations

5-1 Mechanical Handling Equipment.

5-1.1 Industrial Trucks. Power-operated industrial trucks shall comply with NFPA 505, *Standard for Powered Industrial Trucks, Including Type Designations and Areas of Use*.

5-2 Storage of Empty Wood Pallets. Wood pallets shall be stored in accordance with the requirements of NFPA 231, *Indoor General Storage*, Section 4-4.

5-3 Cutting and Welding Operations.

5-3.1 When welding or cutting operations are necessary, the precautions contained in NFPA 51B, *Cutting and Welding Processes*, shall be followed. When possible, work shall be removed to a safe area.

5-3.2 Welding, soldering, brazing, and cutting may be performed on rack or building components which cannot be removed, provided no storage is located below and within 25 ft (7.6m) of the working area, and flameproof tarpaulins enclose this section. During any of these operations the sprinkler system shall be in service. Extinguishers suitable for Class A fires with a minimum rating of 2A and charged inside hose lines where provided shall be located in the working area. A fire watch shall be maintained during these operations and for not less than 30 min following completion of open flame operation.

5-4 Waste Disposal. Rubbish, trash, and other waste material shall be disposed of at regular intervals. (*See NFPA 82, Standard on Incinerators and Rubbish Handling, Section 80.*)

5-5 Smoking. Smoking shall be strictly prohibited, except in locations prominently designated as smoking areas. "No Smoking" signs shall be posted in prohibited areas.

5-6 Maintenance and Inspection.

5-6.1 Fire walls, fire doors, and floors shall be maintained in good repair at all times.

5-6.2* The sprinkler system and the water supplies shall be maintained and serviced.

Appendix A

This Appendix is not a part of the requirements of this NFPA document, but is included for information purposes only.

A-1-2 Units. One H78-14 passenger tire weights about 25 lb (11 kg). One heavy service (truck) tire, size 10.00-20 weighs above 100 lb (45 kg) and is equivalent to four passenger units. Light heavy service tires vary in size and weight from passenger size to heavy service size—on the average being about 2½ equivalent passenger units. Other types of tires are found in a broad range of sizes. Except in large warehouses they are not likely to be encountered in significant quantities.

A-2-1.1 Building codes and insurance requirements may affect the type of construction selected.

A-2-2 Smoke removal is important to manual fire-fighting and overhaul. Since most fire tests were conducted without smoke and heat venting, protection specified in Section 4-1 was developed without the use of such venting. However, venting through eaveline windows, doors, monitors, gravity or mechanical exhaust systems is essential to smoke removal after control of the fire is achieved.

A-4-1.2 Density and areas of application in Table 4-1.2 have been developed from fire test data. Protection requirements for other storage methods are beyond the scope of the standard at the present time. From recent fire testing with densities (0.45 gpm/sq ft and higher) [(18.3 L/min)/m²] there have been indications that large orifice sprinklers at greater than 50 sq ft (4.6 m²) spacing produce better results than the ½ in. (12.7 mm) orifice sprinklers at 50 sq ft (4.6 m²) spacing.

A-4-2.1 In existing buildings to be used for tire storage, high expansion foam might be used to augment an existing sprinkler system whose calcalated density was below that required for the proposed storage height. For example, an existing system calculated to provide 0.25 gpm/sq ft [(10.2 L/min)/m²] could be used for storages requiring up to 0.50 gpm/sq ft [(20.3 L/min)/m²] with the addition of a high expansion foam system. An alternative may be to reinforce or redesign the sprinkler system.

A-4-3.3 Wet systems are recommended for tire storage occupancies. Dry systems are acceptable only where it is impracticable to provide heat.

A-4-4.2 Extinguishers should be provided for adjacent areas such as offices, shops, boiler rooms, electrical switch rooms, truck service areas, etc. If cutting or welding is comtemplated, extinguishers will also be needed. Size, spacing and type of extinguisher to be in accordance with NFPA 10, *Standard for Portable Fire Extinguishers.*

A-4-7 (*See also Appendix B.*) Information on emergency organization is given in NFPA 27, *Recommendations for Organization, Training and Equipment of Private Fire Brigades.*

A-5-6.2 See NFPA 13A, *Care and Maintenance of Sprinkler Systems*, for guidance.

Appendix B

This Appendix is not a part of the requirements of this document, but is included for information purposes only.

B-4-7 Suggestions for Fighting Rubber Tire Fires in Sprinklered Buildings.

Introduction. Observations at tire fire tests have indicated that while automatic sprinklers with adequate discharge densities can control a fire, extinguishment by sprinklers alone is not to be expected. It is essential that the behavior of this type of fire be understood if control is not to be lost in the overhaul stage.

Incipient Stage. If caught in the incipient stage control can often be effected. Dry chemical type extinguishers have been found effective since the powder will pass into the mass of tires and knock down flame temporarily. It is necessary to back up extinguishers with small hose, and to remove affected tires from the pile. Tires thus removed should be taken out of doors, thoroughly soaked and left where they do not expose other combustibles. The area in which the fire occurred should be constantly attended for several hours to watch for rekindling.

Automatic sprinklers can be expected to operate within 2 to 5 min of ignition. At this point, the fire has generally progressed beyond the stage where extinguishers are effective and within a few minutes, smoke will make the area untenable and vision will be completely obscured.

Active Stage. At this point, the building is untenable and obscured vision makes the use of hose streams questionable. It is best to allow the sprinklers to take control of the fire. Most sprinklers will have operated within 15 to 20 min of ignition if control is to be effected. Sprinklers should be allowed to operate at least 60 and preferably 90 min. During the period the building is best left unventilated. As control of the fire is gained, smoke will tend to change from black to gray and diminish in intensity. During this period at least six charged 1½-in. (38 mm) hose lines should be laid out preparatory to entering the building. Portable floodlights should be secured as well as raincoats, boots, helmets, breathing apparatus, etc., for the overhaul crew.

Critical Stage. After 60 to 90 min and when smoke intensity has diminished, the building should be ventilated around the periphery of the suspected fire location. During this period close observation should be made of smoke conditions. If smoke generation increases, cease ventilating and close up building if possible.

Overhaul. As soon as smoke clears to the extent that the building can be entered, entry should be made with small hose streams which should be directed into burning tires. Sprinklers should remain in operation unless the fire chief is certain that hose can control the fire.

Fork trucks and other means should be employed to remove tires from the fire area. It will usually be necessary to keep sprinklers and/or hose streams in operation during this procedure at least until all evidence of flame is gone. Patrols should be made in affected area for 24 hrs following the fire.

In the event that control of the fire is lost as evidenced by increasing smoke generation, loss of pressure at fire pump discharge indicating massive sprinkler operation, collapsing roof, etc., efforts should be directed towards preventing the spread of the fire beyond the area bounded by the fire walls. At this point, consideration should be given to shutting off sprinklers in the fire area to provide water for protecting the exposures.

Use of High Expansion Foam. If a high expansion foam system is used in connection with automatic sprinklers, sprinklers may be shut off 1 hr after ignition and an additional 1 hr soaking time for foam allowed before the building is opened up and overhaul begun. Limited tests with high expansion foam indicate that fire extinguishment is largely complete after a period of soaking in foam. As a precautionary measure, charged hose streams should be available when foam is drained away.

After the initial fill, foam generators should be operated periodically during the soaking period to maintain the foam level. This is necessary since sprinklers and products of combustion will cause partial foam breakdown.

Appendix C

This portion of the Appendix lists publications referenced within this NFPA document and, thus is considered part of the requirements of this document.

C-1 NFPA Publications. The following publications are available from the National Fire Protection Association, Batterymarch Park, Quincy, MA 02269.

NFPA 10-1978, *Portable Fire Extinguishers*

NFPA 11A-1976, *High Expansion Foam Systems*

NFPA 13-1980, *Installation of Sprinkler Systems*

NFPA 13A-1978, *Care and Maintenance of Sprinkler Systems*

NFPA 24-1977, *Outside Protection*

NFPA 27-1975, *Recommendations for Organization, Training and Equipment of Private Fire Brigades*

NFPA 51B-1977, *Cutting and Welding Processes*

NFPA 71-1977, *Central Station Signaling Systems*

NFPA 72A-1979, *Local Protective Signaling Systems*

NFPA 72B-1979, *Auxiliary Protective Signaling Systems*

NFPA 72C-1975, *Remote Station Protective Signaling Systems*

NFPA 72D-1979, *Proprietary Protective Signaling Systems*

NFPA 72E-1978, *Automatic Fire Detectors*

NFPA 82-1977, *Rubbish Handling Incinerators*

NFPA 91-1978, *Blower & Exhaust Systems for Dust, Stock, Vapor Removal*

NFPA 220-1979, *Standard Types of Building Construction*

NFPA 231-1979, *Indoor General Storage*

NFPA 505-1978, *Powered Industrial Trucks*

NFPA 601-1975, *Guard Services in Fire Loss Prevention*

is the annual yield of V_0 as "principal sum." These statements are all correct, under the special assumptions that led to the expression of (16.10) in the special form (16.10').

Example 16. 2
Fire Yours, Hire Ours!

Errors in economic reasoning involving time often stem from an elementary fallacy: failing to appreciate that a dollar in the distant future is worth less today (has lower Present Value) than a dollar in the relatively near future. The following is an extract from a letter to Consumers Union (the well-known consumer advice organization).

> Dear Editor:
>
> I have just read your "Economics for consumers: Notes to home buyers" in the April 1972 issue. As it happens, I am in charge of job placement for the fledgling economists trained here at _____ University. Putting these two together, I can say in short: FIRE YOURS, HIRE OURS.
>
> Your consumer economist compares the same appliances, available at $675 from a store but at $450 through the builder. The store's financing arrangement is a 2-year contract at 15% interest. The builder's is a mortgage add-on, 27-year contract at $7\frac{3}{4}\%$. Your economist assures CU's readers that the store offers the better deal! He arrives at this conclusion by adding up all the interest payments and tacking them onto the purchase price—making the totals $785 for the store deal and $1075 for the builder deal. One's mind reels at the enormity of the error here, flying as it does in the face of both formal economics and common sense. Formally speaking, it suffices to point out that a dollar payment deferred 27 years has a present worth of only 13 cents (at $7\frac{3}{4}\%$ interest, a reasonable current rate). Payments at different dates cannot be aggregated meaningfully without allowing for the time-value of money.
>
> Returning to common sense, I don't suppose many of your readers could really have been fooled into thinking that it's better to buy at $675 than at $450, or better to pay 15% than $7\frac{3}{4}\%$ interest.
>
> Sincerely,
> Professor X

16. D REAL INTEREST AND MONEY INTEREST

What we have been referring to as the rate of interest so far in this chapter is more specifically known as the *real* rate of interest. Following the usual practice in price theory, we have looked behind the "veil of money" so as to

gain an understanding of how the concept of interest is related to the rate of market exchange between current real consumption claims and future real consumption claims. Returning for simplicity to a two-date model (time-0 and time-1), the real rate of interest is the proportionate market premium on current real claims C_0 relative to real claims C_1 to be received one year in the future. Denoting quantities exchanged in markets as Δc_0 and Δc_1, we have seen that (in absolute values) the exchange ratio must satisfy:

$$\frac{\Delta c_1}{\Delta c_0} = 1 + r \tag{16.11}$$

But, in common parlance, the expression "the rate of interest" is ordinarily understood to be associated with the lending and borrowing of *money*. The *money rate of interest*, which can be symbolized as r', need not in general be exactly equal to the real rate of interest r. The money rate of interest is the premium on *current money* m_0 relative to *future money* m_1. That is, if current money is exchanged in the loan markets against future money in the amounts Δm_0 and Δm_1, the exchange ratio (in absolute terms) defines the *money* rate of interest in the expression:

$$\frac{\Delta m_1}{\Delta m_0} = 1 + r' \tag{16.12}$$

What is the relation between the real rate of interest r and the money rate of interest r'? This is connected with movements of the "price level," that is, with changes in the prices (in contemporaneous *money* units) of *real* goods. At time-0 and time-1, money is traded for real goods in exchange ratios $\Delta m_0/\Delta c_0$ and $\Delta m_1/\Delta c_1$. These exchange ratios (in absolute values) define the current and future money *price levels* P_0^m and P_1^m:

$$P_0^m = \frac{\Delta m_0}{\Delta c_0} \quad \text{and} \quad P_1^m = \frac{\Delta m_1}{\Delta c_1} \tag{16.13}$$

These imply:

$$\frac{\Delta m_1}{\Delta m_0} = \frac{P_1^m(\Delta c_1)}{P_0^m(\Delta c_0)}$$

This can be rewritten, using equations (16.11) and (16.12):

$$1 + r' = (1 + r)\frac{P_1^m}{P_0^m} \tag{16.14}$$

In terms of economic logic, equation (16.14) is readily understandable. The left-hand side, $1 + r'$, is what a lender receives in future money in return for giving up one unit of current money. The amount so received must depend, in part, upon the *real* future return $1 + r$ per unit of current *real* claims sacrificed. But money may rise or fall in value relative to the underlying real claims. Hence, the rate of money interest r' must be sufficiently high

to make up for any increase in the price level that makes future real claims more expensive relative to future money.

It is convenient to express the ratio of money price levels, P_1^m/P_0^m, as $1 + a$, where a is the *anticipated rate of price-level inflation*. Then:

(16.15) $$1 + r' = (1 + r)(1 + a)$$

or

(16.16) $$r' = r + a + ra$$

This says that the money rate of interest equals the real rate of interest plus the anticipated rate of price inflation, plus the cross-product of the latter two. When r and a remain in their usual range of percentage points, the cross-product term can to a fair approximation be ignored. With *compound* interest, the shorter the period of compounding the more correct it is to drop the cross-product. For continuously-compounded interest, the cross-product drops out entirely and we have exactly:

(16.17) $$r' = r + a$$

It is in this simple form (16.17) that the relation between real and money interest rates is usually expressed.

Proposition: The money rate of interest equals the real rate of interest plus the anticipated rate of price inflation.

Example 16. 3
Real and Money Rates of Interest

William E. Gibson[9] examined the effects of inflationary expectations upon the "nominal" (money) rates of interest paid on U.S. Treasury securities in the period 1962 to 1970. In all such studies, the practical problem is to find a measure of "inflationary anticipations," which are not a directly visible magnitude. The measure used by Gibson was derived from a semi-annual survey of economists conducted by Joseph Livingston, a nationally syndicated financial columnist.

Using this information as an estimate of anticipations a, and the recorded interest rates as the measure of the money rate r', Gibson estimated statistically an equation in the form:

$$r' = H + Ka$$

Here H and K were the parameters of the line of best fit to the observed data. On the assumption that the *real* rate of interest r was constant over this period, comparison with equation (16.17) above shows that the

[9]William E. Gibson, "Interest Rates and Inflationary Expectations: New Evidence," *American Economic Review*, v. 62 (Dec. 1972).

fitted parameter H is an estimate of the real rate r. Also, the fitted parameter K should be simply equal to unity.

The statistical evidence varied somewhat according to the type of security considered. But the H figures obtained suggested a *real* rate of interest between 2% and 3% (much lower than the nominal interest rates in this period, of course). And the K estimates were not far from unity (for example, .9300 for 3-month Treasury bills, .8959 for 3-year to 5-year Treasury notes).

One interesting point is that the K estimates were closer to unity in the latter than in the earlier portion of the period. The suggestion is that the general public was gradually "learning" to adjust its investments to the prospect of continuing inflation.

Equation (16.17) is connected with important issues of *macro*economic policy. Suppose the government desires, for reasons that do not concern us here, to reduce the money interest rate r'. One thing the government can do is to increase the aggregate money balances in the economy (for example, by paying its bills with newly printed money). In the short run, as the aggregate amount of current money m_0 rises, this does tend to lower the money rate of interest. For, if people have more m_0 in their hands they are more inclined to make market exchanges Δm_0 of current money against future money, i.e., they are more inclined to *lend* money for future return. As we can see in equation (16.12), when the denominator Δm_0 on the left-hand side rises then r' on the right-hand side falls. However, there is an important after-effect to consider. When government increases the aggregate of current money m_0, equation (16.13) tells us that the current money price-level P_0^m also tends to rise ("more money chasing the same amount of goods"). It *may* happen that this process tends to generate public anticipations of further future price inflation. People may think that if the government has found it convenient to print more money forcing up the current price-level P_0^m, they will find it convenient to do so again in the future. Should these anticipations become general, a rises in equation (16.17), so that the money rate of interest r' must rise! Hence, a successful attempt to lower r' *in the short run* may only serve to raise it higher *in the long run*.

16. E DETERMINANTS OF INTEREST AND INVESTMENT

What are the underlying forces tending to cause interest rates to be high in some countries and low in others, high in some eras and low in others? It is possible, in line with the analysis here, to classify the determinants of *real* interest rates under the headings: (1) time-preference, (2) time-endowment, and (3) time-productivity. Given these determinants of *real* interest, the *money* interest rate is accounted for by incorporating the anticipations of

E. Surety Bonds

Reproposed Regulation and Rationale. The reproposed regulation gave owners and operators of hazardous waste management facilities the option to purchase surety bonds in the amount of the cost estimates to meet the requirements for financial assurance for closure and post-closure care. Three types of surety bonds were allowed in the reproposal. They guaranteed performance of closure, payment of a lump sum into a post-closure trust fund at the time of closure, or performance of post-closure care. The lump-sum option was allowed for post-closure care after the Agency determined that sureties would be extremely reluctant to write bonds guaranteeing performance of any activity for a 30-year term.

The main provisions in the bond regulation and standard bond forms were:

- Sureties writing the bonds had to be certified by the U.S. Department of the Treasury in Circular 570, "Surety Companies Acceptable on Federal Bonds." This list includes almost 300 companies, and is under continuous review. The use of Circular 570 relieves the Agency of the burden of evaluating sureties. Certification is a minimum criterion; the Agency reserves the right to require further qualification of sureties.
- Once closure activities began, or were ordered to begin, the bond coverage had to continue until the obligation guaranteed was completed. This provision was considered necessary to prevent the surety from cancelling the bond when coverage is needed most, i.e., when the owner or operator is in financial trouble, when the facility is not meeting the technical requirements of the permit, or when the date of closure is approaching.

- A cancellation clause allowed the surety to cancel a bond with 90 days' notice to the owner or operator and EPA. The regulation allowed the owner or operator 30 days to obtain other financial assurance, thus leaving the Agency 60 days during which it could order closure if financial assurance was not restored. If closure was ordered, in accordance with the previous provision the surety would remain liable on the bond until all obligations were met. The owner or operator could cancel a bond upon 30 days' notice to the surety, but only after demonstrating other financial assurance to the Regional Administrator.
- If a surety was determined to be liable on a performance bond guaranteeing closure or post-closure care, it could choose between two options. First, it could arrange for closure or post-closure care to be performed. If the surety did not choose to perform the activities covered by the bond, it had to pay the penal sum of the bond into an escrow account or trust fund as directed by the Regional Administrator. Allowing this choice between performance or payment on the part of the surety is standard practice.

Comments and Responses. EPA received several comments on the surety bond provisions.

- Closure and post-closure obligations cannot be met with surety bonds. Only through a direct cash payment by an owner or operator equal to the entire amount of the estimated closure cost of the facility into a trust fund on the effective date of the regulations can these long-term financial assurances be provided. In the case of post-closure care, owners or operators of disposal facilities should be required to deposit the estimated cost of post-closure monitoring and maintenance into a trust fund during the operating life of the facility.

EPA disagrees with this comment. The Agency believes that surety bonding is a viable option. This conclusion was reached after consultation with representatives of industry trade associations, analysis of the mechanics of surety bonds under the conditions that will apply during both interim and general status, and a review of existing State hazardous waste programs as well as similar governmental programs that require or permit the use of surety bonds.

An advantage of surety bonds is that, for some owners and operators, their cost may be lower than that of the trust funds. Owners and operators do not have to commit large sums of capital for long periods, although they of course remain liable for the eventual cost of closure or post-closure care.

Another advantage is that surety bonds not only provide full indemnification in the financial sense but also, in the case of performance bonds as allowed under Part 264, establish a responsible party to arrange for performance of the required work in the absence of the owner or operator.

The sureties are likely to meet their obligations fully and in a timely manner, since the Treasury Department may decertify a surety from Circular 570 for failure to pay or perform as required[17]. Because government contractors are major purchasers of surety bonds, and are prohibited from conducting business with sureties which are not certified, it is likely that decertification will result in lost business to the surety, which is obviously a strong incentive to retain certification. The final surety bond regulations for interim and general status are written so that, once a facility is properly bonded, either the owner or operator or the surety must assume responsibility for funding the standby trust or performing closure or post-closure care. Because a responsible party will at all times be liable for complying with this regulation, EPA has

determined that surety bonds meet the standard of providing financial assurance for closing hazardous waste management facilities, and for monitoring and maintaining them during the post-closure period.

- If EPA allows the use of surety bonds to guarantee the closure and post-closure maintenance of hazardous waste disposal facilities, owners and operators will be encouraged to default on those bonds before they are forced to use their own funds. There is no incentive for them to set aside the funds necessary to meet their obligations, when they know that the surety company is legally bound to assume their liabilities.

The fact that the surety will meet the obligations takes care of EPA's main concern. Nevertheless, EPA does not agree with this statement. Owners or operators who are able to obtain bonds guaranteeing that they will carry out their closure or post-closure responsibilities are unlikely to force EPA to call in their bonds for several reasons.

Surety companies are extraordinarily selective in their choice of clients. A surety typically strives to reduce its risk exposure to zero. It is unlikely that any but financially sound and responsible corporations will be able to obtain these bonds for hazardous waste disposal.[18,22] In addition, sureties have indicated that they may in some cases require collateral amounting to 100% of the penal sum or even more.[19] If a bonded owner or operator were to default, he would forfeit that collateral to the surety. Also, an owner or operator who defaults on a bond may find it difficult to obtain any form of third-party financial guarantee in the future.

- A surety association executive commented that a performance bond which gives a surety the option of performing closure or forfeiting the penal sum of the bond is preferable from the sureties' viewpoint to a financial guarantee bond which guarantees only that the owner or operator will have in his possession at the required time sufficient funds to perform closure. Frequently the surety finds that

performing the work guaranteed by the bond is less costly than forfeiting the entire penal sum. For example, sureties which have bonded surface (strip) coal mining operations under the Department of the Interior's surface mine reclamation regulations are, as they gain experience in the field, discovering that it is often less costly for them to contract out the work themselves, should a mine operator default. The sureties thus prefer that the performance option be retained in the final regulation.

- A government surety specialist advised strongly against EPA's inclusion of the performance option in bonds written under interim status standards. During interim status many closure and post-closure plans will not be closely examined by EPA until shortly before closure. At that time, the plans may be significantly altered. Such changes might be interpreted as material alterations of the bonding contract. Unless consent of the surety is obtained for such changes the surety might be able to present a successful legal defense against liability on the bond; material alteration of the work requirements of a performance bond is in fact one of the few legally valid defenses against liability. Therefore, EPA should not allow performance bonds to be written during the interim status phase of permitting, and may not wish to allow them under the general status regulation either.[17]

EPA agrees that in some cases a surety may wish to accept responsibility for closing a facility instead of paying the penal sum into a trust fund. Surety bonds which guarantee performance of activities such as construction, land reclamation and oil spill cleanups are common, but each clearly specifies, at the time the bond is written, the nature and extent of the performance guaranteed by the surety. During interim status, however, some closure and post-closure plans may not be closely examined by the Regional Offices until shortly before closure. At that time, it is possible that the Regional Administrator may determine that the plans require changes which might affect both the cost and type of work required. The actual required performance for the particular facility therefore may not be specified in any detail during most of the term of the bond.

Consequently, in the final regulations for interim status only surety bonds that guarantee payment into standby trust funds for closure and

post-closure care are allowed. In the general standards, performance as well as financial guarantee bonds are allowed since the closure and post-closure plans will be reviewed as part of the permitting process.

- Several sureties suggested that EPA is creating an "impossible" situation for them by requiring bonds which remain in effect during the entire operating life of the facility. A 30-year post-closure bond would be even riskier. Unlike an insurance company, a surety expects to suffer no losses, so bonds will not be readily available for what is perceived to be an inherently risk-prone industry, especially since the cancellation clause does not allow the surety to get off a risk easily. Only after the RCRA regulations have been in effect for 20, 30, or even 40 years will sureties be able to properly assess the risks.

- Several commenters indicated that EPA's requirement that an increase in the cost estimate be reflected in the facility's financial assurance mechanism within 30 days would increase the surety's "exposure" and decrease the likelihood that bonds would be available. A surety prefers to write a bond for a fixed penal sum, or at least have some idea of the eventual size of the bond. One commenter noted that "No business judgments can be made since bond amounts can be increased arbitrarily."

EPA understands that some of the provisions it requires to be in bonds written for hazardous waste management facilities may not be entirely consistent with the current bond-writing practices of the surety industry, and may discourage sureties from writing the bonds at this time. Long-term coverage must be provided, however, since closure or post-closure costs may not be incurred for up to twenty years or more. Continuous coverage of anticipated obligations is required by the regulations, but could not be guaranteed if a surety were permitted to avoid liability simply by cancelling a bond or allowing it to expire regardless of whether the owner or operator had provided another form of financial assurance to take its place. It is likely that such cancellation would come at a time when coverage is essential; for example, when a facility is approaching financial insolvency or is having difficulty complying with the technical requirements of the permit.

In the final regulation, the surety must provide at least 90 days' notice to the owner or operator and EPA prior to cancellation. Upon receiving a cancellation notice, the Regional Administrator will consider the owner or operator to be in violation of the financial assurance regulations, and will issue a compliance order pursuant to Section 3008 of RCRA. If the owner or operator cannot demonstrate to the Regional Administrator alternate financial assurance within 30 days of issuance of the compliance order, the Regional Administrator may direct the surety to place the penal sum of the bond in the standby trust fund. EPA is encouraged by the fact that solid waste disposal facilities permitted under State programs have been able to obtain bonds with similarly strict provisions for guaranteeing continuity of financial responsibility.[20,21]

The requirement that financial assurance increase as the cost estimates increase is also necessary for adequacy of financial assurance, and cannot be substantively changed. This requirement is applicable to all financial assurance mechanisms. The surety bond language in the final regulation includes an optional rider by which the owner or operator and surety agree to adjust the penal sum of the bond yearly so that it equals the adjusted cost estimate, provided that the increase is no more than 20 percent and no decrease takes place without the written consent of the Regional Administrator. Inclusion of such a provision would help assure that the bond will continue to provide for coverage of the full cost estimate. The owner or operator may find such a provision advantageous and convenient since it allows for adjustment of the penal sum within a range mutually acceptable to him and the surety.

The Agency realizes that during the next several years it is likely that only the sureties' favored clients may be able to obtain bonds for their facilities, but it believes that as sureties' experience with hazardous waste facilities increases, bonds may become more readily available, especially for those facilities with RCRA permits.

- EPA's proposed standard bond forms are confusing, excessively complex, and contain language and references to the regulations which could be misconstrued. A bond form is a formal agreement by which a surety agrees to assume a principal's (owner's or operator's) obligation to an obligee (EPA) to meet the terms of an underlying contract (the regulations). It should be kept as simple as possible.

After examining numerous bond forms, several of which were written specifically for hazardous or solid waste disposal facilities, EPA has determined that its proposed bond forms were indeed overly complex and subject to misinterpretation. The text of the revised bond forms avoids unnecessary duplication of the language of the regulations by eschewing the detailed discussion of the actions required of the surety, principal, and obligee under various contingencies, which the proposed bond forms contained. This change should minimize the possibility that the language of the bond itself could be used to subvert the intent of the financial responsibility regulation[17]. Individual forms have been written for closure and post-closure financial guarantee bonds, which may be used during both interim and permitted status, and for closure and post-closure performance bonds, which may be used only by permitted facilities. The surety and the owner or operator are required to certify that the EPA standard language has been used when it writes a bond.

- Sureties expressed concern that an issuer of a bond for closure or post-closure activities might be held responsible for third-party damages resulting from some aspect of the facility's operation not related to the closure or post-closure guarantee. Even if such incidents are covered by a separate liability policy it is conceivable that if the regulations are written into the bond form, the surety might still be held liable.

The Agency believes that the extent of a surety's liability on a closure or post-closure bond is made clear both in the regulations and on the form itself, and is explicitly limited to the stated guarantees.

Final Regulation. EPA has changed several provisions of its surety bond regulation in response to comments and as a result of its own research.

The final regulation for interim status allows owners or operators to obtain financial guarantee bonds which guarantee payment of the penal sum into a standby trust fund. The penal sum must be in the full amount of the estimated closure (§265.143(b)) or post-closure (§265.145(b)) costs, unless part of these costs are covered by other allowed mechanisms.

The final general standard also allows owners or operators to obtain financial guarantee bonds which guarantee funds for closure (§264.143(b)) or post-closure (§264.145(b)) costs, or to obtain surety bonds which guarantee the performance of facility closure (§264.143(c)) or post-closure monitoring and maintenance (§264.145(c)).

Some of the key provisions of the reproposed regulation remain intact. Significant modifications include the requirement that the owner or operator must establish a standby trust fund to receive funds to be paid by himself or the surety. Also, if the owner or operator chooses a financial guarantee bond for closure, he must fund the standby trust fund at least 60 days before closure is scheduled to begin. If a post-closure financial guarantee bond is chosen, the owner or operator must fund the

standby trust fund by the time closure begins. The closure and post-closure financial guarantee bonds must guarantee that the owner or operator will fund the standby trust fund within 15 days in the event that closure is ordered by the Regional Administrator or a U.S. district court, pursuant to Sections 3008, 7002, or 7003 of RCRA, or within 15 days of a notice of termination of the facility's operating permit or interim status. If the owner or operator fails to perform as guaranteed, the surety must deposit funds in the amount of the penal sum into the standby trust. If the owner or operator fails to perform the activities guaranteed by a closure or post-closure performance bond, the surety must perform in his stead, or deposit the penal sum into the standby trust fund.

In addition, the surety must provide at least 90 days' notice of its intention to cancel a bond to the Regional Administrator and the owner or operator. Upon receiving such a notice, the Regional Administrator will consider the owner or operator to be in violation of the financial assurance regulation and will issue a compliance order pursuant to Section 3008 of RCRA. If the owner or operator cannot demonstrate to the Regional Administrator alternate financial assurance within 30 days of issuance of the compliance order, the Regional Administrator may direct the surety to place the penal sum of the bond in the standby trust fund. The latter change was made so that financial assurance can be maintained without the need to require closure. In all cases, a bond cannot be cancelled if a compliance procedure is pending.

Finally, if the adjusted closure or post-closure cost estimate increases beyond the penal sum of the bond, the owner or operator must, within 60 days, increase the penal sum accordingly or obtain other financial assurance.

The surety and owner or operator may elect to attach to the bond form a rider for adjustments of the penalty amount to the adjusted cost estimate provided that increases do not exceed 20 percent and decreases take place only with the Regional Administrator's approval.

United States General Accounting Office

GAO

Report to the Chairman, Subcommittee on Commerce, Transportation and Tourism, Committee on Energy and Commerce House of Representatives

February 1986

HAZARDOUS WASTE

Environmental Safeguards Jeopardized When Facilities Cease Operating

GAO/RCED-86-77

GAO

United States
General Accounting Office
Washington, D.C. 20548

Resources, Community, and
Economic Development Division

B-219849

February 11, 1986

The Honorable James J. Florio
Chairman, Subcommittee on Commerce,
Transportation, and Tourism
Committee on Energy and Commerce
House of Representatives

Dear Mr. Chairman:

In your April 30, 1984, letter and in subsequent discussions with your office, you requested that we examine several issues, including the extent to which (1) owners and operators of hazardous waste facilities have declared bankruptcy and avoided closure and postclosure costs, (2) financial assurance requirements ensure that sufficient funds will be available to properly clean up and close hazardous waste facilities and provide for adequate postclosure care, (3) EPA and states conduct inspections of facility closures, and (4) EPA and states bring enforcement actions for violations of financial assurance and closure/postclosure requirements. This report addresses these issues.

As arranged with your office, unless you publicly announce its contents earlier, we plan no further distribution of this report until 30 days from the date of this letter. At that time, we will send copies to interested parties and make copies available to others upon request.

Sincerely yours,

J. Dexter Peach
Director

Executive Summary

Hazardous waste facilities that are not closed properly when their operations cease may lead to future public health and environmental harm as well as expenditure of public cleanup funds. EPA expects that many facilities will close rather than meet costly new regulatory requirements, and that some will declare bankruptcy. Concerned about whether such facilities are being closed properly, the Subcommittee on Commerce, Transportation, and Tourism, House Committee on Energy and Commerce, requested that GAO determine the extent to which

- owners/operators of hazardous waste facilities have declared bankruptcy and thereby avoided paying closure and postclosure costs,
- financial assurance requirements ensure that sufficient funds will be available to close and provide postclosure care at these facilities,
- facilities that cease operations are inspected for compliance with closure requirements, and
- EPA and the states are taking enforcement action for violations of those requirements.

Background

The Resource Conservation and Recovery Act of 1976 (RCRA) regulates the management and disposal of hazardous waste. Under the act, EPA, since 1981, has required owners/operators of hazardous waste facilities to prepare closure plans and cost estimates for removing or securing wastes, decontaminating equipment, and other activities in the event they cease operations. Plans and cost estimates for these postclosure activities must also be prepared.

To assure that funds will be available for these plans, EPA also requires owners/operators to provide financial assurance by passing a financial test (using financial ratios and other measures), establishing trust funds, obtaining insurance, or using other methods. While EPA has overall responsibility for implementing the act, it has authorized most states to administer all or part of the hazardous waste program.

GAO's review was conducted in four of EPA's ten regions and in six states.

Results in Brief

In three of the eight bankrupt facilities GAO reviewed that had closed or were closing, the courts restricted EPA and state efforts to force owners/operators to properly close them.

Financial assurance requirements may not ensure that financially troubled or bankrupt firms pay closure and postclosure costs because of

potential weaknesses with EPA's financial test and trust fund—the two most widely used financial assurance mechanisms—and noncompliance with the financial assurance requirements in general.

Of the 176 closed facilities GAO reviewed, 109 (about 62 percent) had been inspected by EPA or the states during or after closure.

GAO found that EPA or the states were taking enforcement actions against most facilities violating financial assurance or closure requirements. These actions, however, were not always as strong as called for in EPA guidelines.

Principal Findings

Bankruptcy

Although precise nationwide data are not available, according to state and territorial officials, 74 hazardous waste facilities have filed for bankruptcy. While the bankruptcy law allows for the enforcement of environmental regulations over creditor claims, under judicial decisions, EPA and state environmental interests have not always prevailed but have merely been given equal status with other unsecured creditors, thus hindering governmental efforts to force owners/operators to properly close their facilities.

Eight of the 17 bankruptcy cases occurring in the states GAO visited involved facilities that were closed or closing. About $4.2 million in government funds had been spent thus far at four of these facilities. Although two of the four facilities were not subject to the financial assurance requirements because they declared bankruptcy prior to the regulations' taking effect, the other two that were had not provided assurance. The bankruptcy courts restricted EPA or state efforts to obtain proper closures in three cases. The remaining nine facilities were either continuing to operate under bankruptcy provisions or state officials did not know their closure status.

Financial Assurance

The financial test, used by about 75 percent of the facilities GAO reviewed, allows firms to demonstrate through financial ratios and other measures that they are financially strong and can pay closure and postclosure costs without setting aside money. If the financial strength of these facilities changes rapidly, however, adequate funds may not be

available. The trust fund, used by about 7 percent of the facilities, allows a pay-in period of up to 20 years. If the facility closes early in the pay-in period, however, sufficient funds will not have been set aside. On the basis of these potential weaknesses, nine states and one territory have adopted stronger versions of the financial test and/or trust fund, or require that other methods be used.

Because EPA's and the states' financial assurance requirements are new, there was insufficient experience to evaluate their adequacy. Nevertheless, due to the potential for increased federal liability should these requirements prove insufficient, it is important for EPA to monitor and periodically reevaluate the effectiveness of the financial test and trust fund.

GAO also found that states, in assessing the financial condition of a firm using the financial test, may not always be aware of hazardous waste facilities in other states owned or operated by that firm that are also covered by the same financial test. Thus it is difficult for the states to know whether such firms have enough assets to pass the test for all of their covered facilities nationwide. To assist the states, EPA should provide centralized information on multistate firms.

EPA officials agree that monitoring financial assurance requirements and providing centralized information on multistate firms is important, but resource constraints may prevent their implementation.

Inspection of Closed Facilities

Because of changing priorities, EPA's inspection requirements for the 176 closed facilities GAO reviewed have varied from not requiring inspections of closing facilities to requiring that they all be inspected. As a result, 67 facilities were not inspected. Of the 109 facilities (62 percent) that had been inspected either during or after closure, 37 (about 34 percent) had violations. The states GAO visited have recently adopted policies to inspect all closing facilities to assure they close properly.

Compliance and Enforcement

Of the 1,434 hazardous waste facilities in the six states reviewed, state officials could identify only 657 (46 percent) that had submitted financial assurance documents. This occurred either because EPA allowed states to delay implementing the requirements, facilities had not submitted the required documents, or the states did not know if the documents had been submitted. In addition, of 434 documents that were submitted and reviewed, the states found that 34 percent were deficient.

In addition, of the 149 facilities reviewed that had financial assurance or closure violations, enforcement actions were not taken in 13 cases. In the 136 cases where enforcement actions were taken, they were not as strong as EPA policy and guidelines called for in 122 cases, and were not always effective in obtaining timely compliance. EPA is taking steps to strengthen enforcement actions, but more needs to be done to assure that its regional offices consistently implement the guidance.

Recommendations

GAO recommends that the Administrator, EPA, monitor and periodically reevaluate the use of the financial test and trust fund to assure that they provide adequate financial assurance.

GAO is also making recommendations to EPA aimed at (1) improving state capability to evaluate financial test mechanisms submitted by firms with facilities in more than one state and (2) assuring consistency among EPA's regions and the states in enforcing the financial assurance and closure requirements. (See ch. 3.) If resource constraints prevent EPA from implementing these recommendations, GAO recommends that EPA establish resource needs and provide such information to appropriate congressional committees.

Agency Comments

GAO did not obtain official comments on this report. The views of responsible officials were obtained during our work and are incorporated into the report where appropriate.

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Abbreviations

EPA	Environmental Protection Agency
GAO	General Accounting Office
RCRA	Resource Conservation and Recovery Act of 1976

Introduction

National concern has grown in recent years over the proper control and disposal of hazardous waste. As the public has become more aware of the threats hazardous waste poses to human health and the environment, there has been a corresponding increase in demands that such waste be strictly controlled and disposed of in an environmentally safe manner. Such concerns extend to assuring that hazardous waste treatment, storage, and disposal facilities are properly closed when they cease hazardous waste operations and maintained after closure if the wastes are to be left in place.

The Resource Conservation and Recovery Act of 1976 (RCRA), as amended, was enacted to, among other things, regulate the management of hazardous waste, improve waste disposal practices, and reduce land disposal of hazardous waste. Under the Environmental Protection Agency's (EPA's) regulatory program, standards have been established for reporting, recordkeeping, performance, and facility operations for each of the 54,371 generators, 12,422 transporters, and 4,910 facilities that treat, store, or dispose of hazardous waste.

RCRA requires that any person or company owning or operating a facility where hazardous waste is treated, stored, or disposed of comply with regulations requiring contingency planning and emergency procedures; a manifest system for tracking waste; recordkeeping and reporting; groundwater monitoring; facility closure and postclosure care; financial responsibility requirements; the use and management of containers; and the design and operation of waste storage tanks, surface impoundments, incinerators, and underground injection wells. In addition, the regulations include general requirements for waste analysis, security at facilities, inspection of facilities, and personnel training.

RCRA provides that after authorization by EPA the states may administer their own hazardous waste programs.[1] The act also allows the states to obtain interim authorization from EPA to administer their own hazardous waste programs while working toward final program authorization.[2] The states are required to qualify for final authorization by January 31, 1986. As of October 3, 1985, 26 states and the District of Columbia had been granted final authorization, while 17 of the remaining 24 states

[1]RCRA requires that a state program not be authorized unless it is equivalent to the federal program, is consistent with the federal or other state programs applicable in other states, and provides for adequate enforcement.

[2]Interim authorization will be granted only if the state program is substantially equivalent to the federal program.

and two of the five territories had interim authorization. Most of the remaining states without authorization are carrying out various aspects of the hazardous waste program for EPA under cooperative arrangements, although EPA retains overall responsibility.

Through authorization or cooperative agreements, the states are primarily responsible for implementing the program, including inspection, enforcement, and permitting activities. Regulations promulgated by an EPA-authorized state may not impose any requirements that are less stringent than the federal requirements, but states are free to adopt more stringent measures. A total of $44 million and $48.5 million in EPA grant funds were provided to the states in fiscal years 1984 and 1985, respectively, and $54.5 million was allotted for fiscal year 1986.

Overview of Closure, Postclosure and Financial Assurance Requirements

As part of the regulation of hazardous waste under RCRA, EPA has developed standards for: proper closure of hazardous waste treatment, storage, and disposal facilities; postclosure care and monitoring at land disposal facilities (landfills, surface impoundments, waste piles, and land treatment facilities); and assuring the availability of funds for closure and/or postclosure activities.[3] These standards require the owner/operator of a hazardous waste facility to develop plans for closure and (if applicable) postclosure, to prepare cost estimates to cover expenses to implement those plans and, finally, to demonstrate the ability to pay for closure and/or postclosure. Most of the closure and postclosure regulations became effective in November 1981. The financial assurance regulations became effective in July 1982.

The ability to pay for closure and/or postclosure must be demonstrated by using one or more of the financial assurance mechanisms. The mechanism may be a trust fund, surety bond, letter of credit, insurance, or financial test or corporate guarantee that demonstrates the firm's ability to pay for the cost of closure and, if required, postclosure care and maintenance, and that meets the regulatory specifications for the mechanism chosen.

The closure, postclosure, and financial assurance regulations apply to both the owner and the operator of a hazardous waste facility. EPA considers both parties responsible for carrying out the requirements and

[3]Closure refers to the period during which all facility equipment and structures are properly disposed of or decontaminated by removing all hazardous waste and residues. Postclosure is the 30-year period after closure at land disposal facilities during which monitoring, reporting, and maintenance are performed.

leaves it up to the parties themselves to undertake, share, or divide the actual provision of financial assurance. Federal- and state-owned and/or -operated facilities are exempt from financial assurance regulations but not from those pertaining to closure and postclosure.

Additional financial assurance requirements were imposed by the 1984 Hazardous and Solid Waste Amendments to RCRA.[4] Effective November 8, 1984, all owners/operators were required to (1) identify all hazardous and nonhazardous waste management units at the facility, (2) identify any releases that have occurred or are occurring from those units, (3) take appropriate corrective measures to clean up those releases, and (4) demonstrate financial assurance for those corrective measures. The amendments also instruct the EPA Administrator to establish requirements for financial assurance for corrective action as may be necessary or desirable. The status of EPA's efforts to implement these new requirements is discussed in appendix I.

Enforcement Options and Guidance

The enforcement tools available to EPA and the states to obtain compliance include warning letters or notices of violation, administrative or compliance orders, and civil and/or criminal litigation. Warning letters or notices of violation are used to notify facility owners/operators of violations and may specify the date by which a violator must achieve compliance. They are generally used for minor violations where voluntary compliance is expected. Compliance or administrative orders require compliance by a certain date, may assess penalties, and are enforceable through administrative or judicial action. Civil actions (and in certain cases criminal litigation) may be pursued through the courts. Fines or penalties may be sought through these actions.

RCRA authorizes the EPA Administrator to issue compliance orders and assess penalties of up to $25,000 per day for each violation of program requirements. The Administrator may initiate civil actions for appropriate relief for violations of any RCRA requirement, including temporary or permanent injunctions. Where the noncompliance knowingly endangers the public health, criminal actions may also be initiated.

[4]The Hazardous and Solid Waste Amendments are referred to as the 1984 RCRA amendments throughout this report.

Objectives, Scope, and Methodology

Our objective was to respond to the issues reflected in an April 30, 1984, letter from the Chairman, Subcommittee on Commerce, Transportation, and Tourism, House Committee on Energy and Commerce. The Chairman expressed concern about implementation of regulations governing closure and postclosure of RCRA facilities and the adequacy of RCRA's financial assurance requirements. Specifically, the Subcommittee requested that GAO determine the extent to which

- owners/operators of hazardous waste facilities have declared bankruptcy and thereby avoided closure and postclosure costs,
- financial assurance requirements ensure that sufficient funds will be available to close and provide postclosure care at hazardous waste facilities,
- facilities that cease operations are inspected for compliance with closure requirements, and
- EPA and the states are taking enforcement actions for violations of these requirements.

As agreed with the Subcommittee, we performed our review in the following six states and their respective EPA regional offices: Arizona and California, Region IX; Illinois and Ohio, Region V; New York, Region II; and Pennsylvania, Region III. These states were selected on a nonrandom basis considering the number of bankruptcies, number of closed facilities, volume of hazardous waste generated, and geographic dispersion. The six states provided coverage of approximately 23 percent of the bankruptcies filed nationwide, 20 percent of the closures, and 30 percent of the hazardous waste generated annually. Although this selection was not intended to be representative of nationwide conditions, it does provide significant coverage of hazardous waste facility conditions, operations, and regulations.

Our general approach to achieving our objectives entailed reviewing EPA and state policies and procedures, statistical reports, oversight activities, and compliance and enforcement activities in the areas of closure and postclosure, financial assurance, and bankruptcy. We interviewed hazardous waste officials at EPA headquarters, EPA regions II, III, V, and IX, and state environmental agencies, including the Arizona Department of Health Services, California Department of Health Services, Illinois Environmental Protection Agency, New York State Department of Environmental Conservation, Ohio Environmental Protection Agency, and Pennsylvania Department of Environmental Resources. Most of our work was performed in the state agency headquarters and field offices

because the states have been delegated primary responsibility to conduct the RCRA regulatory program.

To achieve our first objective, related to bankruptcy, we reviewed the applicable legislation and legal cases to determine if facility owners/operators have used the bankruptcy law to avoid paying closure and postclosure costs. We contacted all 50 states, the District of Columbia, and the five territories to determine the number of bankruptcies nationwide as of August 1985. Also, we prepared case studies for all RCRA bankruptcies in the six states[5] visited by reviewing EPA regional and state files and by interviewing EPA regional and state hazardous waste officials and attorneys. In some cases we also contacted state attorney general staff attorneys and bankruptcy courts. The information obtained on bankruptcy is contained in chapter 2.

To achieve our second objective, related to financial assurance, we collected or developed information on the degree of compliance with the requirement to obtain financial assurance, as well as the viability of the financial mechanisms allowed. We contacted all 50 states, the District of Columbia, and the five territories to determine which had implemented the financial assurance requirements, and we reviewed their financial assurance regulations. For the four of the six states visited that had implemented the financial assurance requirements (Pennsylvania and New York had not), we collected or developed statistics on the types of mechanisms that were used, the number of financial assurance documents that had been reviewed for adequacy, and the results of these reviews. We also analyzed state procedures for reviewing the documents. We contacted EPA headquarters and regional officials, state officials, and representatives from 18 environmental, industry, and intergovernmental groups to obtain their opinions on the strengths and weaknesses of the federal mechanisms. The information obtained on financial assurance is contained in chapter 3.

As agreed with the Chairman's office, we obtained information from EPA headquarters hazardous waste officials concerning EPA's plans and progress in implementing the November 1984 RCRA amendments, which require (1) financial assurance for corrective action before a facility can be given a permit when a facility is experiencing continuing releases of hazardous waste and (2) financial assurance for corrective action as EPA

[5]Four of six states we reviewed had facilities in bankruptcy—Illinois (8), New York (5), Ohio (3), and Pennsylvania (1).

deems necessary or desirable for facilities, regardless of whether releases have been detected. This information is included in appendix I.

To achieve our third objective, determining the extent of EPA and state monitoring of facility closures and those in postclosure care and maintenance, we reviewed state and EPA files on 176 facilities that were closed between November 19, 1981, and December 31, 1984. This file review was necessary because limited summary data were available from the states or the regions to determine the extent of closure and postclosure monitoring activities. In order to identify the most complete universe of closed facilities in each of the six states, we obtained and compared lists from the responsible EPA region, state headquarters, and each state field office. We collected data on the number, timing, and results of closure inspections using a pro forma data-collection instrument. These data were obtained to show the extent of closure monitoring. We also observed a closure inspection in each state except Pennsylvania,[6] including two land disposal facilities. The information obtained on closure monitoring is presented in chapter 4.

To achieve our fourth objective, related to enforcement actions for violations of closure, postclosure, and financial assurance requirements, we developed and analyzed data during our closed facility file reviews on the number, type, and effectiveness of enforcement actions resulting from closure inspections. We developed and analyzed statistics on financial assurance enforcement on the basis of our review of standardized compliance monitoring and enforcement log forms. The information obtained on enforcement actions is contained in chapters 3 and 4 with the other information obtained on closure and postclosure monitoring and financial assurance.

Our work was conducted from August 1984 through October 1985 and was performed in accordance with generally accepted government auditing standards. As requested by the Chairman's office, we did not obtain official agency comments on the report; however, we did discuss its substance with EPA headquarters and regional staffs, as well as with state officials responsible for hazardous waste programs. Their comments have been incorporated in the report where appropriate.

[6]A closure inspection was not observed in Pennsylvania because none was performed during the period of our field work in that state.

Bankruptcy Has Allowed Avoidance of Closure/Postclosure Costs by Owners/ Operators of Hazardous Waste Facilities

The bankruptcy law is designed to give debtors a fresh start by relieving them from most of their debts while providing a fair and orderly distribution of the debtor's assets to the creditors. As stated in chapter 1, RCRA was enacted to protect the public health and environment by regulating the proper control and disposal of hazardous waste, including the proper cleanup and closure of a hazardous waste facility. When owners/operators of hazardous waste facilities file for bankruptcy, several provisions of the bankruptcy law may conflict with federal and state environmental interests in obtaining proper cleanup and closure at these facilities. Governmental attempts to assure that these facilities are cleaned up and closed may be frustrated by the automatic stay provision (a legal bar to bringing a lawsuit), or by giving the government's cleanup claim a priority only as an ordinary unsecured claim to be paid along with other unsecured creditors. As a result, when the debtor's assets are distributed, insufficient funds may be available to pay cleanup and/or closure costs, and the responsibility for cleaning up, closing, and monitoring the facility will fall to federal or state authorities. Also, until a recent Supreme Court decision, the trustee's abandonment (transfer of the property) back to the bankrupt debtor had interfered with the ability of states to obtain cleanup at a bankrupt facility.

Although precise nationwide statistics were not available on the number of hazardous waste facilities that have filed for bankruptcy, state and territorial officials indicated that 74 such cases have occurred. In the six states we reviewed, the states identified 17 bankrupt facilities, 8 of which were closed or closing. About $4.2 million in public monies had already been expended to clean up or close four of the eight bankrupt facilities that were closed or closing. The remaining four bankrupt facilities were closed or closing at owner/operator expense without public monies. Nine facilities were either continuing to operate under bankruptcy provisions or their closure status was unknown.

Faced with increasing costs of complying with the hazardous waste regulatory requirements, EPA officials, including the Assistant Administrator for Solid Waste and Emergency Response, predict that many more facilities will close. It is likely that federal and state authorities could increasingly be required to provide the environmental safeguards needed at these sites unless (1) more facility owners/operators provide financial assurance that money will be available to pay the costs of cleanup and closure (see ch. 3) or (2) changes are made in the treatment of environmental claims in bankruptcy proceedings.

Federal and State Funds Spent to Clean Up Bankrupt Facilities

We found, on the basis of data provided by the six states reviewed, that owners/operators of 17 facilities in four of the six states we visited had filed for bankruptcy as of January 31, 1985, and eight of the bankrupt facilities had closed or were closing. (See table II.1 and app. II). Federal and/or state cleanup funds had been expended at four of the eight bankrupt facilities in the amount of $4,176,068 to clean up the sites because the facilities posed imminent hazards to public health and the environment. About two-thirds of this amount had been paid by state governments and one-third by the federal sector. In three of these four cases the facilities have been cleaned up, but additional expenses are expected to be incurred to close them properly.

Owners/operators were in the process of paying or had paid the closure costs at the other four closed or closing bankrupt facilities. Of the remaining nine bankrupt facilities not known to be closed or closing, seven were continuing to operate under the bankruptcy laws, and it had not been determined at two facilities if they would be closing or who would pay the closure costs.

Table 2.1: Federal and State Expenditures to Close Bankrupt Facilities

State	Number of bankruptcies	Number on which federal funds expended	Number on which state funds expended	Amount of federal funds expended	Amount of state funds expended	Total funds expended
Arizona	0	•	•	•	•	•
California	0	•	•	•	•	•
Illinois	8	2	2	$1,321,698	$ 354,370	$1,676,068
New York	5	0	1[a]	0	2,500,000[a]	$2,500,000
Ohio	3	0	0	0	0	0
Pennsylvania	1	0	0	0	0	0
Total	**17**	**2**	**3**	**$1,321,698**	**$2,854,370**	**$4,176,068**

[a]City of New York funds.

None of the four facilities where public funds were expended had established financial assurance demonstrating that the costs of closure would be paid. Two of the four bankrupt owners/operators filed for bankruptcy prior to the effective date of the financial assurance regulations. In the other two cases, the bankruptcies were filed less than 5 months after the effective date of the regulations and the owners/operators did not provide financial assurance. Federal and state efforts to get the owners/operators to clean up and close the facilities were restricted by the courts in three of these cases. The specific environmental hazards

posed by these facilities, as well as the arguments made by EPA and the states to obtain cleanup funds and an analysis of the court decisions, are discussed later in this chapter. In the fourth case, both EPA and Illinois funds were expended. An EPA region V attorney told us that no legal action was taken by EPA against the owner/operator because of insufficient assets and because EPA was able to obtain full reimbursement ($161,000) from the generators of the waste.

As of August 1985, 74 RCRA facilities had filed for bankruptcy, according to state and territorial officials. The EPA Financial Responsibility Program manager expects that as a result of the increasing regulatory requirements and their costs imposed by the 1984 RCRA amendments, more bankruptcies will occur. The 1984 RCRA amendments require changes in facility design and operating requirements that will add substantial operating costs. In addition, the amendments require cleanup of any contamination, no matter when the contamination occurred, even for those facilities that are closing (see app. I). Cleanup costs are estimated by EPA to range between $2 million and $4 million per land disposal facility. A July 1984 EPA study indicated that in 50 years, 23 to 30 percent of the firms owning land disposal facilities will go bankrupt either because of routine business failures or failures induced by the cost of correcting contamination problems.

An indicator of the large number of facilities that will likely close as a result of the amendments is the number of land disposal facilities responding to the act's requirements that owners/operators either certify compliance with groundwater monitoring and financial responsibility requirements by November 8, 1985, or go out of business. This amendment was enacted in response to widespread noncompliance with such requirements. As of December 1985, nearly two-thirds of the estimated 1,500 land disposal facilities nationwide did not comply with the certification requirements and, therefore, must close.

Applicable Provisions of Bankruptcy Law

Congress enacted the Bankruptcy Code[1] to provide a fair distribution of a debtor's funds among creditors and to give debtors a fresh start by relieving them from most of their debts.

Owners/operators of hazardous waste facilities regulated under RCRA can be the subjects of proceedings under two of the main chapters of the

[1]In 1978, Congress revised and codified the existing bankruptcy law by enacting the Bankruptcy Reform Act of 1978, commonly referred to as the Bankruptcy Code.

act, chapter 7 and chapter 11.[2] A Chapter 7 action is for liquidation and is the most common type of bankruptcy. In such a proceeding, a bankruptcy trustee is appointed to gather the property of the debtor that is not exempt from the proceedings, convert the property to cash, and have the available proceeds distributed to the creditors. A chapter 11 filing is intended to reorganize the debtor's assets according to a court-approved plan of rehabilitation so that the debtor can continue in business. Unlike chapter 7, the creditors are seeking to be repaid not out of the debtor's present property, but out of future earnings. The debtor generally remains in business during this bankruptcy action, retains his/her property, and pays the creditors from earnings over time.

According to EPA guidance on pursuing closure and postclosure costs in bankruptcy, EPA's concerns will depend on whether the facility will continue in operation. If the facility will be closed, as in chapter 7 and some chapter 11 proceedings, the guidance specifies that EPA and the states should be concerned that proper closure occurs, or seek recovery from the debtor of public funds expended for closure. If the facility continues to operate, EPA and the states will want to seek adequate financial assurance. Three key provisions of the Bankruptcy Code have affected EPA's and the states' ability to obtain proper cleanup and closure when bankruptcies occur: (1) the automatic stay, (2) the abandonment of property, and (3) priorities of claims.

Court Decisions Involving Bankruptcy Cases Differ

Court decisions involving the relationship between bankruptcy provisions (such as the automatic stay and priority of claims) and hazardous waste handlers differ, depending on the facts of the cases. The bankruptcy files we reviewed in the states visited, as well as several other recent bankruptcy and federal court decisions, demonstrate that federal and state environmental interests do not always prevail over creditors' interests. In most cases, although the facilities had been found to be a threat to public health and the environment and were in several cases known to be contaminating the environment, the creditors' interests under the Bankruptcy Code prevailed over the federal and state environmental interests in cleaning up the sites. Each of these provisions, and cases to illustrate the application of these provisions by the courts, are presented in the following section of this chapter.

[2]Bankruptcy can also be filed under chapter 13, which deals with debtor rehabilitation. According to EPA, few, if any, RCRA facility owners or operators will likely be eligible to file for bankruptcy under this chapter. It is only available to individuals with unsecured debts below $100,000 and secured debts below $350,000. Most owners/operators would probably exceed these amounts in a bankruptcy action.

Automatic Stay

Filing a bankruptcy petition automatically stays (suspends) most legal actions against the debtor. The general purpose of the automatic stay is to grant the debtor temporary relief from creditors' actions and to preserve the estate for orderly distribution of the debtor's assets to creditors. The stay is against all entities, including a governmental unit.

However, the Bankruptcy Code expressly allows an exemption from the automatic stay for a governmental unit to begin or continue a proceeding to enforce its police or regulatory power, or to carry out a court judgment (other than a money judgment) to enforce its police or regulatory power. If EPA and the states can successfully argue that the environmental proceedings fall within this exception to the stay, they can take action in state court or in federal district court while the bankruptcy proceedings continue. If they are unsuccessful in avoiding the automatic stay, they must pursue the claim in the bankruptcy court, along with other creditors.

The automatic stay provision was a key component of the Bankruptcy Reform Act. (Formerly, a stay could be granted only on application to the court.) The legislative history of the Bankruptcy Reform Act is ambiguous regarding the scope of the exception to the automatic stay for enforcement of police or regulatory power. The Senate and House reports accompanying the legislation describe it broadly and contemplate that an action seeking money damages for violation of environmental laws should not be subject to the stay. However, subsequent floor statements made in both houses of Congress suggest that the stay should apply in environmental matters when the environmental enforcement action is essentially seeking money from the debtor or his estate in bankruptcy. The following statement was made on both the Senate and House floors:[3]

> "This section is intended to be given a narrow construction in order to permit governmental units to pursue actions to protect the public health and safety and not to apply to actions by a governmental unit to protect a pecuniary interest in property of the debtor or property of the estate."

This interpretation is consistent with the statutory language, which exempts "the enforcement of a judgment, other than a money judgment," and attempts to balance the protection of the debtor's property with the protection of the public.

[3]124 Cong. Rec. 33,995 (Oct. 5, 1978) (statement of Sen. Dennis DeConcini); 124 Cong. Rec. 32,395 (Sept. 28, 1978) (statement of Rep. Don Edwards).

Although the legislative history has provided some guidance to the courts, judicial rulings have varied, depending on the specific facts of each case. The key to when a court will permit an environmental action to avoid application of the automatic stay is how the court defines the phrase "money judgment." Some enforcement actions are not easily categorized, and courts still must decide which should be favored when both a health and safety interest and a money interest are present. Four court decisions involving the automatic stay provision are summarized below.

American Incineration was one of the four bankrupt facilities in our review where public funds were used to close the facility. The other three cases discussed were not included in our listing of 17 hazardous waste sites but are presented to show how courts decide whether environmental actions are money judgments subject to the stay, or are regulatory actions and therefore exempt. Kovacs, decided by the U.S. Supreme Court, is the leading case in which a proceeding to enforce hazardous waste laws against a bankrupt facility was stayed; Thomas Solvent illustrates a bankruptcy court's decision to stay an environmental action even though the debtor remained in possession and continued to operate its business. In Penn Terra, a federal appeals court ruled that the environmental enforcement action should not be stayed. Although Penn Terra did not deal with a hazardous waste facility, the principles in the case would be applicable to enforcement of hazardous waste laws as well.[4]

American Incineration (Formerly Alburn, Inc.)

Cal-Harbor, the owner of Alburn Inc., a commercial storage and incineration facility, filed for bankruptcy in Illinois on September 4, 1981. In January 1983, Alburn, Inc., was turned over to Professional Construction Company in a separate suit filed against Alburn and its parent corporation, Cal-Harbor. Professional Construction Company created a new operating company called American Incineration and on May 18, 1983, filed for bankruptcy under chapter 11.

Although no more waste was brought to the American Incineration site after Professional Construction Company gained possession, two drums

[4]Although Penn Terra and Kovacs involved companies in two of the six states visited, these bankruptcies were not included in our sample because Penn Terra involved coal mining wastes, which are not regulated by RCRA, and the Kovacs bankruptcy was filed prior to RCRA.

of hazardous waste exploded on July 5, 1983. EPA performed an emergency site cleanup to address the immediate and significant environmental threats. From July 1983 through February 1984, EPA spent $1,160,698 in its cleanup efforts. During the cleanup all of the tanks, as well as the buildings and incinerator, were removed. However, Illinois still has some question as to whether there is a need for further action at the site. According to Illinois, this would probably involve testing and removing soil or capping the site.

On April 12, 1984, EPA took an administrative action to force Professional to close, but Professional obtained a stay from the bankruptcy court preventing EPA from closing the facility. EPA appealed the bankruptcy court injunction. According to EPA, Professional sought to delay closure because it wants to sell the facility to a waste disposal contractor. The district court vacated the order, and the case was remanded to the bankruptcy court which, for the second time, stayed EPA's attempt to close the facility. EPA again appealed the bankruptcy court injunction, and the dispute was still pending in the district court as of August 1985. As a result, EPA was prevented from terminating the facility's operations for at least 16 months after it determined that the facility did not meet federal standards.

EPA is currently negotiating with several hundred generators whose waste was disposed of at the facility for reimbursement of the funds already expended, as well as for the further costs to close the facility properly, according to an EPA attorney.

William Kovacs/Chem-Dyne

In 1976 the state of Ohio sued Kovacs and his wholly owned corporation, Chem-Dyne, operators of a hazardous waste disposal site, in state court for water pollution, nuisance, and violations of state environmental laws. The suit was settled in July 1979, enjoining Kovacs and Chem-Dyne from causing further pollution, requiring them to remove specified wastes from the property, and ordering payment of $75,000 to compensate the state for injury to wildlife.

The cleanup of the site did not proceed as required by the court order. Within two months of the order a large fire engulfed part of the Chem-Dyne site, and a large chemical spill was discovered on the site. In January 1980, rather than finding the inventory of drums on site reduced to 7,500, as required, Ohio EPA found that Kovacs had doubled the number of drum-equivalents on site to almost 30,000.

In February 1980 a receiver was appointed by an Ohio state court at the state's request and was directed to supervise the implementation of the 1979 order. The receiver took possession of the assets, but before he could complete the cleanup, Kovacs filed a petition for personal bankruptcy.

Ohio filed a motion in state court to seek information about Kovacs' post-bankruptcy income and assets for the purpose of attaching Kovacs' wages to clean up the site, but the bankruptcy court stayed these proceedings. The district court and the Court of Appeals for the Sixth Circuit affirmed the bankruptcy court's decision. The Sixth Circuit reasoned that the automatic stay barred governmental units from collecting money in their enforcement efforts.[5] Ohio appealed the Sixth Circuit decision to the Supreme Court. The Supreme Court vacated the decision and turned the case back to the Sixth Circuit for further consideration because Ohio had subsequently argued (as discussed below) that the claims against Kovacs were not claims under bankruptcy law at all and therefore were not subject to the stay.[6]

Ohio's second attempt to collect from Kovacs took the form of another suit in the bankruptcy court, seeking an order that Kovacs' liability under the Ohio injunction was not dischargeable in bankruptcy because it was not a "debt" as defined in the bankruptcy statute. If the state was right, then it could proceed against Kovacs without regard to the automatic stay or other provisions of the Bankruptcy Code.

On appeal, the Supreme Court upheld lower courts' rulings that the cleanup order constituted a claim that the debtor may be released from under the Bankruptcy Code and agreed that Kovacs' duty under the Ohio injunction was in essence a monetary obligation. The court reasoned that after the state receiver was appointed and in control of the site, Kovacs was not in a position to personally take charge of and carry out the removal of waste; the only performance sought from Kovacs thereafter was the payment of money to cover the cost of cleanup. Essentially, under the court's reasoning, the cleanup order had been converted from an order to take some action to an action seeking money—a dischargeable debt.[7]

[5]In re Kovacs, 681 F.2d 454 (6th Cir. 1982) (Kovacs I).

[6]103 S. Ct. 810 (1983).

[7]Ohio v. Kovacs, 105 S. Ct. 705 (1985).

Thomas Solvent Co.

On January 12, 1984, Michigan brought suit in a Michigan state court against Thomas Solvent, which operated a wholesale chemical and solvent storage and distribution business. The complaint alleged that improper storage of toxic chemicals was polluting groundwater and that the contaminated water was moving toward nearby drinking water supplies. The state court found that the groundwater beneath Thomas Solvent's facilities contained levels of contaminants that posed an immediate threat of potentially irreparable harm to the health and well-being of people in the area. The court ordered Thomas Solvent to take certain action to purify and protect the groundwater, at an estimated cost of $2 million.

Subsequently, Thomas Solvent filed a petition for reorganization and continued to operate. Thomas Solvent filed a complaint in bankruptcy court to enjoin the state from proceeding with the state court action and from enforcing any order entered by that court that would require expenditure of assets of the estate. Thomas Solvent claimed that the action of the state should be stayed because it was to enforce a money judgment. The state argued that Thomas Solvent must take the action ordered by the state court and that the assets of Thomas Solvent, estimated to be of a value far below the costs of the ordered action, be used for this purpose until completely depleted. The bankruptcy court decided in Thomas Solvent's favor, holding that the automatic stay applied; the court stated that it was bound by the Sixth Circuit's decision in Kovacs (subsequently affirmed by the Supreme Court). The court reasoned that the automatic stay applied since compliance with the order would require the expenditure of funds. Unlike Kovacs, however, the debtor remained in possession and continued to operate its business. The court stated that if Thomas Solvent continued to operate without liquidating, the court would lift the automatic stay.[8]

Penn Terra, Ltd.

In May 1982 Pennsylvania obtained an injunction in state court against Penn Terra, Ltd., a bankrupt coal mining company, to compel Penn Terra to correct violations of several Pennsylvania environmental laws. The violations included failure to backfill areas affected by strip mining; failure to maintain backfilling equipment on the site; failure to revegetate areas affected by the strip mining operation; and failure to seal a deep mine opening at the strip mining site. Pennsylvania also sought to enforce an earlier agreement that legally bound Penn Terra to correct these violations.

[8]In re Thomas Solvent Co., 44 B.R. 83 (W.D. Mich. 1984).

Penn Terra filed a petition in bankruptcy court, contending that the state proceeding violated the automatic stay provision of the Bankruptcy Code. The bankruptcy court found that the state actions were actions to enforce a money judgment and enjoined Pennsylvania from enforcing the order it had received from the state court; the district court affirmed the decision.

On appeal, the Third Circuit Court of Appeals reversed the district court's decision and held that the automatic stay provision did not apply. The Third Circuit determined that the state court order was not a money judgment because the action was brought to compel the performance of remedial acts. The Third Circuit adopted a traditional definition of "money judgment." This decision affirmed Pennsylvania's power to protect the health and safety of its citizens from environmental hazards as against the competing interests of the bankrupt company and its creditors.[9]

Abandonment of Hazardous Waste Sites

A bankruptcy trustee may petition the bankruptcy court to allow abandonment of any property that is burdensome or of inconsequential value to the estate. Such abandonment may be to any person with an ownership interest in the property, including the debtor. This provision had in the past affected the ability of EPA and states to enforce environmental laws but a recent Supreme Court decision has resolved this issue by prohibiting such abandonment.

The filing of a bankruptcy petition creates an estate that generally consists of all of the debtor's property. The trustee, charged with administering the bankrupt estate, might be prompted to abandon a hazardous waste facility to the prior owner, the debtor, if the cost of cleanup exceeded the value of the property. Having no other assests, the debtor would be unable to clean up the site, creating a continuing danger to public health and safety.

In a January 1986 Supreme Court decision concerning Quanta Resources Corporation, a waste oil storage and reprocessing business, the Supreme Court ruled that the trustee could not abandon two hazardous waste facilities in violation of state laws designed to protect public health and safety. Because earlier decisions of the bankruptcy and district courts had allowed abandonment, public monies were required in the cleanup and closure of the Quanta facility in New York, which was one of the 17

[9]Penn Terra Ltd. v. Dept. of Environmental Resources, 733 F.2d 267 (3d Cir. 1984).

bankruptcies included in our list of reviewed sites. The Quanta cases are briefly summarized below.

Quanta Resources Corporation

Quanta Resources Corporation has facilities in Long Island City, New York; Edgewater, New Jersey; and Syracuse, New York. Quanta filed for reorganization under the Bankruptcy Code on October 6, 1981 (later converted to a liquidation proceeding).

The trustee sought to abandon the Long Island City, New York, and the Edgewater, New Jersey, facilities (to Quanta), asserting that the substantial expenditures to guard, repair, clean up, and dispose of the waste would render the property a burden on the estate. Both facilities contained waste oil and other chemicals that were being managed in violation of provisions of state environmental laws. New Jersey and New York considered both facilities to be in a bad state of repair and had found that the waste oil and sludge on-site was contaminated with PCBs (polychlorinated biphenyls). New Jersey and New York objected to the trustee's abandonment, contending that because Quanta had no assets, the abandonment would in effect be a disposal of hazardous wastes under New Jersey and New York law. In addition, the states argued that the abandonment of facilities in such a state of disrepair would create a continuing violation of state and local hazardous waste storage laws.

The bankruptcy court allowed the abandonment, as did the district court, but the Third Circuit Court of Appeals reversed it. The Third Circuit refused to permit abandonment, holding that Congress did not intend that the trustee's abandonment power be unrestricted by public health and safety laws. The court balanced the policies of the opposing interests involved and found that abandonment would contravene state law, with a serious impact on public health and safety. The Third Circuit accorded the interest in protecting public health greater weight than the policy to preserve the estate for distribution to creditors. The court stated that allowing trustees to dispose of hazardous waste under the cloak of the abandonment power would transform citizen compliance with environmental protection laws into governmental cleanup by default.[10] In a ruling issued January 27, 1986, the Supreme Court agreed with the Third Circuit ruling that a trustee may not abandon property in contravention of a state law or regulation that is designed to protect

[10]Matter of Quanta Resources Corp., 739 F.2d 912 (3d Cir. 1984); In re Quanta Resources Corp., 739 F.2d 927 (3d Cir. 1984).

public health and safety from identified hazards such as those posed by hazardous waste.[11]

The Quanta cases leave several open questions, however. New York had already expended money—$2.5 million—to partially clean up the facility located there and sought reimbursement of its cleanup expenses as an administrative expense. The Third Circuit had remanded this issue for resolution by the bankruptcy court, did not order Quanta to complete the cleanup at the site, and did not offer guidance about what source of funds would pay for the cost of cleanup. The Supreme Court also expressly stated that it was not addressing these issues. Therefore, the effect of this decision on other creditors and the amount of funds the states will receive for environmental cleanup is uncertain.

Priorities of Claims

If EPA or a state is unsuccessful in avoiding the automatic stay and therefore has to pursue its environmental protection claim in bankruptcy along with other creditors, it may attempt to obtain priority status for cleanup costs—that is, request that claims for cleanup, closure, and postclosure care be given priority over other creditor claims. The level of priority given the claim determines the likelihood that the claim will be paid. Secured claims (by a lien on property) are accorded the highest priority in a bankruptcy proceeding. The highest priority for unsecured claims is administrative expense status. Administrative expenses include necessary costs and expenses of preserving the estate incurred after filing of the bankruptcy. Claims in this category are normally paid after secured claims.

In order to obtain the highest priority for their claim, EPA and the states may argue that they are entitled to a lien under federal or state law and recover cleanup costs under this lien. If they are unable to obtain a lien upon the bankrupt estate, EPA and states might attempt to obtain first priority among unsecured creditors by asserting that their claim for reimbursement of expenses falls into the administrative expense category as necessary costs to preserve the estate.

Priority status does not necessarily guarantee payment of the debt. For example, if the property of the estate is valueless, all claims will be left unpaid, including those that are secured. Even if assets are available,

[11] Midlantic National Bank v. New Jersey Dept of Envtl. Protection, 54 U.S.L.W. 4138 (U.S. Jan.27, 1986).

after satisfying secured claims, little or no funds may be left to pay administrative expenses.

One of the 17 bankruptcy cases in our review, Parsons Casket Hardware Company, involved an unsuccessful attempt by Illinois to have cleanup costs declared administrative expenses. Parsons Casket Hardware Company, a storage facility, filed for bankruptcy liquidation on August 7, 1982. The state filed a motion with the bankruptcy court that, among other things, the trustee be required to expend funds to abate the environmental violations at the site. The state wanted to classify the expenditure as an administrative expense. The bankruptcy court denied the state's motion for cleanup as an administrative expense. On May 2, 1985, the district court affirmed the decision. Administrative status was denied on the basis that, under Illinois law, the trustee was not "managing or operating" the debtor's business and that given the condition of the site, the trustee's responsibility was to reduce the debtor's estate to money and distribute it fairly among the creditors. The state's claim as an unsecured creditor was still pending in the bankruptcy court as of September 1985.

On October 2, 1984, while this suit was pending, Illinois determined that the site was releasing a hazardous substance into the environment and was threatening to release additional quantities of hazardous waste. Illinois cleaned up a major portion of the site from October 1984 through February 1985 using $350,000 of Illinois hazardous waste cleanup monies, but more funds are expected to be required to close it properly. A portion of the site, a building, was sold on condition that the new owner clean up the inside of the building. The state also filed suit against the parent company in state court to obtain cleanup on the basis that it had disposed of waste at the Parsons facility and, therefore, was liable as a generator. The state and Parsons agreed to a settlement of $13,834, along with a $500 penalty, on August 14, 1985. The state is currently in the process of taking action against the other generators for reimbursement of cleanup costs.

Conclusions

The bankruptcy law allows room for varying legal interpretations regarding the redress of environmental concerns when hazardous waste facilities file for bankruptcy. The bankruptcy cases we reviewed and several other recent bankruptcy and federal court decisions demonstrate that neither protection of public health and the environment nor creditors' interests have consistently prevailed. Given these conditions, federal and state governments are vulnerable to paying the costs to

clean up or close bankrupt hazardous waste facilities. Although thus far 74 hazardous waste facilities nationwide have been involved in bankruptcy, the potential exists for an increasing number in the next few years as costly new RCRA amendments are implemented. Correspondingly, the number of facilities requiring public funds to close them properly may increase.

To mitigate the potential public liability, the Bankruptcy Code could be revised to prove that the automatic stay does not apply to enforcement of environmental cleanup (whether by injunctions, money judgment, payment, reimbursement, or any other manner). The Bankruptcy Code could also be revised to provide that cleanup and closure costs have priority status as a secured lien[12] or as administrative expenses.

Such options and the ramification of the Supreme Court's ruling on abandonment raise broad policy questions beyond the scope of this report. While RCRA was enacted to protect the public health and the environment, this purpose comes into conflict with the bankruptcy law providing for fair distribution of assets to creditors. For example, if creditors' claims were always given lower priority than environmental cleanups, the creditors may, in effect, suffer a disproportionate burden of the cost of such cleanups. The public interest may dictate that these costs be shared on a broader scale, such as would take place if cleanups were publicly funded. Such changes may also lessen the ability of facility owners/operators to obtain credit, which may, in turn, adversely affect the development of needed hazardous waste treatment, storage, and disposal capacity.

To ensure that facility owners/operators—even those financially troubled or bankrupt—will have adequate funds to properly close their facilities, EPA requires owners/operators of all hazardous waste treatment, storage, and disposal facilities to establish some form of financial assurance. None of the bankrupt facilities we reviewed that required the expenditure of public funds had financial assurance because the requirements had not been implemented

[12]The current administration, House, and Senate versions of the proposed Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) [commonly called Superfund] Amendments include a provision to establish a lien for any federally incurred cleanup costs, with the amount of the lien to be limited to the value of the property. Superfund was enacted in 1980 to provide liability, compensation, cleanup, and emergency response for hazardous substances released into the environment. If enacted, it is unclear what impact the federal lien amendment will have on recovery of Superfund monies. We mention this proposed provision, however, to show that there is already some support for giving cleanup expenses priority as a lien.

shortly before the bankruptcy was filed. However, even when implemented, financial assurance requirements may not always provide the intended assurances. EPA and state implementation of the financial assurance requirements is discussed in the following chapter.

Financial Assurance Requirements Do Not Assure That All Facilities Have Sufficient Funds for Closure and Postclosure Costs

RCRA requires that owners/operators of hazardous waste facilities provide financial assurance that funds will be available to pay for proper closure of their facilities and postclosure care and maintenance when required. The purpose of the financial assurance requirements is to increase the likelihood that owners/operators—and not the public—will pay these costs. The financial assurance requirements, however, may not always provide the intended assurance. We found (1) inherent weaknesses in two of the financial assurance mechanisms used by the majority of facilities nationwide that may result in insufficient funds being set aside, (2) delayed implementation of the requirements by two of the states visited, and (3) compliance and enforcement problems in the other four states.

Financial Assurance Requirements

Financial assurance requirements are designed to assure that when hazardous waste facilities cease operations, their owners/operators will have adequate funds for closure and postclosure activities. The closure and postclosure plan and funding must provide for such routine operations as removal and transportation of all hazardous waste and contaminated soil. In addition, sampling, testing, and monitoring both contaminated and uncontaminated areas within and adjacent to the site may be required during site closure and for up to 30 years after closure. According to EPA, the costs of these activities can run into millions of dollars. Mechanisms used to demonstrate a firm's ability to pay these costs are listed and defined below.

- Trust Fund: an agreement with an authorized bank or other institution to act as trustee of payments made by the facility owner/operator. Release of these funds may be directed only by EPA or the states.
- Financial Test: a method of demonstrating adequate resources to cover closure and postclosure costs. An owner/operator may demonstrate that he does not need to set aside funds in a trust or make other arrangements to pay closure and/or postclosure costs by passing at least one of two financial tests.
- Surety Bond: a contract with a qualified surety company that guarantees payment for or performance of closure and/or postclosure if the owner/operator is unable to do so.
- Letter of Credit: a letter issued by an authorized bank or other institution in which payment of closure and/or postclosure costs is guaranteed by the issuer if the owner/operator is unable to do so.
- Insurance: insurance issued by a licensed company to pay closure and/or postclosure costs for the owner/operator, with payment limited to the face value of the policy.

- State Mechanisms and State Guarantees: states may allow other mechanisms that provide equivalent assurance to that of the mechanisms specified in the federal regulations, or they may guarantee payment.

Weaknesses of the Trust Fund and Financial Test

Because of weaknesses in the trust fund and financial test—the two most widely used financial assurance mechanisms—funds may not always be available to close facilities properly and provide for postclosure care.

We solicited comments from EPA headquarters, EPA regional, and state officials, and 18 environmental or industry groups concerning the strengths and weaknesses of all five federal mechanisms. They expressed concerns about two mechanisms: the trust fund and the financial test. These mechanisms are used by about 82 percent of RCRA facilities nationwide, according to EPA estimates. In the states we visited that had implemented financial assurance requirements, 75 percent of the facilities used the financial test and 7 percent used the trust fund. The comments we received are summarized in the following paragraphs. Information on which states and territories do not allow these mechanisms or allow them with more restrictive terms is also provided.

Trust Fund

One way to fulfill the financial assurance requirements is to establish a trust fund at an authorized bank or other institution whose trust activities are examined and regulated by a state or federal agency. Nationally, there are about 4,000 institutions with such qualifications.

The trust fund is to be funded by annual payments that ultimately amount to the total closure and/or postclosure cost estimate. The pay-in period varies but has a maximum of either 20 years or the remaining operating life of the facility, whichever is shorter. According to EPA, a pay-in trust fund was allowed to provide a mechanism affordable to owners/operators with limited resources who might not be able to afford or qualify for the other mechanisms.

EPA regional and state financial assurance coordinators commented that the trust fund does not provide enough assurance that, during the early years of the pay-in period, sufficient funds will be available to pay for closure and/or postclosure costs if the facility closes sooner than expected. They suggested that the pay-in period be shortened and/or that an accelerated payment schedule with higher payments in the early years be required.

When considering what financial assurance mechanisms it should allow, New York commissioned a consultant to study the various mechanisms and three reports were issued. In addressing the trust funds, the consultant's March 1984[1] report noted that trust funds have weaknesses, particularly for commercial hazardous waste firms that depend on their hazardous waste operations for a major source of their revenues. The report noted that such firms operate in a highly uncertain environment and could close prematurely, well before any sizable amount of money is set aside in a trust fund. The consultant recommended that commercial facilities using the trust fund be required to fully fund their trust fund when established, with no pay-in period allowed.

On the basis of our review of financial assurance regulations for all states, the District of Columbia, and three of the five territories,[2] we found that Pennsylvania, Tennessee, and Guam exclude use of the trust fund in their financial assurance regulations. Maine, New York, and Wisconsin allow the trust fund with modifications. Maine requires an initial payment of 25 percent of the estimated closure and postclosure costs, requires complete funding within 5 years, and places additional restrictions on types of investments allowed. New York's regulations require new facilities and certain types of existing facilities defined as "revenue-oriented"[3] to fully fund the trust fund within 1 year. Wisconsin also requires the trust fund to be fully funded at the time it is established. Michigan plans changes to its existing trust fund regulations to make them more stringent and require full funding of the trust fund with no pay-in period allowed.

Financial Test

To use the financial test option, a facility owner/operator must demonstrate financial soundness by passing one of two financial tests. Both alternatives require the owner/operator to have a tangible net worth and U.S. assets equal to at least six times the sum of closure and postclosure care cost estimates and a minimum tangible net worth of $10 million. The financial test option is attractive to many large domestic

[1] Analysis of Financial Viability Standards for Guaranteeing Financial Responsibility in the State of New York, ICF Incorporated.

[2] No responses were received from American Samoa and the Virgin Islands.

[3] A "revenue-oriented" facility means any company for which a majority of both its operating revenues and profits after taxes for the prior three years and for the current and next year have been and are expected to be attributable to the transportation, storage, handling, disposal, treatment, or management of hazardous waste or related activities or the ownership of or leasehold or other interest in any persons, facilities, or other assets engaged in or used for such activities.

firms in a strong financial position because the direct cost to the firm will almost certainly be less than the costs of alternative assurance options, since the firm is neither building a fund nor paying a risk premium, such as an insurance policy would require. There is no need for third-party involvement, and no funds need to be set aside in anticipation of future costs. To pass this test, the owner/operator must submit data each year from his independently audited financial statements, including: (1) a special report from an independent auditor and (2) a copy of the standard auditor's report accompanying the annual financial statements. Qualifications in the auditor's opinion may be grounds for disallowance.

If an owner/operator's parent corporation passes the financial test, the parent's guarantee of closure or postclosure costs may be used as financial assurance. The guarantee must be from a parent firm that directly owns at least 50 percent of the owner/operator's voting stock.

As mentioned in the previous section, the financial test is the most commonly used mechanism; it is also probably the least costly mechanism for owners/operators. If the owner/operator or the parent company already has audited financial statements, the only additional expense involved is the auditor's charge for the special report comparing the financial data submitted to EPA with data in the financial statements. According to a June 1983 consultant's report[4] prepared for New York, the cost averages approximately $300 annually.

EPA's first proposed financial assurance regulations did not allow the use of the financial test. After receiving public comments that it be allowed, however, EPA evaluated different forms of financial tests and selected one that in its judgment would best minimize both public and private costs to properly close facilities. In selecting this test, however, EPA acknowledged that it may not work in every case. EPA estimated that using the financial test chosen, about 2.5 facilities per year would go bankrupt without having sufficient funds to close, even though these facilities had passed the financial test earlier. This estimate is based on the assumption that a number of facilities that failed the financial test 2-3 years prior to going bankrupt would be able to provide alternative financial assurance. However, this assumption may be optimistic. Specifically, financial institutions and insurance companies may be reluctant to offer financial assurance to such facilities if there is any

[4]Analysis of Alternative Methods of Guaranteeing Pre-Closure, Closure, and Post-Closure, ICF Incorporated.

indication of financial distress. It is also unclear how such facilities could manage the insurance premiums, bank fees, or trust fund payments.

Our review of bankrupt facilities, discussed in chapter 2, also indicates that EPA's estimate may be low because even though the number of bankrupt facilities we reviewed was small and financial information often not available, we found that one corporation that owned 3 of the 17 facilities reviewed could have passed the financial test in each of the three years preceding the year in which bankruptcy was filed.

EPA regional and state financial assurance coordinators commented that they do not believe that the financial test provides sufficient assurance that the owner/operator will be able to pay the costs of closure and, where applicable, postclosure. The reasons cited were that no funds are specifically set aside for this purpose and that the financial position of companies can change rapidly.

As previously stated, New York commissioned a consultant to study various financial assurance mechanisms. In a May 1983 report,[5] the consultant surveyed ten states regarding the financial test. The most repeated opinion was general dissatisfaction; many state officials said that, should a facility fail, protection of public health and the environment is unduly dependent on public funds.

Other criticisms were directed toward excessive complexity, lack of clarity, and discrimination against small firms. Finally, although states are free to modify the test, modification is both expensive and difficult (in one case, it required a 2-year legislative process).

In the previously mentioned March 1984 New York consultant's report, the consultant identified several problems with the financial test. He suggested strengthening the financial test and not allowing it for commercial facilities because

(1) Commercial firms operate in a highly uncertain economic and regulatory environment, and any change could quickly and adversely affect the operations and financial performance of a commercial firm.

[5]Analysis of Use of the Financial Test for Guaranteeing Financial Responsibility in the State of New York, ICF Incorporated.

(2) The financial test is not itself an instrument of financial assurance and does not guarantee ready access to funds; a firm is not required to set any funds aside or to make a written commitment that funds will be available when needed.

(3) The performance of the financial test, especially its ability to detect those firms likely to be unable to meet their financial obligations, remains untested for commercial firms.

On the basis of a survey of financial assurance requirements in all states, the District of Columbia, and three of the five territories, we found that Pennsylvania, New Jersey, Massachusetts, and Guam do not allow use of the financial test. Louisiana, Missouri, New York, and Wisconsin allow use of a modified financial test. Louisiana prohibits use of the financial test by commercial land disposal facilities. New York does not allow facilities that it defines as revenue-oriented to use the financial test. Missouri requires owners/operators to have a tangible net worth of at least $50 million as compared with the $10 million required by the federal regulations. Wisconsin's financial test is available only to landfill disposal facilities, and the financial requirements to pass the test are more stringent. Michigan plans to modify its existing financial test regulations to make them more stringent, including requiring (1) either total assets in Michigan of at least $50 million or total assets in Michigan that are at least six times the sum of the approved closure and postclosure estimate, whichever is larger, or (2) tangible net worth of $20 million.

Multistate Financial Tests Are Difficult to Review

In addition to the potential weaknesses in the financial test discussed above, problems exist in determining the adequacy of the test when companies operate in more than one state. Since the financial test must cover the total estimated costs of closure or postclosure care for all facilities for which the financial test is being used, many tests can cover facilities in more than one state. In California, Arizona, Illinois, and Ohio, for example, there were a total of 220 multistate financial test submittals, each of which requires review by a minimum of two states. One test covered 157 facilities in 41 states, which required 41 separate reviews by state officials of the same test. This makes it difficult for the individual states to determine if the owner/operator successfully passes the financial test. Under the current system, it is difficult, if not impossible, for the individual states reviewing the financial tests to verify that all facilities owned by the owner/operator, for which financial assurance is to be provided by the financial test, have been identified by

the owner/operator, as required. In addition, for any out-of-state facilities covered by the test, the individual states must contact the respective state environmental agencies to verify that the closure and/or postclosure cost estimates covered by the test are current and accurate. The current system also results in duplication of effort because a staff person in each state must review the financial test computation as well as verify each cost estimate amount.

Nationwide statistics were not available from EPA on the number of multistate financial tests. In the four states included in our review, the multistate financial test was being used by 50.5 percent of the RCRA facilities subject to financial assurance regulations, as shown in table 3.1.

Table 3.1: Usage of Multistate Financial Test

	Number of multistate tests	Facilities using multistate test	Facilities subject to financial assurance regulations	Percentage of facilities using multistate financial test
California	63	129	360	35.8
Arizona	11	15	35	42.9
Illinois	85	174	351	49.6
Ohio	61	174	228	76.3
Total	**220**	**492**	**974**	50.5

Due to the effort that would be required to verify that all out-of-state facilities covered by the test are listed and the cost estimate amounts are accurate, California, Arizona, Illinois, and Ohio check only in-state facilities. State financial assurance coordinators emphasized that they do not have time to contact other states to check the completeness of the list of facilities and the accuracy of closure and postclosure cost estimates for facilities located in other states. In these four states the 220 multistate financial tests included 4,303 out-of-state facilities. By not checking, the states did not know if out-of-state closure and postclosure costs totalling about $1.5 billion included current cost estimates for all facilities, and these states could not determine if the test had actually been passed.

EPA had already identified two financial test submissions that included different closure costs for two facilities. According to a memorandum from an EPA region V official, this problem is potentially widespread

because companies may be understating their total closure costs by submitting different lists of facilities covered and different closure cost estimates to the EPA regions and/or states and thus making it easier to pass the financial test. The two differing financial test cost estimates identified varied by $11.1 million.

EPA regional and state financial assurance coordinators strongly support a centralized nationwide approach to review multistate financial tests in order to determine that all facilities covered are listed, to check the accuracy of the amount of closure and postclosure cost estimates, and to reduce the duplication involved in reviewing the financial test submissions. In 1982 EPA region V and region VIII offices conducted a pilot test to centralize and automate the financial test review. EPA concluded that the automated financial test pilot project was successful and estimated that an automated (versus manual) system would save government and the private sector $1 to $1.3 million annually and reduce the administrative burden. Federal and state costs would be reduced an estimated $75,000 to $130,000 annually, depending on who administered the program. However, as of October 1985, EPA had not completed development of this automated financial test or taken any other action to develop a centralized approach. Resources allocated to the project for fiscal year 1985 were redirected to implementation of the 1984 RCRA amendments. According to the chief of EPA's Financial Responsibility and Assessment Branch, EPA does not expect to fund the project in fiscal years 1986 or 1987 because, although it is important, it is of lower priority than developing regulations to implement financial responsibility for corrective action and other new requirements imposed by the 1984 RCRA amendments.

Monitoring of Effectiveness of Mechanisms Is Needed

We noted that despite the potential weaknesses of the trust fund and the financial test, EPA has no plans to monitor and periodically reevaluate the effectiveness of these two mechanisms—or the other allowed mechanisms—during actual closures to provide information for use in determining if these mechanisms should be eliminated or modified. According to the Deputy Director of EPA's Permits and State Programs Division, it is important that the effectiveness of the mechanisms be monitored; the division considered evaluating the effectiveness of the mechanisms in fiscal year 1986, but decided against doing so because of lack of resources.

The weaknesses described earlier, along with the absence of EPA plans to monitor the effectiveness of the mechanisms, are of special concern

because these same mechanisms are being required to cover other types of facilities or costs. For example, in May 1984 EPA published final regulations requiring that owners/operators of underground injection wells provide financial assurance for closing costs, including plugging and abandonment, using the same mechanisms. The 1984 RCRA amendments imposed additional financial assurance requirements, specifying that these same mechanisms be used, with the specific terms of the mechanisms to be established by EPA. The amendments require hazardous waste facility owners/operators to provide financial assurance for corrective action in case of contamination, as discussed in appendix I. In addition, owners/operators of underground storage tanks (there are at least 3 million tanks nationwide) are required to use these mechanisms to provide financial assurance for corrective action and third-party liability, should leaks occur. Many of the underground injection well and tank owners/operators may already be using the financial test to provide financial assurance for closure and/or postclosure at any treatment, storage, or disposal facilities they also own.

Many Facilities Do Not Have Financial Assurance

Overall, of the 1,434 facilities[6] in the six states reviewed, state officials were aware of only 657 (46 percent) that had financial assurance (see table 3.2). The primary reasons that owners/operators of fewer than half of the facilities provided such assurance were:

- EPA allowed states to delay implementing the financial assurance requirements,
- owners/operators did not submit financial assurance documents (although required), and
- one state did not know if most owners/operators submitted the required financial assurance documents.

[6]Federal and state hazardous waste facilities were excluded because EPA regulations specifically exempt them from compliance with the financial assurance regulations.

Table 3.2: Facilities in Six States With Financial Assurances

		Facilities	Percentage
Reason facility may not have financial assurance:			
Not required by state	425[a]		
Owner/operator failed to submit	109		
Status unknown	243[b]		
Facilities either without financial assurance or status unknown		777	54
Facilities with financial assurance		657	46
Total		**1,434**	**100**

[a]Although not required, some facilities in Pennsylvania and New York may have voluntarily provided financial assurance.

[b]California did not know the number of facilities that had financial assurance.

Where financial assurance documents were submitted and reviewed, the states found deficiencies in 147 (34 percent). In addition, state enforcement has not always been effective in obtaining compliance.

EPA Allowed States to Delay Implementing Financial Assurance Requirements

The federal financial assurance regulations became effective on July 6, 1982. Rather than requiring facilities to provide financial assurance by a specified date, as is done for the requirements contained in most other new hazardous waste regulations, EPA chose to allow the states until the time they received interim authorization for permitting activities to implement these requirements. EPA expected that all states would receive such authorization by the January 1985 deadline originally required by RCRA. However, this deadline was extended to January 1986 by the 1984 RCRA amendments.

As a result of EPA's approach, two of the six states we visited, New York (with 284 facilities subject to these regulations) and Pennsylvania (with 141) had neither adopted their own financial assurance regulations nor implemented the federal regulations until October and September 1985, respectively—over 3 years after the requirements became effective.[7] According to a New York solid waste management specialist, the New York General Assembly had directed New York to review the federal financial assurance requirements before developing their own. New York's financial assurance regulations were first promulgated in January 1984 and were repromulgated in October 1984 as a result of substantial negative comments on the initial proposal. Final regulations

[7]As of August 1985 all 44 other states, the District of Columbia, and three of the five territories indicated that they had either adopted their own financial assurance regulations or implemented the federal regulations.

became effective in July 1985, and all hazardous waste facility owners/operators had until October 1985 to comply. Pennsylvania did not adopt its financial assurance regulations until March 1985, and all hazardous waste facility owners/operators had until September 1985 to comply. These regulations were only recently enacted because the state's regulatory process requires legislative passage of regulations, which in this case took 2 years.

Many Facilities Have Not Submitted Financial Assurance Mechanisms

According to state records, owners/operators of 17 percent of the facilities subject to the financial assurance requirements in Arizona, Illinois, and Ohio had not submitted financial assurance documents. Table 3.3 shows, by state, the number of operating facilities that were subject to the financial assurance requirements as of September 30, 1985, and number of facilities that had submitted financial mechanisms. As discussed above, neither Pennsylvania nor New York required financial assurance until September and October 1985, respectively. California reviewed financial assurance documents from all of its 117 major[8] facilities, but did not know how many of its 243 nonmajor facilities had submitted documents.

Table 3.3: Statistics on Financial Assurance Submissions As of September 30, 1985

	Facilities subject to requirements	Facilities that submitted documents	(%)	Facilities that did not submit documents	(%)
Arizona	34	29	(85%)	5	(15%)
Illinois	390	296	(76%)	94	(24%)
Ohio	225	215	(96%)	10	(4%)
Total	**649**	**540**	**(83%)**	**109**	**(17%)**

State financial assurance coordinators told us that the primary problems with financial assurance compliance were nonsubmission and late submission. Some facility owners/operators, they said, lack familiarity with the requirements, while others find compliance financially burdensome.

Many facilities that had not submitted a financial document have closed or are closing, as shown in table 3.4. This is of concern because, as noted in chapter 2, owners/operators of 17 closed facilities in the six states visited had already declared bankruptcy and public monies were expended for cleanup in four of these cases. Table 3.4 presents a range

[8]According to EPA's definition in use during fiscal year 1985, major facilities include all land disposal facilities, incinerators, and other selected treatment and storage facilities, the total of which is to comprise approximately 10 percent of all facilities in a particular state.

for the number of closed facilities, rather than a specific figure, because for many facility closures where no closure plan was submitted, we could not determine if the facility closed before or after the effective date of the financial assurance regulations. Since the basic intent of the financial assurance requirements is to increase the likelihood that owners/operators will have sufficient funds to close properly, the high number of facilities closing without financial assurance could potentially result in it being necessary to expend public funds to close many of these facilities properly.

Table 3.4: Number of Facilities That Were Closed or Were Closing As of 12/31/84 and Had Not Submitted a Financial Assurance Document

	Closing facilities	Closed facilities
Arizona	2	3
California	7	0-14
Illinois	25	23-39
Ohio	17	9-11
Total	**51**	**35-67**

Many Financial Assurance Documents Have Deficiencies

Table 3.5 shows that when financial documents are submitted and reviewed, many are found to be deficient. Of 434 documents reviewed during 1984 in Arizona, Illinois, and Ohio, 147 (34 percent) had deficiencies or violations of regulatory requirements. California did not know the specific extent of compliance with financial assurance requirements, although the California financial assurance coordinator estimated that approximately 17 percent of the total number of facilities in the state were in violation. All of California's 117 major facilities were reviewed for compliance, and 11 of these were found to be in violation. The state financial assurance coordinators told us that cost estimates on which the amount of financial assurance coverage was based were frequently not for the current year, had not been updated for inflation, or were incomplete because the total closure/postclosure estimates did not include estimates for all facilities covered. They also stated that many financial assurance documents contained incorrect wording or clerical errors that may affect their enforceability.

Enforcement Actions Have Not Always Been Effective

EPA compliance and enforcement guidelines, established in October 1982, state that violations of the financial responsibility requirements pose direct and immediate harm or threat of harm to the public health or the environment and are to be addressed by issuing compliance orders. These violations can include failure to establish financial assurance for

closure and postclosure care or failure to use the exact wording required for the financial assurance option chosen. Compliance or administrative orders were specified as the initial type of enforcement action to be taken because they require compliance by a certain date, may assess penalties, and are enforceable through administrative or judicial action, as compared with notices of violation, that are generally to be used for very minor violations where voluntary compliance is expected, according to EPA.

Since the states did not maintain statistics on financial assurance enforcement actions, we developed them where possible on the basis of our review of state reporting forms. The fiscal year 1984 grants for Arizona, Illinois, and Ohio required the states to review all major facilities for compliance with the financial assurance requirements and to prepare standardized compliance monitoring and enforcement log forms for each review. Statistics could not be developed for California, because this requirement was not in its 1984 grant and the logs were not prepared. The requirement was specifically added in California's fiscal year 1985 grant. The results of our review of these forms is shown in table 3.5.

Table 3.5: State Enforcement Actions Based on Financial Assurance Violations Identified During Fiscal Year 1984

	Number of facilities			
	Arizona	Illinois	Ohio	Total
Number of facilities reviewed	32	92	46	170
Number of facilities with violations	19 (59%)	69 (75%)	24 (52%)	112 (66%)
No enforcement action	1	3	0	4
Total facilities with enforcement actions	**18**	**66**	**24**	**108**
Notice of violation	17	35	12	64
1 notice	•	13	6	19
2 notices	•	3	3	6
3 notices				
Compliance Order	0	0	1	1
One or more notices of violation and referral to state attorney general and/or EPA	0	14	2	16
Referral to EPA	1	1	0	2
Facilities with violations brought into compliance by 1/31/85[a]	15	40	9	64
Facilities still out of compliance as of 1/31/85[a]	4	29	15	48

[a]Based on GAO's review of state records.

Table 3.5 shows that state enforcement actions were generally notices of violation rather than compliance orders, as called for in EPA guidance. Where compliance was not achieved and more than one enforcement action was taken, the states generally issued additional notices of violation rather than taking escalated enforcement action, such as issuing compliance orders.

As of January 31, 1985,[9] 45 of 108 facilities (42 percent) found in violation during fiscal year 1984 where enforcement actions were taken were still in violation. Of the 63 facilities brought into compliance by January 31, 1985, 23 had already been out of compliance 3 or more months. Table 3.6 shows the elapsed time between enforcement action and compliance for facilities brought into compliance. Table 3.7 shows time elapsed since enforcement action for facilities still not in compliance as of January 31, 1985. Although statistics were not available on California's enforcement actions involving financial assurance, overall enforcement action statistics provided by EPA for California showed that few compliance orders were issued in fiscal year 1984. The state made extensive use of notices of violation (309), as compared with compliance orders (22).

Table 3.6: Number of Months Between the First Enforcement Action and the Date of Actual Compliance for Facilities Brought Into Compliance by January 31, 1985

	Less than 3 mos.	3-6 mos.	6-9 mos.	9-12 mos.	Total
Arizona	14	0	0	1	15
Illinois	21	12	5	1	39
Ohio	5	2	2	0	9
Total facilities	**40**	**14**	**7**	**2**	**63**

Table 3.7: Number of Months Between Enforcement Action and January 31, 1985 for Facilities Out of Compliance As of January 31, 1985

	Less than 3 mos.	3-6 mos.	6-9 mos.	9-12 mos.	Over 12 mos.	Unknown	Total
Arizona	1	0	0	1	0	1	3
Illinois	0	3	7	16	0	1	27
Ohio	0	0	2	9	4	0	15
Total facilities	**1**	**3**	**9**	**26**	**4**	**2**	**45**

[9]We reviewed compliance monitoring and enforcement logs through January 31, 1985 in order to capture any enforcement actions taken in early fiscal year 1985 related to the fiscal year 1984 record reviews. We established this date as a cut-off to be consistent among all states visited. We began our fieldwork in the first state in February 1985.

None of the states had specific enforcement policies for financial assurance violations. However, Illinois', Ohio's, and Arizona's general enforcement policies called for less stringent enforcement action than specified in EPA's enforcement guidance. Illinois' and Arizona's policies called for issuing one or more notices of violation in noncompliance cases without regard to the severity of the violation. Those policies also required issuance of a compliance order, or referral to the state attorney general's office or EPA for prosecution if facilities did not respond to the notices of violation. Ohio's policy allowed issuance of notices of violation or compliance orders, but according to the manager of Ohio's Division of Solid and Hazardous Waste, notices of violation are generally used because they are effective. For facilities that failed to take action, compliance orders are issued or the case is referred to the attorney general's office. The Arizona compliance unit manager, the Illinois manager of the Division of Land Pollution Control, and the Ohio manager of the Division of Solid and Hazardous Waste told us that they think that it is more appropriate to issue a notice of violation rather than a compliance order as the initial enforcement action for financial assurance violations.

Another reason Illinois did not use compliance orders as the initial type of enforcement action for financial assurance violations, according to the manager of the Division of Land Pollution Control, was because the Illinois Environmental Protection Agency does not have authority to issue compliance orders. All financial assurance cases would have to be referred to the Illinois Attorney General if compliance orders were to be issued. The manager of the Division of Land Pollution Control told us that the Illinois business community does not always take notices of violation seriously. Legislation authorizing the state EPA to issue compliance orders was submitted to the Illinois state legislature in the late 1970s but was not enacted. Illinois plans to repropose such legislation at a later legislative session.

Although California's enforcement policy was consistent with EPA's, it was not followed; notices of violation were routinely used as the initial enforcement action. The chief of enforcement in California during our review considered enforcement actions other than issuance of notices of violation unwarranted when enforcement action is taken against a facility solely for financial assurance violations. He stated that he preferred to issue compliance orders only in cases where other violations were involved. A new California chief of enforcement, hired in mid-1985, told us that financial assurance violations are more serious than they appear and require more enforcement activity. The chief plans to

refer these cases to the district attorneys since the California environmental agency does not have authority to issue compliance orders with penalties. The chief of enforcement said, however, that the district attorneys have been reluctant to pursue financial assurance violations because they do not involve evidence of a health danger, and that he is working on an agreement with one district attorney to promote these cases by assigning them to the district attorney while the California environmental agency maintains the administrative responsibility. He estimated that 80-90 percent of the owners/operators will bring themselves into compliance after receiving a compliance order with penalty and that further prosecution will not be necessary.

Prompted by concern of significant noncompliance with hazardous waste regulations in general, EPA in December 1984 issued a more stringent enforcement policy that addresses the type and timing of enforcement actions, including guidance on the appropriate time to take more stringent enforcement actions. The new policy was optional in fiscal year 1985 but mandatory for fiscal year 1986. EPA regions are to make the policy a part of state grant or enforcement agreements. The policy states that financial assurance violators are to be treated as "high-priority violators," and specifies that within 90 days of discovery, states should issue such violators a compliance order with penalty and a schedule for returning to compliance. If the violator fails to comply, the state must refer the case for judicial action within 90 days of discovery, or request that EPA issue a compliance order with penalty.

We noted that EPA region IX did not include this requirement in the Arizona grant because, according to the EPA project officer for Arizona, EPA region IX considers Arizona's enforcement record to be "fairly good," making inclusion of this requirement unnecessary. EPA region V did not include this requirement in the Illinois grant because, according to the EPA chief of RCRA enforcement for Illinois, the Illinois environmental agency lacks authority to issue compliance orders and would have to refer each case to either the state attorney general's office or EPA region V, which have authority to issue them. This policy is included in the California, New York, Ohio, and Pennsylvania fiscal year 1986 grants. The EPA headquarters director of RCRA enforcement told us that he was not aware that the regions had not included the new enforcement policy in all state grants as required—and that they should have.

Conclusions

Financial assurance requirements may not provide the intended assurance that owners/operators—rather than the public—pay all costs of

facility closure and postclosure because of (1) inherent weaknesses in the trust fund and financial test, which are used by about 82 percent of the approximately 4,900 facilities nationwide; (2) the difficulty that regulators have in reviewing the adequacy of multistate financial tests; (3) delayed implementation of the requirements in at least two states; (4) noncompliance with the financial assurance requirements; and (5) lack of strong enforcement action against noncomplying facilities. As the corrective action provisions of the 1984 RCRA amendments are implemented, these problems will probably become more acute if facilities are allowed to use the same mechanisms for financial assurance to pay the costs of corrective action.

To address these problems, EPA needs to closely monitor closing facilities or those implementing corrective actions to determine if the financial test and trust fund provide adequate financial assurance. If such facilities fail to provide adequate funds to meet their responsibilities, EPA should reconsider the use of these mechanisms. EPA also needs a centralized and more efficient approach to verifying the accuracy of out-of-state closure and postclosure cost estimates supporting financial tests submitted by companies with facilities in more than one state. If states had access to a centralized data base containing cost estimates for multistate firms, the effectiveness of their regulatory reviews could be increased and verification costs and duplication of effort reduced. In addition, EPA needs to assure that all of its regions and the states implement existing enforcement guidance that calls for strong enforcement against facilities in violation of financial assurance requirements.

Recommendations

We recommend that the Administrator, EPA:

- Monitor and periodically reevaluate hazardous waste facility closures and implementation of corrective action activities to assure that the trust fund and financial test are providing adequate assurance that funds will be available.
- Develop and implement a system for providing a centralized review of all multistate financial tests.
- Direct EPA regional offices to ensure that all state grant or enforcement agreements include a requirement for states to issue compliance orders for all violations of financial assurance requirements as initial enforcement actions and closely oversee state implementation of this requirement.

With the current emphasis on reducing government spending, we recognize that it may be difficult to obtain the additional staff or funds needed to monitor the effectiveness of the trust fund and financial test and to develop a centralized system to review multistate financial tests. We believe both of these activities are important. If, however, resources are not available because of higher priority requirements, we recommend that EPA determine the additional needs of the program and provide such information to the appropriate congressional committees for their consideration.

Chapter 4

Monitoring of Facility Closures

EPA regulations require that owners/operators of hazardous waste treatment, storage, and disposal facilities that cease operating close their facilities, in accordance with an EPA or state-approved closure plan. After closure, the owner/operator and an independent professional engineer must certify that the facility was closed in accordance with the plan. The facility may also be inspected by an EPA or state inspector during or after closure. Because of changing priorities, EPA's inspection requirements for itself and the states have varied from requiring no inspections of closing facilities to requiring inspections for all such facilities. EPA currently requires inspections of all closing land disposal facilities, but not storage and treatment facilities.

In the states reviewed, 109 of the 176 facilities that had closed as of December 31, 1984 (about 62 percent) had been inspected by EPA or the states. The reasons that not all facilities were inspected include a lack of a requirement to inspect all closing facilities and reliance on the professional engineer certification to assure that the facility closed properly. Each of the states reviewed, however, has recently adopted policies or commitments to inspect all closing facilities.

The inspections disclosed violations at 37 (34 percent) of the 109 facilities inspected. In reviewing these violations, we found that the enforcement actions taken by EPA or the states were generally not as strong as specified in EPA guidance and were not always timely or effective in correcting the deficiencies. EPA has recognized this problem and, as discussed in chapter 3, is implementing a new response policy designed to strengthen enforcement.

Closure Procedures

RCRA regulations require owners/operators of closing hazardous waste treatment, storage, and disposal facilities to submit a closure plan to EPA or the state for approval. Upon receipt of the plan, EPA or the state is required to publish a notice for public review, allowing a 30-day comment period. EPA or the state must approve, modify, or disapprove the plan within 90 days of receiving it. If the plan is approved, the owner/operator has 90 days to complete all treatment, storage, and disposal activities or to remove waste from the site. All other closure activities must be completed within 180 days, including decontaminating or disposing of all equipment and structures.[1] The final step in closure is submission of certifications to EPA and/or the state from both the owner/

[1]The regulations allow the EPA Administrator to approve extending the 90- and 180-day periods.

operator and an independent professional engineer certifying that the facility was closed in accordance with the approved plan.

Owners/operators of land disposal facilities where waste will remain on site after the facility is closed must also have a postclosure plan identifying the activities to be carried out for 30 years after closure. The plan must, at minimum, include (1) the provisions for groundwater monitoring and reporting, (2) the planned maintenance activities to ensure the integrity of the final cover or containment system and the functioning of monitoring equipment, and (3) the identity of the persons to be contacted about the facility during postclosure.

Proper Closure Is Important

According to EPA, proper closure of hazardous waste facilities is important because, in many cases, it is the last time such facilities come under regulatory scrutiny. EPA also notes that lack of attention to environmental problems at the time of closure may lead to an increase in the number of Superfund[2] cleanup sites several years in the future. As of September 1985, EPA had identified 58 RCRA facilities that will need Superfund cleanup action.

Proper closure of facilities is increasingly important because of the growing number of facilities closing or expected to close. According to the deputy director of EPA's Permits and State Programs Division, 50 percent or more of the approximately 4,900 RCRA facilities nationwide will eventually close rather than obtain final permits. EPA generally classifies hazardous waste facilities into three types: land disposal, incinerator, and storage/treatment; it has issued separate regulations for each type. According to EPA, land disposal facilities and incineration facilities pose the highest risk of harm to the public health and the environment through surface and groundwater contamination and air pollution. As of August 1985, EPA reported that a total of 1,105 RCRA facilities had closed: 171 land disposal facilities, 42 incinerators, and 892 storage/treatment facilities.

In the six states reviewed we identified a total of 176 RCRA facilities that had closed as of December 31, 1984, including 19 land disposal facilities, 4 incinerators, and 153 storage/treatment facilities. Some of the 176 closures were partial closures of facilities that contained more than one hazardous waste management unit. An example of partial closures

[2]As noted in chapter 2, Superfund refers to EPA's program for cleaning up sites contaminated by hazardous waste or other substances.

would be the owner/operator of a facility with a number of storage ponds closing one pond. Data by state and type of facility are shown in table 4.1.

Table 4.1: Closed RCRA Facilities in Six States As of December 31, 1984

	Land disposal	Incinerator	Storage/ treatment	Total
Arizona	6	0	2	8
California	4	2	32	38
Illinois	1	1	45	47
New York	3	0	17	20
Ohio	2	1	42	45
Pennsylvania	3	0	15	18
Total	**19**	**4**	**153**	**176**

None of the 19 closed land disposal facilities in the six states reviewed were subject to the 30-year postclosure maintenance and monitoring provisions of RCRA because, according to state hazardous waste officials, the facilities totally removed all waste and contaminated soil from the sites. In that regard, an EPA study issued in March 1985[3] found that 75 percent of land disposal facilities close by removing wastes from the facility. According to the study, this approach may remove the need to permanently cover the disposal facilities or perform postclosure groundwater monitoring. The study also found that, partly as a result of the waste removals, few postclosure plans have been submitted for approval and few postclosure permit applications have been requested or received.

The six states also identified 226 additional facilities that have already indicated their intent to close or are in the process of closing. The closing facilities included 99 land disposal, 2 incineration, and 125 storage/treatment facilities. The closure of land disposal facilities often requires more time than other facilities, according to state permitting officials, because the closure plan approval process is more complicated and little EPA guidance exists on the extent to which owners/operators must clean up land disposal facilities. In addition, for example, once the closure activities begin, it may become apparent that more contaminated subsoil must be removed than originally anticipated, which takes more time.

[3]Study of Closure/Postclosure Implementation at Land Disposal Facilities, EPA Office of Solid Waste, Permits Branch, March 1, 1985.

The number of closing land disposal facilities may, in fact, be much larger in the near future. In an August 27, 1985, memorandum, the EPA Assistant Administrator for Solid Waste and Emergency Response stated that EPA is expecting an unprecedented number of land disposal facilities to close during the coming months as a result of the recent RCRA amendments requiring owners/operators to certify compliance with applicable groundwater monitoring and financial responsibility requirements by November 8, 1985. As discussed in chapter 2, about two-thirds of the estimated 1,500 land disposal facilities nationwide did not submit certifications and therefore must close.

EPA Inspection Requirements Have Varied

Prior to fiscal year 1985 EPA had no inspection requirements for closing or closed facilities. In its fiscal year 1985 RCRA Implementation Plan, which provides guidance to EPA regions and the states, EPA called for inspection of all facilities that closed during fiscal year 1984 that had not been inspected and all facilities closing in fiscal year 1985. EPA deleted this inspection requirement in April 1985 to free EPA and state resources to implement provisions of the 1984 RCRA amendments. In fiscal year 1986 EPA is specifically requiring inspections of all closed land disposal facilities within 1 year of closure. There is no fiscal year 1986 requirement to inspect closing treatment, storage, or incineration facilities. The Director of EPA's RCRA Enforcement Division told us that requiring inspections of these facilities after they have closed would be desirable but would require additional resources. Within resource constraints, he said, priority should go to the more environmentally significant land disposal facilities and to meeting other inspection requirements, such as those mandated by the 1984 RCRA amendments.

Extent of Inspections in States Reviewed

Of the 176 facilities that had closed in the states reviewed as of December 31, 1984, 109 (62 percent) had been inspected. Table 4.2 summarizes inspection statistics for closed facilities in the six states reviewed. Arizona and Pennsylvania had informal policies to inspect closed facilities at least once and had inspected all but two facilities. The state permitting unit chiefs for California, New York, and Ohio, and the Illinois chief enforcement attorney, however, told us that the reasons many closed facilities were not inspected were that the state did not have a policy to inspect all closed facilities, the state preferred to inspect facilities during the closure plan approval process, and/or because the state relied on the integrity of the professional engineer certifications.

Table 4.2: Summary of Inspection Statistics for Closed Facilities in the Six States Reviewed As of December 31, 1984

State	Total	Inspected	Not inspected	Percentage not inspected
All Closed Facilities				
Arizona	8	6	2	25
California	38	15	23	61
Illinois	47	31	16	34
New York	20	17	3	15
Ohio	45	22	23	51
Pennsylvania	18	18	0	0
Total	**176**	**109**	**67**	38
Land Disposal				
Arizona	6	5	1	17
California	4	4	0	0
Illinois	1	1	0	0
New York	3	3	0	0
Ohio	2	1	1	50
Pennsylvania	3	3	0	0
Total	**19**	**17**	**2**	11
Incinerators				
Arizona	0	0	0	0
California	2	2	0	0
Illinois	1	1	0	0
New York	0	0	0	0
Ohio	1	1	0	0
Pennsylvania	0	0	0	0
Total	**4**	**4**	**0**	0
Storage/Treatment				
Arizona	2	1	1	50
California	32	9	23	72
Illinois	45	29	16	36
New York	17	14	3	18
Ohio	42	20	22	52
Pennsylvania	15	15	0	0
Total	**153**	**88**	**65**	42

The number and timing of closure inspections varied. Of the 109 facilities inspected, 73 were inspected once and 36 were inspected two or more times. There was no clear pattern regarding the point in time in the closure process when the inspections were performed. Violations

requiring corrective action before closure was considered to have been acceptably performed were detected at 37 (about 34 percent) of the closed/closing facilities. Violations were detected at 6 land disposal facilities, 1 incinerator, and 30 treatment and storage facilities. Examples of the types of deficiencies disclosed at the 37 facilities include:

- facility closed without an approved closure plan,
- no owner/operator or professional engineer certifications were submitted,
- not all hazardous waste was removed from site,
- groundwater was contaminated,
- soil was contaminated,
- contaminated equipment remained on site,
- surface impoundments were improperly closed, and
- no financial assurance existed.

We noted that serious violations—such as soil contamination, closure without a closure plan, and corroded and leaking containers left on-site—occurred at storage and treatment facilities. We also noted that violations were discovered in four of the eight cases where inspections were conducted after the professional engineer certifications had been made. These violations included rusted drums left on-site, improperly installed containment liners, and decontamination activities not performed.

All of the states we visited have policies or have made commitments beginning in fiscal year 1985 to inspect all closed facilities. The inspection criteria generally call for one inspection, regardless of type of facility, to be performed at varying times during the closure process. Under procedures adopted in December 1984 and January 1985, both Ohio and Illinois now require an inspection of closed facilities after the last closure certification has been received. Arizona and California established policies in April 1985. Arizona's policy is to inspect all closed facilities after decontamination is complete and sometimes during the cleanup phase, as appropriate. California now requires that all closing facilities be inspected at least once between closure plan approval and owner/operator certification to ensure that the closure is performed in accordance with the approved plan. Beginning in October 1985, Pennsylvania's financial assurance regulations require that, after closure is complete, the state initiate an inspection of the facility to verify that closure has been effected in accordance with the approved closure plan. The New York permit section supervisor told us that New

York has committed itself to inspecting all closed facilities in conjunction with both the fiscal year 1985 and 1986 EPA grants.

Enforcement Actions for Closure Violations Have Not Always Been Effective

Enforcement is critical to adequate protection of public health and the environment. As noted in a joint memorandum from the EPA Assistant Administrator for Solid Waste and Emergency Response and the Assistant Administrator for Enforcement and Compliance Monitoring:

"Improper hazardous waste disposal carries with it the potential for significant harm to health and damage to the environment. Rapid and decisive enforcement action is needed to protect public health and the environment against imminent hazards and against significant violations of existing regulatory standards. Enforcement actions must be sufficient, frequent, visible, and forceful to provide an effective deterrent, so that the regulated facilities recognize that it is in their own interest to comply."

Based on the enforcement data available from the 37 closed facilities with violations, our analysis indicates that, like the enforcement actions for violations of financial assurance requirements discussed in chapter 3, enforcement actions for closure violations were not always effective in obtaining compliance and could be improved in terms of appropriateness of initial type of enforcement action. In addition, improvements could be made in the timeliness of the action and in taking further timely enforcement action if compliance is not achieved based on the initial enforcement action.

EPA's general compliance and enforcement guidelines, issued July 7, 1981, and in effect during the period of our review, stipulated that closure violations, like financial assurance violations, should generally be addressed with a compliance order. Our analysis of the enforcement actions taken against the 37 closed facilities with violations revealed that EPA and the states generally did not issue compliance orders as the initial type of enforcement action, as specified by EPA in 1981. Of the 37 facilities with violations, no enforcement action was taken in 9 cases (23 percent). Warning letters were issued as the initial enforcement action in 17 cases (61 percent). Compliance orders or referral to the state attorney general or EPA for legal action were the initial actions taken in only 11 of the cases (39 percent). Even for the seven more environmentally significant closed land disposal and incineration facilities, the initial enforcement action taken was the issuance of a warning letter in four of the seven cases. Additional escalated enforcement actions were taken in only three cases after the issuance of notices of violation did not achieve compliance.

Some violations remained uncorrected for long periods of time. At the time of our review, 22 of the 37 facilities still had uncorrected violations, according to state records and as shown in table 4.3.

Table 4.3: Statistics on Facilities With Uncorrected Deficiencies

State	Facilities inspected	Having deficiencies	Deficiencies corrected	Uncorrected deficiencies
Arizona	6	1	1	0
California	15	4	3	1
Illinois	31	14	3	11
New York	17	10	5	5
Ohio	22	8	3	5
Pennsylvania	18	0	0	0
Total	**109**	**37**	**15**	**22**

Table 4.4 shows the length of time deficiencies had been uncorrected at the 22 facilities with uncorrected deficiencies as of January 31, 1985.

Table 4.4: Duration of Noncompliance for Uncorrected Deficiencies, As of January 31, 1985

Number of months between detection of violation and January 31, 1985	Number of facilities
0 - 6 months	4
6 - 12 months	1
12 - 18 months	7
18 - 24 months	1
24 - 36 months	4
36 - 48 months	4
48 - 60 months	1
Total	**22**

The following examples illustrate problems with both the type and effectiveness of enforcement actions at some of the 22 facilities.

- A closed Illinois storage/treatment facility was inspected on November 18, 1982, and found to be in violation because a closure plan had not been submitted and lead contamination was found in the ground. A notice of violation was issued January 27, 1983 and, after continued noncompliance, the case was referred to the Illinois Attorney General on January 1, 1984. No other enforcement action had been taken as of March 6, 1985—28 months after the violations were detected. According to an Illinois Enforcement Division attorney, a notice of violation was initially issued rather than a compliance order because the Illinois Environmental Protection Agency does not have authority to issue

compliance orders. Such action has to be taken by the state attorney general. He could not explain why further, more serious enforcement action was not taken or why the case was not referred to the Illinois Attorney General sooner.

- A closed New York land disposal facility was inspected on March 27, 1984, and found to be in violation because, among other violations, no closure plan had been submitted, surface impoundments were closed improperly, hazardous waste was left on-site, and equipment was contaminated. A notice of violation was issued on April 27, 1984; no other enforcement action had been taken as of July 30, 1985. The New York permits section supervisor said New York has not taken further action because it has been working with the owner/operator to develop an acceptable closure plan. The supervisor said, however, that the state is planning to issue a compliance order because of continued noncompliance.
- An Ohio storage/treatment facility indicated its intent to close on July 6, 1984, and was found to be in violation because the owner/operator had not submitted an adequate closure plan. A notice of violation was issued by the Ohio Attorney General's Office on March 15, 1985; three additional notices of violation were issued between this date and September 1985. An Ohio Assistant Attorney General explained that the attorney general's office was handling the case because it was referred by the Ohio Environmental Protection Agency. The Attorney General, however, does not have authority to issue a compliance order. Although the Ohio Environmental Protection Agency has such authority, the attorney general's office does not normally return cases to the responsible agency once referred. The issuance of a notice of violation rather than a compliance order in this case seems even more inappropriate because, at the time the state learned of the facility closure, the state had already issued several notices of violation for violations of operating standards.

As discussed in chapter 3, EPA has recognized that swifter and stronger enforcement is needed. Under EPA's Enforcement Response Policy issued in December 1984, violators of closure/postclosure requirements are generally to be treated as high priority violators and must, within 90 days of discovery, receive a compliance order. Such violators are also to be assessed a fine and be given an expeditious schedule for obtaining compliance. States that do not have administrative penalty authority should take judicial action to compel compliance and issue a fine, or ask EPA to take action. This policy was an optional part of state grant or enforcement agreements in fiscal year 1985, but it was mandatory in fiscal year 1986. Also as discussed in chapter 3, however, EPA regions V

and IX did not include this requirement in the Illinois or Arizona fiscal year 1986 grants.

Conclusions

It is important that owners/operators of hazardous waste facilities close their facilities properly so that public health and the environment are protected and so that public funds do not have to be spent to clean up and close the facilities. Because of changing priorities, EPA's inspection requirements to assure that facilities are closed properly have varied, ranging from no required inspections to required inspections of all closed facilities. EPA currently requires inspections of closed or closing land disposal facilities, but not of storage and treatment facilities. We noted, however, that some closed storage and treatment facilities that were inspected had serious violations. In the six states we reviewed, 62 percent of the 176 facilities that had closed by December 31, 1984, had been inspected. Each state has recently gone beyond EPA's requirements and adopted policies to inspect all closing or closed facilities. We recognize that EPA must set priorities for the use of limited inspection resources and that priority should go to inspecting the more potentially environmentally significant land disposal facilities. However, storage and treatment facilities can also pose environmental threats if not closed properly, and the actions taken by the states we visited to also inspect these facilities are appropriate.

Where inspections were conducted and violations found, our analysis shows that the enforcement actions taken were not always in accordance with EPA enforcement guidelines and were not always effective in obtaining timely compliance. EPA has recognized this problem and, as discussed in chapter 3, is implementing a new enforcement response policy designed to strengthen enforcement actions for closure-related violations.

Status of EPA Efforts to Implement Requirements for Financial Assurance for Corrective Action

Two sections of the Hazardous and Solid Waste Amendments of 1984 impose requirements dealing with financial assurance for corrective action when hazardous waste is or may be released into the environment. EPA has interpreted corrective action to mean cleanup of releases to all media such as groundwater, air, surface water, and soils. Section 3004(u) of the act (section 206 of the amendments) requires corrective action and financial assurance for completing such corrective action for releases that are occurring or have occurred (continuing releases) at RCRA facilities seeking a permit and was effective on the date of enactment (Nov. 8, 1984). Section 3004(a) of the act (section 208 of the amendments) adds to the standards applicable to owners/operators of treatment, storage, and disposal facilities the requirement to maintain financial responsibility for corrective action for releases that may occur as the EPA Administrator deems necessary or desirable. EPA has concentrated its efforts on implementing the requirement for financial assurance for corrective action at facilities where releases are now occurring.

Section 3004(U)—Corrective Action for Continuing Releases

One of the most important provisions of the Solid and Hazardous Waste Amendments of 1984, according to EPA, is the new requirement for corrective action for continuing releases. The amendments state that:

> "Standards promulgated under this section shall require, and a permit issued after the date of enactment of the Hazardous and Solid Waste Amendments of 1984 by the Administrator or a State shall require, corrective action for all releases of hazardous waste or constituents from any solid waste management unit at a treatment, storage or disposal facility seeking a permit under this subtitle, regardless of the time at which waste was placed in such unit. Permits issued under section 3005 shall contain schedules of compliance for such corrective action (where such corrective action cannot be completed prior to issuance of the permit) and assurances of financial responsibility for completing such corrective action."

The intent of Congress in establishing this new permit requirement was to correct the perceived shortcoming in the existing RCRA regulations, which allow operating permits to be issued to facilities at which environmental contamination is occurring or has occurred, without the permit addressing that contamination in any way. EPA has interpreted the new provision to mean that all permit applications must now (1) identify all solid waste management units at the facility, (2) identify any releases that have occurred or are occurring from those units, (3) take appropriate corrective measures to clean up those releases, and (4) demonstrate financial assurance for those corrective measures.

To demonstrate financial assurance the owner/operator must identify the necessary corrective measures and develop a cost estimate for the planned activities. Section 3004(t) of the act (section 205 of the amendments) lists the mechanisms that may be used to demonstrate financial assurance for corrective action, including surety bonds, letters of credit, insurance, and the financial test. This section omitted trust funds and state-required mechanisms (which are currently allowed by EPA regulation to be used to demonstrate financial assurance for meeting closure and postclosure costs) from the list of instruments that may be used for financial responsibility. EPA considers this to be an inadvertent omission, since nothing in the legislative history suggests the intentional omission and intends to continue to allow all six mechanisms in its regulations for closure and postclosure activities. Under EPA regulations, the states and the federal government are exempt from the requirements for financial assurance for corrective action. The initial implementing regulations were published July 15, 1985. Further clarifying regulations, according to the EPA Financial Responsibility Program manager, will be promulgated in September 1986, and the final regulations promulgated in September 1987.

Section 3004(A)—Financial Assurance for Corrective Action

In addition to the requirement for financial assurance for corrective action at facilities that are experiencing releases, financial assurance for corrective action may be required at facilities regardless of whether releases necessitating corrective action have been detected. As of August 6, 1985, EPA had not yet begun to develop implementing regulations, according to the EPA Financial Responsibility Program manager. EPA plans to publish the proposed regulations in March 1988, and the final regulations in January 1989.

RCRA Bankruptcies Reviewed by GAO

Table II.1: RCRA Bankruptcies Reviewed by GAO

Name of facility	State	Type of facility	Payment of closure costs: Operating	Payment of closure costs: Closure status unknown	Payment of closure costs: Owner/ operator expense	Public monies	Public monies expended
American Incineration, Inc.	Illinois	Storage/ incineration				X	$1,160,698.00
Recycoil	Illinois	Storage/ treatment		X			
Taracorp, Inc.	Illinois	Storage		X			
Liquid Dynamics	Illinois	Storage/ treatment				X	165,370.00[a]
Parson's Casket Hardware Co.	Illinois	Storage				X	350,000.00
Barker Chemical	Illinois	Storage			X		
Mika Timber Co.	Illinois	Storage/ disposal	X				
Unichem Corp.	Illinois	Storage			X		
Northway Environmental Services	Ohio	Storage			X		
Marion Steel Corp.	Ohio	Storage	X				
Ironton Coke Co.	Ohio	Treatment/ disposal			X		
Majestic Weaving Co.	New York	Land disposal	X				
Quanta Resources Corp.	New York	Storage/ treatment				X	2,500,000.00
Revere Copper & Brass Products, Inc.	New York	Storage					
Seneca St., Rome facility			X				
Railroad St., Rome facility			X				
Balaird Rd., Middletown facility			X				
Whitmoyer Laboratories, Inc.	Pennsylvania	Storage	X				
Total: 17			**7**	**2**	**4**	**4**	**$4,176,068.00**

[a]EPA has already received reimbursement of the $161,000 it expended to clean up the site from the generators who had disposed of hazardous waste at the site.

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Exhibit 21

ICF INCORPORATED International Square, 1850 K Street, Northwest, Washington, D.C. 20006 (202) 862-1100

June 28, 1985

MEMORANDUM

TO: Carole Ansheles, Debra Wolpe, OSW

FROM: Paul Bailey, Peter Linquiti, Clarence Koo, ICF

SUBJECT: Preliminary Results of Case Studies of Bankrupt TSDFs

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This memorandum presents preliminary results of and suggests next steps for ICF's case studies on bankrupt firms that own or operate treatment, storage, or disposal facilities (TSDFs). The key results of ICF's efforts are:

- A substantial majority of bankrupt firms provided inadequate or no financial assurance for closure or post-closure costs. However, an important reason for this failure is that many of the firms entered bankruptcy before financial responsibility requirements were in effect in their states;
- Regional and state contacts believed that almost all of the bankruptcies were "caused" by business factors other than costs imposed by any RCRA regulations;
- Apart from data submitted by firms in support of the financial test, Regions and states largely do not collect financial information on firms in the regulated community;
- Many firms that file for reorganization under Chapter 11 continue to operate their facilities; and
- A significant number of the bankrupt RCRA firms have positive net worth.

Because additional information will be gathered, these results should be considered preliminary in nature. Each of these findings is discussed below in greater detail. First, however, a general description of our investigative effort is presented.

Background

In assessing these results, it is important to understand the scope and limitations of these case studies. Because of the priority placed by OSW on investigating bankrupt firms, the case studies focused on those firms that actually (i.e., formally) declared bankruptcy under Chapter 7 or 11 of the Bankruptcy Act. We believe that these efforts have identified almost all such bankrupt firms. The list of bankrupt facilities is included as Appendix A. Several firms were also investigated because state or Regional contacts indicated they were effectively bankrupt (because, for example, the owner of the facility was imprisoned) or would probably soon declare bankruptcy. The list of other facilities of interest is presented in Appendix B. The studies did not investigate facility closure unaccompanied by bankrupty or firm exits due to voluntary dissolution or corporate mergers.

To create our initial inventory of facilities owned by bankrupt firms, the following sources of information were combined:

- A HWDMS computer run to determine which facilities had ceased operations;
- The list of bankrupt land disposal facilities prepared by ICF for the Corrective Action Financial Assurance Project in 1984;
- A list of bankrupt firms provided to EPA by the House Subcommittee on Oversight and Investigations, which is chaired by Representative Dingell;
- Dun & Bradstreet's Business Information Reports on firms that own RCRA treatment or storage facilities; and
- The list of bankrupt facilities generated by Region V's contractor.

ICF then contacted each of the ten EPA Regional Offices and 31 state RCRA agencies[1] to determine which firms are actually bankrupt and to obtain

[1] Generally, a state office was contacted when the EPA regional contact indicated that a state official might have better knowledge of bankruptcies in that state than the Regional contact. However, follow-up efforts are currently being conducted for a few state offices that have not yet provided sufficient information for these case studies. Appendix C lists the persons contacted in each Region and state.

additional information on those bankrupt firms. These efforts have produced an updated list of bankrupt firms.[2]

It was not possible to conduct detailed case studies through telephone interviews. Most of the Regional and state contacts recited information from memory, rather than consulting case files. Furthermore, several contacts stated that it would not be possible to photocopy files for the case studies because the files were too voluminous and no summaries of the files existed. Despite these limitations, ICF was able to procure much of the more important information concerning each of the bankrupt firms and their associated facilities.

Preliminary Results

Most Bankrupt Firms Lacked Adequate Financial Assurance

Of the 54 facilities identified as being owned by bankrupt firms, only 7 (13 percent) had adequate financial assurance; 34 (63 percent) had inadequate or no financial assurance; and information was not obtained for 13 (24 percent). Two principal reasons accounted for those facilities not covered by financial assurance. First, many facilities went bankrupt before applicable financial responsibility regulations become effective. At least 25 facilities went bankrupt during or before 1982, the year when EPA promulgated its financial assurance regulations. In some states, the effective date of financial assurance regulations was even later. For example, because New York and Pennsylvania were already in Phase I of their state RCRA programs when EPA promulgated its closure/post-closure care financial responsibility regulations in 1982, facilities in those two states were not covered by these regulations. Instead, Pennsylvania and New York established financial responsibility requirements effective September 1985 and July 1985. Consequently, firms in New York and Pennsylvania going bankrupt prior to these dates were very unlikely to have provided financial assurance.

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[2] This list may not be complete because most contacts did not review their files in answering ICF's questions, but instead relied on their memories. Ongoing efforts to collect more data from states may also uncover additional bankruptcies. Furthermore, this list does not include firms that may be technically insolvent by having negative net worth, but that are not legally bankrupt.

In other cases, some firms provided or attempted to provide financial assurance prior to bankruptcy by means of a financial test.[3] Two of these firms failed the financial test, but the Agency or state was unable to obtain an alternative assurance mechanism prior to (or after) the bankruptcy. In another case, a facility had secured a letter of credit that was withdrawn by the issuing institution and not replaced prior to the bankruptcy.[4]

The firms that provided inadequate financial assurances also fall into two categories. One category comprised firms that based the amounts of financial assurances on closure or post-closure care cost estimates deemed inadequate by the state or Agency. The second category includes firms that only partially funded trust funds prior to bankruptcy.

Little Collection of Financial Data

State and regional contacts do not appear to collect financial data on firms other than the data submitted by firms to qualify for the financial test. Moreover, the Region or state typically has little or no advance notice of a bankruptcy, although in several instances the Region or state anticipated the bankruptcy filing from information gathered during a site inspection or from private or public discussions of a firm's financial difficulties. Because firms that do not use the financial test (and therefore do not submit any financial information) are more likely to go bankrupt, the state and EPA Regional offices possess little financial data useful for predicting bankruptcies.

Reasons for Bankruptcy

It is clear that RCRA enforcement activities and regulatory requirements do impose a burden on firms. For firms in poor financial health, these factors do not contribute to financial prosperity. A rigorous determination of the causes of bankruptcy at each of the facilities identified was, however, beyond the scope of our study.

Regional and state contacts generally lack detailed information on the reasons for a firm's bankruptcy. However, their understanding is that most, if not all, of the firms entered bankruptcy because of poor business

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[3] Two such firms are Revere Copper and Brass, Inc. (ALD055798037), and International Lead Co. (ALD041906173).

[4] Fisher-Calo (IND064700883).

conditions unrelated to RCRA regulations. The general decline in oil prices, for example, seems to have precipitated the bankruptcy of several independent oil refineries, many of which operate TSD facilities. Further, the severity of the 1982 economic recession appears to have led to the demise of many firms that operate TSD facilities. Interestingly, there was a group of bankrupt firms that had a great deal of difficulty complying with RCRA, but for whom the bankruptcy did not appear to be causally related to the RCRA regulations. Instead, impressionistic evidence indicates that both chronic regulatory noncompliance and an inability to operate profitably seem to result from a general ineptitude on the part of management.

In the future, an increasing percentage of bankruptcies might be causally related to the enforcement of RCRA Regulations. For example, several contacts in the Southeast noted that many small wood processing firms are expected to go bankrupt once they are forced to finance corrective action at their facilities.

Many Chapter 11 Firms Continue to Operate their Facilities

Filing under Chapter 11 provides a firm protection from its creditors while it attempts to reorganize its debts and business operations to prevent total liquidation of the enterprise. Because such firms generally continue to engage in many of the same businesses as before the bankruptcy filing, they also often continue to operate those hazardous waste facilities associated with the ongoing businesses.

Of the 53 facilities for which the type of bankruptcy was determined, 32 (60 percent) appear to be under Chapter 11 and conceivably could still be operating their facilities. Not all firms, however, continue to operate their TSDFs. Of the 39 bankrupt facilities where operating status was obtained, slightly more than a quarter are still managing hazardous wastes. In short, a Chapter 11 bankruptcy does not always mean that a facility ceases to operate.

Many Bankrupt Firms have Positive Net Worth

It is not necessary that a firm's liabilities exceed its assets (i.e., that it have a negative net worth) before it files for protection under the Bankruptcy Act. Indeed, it appears that a significant number of bankrupt facilities are owned by firms with positive net worth. Of the 21 facilities for which firm net worth is available, 14 (67 percent) had a positive net worth while the remaining 7 (33 percent) had a negative net worth. For facilities with owners having positive net worth, the average net worth was $45.7 million. (This average is pulled upward by a few large firms.) For facilities with owners having negative net worth, the average net worth was a negative $4.1 million.

Continuous Releases

ICF's telephone interviews also generated limited information on certain concerns other than bankruptcies, such as continuous releases. Because the focus of these case studies was on bankruptcy and because a different person typically possessed information on other topics, such as corrective action costs, continuous releases, and a facility's compliance history, ICF did not attempt to obtain detailed information on these topics. The information on continuing releases is described below.

Karen Flourney of Region 7 stated that of the 79 solid waste management units that have submitted Part B applications, one-half have known or suspected releases. The other half of the facilities typically did not submit enough data for the Region to infer a continuous release, but may in fact have continuous releases. In addition, many of the applicants did not understand the definition of a solid waste management unit and submitted information only regarding hazardous waste facilities.

George Hilfer of Region 10 provided a similar estimate, noting that there are suspicions or confirmations of continuous releases at 50 to 70 percent of all SWMUs in Region 10.

Mickey Hartnett of Region 4 noted that the Region is presently receiving responses to its questionnaires regarding continuing releases. Among the preliminary conclusions that can be drawn from the responses to date are that every military facility and every unlined surface impoundment has a continuous release.

Other Regions have noted that information on continuing releases will be collected and tabulated shortly, although Region 3 noted that its data collection efforts focused only on determining the number of SWMUs in its jurisdiction, and not on estimating the number of continuous releases.

Next Steps

ICF will contact several more state offices to continue its data collection efforts for certain firms whose case studies are incomplete. We will also be investigating additional sources of financial data. If desired, ICF can also supplement these case studies by any or several of the following efforts:

- Tie up "loose ends" in the HWDMS and the Firm Facility Financial Database. This could be accomplished by either additional telephone surveys of Regions and states or by sending written questionnaires to the Regions and states. Both methods, however, suffer drawbacks. ICF's experiences in conducting these case studies indicate that telephone surveys are generally incapable of developing detailed data and result in information whose quality and depth varies across contacts. Those contacted by telephone are often unwilling to locate desired information among their files, preferring instead to answer questions based on their recollections. In fact, a few contacts suggested the use of written questionnaires for these case studies. However, the use of written questionnaires may not be advisable because of the difficulty in receiving timely and complete responses.

- Investigate the financial status of bankrupt firms by accessing records from the Administrative Office of the United States Bankruptcy Courts. These records generally contain detailed information on the assets, liabilities, and types of creditors (potentially including EPA or state environmental agencies) for firms that file for Chapter 7 or 11 bankruptcy. Reviewing these records may show the extent to which bankrupt RCRA firms might be able to fund closure, post-closure care, and corrective action costs at the site upon liquidation or during reorganization (if the Agency can legally force bankrupt firms to undertake certain actions).

- Conduct additional aggregate analysis of the information obtained by the case studies. Depending on your analytic interests, we can investigate patterns in and relationships among the types and timing of bankruptcies, the Regional distribution of bankruptcies, the net worth of bankrupt firms, and facility status.

We look forward to meeting with you in the near future to discuss these results. In the meantime, if you have any questions or comments, please call.

PB/PL/CK:mdb

APPENDIX A

BANKRUPT RCRA TSD FACILITIES

APPENDIX A - BANKRUPT RCRA TSD FACILITIES

REGION 1

Facility ID	Facility Name	Bankruptcy	Financial Assurance a/	Facility Status b/	Total Assets c/ (000's)	Total Liabilities c/ (000's)	Net Worth c/ (000's)	Comments
CTD001444066	Choice Vend, Inc.	Ch 11 - 6/82 Ch 7 - 10/83	No	Inoperative, Not closed	d/	d/	d/	During liquidation, facility purchased by another company, Winchester Assoc. who is now closing site. Closure estimate: $13,000.
CTD060008307	Century Brass	Ch 11 - 3/85	Yes	Operating	64,210	87,433	(22,233)	Closure estimate considered inadequate. Trust fund used.

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a/ This column indicates whether required financial assurance has been provided. At land disposal facilities, both closure and post closure assurance is required. At all other facilities, only closure assurance is necessary.

b/ Inoperative means that the facility is not currently managing hazardous wastes. Closed means that the facility has undergone closure in compliance with RCRA regulations.

c/ Unless otherwise noted, all financial data is based on information provided at the time of the bankruptcy filing. If more recent financial information was available, it is shown along with the date it was provided. The entry N/A indicates that Dun and Bradstreet does not currently have financial information on the firm.

d/ Information not yet obtained.

APPENDIX A - BANKRUPT RCRA TSD FACILITIES

REGION 2

Facility ID	Facility Name	Bankruptcy	Financial Assurance a/	Facility Status b/	Total Assets c/ (000's)	Total Liabilities c/ (000's)	Net Worth c/ (000's)	Comments
NJD002522027	National Smelting and Refining	Ch 11 - 1/84 Ch 7 - 4/84	No	Inoperative, Closed	d/	d/	d/	
NJD054050703	Scientific Chemical Processing (Newark)	Unknown	No	Inoperative, Not closed	N/A	N/A	N/A	Ceased operations in 1981 or 1982.
NYD980592562	Quanta Resources	Ch 11 - 10/81 Ch 7 - 11/81	No	Inoperative, Not closed				New York City already expended $2.5 million on cleanup at site.
NYD00171038	Majestic Weaving	Ch 11 - 1981	No	Inoperative, Not closed	N/A	N/A	N/A	Company in process of properly closing facility. No problems expected. Reg. 2 states that company might be out of bankruptcy.
NYD071586127	Revere Copper & Brass	Ch 11 - 10/82	No	Inoperative, Closure in progress	410,842	237,077	173,765	Total closing costs for both New York facilities estimated at $30,000.
NYD002206894	Revere Copper & Brass	Ch 11 - 10/82	No	Inoperative, Closure in progress	410,842	237,077	173,765	Company about to emerge from bankruptcy.

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a/ This column indicates whether required financial assurance has been provided. At land disposal facilities, both closure and post closure assurance is required. At all other facilities, only closure assurance is necessary.

b/ Inoperative means that the facility is not currently managing hazardous wastes. Closed means that the facility has undergone closure in compliance with RCRA regulations.

c/ Unless otherwise noted, all financial data is based on information provided at the time of the bankruptcy filing. If more recent financial information was available, it is shown along with the date it was provided. The entry N/A indicates that Dun and Bradstreet does not currently have financial information on the firm.

d/ Information not yet obtained.

APPENDIX A - BANKRUPT RCRA TSD FACILITIES

REGION 3

Facility ID	Facility Name	Bankruptcy	Financial Assurance a/	Facility Status b/	Total Assets c/ (000's)	Total Liabilities c/ (000's)	Net Worth c/ (000's)	Comments
WVD000510859	Wheeling Pittsburg Steel	Ch 11 - 4/85	Yes	Operating	d/	d/	d/	Surety Bond for C & PC of $4,000. Cost estimate deemed inadequate; SI done; several enforcement actions taken.
VAD007072482	L.A. Clarke & Sons	Ch 11 - 3/83	No	Inoperative, Not closed	4,020	2,737	1,283	On NPL; state has begun enforcement actions.
PAD002370005	Tube Methods, Inc.	Ch 11 - 9/83	No	Inoperative, Not closed	N/A	N/A	N/A	Part B called in; site includes large surface impoundments not subject to RCRA.
PAD003005014	Whitmayer Laboratories	Ch 11 - 7/84	No	Operating	5,023	5,002	21	Parent, Stafford Laboratories, also filed Ch 11. Small container storage facility with small expected closure costs.
PAD003058047	Drake Chemicals	Ch 11 - Date unknown	No	Inoperative, Not closed	N/A	N/A	N/A	On NPL; some remedial action already completed at site. By 9/84, operations reported discontinued.
PAD (ID unknown)	Penn Terra Ltd. (Armstrong County)	Ch 7 - 3/82	d/	d/	d/	d/	d/	

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a/ This column indicates whether required financial assurance has been provided. At land disposal facilities, both closure and post closure assurance is required. At all other facilities, only closure assurance is necessary.

b/ Inoperative means that the facility is not currently managing hazardous wastes. Closed means that the facility has undergone closure in compliance with RCRA regulations.

c/ Unless otherwise noted, all financial data is based on information provided at the time of the bankruptcy filing. If more recent financial information was available, it is shown along with the date it was provided. The entry N/A indicates that Dun and Bradstreet does not currently have financial information on the firm.

d/ Information not yet obtained.

APPENDIX A - BANKRUPT RCRA TSD FACILITIES

REGION 4

Facility ID	Facility Name	Bankruptcy	Financial Assurance a/	Facility Status b/	Total Assets c/ (000's)	Total Liabilities c/ (000's)	Net Worth c/ (000's)	Comments
TND007018799	American Creosote Works	Ch 11 - 5/82	No	Inoperative, Not closed	N/A	N/A	N/A	NPL site; Superfund removal actions already undertaken.
ALD055798037	Revere Copper & Brass	Ch 11 - 10/82	No	Operating	410,842	237,077	173,765	Failed financial test just before entered bankruptcy. Company about to emerge from bankruptcy.
ALD041906173	International Lead Co. (ILCO)	Ch 11 - Early 1982	No	Operating	d/	d/	d/	ILCO failed financial test before bankruptcy. About ten surface impoundments at site.
GAD057302002	National Smelting & Refining	Ch 11 - 1/84 Ch 7 - 4/84	No	d/	d/	d/	d/	Same company owns NJD002522027.
GAD089699680	Wells Aluminum Moultrie	Ch 11 - 10/82	No	Closed	N/A	N/A	N/A	Wholly-owned subsidiary of Revere Copper & Brass. Reg. 4 states is no longer TSD.
GAD000222083	Southeastern Waste Treatment	Ch 11 - Early 85	Yes	d/	N/A	N/A	N/A	Surety bond amount deemed sufficient for closure.

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a/ This column indicates whether required financial assurance has been provided. At land disposal facilities, both closure and post closure assurance is required. At all other facilities, only closure assurance is necessary.

b/ Inoperative means that the facility is not currently managing hazardous wastes. Closed means that the facility has undergone closure in compliance with RCRA regulations.

c/ Unless otherwise noted, all financial data is based on information provided at the time of the bankruptcy filing. If more recent financial information was available, it is shown along with the date it was provided. The entry N/A indicates that Dun and Bradstreet does not currently have financial information on the firm.

d/ Information not yet obtained.

APPENDIX A - BANKRUPT RCRA TSD FACILITIES

REGION 4 (continued)

Facility ID	Facility Name	Bankruptcy	Financial Assurance a/	Facility Status b/	Total Assets c/ (000's)	Total Liabilities c/ (000's)	Net Worth c/ (000's)	Comments
GAD990675118	Taracorp. - Peitzinger Div.	Ch 11 - 10/82	Yes	Operating	17,492	19,485	(1,993)	Trust fund presently contains about $5,000. Closure estimate: $57,000; o/o working w/ state towards proper closure. Financial data as of 7/31/84.
NCD000827832	Electrical Utilities	Ch 11 - 9/83	d/	d/	3,522	6,105	(2,583)	State bringing RCRA enforcement action against company.
MSD (ID unknown)	American Creosote Works (Lewisville)	Ch 11 - 5/82	Yes	Inoperative, Closed	d/	d/	d/	Letter of credit of $48,750 collected, but Superfund cleanup costs were several million. Plant sold to Superior Wood Treatment who closed the facility: may require further Superfund action.
NCD (ID unknown)	Laurinburg Oil Co. (Scotland County)	Ch 11 - 1/84	d/	d/	d/	d/	d/	

a/ This column indicates whether required financial assurance has been provided. At land disposal facilities, both closure and post closure assurance is required. At all other facilities, only closure assurance is necessary.

b/ Inoperative means that the facility is not currently managing hazardous wastes. Closed means that the facility has undergone closure in compliance with RCRA regulations.

c/ Unless otherwise noted, all financial data is based on information provided at the time of the bankruptcy filing. If more recent financial information was available, it is shown along with the date it was provided. The entry N/A indicates that Dun and Bradstreet does not currently have financial information on the firm.

d/ Information not yet obtained.

APPENDIX A - BANKRUPT RCRA TSD FACILITIES

REGION 5

Facility ID	Facility Name	Bankruptcy	Financial Assurance a/	Facility Status b/	Total Assets c/ (000's)	Total Liabilities c/ (000's)	Net Worth c/ (000's)	Comments
ILD005252432	Parsons Company	Ch 7 - 8/82	No	Inoperative, Not closed	437	1,502	(1,065)	
ILD096731468	Taracorp (Hoyt)	Ch 11 - 10/82	No	Operating	17,492	19,485	1,933	Financial data as of 7/31/84.
ILD098983208	Taracorp (McCook)	Ch 11 - 10/82	No	Operating	17,492	19,485	1,933	Financial data as of 7/31/84.
ILD074410390	Liquid Dynamics	Ch 11 - 7/81 Ch 7 - 10/83	d/	Inoperative, Not closed	N/A	N/A	N/A	CERCLA removal action.
ILD000716852	Professional Sales/American Incineration	Ch 7 - Date unknown	No	Inoperative Not closed	d/	d/	d/	CERCLA removal action; groundwater and soil contamination.
IND064700883	Fisher-Calo	Ch 11 - 2/85	No	d/	N/A	N/A	N/A	Letter of Credit withdrawn. NPL site.
IND082287632	Ingram Richardson	Ch 7 - 3/81	No	d/	N/A	N/A	N/A	
IND084259951	Envirochem/Technisol	Ch 7 - 2/83	No	Inoperative, Not closed	113	95	18	
IND980590947	Chemsolve	Ch 7 - 11/84	d/	d/	N/A	N/A	N/A	Facility has been sold.
IND08254803	Energy Cooperative	Ch 11 - Date unknown Ch 7 - 5/84	d/	d/	N/A	N/A	N/A	

a/ This column indicates whether required financial assurance has been provided. At land disposal facilities, both closure and post closure assurance is required. At all other facilities, only closure assurance is necessary.

b/ Inoperative means that the facility is not currently managing hazardous wastes. Closed means that the facility has undergone closure in compliance with RCRA regulations.

c/ Unless otherwise noted, all financial data is based on information provided at the time of the bankruptcy filing. If more recent financial information was available, it is shown along with the date it was provided. The entry N/A indicates that Dun and Bradstreet does not currently have financial information on the firm.

d/ Information not yet obtained.

APPENDIX A - BANKRUPT RCRA TSD FACILITIES

REGION 5 (continued)

Facility ID	Facility Name	Bankruptcy	Financial Assurance a/	Facility Status b/	Total Assets c/ (000's)	Total Liabilities c/ (000's)	Net Worth c/ (000's)	Comments
IND000646984	Tri-City Plating	Ch 7 - Early 82	No	d/	N/A	N/A	N/A	
IND000646943	SEPOA	Ch 11 - 10/82	No	d/	995	1,333	(338)	Fatal fire/explosion.
OHD032271975	Marion Steel	Ch 11 - 9/83	No	Inoperative, closure in progress	32,665	21,365	11,300	Same as OHD079418166.
OHD980792204	Terex Corp.	Ch 11 - 11/83	d/	d/	237,249	170,349	66,900	Owned by German firm.
OHD (ID unknown)	Kovacs/Chem-Dyne Corp. (Hamilton)	Ch 11 - 7/80 Ch 7 - 11/80	d/	d/	d/	d/	d/	
MND980501647	Union Scrap Iron & Metal	Ch 7 - 1/85	d/	d/	4,471	4,817	(346)	NPL site, claims RCRA recycling exemption.

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a/ This column indicates whether required financial assurance has been provided. At land disposal facilities, both closure and post closure assurance is required. At all other facilities, only closure assurance is necessary.

b/ Inoperative means that the facility is not currently managing hazardous wastes. Closed means that the facility has undergone closure in compliance with RCRA regulations.

c/ Unless otherwise noted, all financial data is based on information provided at the time of the bankruptcy filing. If more recent financial information was available, it is shown along with the date it was provided. The entry N/A indicates that Dun and Bradstreet does not currently have financial information on the firm.

d/ Information not yet obtained.

APPENDIX A - BANKRUPT RCRA TSD FACILITIES

REGION 6

Facility ID	Facility Name	Bankruptcy	Financial Assurance a/	Facility Status b/	Total Assets c/ (000's)	Total Liabilities c/ (000's)	Net Worth c/ (000's)	Comments
TXD061382206	Quality Service Railcar Repair Inc.	Ch 11 - 12/84	Yes	Inoperative, Closure in progress	6,108	690	5,418	Parent G.E. doing closure and providing financial assurance.
TXD008110637	Gary Aircraft	Ch 11 - 10/84	Yes	Operating	7,244	4,771	2,473	Operating as new, non-bankrupt entity Gary Aerospace.
OKD082471988	Hudson Refining	Ch 11 - 1/84	No	Inoperative, Not closed	32,845	27,846	4,999	
OKD004998225	Basin Refining	Ch 7 - 1983	No	Inoperative, Not closed	N/A	N/A	N/A	
LAD081407850	Hill Petroleum	Ch 11 - 2/84	No	Closed	N/A	N/A	N/A	Did first-party closure.
LAD000225862	Goodhope Refining	Ch 11 - Date unknown	Yes	Closed	N/A	N/A	N/A	

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a/ This column indicates whether required financial assurance has been provided. At land disposal facilities, both closure and post closure assurance is required. At all other facilities, only closure assurance is necessary.

b/ Inoperative means that the facility is not currently managing hazardous wastes. Closed means that the facility has undergone closure in compliance with RCRA regulations.

c/ Unless otherwise noted, all financial data is based on information provided at the time of the bankruptcy filing. If more recent financial information was available, it is shown along with the date it was provided. The entry N/A indicates that Dun and Bradstreet does not currently have financial information on the firm.

d/ Information not yet obtained.

APPENDIX A - BANKRUPT RCRA TSD FACILITIES

REGION 7

Facility ID	Facility Name	Bankruptcy	Financial Assurance a/	Facility Status b/	Total Assets c/ (000's)	Total Liabilities c/ (000's)	Net Worth c/ (000's)	Comments
NED00610444	Atwood Enterprises	Ch 11 - 1985	Yes	Inoperative, Closure in progress	N/A	N/A	N/A	Most of closing completed before bankruptcy; remaining funds in trust will probably be sufficient.

a/ This column indicates whether required financial assurance has been provided. At land disposal facilities, both closure and post closure assurance is required. At all other facilities, only closure assurance is necessary.

b/ Inoperative means that the facility is not currently managing hazardous wastes. Closed means that the facility has undergone closure in compliance with RCRA regulations.

c/ Unless otherwise noted, all financial data is based on information provided at the time of the bankruptcy filing. If more recent financial information was available, it is shown along with the date it was provided. The entry N/A indicates that Dun and Bradstreet does not currently have financial information on the firm.

d/ Information not yet obtained.

APPENDIX A - BANKRUPT RCRA TSD FACILITIES

REGION 8

Facility ID	Facility Name	Bankruptcy	Financial Assurance a/	Facility Status b/	Total Assets c/ (000's)	Total Liabilities c/ (000's)	Net Worth c/ (000's)	Comments
COD067315390	Gary Refining	Ch 11 - 3/85	No	Operating	125,638	104,104	22,534	Closure cost estimates believed to be too low.

a/ This column indicates whether required financial assurance has been provided. At land disposal facilities, both closure and post closure assurance is required. At all other facilities, only closure assurance is necessary.

b/ Inoperative means that the facility is not currently managing hazardous wastes. Closed means that the facility has undergone closure in compliance with RCRA regulations.

c/ Unless otherwise noted, all financial data is based on information provided at the time of the bankruptcy filing. If more recent financial information was available, it is shown along with the date it was provided. The entry N/A indicates that Dun and Bradstreet does not currently have financial information on the firm.

d/ Information not yet obtained.

APPENDIX A - BANKRUPT RCRA TSD FACILITIES

REGION 9

Facility ID	Facility Name	Bankruptcy	Financial Assurance a/	Facility Status b/	Total Assets c/ (000's)	Total Liabilities c/ (000's)	Net Worth c/ (000's)	Comments
HIT160010021	Pepper Industries	Ch 11 - 10/84	Yes	d/	N/A	N/A	N/A	

a/ This column indicates whether required financial assurance has been provided. At land disposal facilities, both closure and post closure assurance is required. At all other facilities, only closure assurance is necessary.

b/ Inoperative means that the facility is not currently managing hazardous wastes. Closed means that the facility has undergone closure in compliance with RCRA regulations.

c/ Unless otherwise noted, all financial data is based on information provided at the time of the bankruptcy filing. If more recent financial information was available, it is shown along with the date it was provided. The entry N/A indicates that Dun and Bradstreet does not currently have financial information on the firm.

d/ Information not yet obtained.

APPENDIX A - BANKRUPT RCRA TSD FACILITIES

REGION 10

Facility ID	Facility Name	Bankruptcy	Financial Assurance a/	Facility Status b/	Total Assets c/ (000's)	Total Liabilities c/ (000's)	Net Worth c/ (000's)	Comments
ORD009051442	Allied Plating	Ch 11 - 11/82 Ch 7 - date unknown	No	Inoperative, Not closed	N/A	N/A	N/A	Allied ceased operation 2/84 and liquidated. Region currently taking actions to make lessor of facility land and buildings pay for preliminary assessment.
WAD081482457	Pro Coat (now Pringle Manufacturing)	Ch 7 - 1980 or 1981	d/	Inoperative, Closure in progress	N/A	N/A	N/A	Facility purchased by Pringle Mfg. during liquidation; Pringle now closing site.
IDD000800961	ARRCOM (Rothdrum)	Ch 11 - 3/82 Ch 7 - 12/82	d/	Inoperative, Not closed	367.9	468.4	(100.5)	Company owned by Drexler, who was jailed for unrelated fraud; Drexler was evicted from the ARRCOM properties because he did not pay the rent. On NPL. It is possible that these financial data pertain to all companies owned by Drexler, including Western Pacific Vacuum.
WAD087462503	ARRCOM (Woodlawn)	Ch 11 - 3/82 Ch 7 - 12/82	d/	Inoperative, Not closed	367.9	468.4	(100.5)	Also owned by Drexler. (See comments above.)
WAD000643593	Western Pacific Vacuum Service	Ch 11 - 3/82 Ch 7 - 12/82	d/	Inoperative, Not closed	N/A	N/A	N/A	Also owned by Drexler. (See comments above.)

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b/ Inoperative means that the facility is not currently managing hazardous wastes. Closed means that the facility has undergone closure in compliance with RCRA regulations.

c/ Unless otherwise noted, all financial data is based on information provided at the time of the bankruptcy filing. If more recent financial information was available, it is shown along with the date it was provided. The entry N/A indicates that Dun and Bradstreet does not currently have financial information on the firm.

d/ Information not yet obtained.

APPENDIX B

OTHER FACILITIES OF INTEREST

APPENDIX B - OTHER FACILITIES OF INTEREST

REGION 1

Facility ID	Facility Name	Bankruptcy	Financial Assurance a/	Facility Status b/	Total Assets c/ (000's)	Total Liabilities c/ (000's)	Net Worth c/ (000's)	Comments
MAD066588906	Peabody Chem Ind.	No	Yes	Inoperative, Not closed	N/A	N/A	N/A	Company dissolved; assets taken over by parent, Peabody Clean Int'l., who provided financial assurance with $250,000 surety bond. This amount deemed inadequate, but state expects parent will fully fund cleanup and closure.

a/ This column indicates whether required financial assurance has been provided. At land disposal facilities, both closure and post closure assurance is required. At all other facilities, only closure assurance is necessary.

b/ Inoperative means that the facility is not currently managing hazardous wastes. Closed means that the facility has undergone closure in compliance with RCRA regulations.

c/ Unless otherwise noted, all financial data is based on information provided at the time of the bankruptcy filing. If more recent financial information was available, it is shown along with the date it was provided. The entry N/A indicates that Dun and Bradstreet does not currently have financial information on the firm.

d/ Information not yet obtained.

APPENDIX B - OTHER FACILITIES OF INTEREST

REGION 2

Facility ID	Facility Name	Bankruptcy	Financial Assurance a/	Facility Status b/	Total Assets c/ (000's)	Total Liabilities c/ (000's)	Net Worth c/ (000's)	Comments
NJD081994741	Valumet Processing Corp.	No	No	N/A	d/	d/	d/	Incorrectly listed as a TSDF.
NYD980648281	Niagra Recycling	Yes	N/A					Reg. 2 says is not a TSDF.
NJD049860836	Kin Buc Inc.	Unknown	d/	Inoperative, Not closed	N/A	N/A	N/A	Superfund site. Ceased operations around 1976-77. Never permitted as a RCRA facility.
NJD070565403	Scientific Chemical Processing (Carlstadt)	Unknown	No	Inoperative, Not closed	N/A	N/A	N/A	On NPL. Company closed operations before 1982.
NJD054050703	Scientific Chemical Processing (Newark)	Unknown	No	Inoperative, Not closed	N/A	N/A	N/A	

a/ This column indicates whether required financial assurance has been provided. At land disposal facilities, both closure and post closure assurance is required. At all other facilities, only closure assurance is necessary.

b/ Inoperative means that the facility is not currently managing hazardous wastes. Closed means that the facility has undergone closure in compliance with RCRA regulations.

c/ Unless otherwise noted, all financial data is based on information provided at the time of the bankruptcy filing. If more recent financial information was available, it is shown along with the date it was provided. The entry N/A indicates that Dun and Bradstreet does not currently have financial information on the firm.

d/ Information not yet obtained.

APPENDIX B - OTHER FACILITIES OF INTEREST

REGION 3

Facility ID	Facility Name	Bankruptcy	Financial Assurance a/	Facility Status b/	Total Assets c/ (000's)	Total Liabilities c/ (000's)	Net Worth c/ (000's)	Comments
MDD093958767	Multichem	No	--	Closed	N/A	N/A	N/A	In 1984 Company put out of business by court order for illegal incineration of non-RCRA (but state-regulated) wastes. Old RCRA facility properly closed; permit for new RCRA facility denied..
DED980555049	Multichem	No	--	--	N/A	N/A	N/A	Newer operated RCRA facility in Delaware.
PAD000647735	Keystone Chemical	Unknown	No	Inoperative	N/A	N/A	N/A	Facility purchased by Mr. Gus Schulte. Facility previously has interim status for treatment and disposal.
PAD000647735	Keystone Chemical	Unknown	No	Inoperative, Not closed	d/	d/	d/	Facility purchased by Mr. Gus Schulte. State believes Mr. Schulte will apply for a treatment permit and close the disposal facility.

a/ This column indicates whether required financial assurance has been provided. At land disposal facilities, both closure and post closure assurance is required. At all other facilities, only closure assurance is necessary.

b/ Inoperative means that the facility is not currently managing hazardous wastes. Closed means that the facility has undergone closure in compliance with RCRA regulations.

c/ Unless otherwise noted, all financial data is based on information provided at the time of the bankruptcy filing. If more recent financial information was available, it is shown along with the date it was provided. The entry N/A indicates that Dun and Bradstreet does not currently have financial information on the firm.

d/ Information not yet obtained.

APPENDIX B - OTHER FACILITIES OF INTEREST

REGION 3 (continued)

Facility ID	Facility Name	Bankruptcy	Financial Assurance a/	Facility Status b/	Total Assets c/ (000's)	Total Liabilities c/ (000's)	Net Worth c/ (000's)	Comments
DED980714141	Chem-Solve Inc.	Probably will declare	Yes	Inoperative, Not closed	d/	d/	d/	Facility ceased operations after fire in 9/84. State discovered that large corrective action will be needed at site. Interim Status to be terminated.
PAD004338125	Fosbrink Machine Company	Unknown	d/	d/	d/	d/	d/	Reg. 3 and state unfamiliar with this facility.

a/ This column indicates whether required financial assurance has been provided. At land disposal facilities, both closure and post closure assurance is required. At all other facilities, only closure assurance is necessary.

b/ Inoperative means that the facility is not currently managing hazardous wastes. Closed means that the facility has undergone closure in compliance with RCRA regulations.

c/ Unless otherwise noted, all financial data is based on information provided at the time of the bankruptcy filing. If more recent financial information was available, it is shown along with the date it was provided. The entry N/A indicates that Dun and Bradstreet does not currently have financial information on the firm.

d/ Information not yet obtained.

APPENDIX B - OTHER FACILITIES OF INTEREST

REGION 4

Facility ID	Facility Name	Bankruptcy	Financial Assurance a/	Facility Status b/	Total Assets c/ (000's)	Total Liabilities c/ (000's)	Net Worth c/ (000's)	Comments
TND000603589	Resource Recycling Technologies - Industrial Liquids Recycling	Probably will declare	Yes	Operating	d/	d/	d/	Letter of Credit = $14,686. Cost estimate probably inadequate; state expects bankruptcy because firm's insurance was cancelled and many employees were laid off.
TND000737510	Resource Recycling Technologies - Chemfuel	Probably will declare	Yes	Operating	d/	d/	d/	Letter of Credit = $62,838.
FLD055945653	City Industries	Unknown	No	Inoperative, Not closed	N/A	N/A	N/A	Operating permit denied 12/83; large site cleanup required; possible Superfund site.

a/ This column indicates whether required financial assurance has been provided. At land disposal facilities, both closure and post closure assurance is required. At all other facilities, only closure assurance is necessary.

b/ Inoperative means that the facility is not currently managing hazardous wastes. Closed means that the facility has undergone closure in compliance with RCRA regulations.

c/ Unless otherwise noted, all financial data is based on information provided at the time of the bankruptcy filing. If more recent financial information was available, it is shown along with the date it was provided. The entry N/A indicates that Dun and Bradstreet does not currently have financial information on the firm.

d/ Information not yet obtained.

APPENDIX B - OTHER FACILITIES OF INTEREST

REGION 5

Facility ID	Facility Name	Bankruptcy	Financial Assurance a/	Facility Status b/	Total Assets c/ (000's)	Total Liabilities c/ (000's)	Net Worth c/ (000's)	Comments
ILD001744572	Trieu Steel & Processing	Ch 11 - 11/82 Ch 7 - 3/83	No	Inoperative, Not closed	2,178	N/A	N/A	Not a TSD facility.
ILD084317452	Hopkins Agricultural	No	d/	d/	N/A	N/A	3,010	Purchased by United Agri Products, who then divided Hopkins into three subsidiaries.
OHD087433744	Clermont Environmental	No	Yes	Inoperative, Not closed	N/A	N/A	N/A	Owned by BFI via CECOS. On prior EPA list was incorrectly listed as bankrupt.
WID006075352	Hopkins Agricultural	No	d/	d/	N/A	N/A	3,010	Purchased by United Agri Products, who then divided Hopkins into three subsidiaries. Financial data pertains to Hopkins before its sale.

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c/ Unless otherwise noted, all financial data is based on information provided at the time of the bankruptcy filing. If more recent financial information was available, it is shown along with the date it was provided. The entry N/A indicates that Dun and Bradstreet does not currently have financial information on the firm.

d/ Information not yet obtained.

APPENDIX B - OTHER FACILITIES OF INTEREST

REGION 6

Facility ID	Facility Name	Bankruptcy	Financial Assurance a/	Facility Status b/	Total Assets c/ (000's)	Total Liabilities c/ (000's)	Net Worth c/ (000's)	Comments
TXD990706517	Century Forest Industries	d/	Yes	Inoperative, Not closed	N/A	N/A	N/A	Closure trust fund financed by CERCLA PRPs.
TXD010527679	Rabb Dusting	d/	No	Inoperative, Not closed	N/A	N/A	N/A	
TXD092405695	Glow Metals (Gary Energy Corp.)	d/	d/	d/	d/	d/	d/	State is unaware of this facility.
LAD069527596	O.A. Greene Waste Dump	No	N/A	N/A	N/A	N/A	N/A	Not RCRA TSD

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c/ Unless otherwise noted, all financial data is based on information provided at the time of the bankruptcy filing. If more recent financial information was available, it is shown along with the date it was provided. The entry N/A indicates that Dun and Bradstreet does not currently have financial information on the firm.

d/ Information not yet obtained.

APPENDIX B - OTHER FACILITIES OF INTEREST

REGION 7

Facility ID	Facility Name	Bankruptcy	Financial Assurance a/	Facility Status b/	Total Assets c/ (000's)	Total Liabilities c/ (000's)	Net Worth c/ (000's)	Comments
MOD099238784	Mixdorf Kriem Inc.	No	Yes	Closure in progress	d/	d/	d/	Financial assurance deemed adequate. D&B states company is liquidated.
KSD007240286	Cross Mfg.	Ch 11 - 1/82	--	--	10,646	11,741	(1,095)	Not a TSDF. Original filing was precautionary.
KSD031373830	Cross Mfg.	Ch 11 - 1/82	--	--	10,646	11,741	(1,095)	Not a TSDF.
NED051947695	Willis Paralyzer	Not officially declared	Yes	No	N/A	N/A	N/A	IS terminated Spring 1984 after numerous RCRA violations; $350,000 already spent on cleanup. PRPs providing some financing of cleanup; company out of business.

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c/ Unless otherwise noted, all financial data is based on information provided at the time of the bankruptcy filing. If more recent financial information was available, it is shown along with the date it was provided. The entry N/A indicates that Dun and Bradstreet does not currently have financial information on the firm.

d/ Information not yet obtained.

APPENDIX B - OTHER FACILITIES OF INTEREST

REGION 8

Facility ID	Facility Name	Bankruptcy	Financial Assurance a/	Facility Status b/	Total Assets c/ (000's)	Total Liabilities c/ (000's)	Net Worth c/ (000's)	Comments
COD000716647	Shattuck Chemical-Douglas City	No	Yes	d/	N/A	N/A	N/A	Claiming mining waste exemption
COD007057417	Shattuck Chemical-Denver	No	Yes	d/	N/A	N/A	N/A	Claiming mining waste exemption
COD000110254	Broderick Wood Products	No	No	Inoperative, Not closed	N/A	N/A	N/A	Now owned by First Interstate Bank and Colorado National Bank
UTD094667995	Riverside Industries/ Anderson Industries	No	Yes	Inoperative, Not closed	N/A	N/A	N/A	Non-notifier has only made one trust fund payment

a/ This column indicates whether required financial assurance has been provided. At land disposal facilities, both closure and post closure assurance is required. At all other facilities, only closure assurance is necessary.

b/ Inoperative means that the facility is not currently managing hazardous wastes. Closed means that the facility has undergone closure in compliance with RCRA regulations.

c/ Unless otherwise noted, all financial data is based on information provided at the time of the bankruptcy filing. If more recent financial information was available, it is shown along with the date it was provided. The entry N/A indicates that Dun and Bradstreet does not currently have financial information on the firm.

d/ Information not yet obtained.

APPENDIX B - OTHER FACILITIES OF INTEREST

REGION 10

Facility ID	Facility Name	Bankruptcy	Financial Assurance a/	Facility Status b/	Total Assets c/ (000's)	Total Liabilities c/ (000's)	Net Worth c/ (000's)	Comments
WAD070054309	Fibrex	No	N/A	N/A	d/	d/	d/	Fibrex no longer a TSDF. Fibrex as previously owned by HBR Corp., who went bankrupt in 1981.
WAD009487513	Western Processing	Unknown	No	Inoperative, Not closed	N/A	N/A	N/A	Land Disposal facility on NPL; state now working with PRPs.

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d/ Information not yet obtained.

APPENDIX C

REGIONAL AND STATE CONTACTS

Region I

EPA: Gary Gosbee

Connecticut : George Dews
Rhode Island : Julie Miller
Massachusetts: Janet Hartke

Region II

EPA: Leila Meltzer

New Jersey: Frank Coolick, Dave Shotwell, Tom Sherman
New York : Tom Hagerty, Rocky Pagion

Region III

EPA: Bill Shrepp

Delaware : Keshore Fruitualla
Maryland : Reed Rosnick, Jim Francis
Pennsylvania : Rick Shipman, Cathy Gerioski
West Virginia: Rick Meldin, Steve Wright, "Cookie" Ledy

Region IV

EPA: Micky Hartnett, David Ellison

Alabama : Russell Zora
Florida : Diane Hunt
Georgia : Valarie Sykes
Mississippi: Jack McMillan
Tennessee : Bert Layne

Region V

EPA: Tom Golz, Roger Grimes, Bob Leininger

Illinois: Andy Vollmer, Ken Beechley
Ohio : Debra Tegtmeyer
Indiana : Jeff Stevens

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September 5, 1985

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om Gillis

Ximena Vaca, Peter Linquiti, Paul Bailey

Update to Preliminary List of Bankrupt Owners of Treatment, Storage and Disposal Facilities

is memorandum is a follow-up to our June 28 memorandum which presented inary results and suggested next steps for ICF's case studies of upt firms that own or operate treatment, storage, or disposal facilities s). For this update we have completed the following tasks:

- Updated Appendix A of the earlier ICF memorandum which includes a list of bankrupt firms that own or operate TSDFs. We have added fifteen facilities to the list.
- Incorporated five years of financial information (current assets, current liabilities, total assets, total liabilities, net worth, and net income) for all of the identified bankrupt public firms that own TSDFs. They are: Revere Copper and Brass, Pittsburg-Wheeling Steel, North American Car Company, Commonwealth Oil Refining Co., and Wickes Companies, Inc.[1]
- Computed for each public company the set of financial ratios stipulated in Alternative I of the financial test (total liabilities over net worth, net income plus depreciation, depletion and amortization over total liabilities and current assets over current liabilities).

Each of these tasks is described in more detail below.

[1] Wickes Companies emerged from bankruptcy on January 26, 1985. We are including the data for illustration purposes. A. H. Robins (Facility Id. VAD000820548) filed for bankruptcy August 22, 1985. We have not yet added this information to the list.

1. Update to List of Facilities Owned by Bankrupt Firms

Part 1 consists of the list of facilities included in Appendix A of the earlier ICF memorandum, plus an additional fourteen firms which were not included in the original list because ICF had not yet received the necessary Dun & Bradstreet Business Information Reports. We have now received the data and have been able to add new facilities and update the financial information of firms in the original list whenever more current figures were available. The new facilities added are:

Interroyal Corp. - Ch 11
Trofe Incineration, Inc.- Ch 11
Coral Petroleum - Ch 11
L.H. Inc. - Ch 7
D.J. Lumber Sales, Inc. - Ch 11
Drum Recovery - Ch 7
Rogers Petro Chem, Inc. - Ch 7
Storage Technology de P. R. - Ch 11
The Wickes Companies - Ch 11
JCS Co. Inc. - Ch 7
Oklahoma Refining Co. - Ch 11
C.C. Oil Refining Corp. - Ch 11
Canyonlands 21st Century Corp. - Ch 11
Commonwealth Oil Refining - Ch 11
H B R Corp. - Ch 11

The facilities listed in the original list for which we have found more current information are:

Century Brass - Ch 11
Ingram Richardson - Ch 7
Terex Corp. - Ch 11
Gary Refining - Ch 11
Electrical Utilities - Ch 11
Chemsolve - Ch 7
Pro Coat (Pringle Manuf.) - Ch 7
Wells Aluminum Moultrie - Ch 11

It is important to note that we have cross-checked facility ID numbers with both the HWDMS (Hazardous Waste Data Management System) and DPRA (Development Planning and Research Associates Inc.) lists of active facilities. We have also included firms that do not appear in either HWDMS or DPRA, but that to our knowledge are bankrupt owners or operators of TSDFs. For these facilities, in some cases we have been able to obtain a facility ID by calling the appropriate EPA regional office, in other cases the facility ID is unknown.

Analysis of the Updated List of Firms That Own TSDFs

The updated list contains 63 firms, 48 from the original list and 15 new firms. Since our primary source was Dun & Bradstreet Business Reports, we have not been able to incorporate or update the information on financial assurance or facility status. As a result, the number of companies that have provided financial assurance as a percentage of the total, may appear low.

Of the 63 firms, the majority, 28 firms (44 percent) did not have financial assurance, only 9 firms (14.5 percent) had provided financial assurance and 27 firms (43.5 percent) had an unknown status. Most of the firms without financial assurance and of unknown status, became bankrupt before or during 1982. Consequently, it is possible that many of these facilities were not required financial assurance, since regulations were only enacted in 1982.[2]

- Chapter 11 versus Chapter 7:

The 63 firms in the list of bankrupt firms that own TSDFs can be divided into those firms which are currently in Ch. 11 and those in Ch. 7 of the Bankruptcy Code. The largest number of firms, 39 (62 percent) are in Ch. 11, 23 (37 percent) firms are in Ch. 7 and 1 firm (1 percent) is unknown.

Some of the firms have converted from Ch. 11 to Ch. 7 status. Most of these firms filed for Ch. 11 before 1982, but there are cases of companies that filed for Ch. 11 in 1983 or 1984 and shortly thereafter, filed for Ch. 7. The following table shows the number of months between Ch. 11 and Ch. 7. The average period between Ch. 11 and Ch. 7 was 10 months. Please refer to Table 1.

- Firms With Positive Net Worth:

Although bankrupt companies cannot easily be considered financially "strong," there are 17 companies (27.4 percent) on the list which had positive net worth at the time of filing for bankruptcy. All of these companies are in Ch. 11. There are no Ch. 7 companies with positive net worth.

Our sample of bankrupt firms is small and incomplete, but it seems to show no correlation between firms with positive net worth and facilities which are still operating. Although there are only eight operating facilities on the list, and five of these are owned by firms with positive net worth, as a whole, only 29 percent of the firms with positive net worth own operating facilities.

Out of the 18 companies with positive net worth, 7 (39 percent) were of unknown financial assurance status, 4 (22 percent) had financial assurance and 7 (39 percent) did not. This leads us to conclude that there is no decisive correlation between firms with positive net worth and financial assurance.

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[2] In some states these regulations were enacted even later.

TABLE 1

TSDF OWNERS OR OPERATORS WHO FILED FOR CHPATER 11 AND SUBSEQUENTLY FILED FOR CHAPTER 7

Firm Name	Bankruptcy Dates	Number Months
Choice Vend, Inc.	Ch 11 6/82 Ch 7 10/83	16 months
National Smelting and Refining	Ch 11 1/84 Ch 7 4/84	3 months
Quanta Resources	Ch 11 10/81 Ch 7 11/81	1 month
Liquid Dynamics	Ch 11 7/81 Ch 7 10/83	27 months
Energy Cooperative	Ch 11 date unknown Ch 7 5/84	
Kovacs/Chem-Dyne Corp.	Ch 11 7/80 Ch 7 11/80	4 months
Allied Plating	Ch 11 11/82 Ch 7 date unknown	
AARCOM	Ch 11 3/82 Ch 7 12/82	9 months
Western Pacific Vacuum Service	Ch 11 5/82 Ch 7 12/82	7 months
	Total Average	67 months 10 months

The average positive net worth was approximately $36,970. The median positive net worth was approximately $6,649.50.[3]

- Conclusions:

The observations made in the above paragraphs can be summarized as follows:

- The largest number of firms in our sample , 62 percent, are in Chapter 11.
- When firms convert from Chapter 11 to Chapter 7, the average length of time is approximately 10 months.
- 27.4 percent of the companies on the list have positive net worth. All of them are in Chapter 11.
- It is not clear that bankrupt facility owners with positive net worth tend to own operating facilities.
- There is no correlation between facility owners with positive net worth and financial assurance status.

The list represents our best effort to compile an updated list of bankrupt owners of TSDFs. The limitation of our list, and therefore of any analysis that may be performed using the data, is that the information available is very incomplete. We have all of the required information for very few companies. At the risk of reducing our sample even further, we have attempted to supplement the conclusions drawn above by utilizing a sample of companies that have a complete set of data. The results of such analysis fully corroborate our earlier findings:

- Out of 14 companies which have a complete set of data, the majority, or 85 percent are in Chapter 11.
- Most of the firms, 64.3 percent, did not have financial assurance.

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[3] Medians are often used with long tailed distributions such as this one. The median was computed by listing the net worth figures in ascending order and finding the midpoint, which lies between $8,300 and $4,999.

- There is a chance that some of these companies may emerge from Chapter 11. Eleven companies, or 78.6 percent had positive net worth. The average net worth was $32,882.57, a figure close to the average net worth for the entire list.

- The sample of 14 firms seems to confirm our earlier finding that firms with positive net worth are not necessarily likely to have financial assurance. As mentioned earlier, financial assurance has been a recent regulatory development. 63.6 percent of the firms with positive net worth did not have financial assurance.

- The smaller sample also supports our finding that there is no correlation between positive net worth and operating facilities. 43 percent of the firms owned operating facilities, 50 percent owned inoperative and 7 percent (1 firm) owned closed facilities.

2. FINANCIAL DATA FOR PUBLIC FIRMS THAT OWN OR OPERATE TSDFs

For each bankrupt public firm, we obtained five years historical data ending with the year in which the firm filed under Chapter 11.[4] The purpose of gathering the data was to observe the companies during the years prior to bankruptcy and to investigate the financial ratio's ability to predict bankruptcies.

The methodology we have chosen is to calculate the financial ratios required by Alternative I of the financial test for the five years including the year of bankrutpcy to determine whether the ratios could be used to warn EPA officials of impending problems.

Subpart H of the 40 CFR Parts 264 and 265 offer companies two financial test alternatives. They may satisfy the financial assurance requirements by demonstrating that either of two sets of criteria are met:

Alternative I

(A) Two of the following three ratios: a ratio of total liabilities to net worth less than 2.0; a ratio of the sum of net income plus depreciation, depletion, and amortization

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[4] None of the public firms identified has filed for Ch. 7.

to total liabilities greater than 0.1; and a ratio of current assets to current liabilities greater than 1.5; and

(B) Net working capital and tangible net worth each at least six times the sum of the current closure and post-closure cost estimates; and

(C) Tangible net worth of at least $10 million; and

(D) Assets in the United States amounting to at least 90 percent of total assets or at least six times the sum of the current closure and post-closure cost estimates.

Or they may meet the second set of requirements:

Alternative II

(A) A current rating for his most recent bond issuance of AAA, AA, A, or BBB as issued by Standard and Poor's or Aaa, Aa, A, or Baa as issued by Moody's; and

(B) Tangible net worth at least six times the sum of the current closure and post-closure cost estimates; and

(C) Tangible net worth of at least $10 million; and

(D) Assets in the United States amounting to at least 90 percent of total assets or at least six times the sum of the current closure and post-closure cost estimates.

We have calculated the financial ratios required by Alternative I: the ratio of current assets over current liabilities, the ratio of total liabilities to net worth, and the ratio of net income plus depreciation, depletion and amortization over current liabilities.

Part 2 contains exhibits presenting the financial ratios required by Alternative I of the financial test. Total assets, total liabilities, net worth, current assets, current liabilities, and depreciation, depletion and amortization for each firm are presented on separate exhibits.

Ratio Analysis

The following exhibits show the financial ratios for each public company, including the year of bankruptcy. It is clear that the financial test, designed to measure a company's financial strength, could serve as a warning to EPA officials that the company is not doing well. Nevertheless, it is not clear that the financial test is a good predictor of the actual <u>timing</u> of abrupt deterioration or bankruptcy. The following observations may serve as illustration:

- Based on their financial ratios alone, three out of five of the companies (Revere Copper & Brass, Commonwealth Oil Refining Co., and North American Car Corp.) would not have passed the financial test four years before bankruptcy.[5] The Wickes Companies would have passed the ratios by a very slim margin. Only Wheeling-Pittsburgh Steel would have comfortably exceeded the requirements of the financial ratios in the financial test.

- During the years before bankruptcy, North American Car and Commonwealth Oil Refining Corp., had three consecutive "bad" years in which they could not have passed the financial ratios. Wickes Companies had two consecutive "bad" years. There was a trend of bad performance leading to bankruptcy.

- Revere Copper & Brass had the opposite record: three "good" years in which they could have passed the financial test. The year before bankruptcy, Revere Copper & Brass could have passed the ratios in the financial test. EPA officials could not have anticipated the sudden deterioration.

- None of the companies passed the financial test during the year of bankruptcy.

It appears that financial ratios are a good measure of the company's financial health at the time of the financial statements, but they are not designed to predict abrupt deteriorations in the conduct of business. Nevertheless, a trend of failing to pass the financial ratios could indicate an unstable situation which could warn EPA officials of a possible bankruptcy.

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[5] Financial test requires that the company pass two of the three ratios.

REVERE COPPER AND BRASS
FINANCIAL TEST ANALYSIS

Financial Test		1982	1981	1980	1979	1978
(1) Total Liabilities / Net Worth	< 2.	9.78	1.51	1.39	1.85	2.52
(2) Net Income + DDA / Total Liabilities	> 0.1	-0.46	0.080	.14	0.13	-0.016
(3) Current Assets / Current Liabilities	> 1.5	3.64	2.97	2.32	2.54	2.66

WHEELING-PITTSBURGH STEEL
FINANCIAL TEST ANALYSIS

Financial Test		1984	1983	1982	1981	1980
(1) Total Liabilities / Net Worth	< 2.	2.56	2.32	1.77	1.37	1.38
(2) Net Income + DDA / Total Liabilities	> 0.1	-0.019	-0.016	-0.027	0.16	0.095
(3) Current Assets / Current Liabilities	> 1.5	1.61	1.42	2.57	1.86	1.66

NORTH AMERICAN CAR CORP.
FINANCIAL TEST ANALYSIS

Financial Test		1983	1982	1981	1980	1979
(1) Total Liabilities / Net Worth	< 2.	-52.60	47.37	3.69	3.82	4.19
(2) Net Income + DDA / Total Liabilities	> 0.1	-0.003	0.035	0.072	0.090	0.080
(3) Current Assets / Current Liabilities	> 1.5	0.96	1.31	2.02	3.50	2.59

WICKES COMPANIES
FINANCIAL TEST ANALYSIS

Financial Test		1982	1981	1980	1979	1978
(1) Total Liabilities / Net Worth	< 2.	19.95	4.25	2.20	2.01	1.80
(2) Net Income + DOA / Total Liabilities	> 0.1	-0.190	0.020	0.101	0.110	0.126
(3) Current Assets / Current Liabilities	> 1.5	1.10	1.42	1.82	2.21	2.13

COMMONWEALTH OIL REFINING COMPANY, INC.
FINANCIAL TEST ANALYSIS

Financial Test		1984	1983	1982	1981	1980
(1) $\frac{\text{Total Liabilities}}{\text{Net Worth}}$	< 2.	-1.49	-2.37	-3.64	19.83	3.10
(2) $\frac{\text{Net Income + DDA}}{\text{Total Liabilities}}$	> 0.1	-0.40	-0.03	-0.51	-0.88	0.02
(3) $\frac{\text{Current Assets}}{\text{Current Liabilities}}$	> 1.5	6.97	.66	1.26	2.69	.84

REVERE COPPER AND BRASS, INC. AND SUBSIDIARIES

Fac. ID NYD071586127
NY002206894

Ch 11 - Oct. 1982

(In Thousands)	Dec. 31, 1982	Dec. 31, 1981	Dec. 31, 1980	Dec. 31, 1979	Dec. 31, 1978
Current Assets	224,097	263,886	217,614	248,564	254,810
Current Liabilities	61,489	88,775	93,773	97,886	95,770
Total Assets	341,026	473,756	432,810	457,709	475,100
Total Liabilites	309,403 a/	285,039	251,834	297,058	340,123
Net Worth	31,623 b/	188,717	180,976	160,651	134,977
Net Income	(157,108)	9,356	21,865	25,713	(19,043)
Depreciation, Depletion, and Amortization	13,559	13,309	12,733	12,220	13,647

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a/ Contains $221,263 in liabilities deferred under Ch 11.

b/ Contains ($18,933) retained earnings deficit.

WHEELING-PITTSBURGH STEEL CORPORATION

Fac. ID WVD0005100859 — Ch 11 - April, 1985

(In Thousands)	Dec. 31, 1984	Dec. 31, 1983	Dec. 31, 1982	Dec. 31, 1981	Dec. 31, 1980
Current Assets	331,402	342,597	376,311	422,542	394,940
Current Liabilities	206,434	241,381	146,285	227,065	237,508
Total Assets	1,219,675	1,241,322	1,207,161	1,119,485	983,372
Total Liabilites	864,402 a/	855,636	763,453	643,894	566,888
Net Worth	337,086	368,352	431,278	467,997	409,938
Net Income	(59,376)	(54,080)	(58,769)	60,059	14,675
Depreciation, Depletion, and Amortization	42,729	40,361	38,219	42,989	39,052

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a/ All short term debt except for $5,698,000 has been reclassified as long term debt as a result of Ch 11 proceedings.

NORTH AMERICAN CAR CORP.

Fac. ID ILD047029970

Ch 11 - Dec. 1984

(in Thousands)	Dec. 31, 1983 a/	Dec. 31, 1982 c/	Dec. 31, 1981	Dec. 31, 1980	Dec. 31, 1979
Current Assets	65,542 d/	94,780	122,194	156,302	144,751
Current Liabilities	68,474	72,125	60,571	44,647	55,930
Total Assets	1,008,246	1,137,290	1,241,777	1,189,345	1,109,820
Total Liabilities	1,027,787	1,113,778	976,966	942,628	895,809
Net Worth	(19,541) b/	23,512 b/	264,811	246,717	214,011
Net Income	(47,581)	(1,216)	31,397	46,506	36,185
Depreciation, Depletion, and Amortization	44,268	40,436	39,368	38,536	35,572

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a/ 1984 figures not available because company has filed for an extension of the deadline for submission of the 10-K report for fiscal year ending December 1984.

b/ Net Worth includes intercompany receivables of ($240,618,000) in 1983 and ($241,676,000) in 1982, reclassified against equity.

c/ 1982 figures related as a result of the restructuring agreement with principal lenders.

d/ Restricted cash under restricting agreement equals $34,361,000.

COMMONWEALTH OIL REFINING CO., INC.

Fac. ID PRD09017228 Ch 11 - July 1984

(in Thousands)	Dec. 31, 1984	Dec. 31, 1983	Dec. 31, 1982	Dec. 31, 1981	Dec. 31, 1980
Current Assets	9,132	14,512	27,101	175,736	364,873
Current Liabilities	1,311	22,009	21,456	65,239	432,728
Total Assets	49,191	59,142	82,135	235,735	613,204
Total Liabilites	149,957	102,342	113,199	224,416	463,463
Net Worth	(100,766)	(43,200)	(31,064)	11,319	149,741
Net Income	(57,576)	(12,510)	(44,635)	(212,309)	(3,506)
Depreciation, Depletion, and Amortization	(2,256)	15,765	(12,962)	15,629	13,435

THE WICKES COMPANIES, INC.

Fac. ID

Ch 11 - April 1982

(in Thousands)	Jan. 31, 1982	Jan. 31, 1981	Jan. 31, 1980	Jan. 31, 1979	Jan. 31, 1978
Current Assets	676,936	1,031,367	584,664	482,066	416,520
Current Liabilities	612,762	728,362	321,495	218,622	195,191
Total Assets	953,159	1,705,296	888,267	755,221	581,949
Total Liabilites	886,233	1,380,572	610,359	504,517	373,946
Net Worth	44,426	324,724	277,908	250,704	208,003
Net Income	(187,393)	(10,122)	39,701	34,378	29,555
Depreciation, Depletion, and Amortization	22,182	38,466	22,304	22,063	17,570

PART 1 - UPDATE TO BANKRUPT RCRA TSD FACILITIES (August 1985)

REGION 1

Facility ID	Facility Name	Bankruptcy	Financial Assurance a/	Facility Status b/	Total Assets c/ (000's)	Total Liabilities c/ (000's)	Net Worth c/ (000's)	Comments
CTD001444066	Choice Vend, Inc.	Ch 11 - 6/82 Ch 7 - 10/83	No	Inoperative, Not closed	N/A	N/A	N/A	During liquidation, facility purchased by another company, Winchester Assoc. who is now closing site. Closure estimate: $13,000.
CTD060008307	Century Brass	Ch 11 - 3/85	Yes	Operating	64,210	87,433	(23,223)	Closure estimate considered inadequate. Trust fund used. Report dated 4/85 revealed that a $10 million financing agreement with General Electric Credit Corp. may keep the company afloat for another 8 weeks.
CTD045110913	Interroyal Corp. d/	Ch 11 - 12/82	Unknown	Unknown	23,234	21,569	1,665	

a/ This column indicates whether required financial assurance has been provided. At land disposal facilities, both closure and post closure assurance is required. At all other facilities, only closure assurance is necessary.

b/ Inoperative means that the facility is not currently managing hazardous wastes. Closed means that the facility has undergone closure in compliance with RCRA regulations.

c/ Unless otherwise noted, all financial data is based on information provided at the time of the bankruptcy filing. If more recent financial information was available, it is shown along with the date it was provided. The entry N/A indicates that Dun and Bradstreet does not currently have financial information on the firm.

d/ Facility identification not found in HWDMS or DPRA.

PART 1 - UPDATE TO BANKRUPT RCRA TSD FACILITIES (August 1985)

REGION 2

Facility ID	Facility Name	Bankruptcy	Financial Assurance a/	Facility Status b/	Total Assets c/ (000's)	Total Liabilities c/ (000's)	Net Worth c/ (000's)	Comments
NJD002522027	National Smelting and Refining d/	Ch 11 - 1/84 Ch 7 - 4/84	No	Inoperative, Closed	N/A	N/A	N/A	
NJD054050703	Scientific Chemical Processing (Newark)	Unknown	No	Inoperative, Not closed	N/A	N/A	N/A	Ceased operations in 1981 or 1982.
NYD980592562	Quanta Resources	Ch 11 - 10/81 Ch 7 - 11/81	No	Inoperative, Not closed	N/A	N/A	N/A	New York City already expended $2.5 million on cleanup at site.
NYD001701382	Majestic Weaving	Ch 11 - 1981	No	Inoperative, Not closed	N/A	N/A	N/A	Company in process of properly closing facility. No problems expected. Reg. 2 states that company might be out of bankruptcy.
NYD071586127	Revere Copper & Brass	Ch 11 - 10/82	No	Inoperative, Closure in progress	341,026	309,403	31,623	Total closing costs for both New York facilities estimated at $30,000.
NYD002206894	Revere Copper & Brass d/	Ch 11 - 10/82	No	Inoperative, Closure in progress	341,026	309,403	31,623	Company about to emerge from bankruptcy.
NJD095275269	Trofe Incineration, Inc.	Ch 11 - 4/85	Unknown	Unknown	5,000	3,247	1,753	
PRD09107228	Commonwealth Oil Refining	Ch 11 - 7/84	Unknown	Unknown	49,191	149,957	(100,766)	
PRD091173716	Storage Technology de P.R.	Ch 11 - 10/84	Unknown	Unknown	95,247	13,318	81,929	

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c/ Unless otherwise noted, all financial data is based on information provided at the time of the bankruptcy filing. If more recent financial information was available, it is shown along with the date it was provided. The entry N/A indicates that Dun and Bradstreet does not currently have financial information on the firm.

d/ Facility identification not found in HWDMS or DPRA.

PART 1 - UPDATE TO BANKRUPT RCRA TSD FACILITIES (August 1985)

REGION 3

Facility ID	Facility Name	Bankruptcy	Financial Assurance a/	Facility Status b/	Total Assets c/ (000's)	Total Liabilities c/ (000's)	Net Worth c/ (000's)	Comments
WVD000510859	Wheeling Pittsburg Steel d/	Ch 11 - 4/85	Yes	Operating	1,219,675	364,402	337,086	Surety Bond for C & PC of $4,000. Cost estimate deemed inadequate; SI done; several enforcement actions taken.
VAD007972482	L.A. Clarke & Sons	Ch 11 - 3/83	No	Inoperative, Not closed	4,020	2,737	1,283	On NPL; state has begun enforcement actions.
PAD002370005	Tube Methods, Inc.	Ch 11 - 9/83	No	Inoperative, Not closed	N/A	N/A	N/A	Part B called in; site includes large surface impoundments not subject to RCRA.
PAD003005014	Whitmoyer Laboratories	Ch 11 - 7/84	No	Operating	5,023	5,002	21	Parent, Stafford Laboratories, also filed Ch 11. Small container storage facility with small expected closure costs.
PAD003058047	Drake Chemicals	Ch 11 - Date unknown	No	Inoperative, Not closed	N/A	N/A	N/A	On NPL; some remedial action already completed at site. By 9/84, operations reported discontinued.
PAD (ID unknown)	Penn Terra Ltd. d/ (Armstrong County)	Ch 7 - 3/82	Unknown	Unknown	N/A	N/A	N/A	

a/ This column indicates whether required financial assurance has been provided. At land disposal facilities, both closure and post closure assurance is required. At all other facilities, only closure assurance is necessary.

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c/ Unless otherwise noted, all financial data is based on information provided at the time of the bankruptcy filing. If more recent financial information was available, it is shown along with the date it was provided. The entry N/A indicates that Dun and Bradstreet does not currently have financial information on the firm.

d/ Facility identification not found in HWDMS or DPRA.

PART 1 - UPDATE TO BANKRUPT RCRA TSD FACILITIES (August 1985)

REGION 4

Facility ID	Facility Name	Bankruptcy	Financial Assurance a/	Facility Status b/	Total Assets c/ (000's)	Total Liabilities c/ (000's)	Net Worth c/ (000's)	Comments
TND007018799	American Creosote Works	Ch 11 - 5/82	No	Inoperative, Not closed	N/A	N/A	N/A	NPL site; Superfund removal actions already undertaken.
ALD055798037	Revere Copper & Brass	Ch 11 - 10/82	No	Operating	410,842	237,077	173,765	Failed financial test just before entered bankruptcy. Company about to emerge from bankruptcy.
ALD041906173	International Lead Co. (ILCO)	Ch 11 - Early 1982	No	Operating	N/A	N/A	N/A	ILCO failed financial test before bankruptcy. About ten surface impoundments at site.
GAD057302002	National Smelting & Refining d/	Ch 11 - 1/84 Ch 7 - 4/84	No	Unknown	N/A	N/A	N/A	Same company owns NJD002522027.
GAD089699680	Wells Aluminum Moultrie	Ch 11 - 10/82	No	Closed	8,673	12,026	(3,353)	Wholly-owned subsidiary of Revere Copper & Brass. Reg. 4 states is no longer TSD.
GAD000222083	Southeastern Waste Treatment	Ch 11 - Early 85	Yes	Unknown	N/A	N/A	N/A	Surety bond amount deemed sufficient for closure.

a/ This column indicates whether required financial assurance has been provided. At land disposal facilities, both closure and post closure assurance is required. At all other facilities, only closure assurance is necessary.

b/ Inoperative means that the facility is not currently managing hazardous wastes. Closed means that the facility has undergone closure in compliance with RCRA regulations.

c/ Unless otherwise noted, all financial data is based on information provided at the time of the bankruptcy filing. If more recent financial information was available, it is shown along with the date it was provided. The entry N/A indicates that Dun and Bradstreet does not currently have financial information on the firm.

d/ Facility identification not found in HWDMS or DPRA.

PART 1 - UPDATE TO BANKRUPT RCRA TSD FACILITIES (August 1985)

REGION 4 (continued)

Facility ID	Facility Name	Bankruptcy	Financial Assurance a/	Facility Status b/	Total Assets c/ (000's)	Total Liabilities c/ (000's)	Net Worth c/ (000's)	Comments
GAD990675118	Taracorp. - Peitzinger Div.	Ch 11 - 10/82	Yes	Operating	17,661	17,628	33	Trust fund presently contains about $5,000. Closure estimate: $57,000; o/o working w/ state towards proper closure. Financial data as of 7/31/84.
NCD000827832	Electrical Utilities	Ch 11 - 9/83	Unknown	Unknown	3,522	3,737	(215)	State bringing RCRA enforcement action against company.
MSD (ID unknown)	American Creosote Works d/ (Lewisville)	Ch 11 - 5/82	Yes	Inoperative, Closed	N/A	N/A	N/A	Letter of credit of $48,750 collected, but Superfund cleanup costs were several million. Plant sold to Superior Wood Treatment who closed the facility: may require further Superfund action.
NCD (ID unknown)	Laurinburg Oil Co. d/ (Scotland County)	Ch 11 - 1/84	Unknown	Unknown	N/A	N/A	N/A	
TND016520017	Interroyal Corp. d/	Ch 11 - 12/82	Unknown	Unknown	23,234	21,569	1,665	
ALD000776658	Coral Petroleum, Inc. d/	Ch 11 - 6/83	Unknown	Unknown	589,300	581,000	8,300	

a/ This column indicates whether required financial assurance has been provided. At land disposal facilities, both closure and post closure assurance is required. At all other facilities, only closure assurance is necessary.

b/ Inoperative means that the facility is not currently managing hazardous wastes. Closed means that the facility has undergone closure in compliance with RCRA regulations.

c/ Unless otherwise noted, all financial data is based on information provided at the time of the bankruptcy filing. If more recent financial information was available, it is shown along with the date it was provided. The entry N/A indicates that Dun and Bradstreet does not currently have financial information on the firm.

d/ Facility identification not found in HWDMS or DPRA.

PART 1 - UPDATE TO BANKRUPT RCRA TSD FACILITIES (August 1985)

REGION 5

Facility ID	Facility Name	Bankruptcy	Financial Assurance a/	Facility Status b/	Total Assets c/ (000's)	Total Liabilities c/ (000's)	Net Worth c/ (000's)	Comments
ILD005252432	Parsons Company	Ch 7 - 8/82	No	Inoperative, Not closed	437	1,502	(1,065)	
ILD096731468	Taracorp (Hoyt)	Ch 11 - 10/82	No	Operating	17,492	19,485	1,933	Financial data as of 7/31/84.
ILD098983208	Taracorp (McCook)	Ch 11 - 10/82	No	Operating	17,492	19,485	1,933	Financial data as of 7/31/84.
ILD074410390	Liquid Dynamics d/	Ch 11 - 7/81 Ch 7 - 10/83	Unknown	Inoperative, Not closed	N/A	N/A	N/A	CERCLA removal action.
ILD000716852	Professional Sales/American Incineration d/	Ch 7 - Date unknown	No	Inoperative Not closed	N/A	N/A	N/A	CERCLA removal action; groundwater and soil contamination.
IND064700883	Fisher-Calo	Ch 11 - 2/85	No	Unknown	N/A	N/A	N/A	Letter of Credit withdrawn. NPL site.
IND082287632	Ingram Richardson	Ch 7 - 3/81	No	Unknown	N/A	9,944	N/A	
IND084259951	Envirochem/Technisol	Ch 7 - 2/83	No	Inoperative, Not closed	113	95	18	
IND980590947	Chemsolve	Ch 7 - 11/84	Unknown	Unknown	N/A	N/A	N/A	Facility has been sold. Amount owned to petitioning creditors = $36,289.00.
IND082547803	Energy Cooperative	Ch 11 - Date unknown Ch 7 - 5/84	Unknown	Unknown	N/A	N/A	N/A	

a/ This column indicates whether required financial assurance has been provided. At land disposal facilities, both closure and post closure assurance is required. At all other facilities, only closure assurance is necessary.

b/ Inoperative means that the facility is not currently managing hazardous wastes. Closed means that the facility has undergone closure in compliance with RCRA regulations.

c/ Unless otherwise noted, all financial data is based on information provided at the time of the bankruptcy filing. If more recent financial information was available, it is shown along with the date it was provided. The entry N/A indicates that Dun and Bradstreet does not currently have financial information on the firm.

d/ Facility identification not found in HWDMS or DPRA.

PART 1 - UPDATE TO BANKRUPT RCRA TSD FACILITIES (August 1985)

REGION 5 (continued)

Facility ID	Facility Name	Bankruptcy	Financial Assurance a/	Facility Status b/	Total Assets c/ (000's)	Total Liabilities c/ (000's)	Net Worth c/ (000's)	Comments
OHD980615728	L.H. Inc. (Liquid Haulers)	Ch 7 - 3/85	Unknown	Unknown	.035	63	(63)	
IND000646984	Tri-City Plating	Ch 7 - Early 82	No	Unknown	N/A	N/A	N/A	
IND000646943	SEPOA	Ch 11 - 10/82	No	Unknown	995	1,333	(338)	Fatal fire/explosion.
OHD032271975	Marion Steel	Ch 11 - 9/83	No	Inoperative, closure in progress	32,665	21,365	11,300	Same as OHD079418166.
OHD980792204	Terex Corp. d/	Ch 11 - 11/83 12/84	Unknown	Unknown	237,249 159,985	170,349 160,462	66,900 (477)	Owned by IBH Holding A.G., a German firm who has also filed for arrangement under Ch 11.
OHD (ID unknown)	Kovacs/Chem-Dyne Corp. d/ (Hamilton)	Ch 11 - 7/80 Ch 7 - 11/80	Unknown	Unknown	N/A	N/A	N/A	
MND980501647	Union Scrap Iron & Metal d/	Ch 7 - 1/85	Unknown	Unknown	4,471	4,817	(346)	NPL site, claims RCRA recycling exemption.
IND075982975	D.J. Lumber Sales, Inc.	Ch 11 - 11/81	Unknown	Unknown	1,038	901	137	Feb., 1984 report states that sales for 12 months ended 1983 were up and profits were up, but it is uncertain whether company is now profitable.
ILD047029970	North American Car Corp.	Ch 11 - 12/84	Unknown	Unknown	1,008	1,028	(20)	
MND086113826	Rogers Petro Chem, Inc.	Ch 7 - 10/81	Unknown	Unknown	N/A	N/A	N/A	

a/ This column indicates whether required financial assurance has been provided. At land disposal facilities, both closure and post closure assurance is required. At all other facilities, only closure assurance is necessary.

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c/ Unless otherwise noted, all financial data is based on information provided at the time of the bankruptcy filing. If more recent financial information was available, it is shown along with the date it was provided. The entry N/A indicates that Dun and Bradstreet does not currently have financial information on the firm.

d/ Facility identification not found in HWDMS or DPRA.

PART 1 - UPDATE TO BANKRUPT RCRA TSD FACILITIES (August 1985)

REGION 6

Facility ID	Facility Name	Bankruptcy	Financial Assurance a/	Facility Status b/	Total Assets c/ (000's)	Total Liabilities c/ (000's)	Net Worth c/ (000's)	Comments
TXD061382206	Quality Service Railcar Repair Inc.	Ch 11 - 12/84	Yes	Inoperative, Closure in progress	6,108	690	5,418	Parent G.E. doing closure and providing financial assurance.
TXD008110637	Gary Aircraft	Ch 11 - 10/84	Yes	Operating	7,244	4,772	2,473	Operating as new, non-bankrupt entity Gary Aerospace.
OKD082471988	Hudson Refining	Ch 11 - 1/84	No	Inoperative, Not closed	32,845	27,846	4,999	
OKD004998225	Basin Refining	Ch 7 - 1983	No	Inoperative, Not closed	N/A	N/A	N/A	
LAD081407850	Hill Petroleum	Ch 11 - 2/84	No	Closed	N/A	N/A	N/A	Did first-party closure.
LAD000225862	Goodhope Refining	Ch 11 - Date unknown	Yes	Closed	N/A	N/A	N/A	
TXD000741702	J.C.S. Co. Inc.	Ch 7 - 5/85	Unknown	Unknown	197	472	(275)	
OKD091598870	Oklahoma Refining Co.	Ch 11 - 9/84	Unknown	Unknown	N/A	N/A	N/A	
TXD980796981	C.C. Oil Refining Co.	Ch 11 - 12/84	Unknown	Unknown	1,226	4,102	(2,876)	

---

a/ This column indicates whether required financial assurance has been provided. At land disposal facilities, both closure and post closure assurance is required. At all other facilities, only closure assurance is necessary.

b/ Inoperative means that the facility is not currently managing hazardous wastes. Closed means that the facility has undergone closure in compliance with RCRA regulations.

c/ Unless otherwise noted, all financial data is based on information provided at the time of the bankruptcy filing. If more recent financial information was available, it is shown along with the date it was provided. The entry N/A indicates that Dun and Bradstreet does not currently have financial information on the firm.

d/ Facility identification not found in HWDMS or DPRA.

PART 1 - UPDATE TO BANKRUPT RCRA TSD FACILITIES (August 1985)

REGION 7

Facility ID	Facility Name	Bankruptcy	Financial Assurance a/	Facility Status b/	Total Assets c/ (000's)	Total Liabilities c/ (000's)	Net Worth c/ (000's)	Comments
NED000610444	Atwood Enterprises	Ch 11 - 1985	Yes	Inoperative, Closure in progress	N/A	N/A	N/A	Most of closing completed before bankruptcy; remaining funds in trust will probably be sufficient.

a/ This column indicates whether required financial assurance has been provided. At land disposal facilities, both closure and post closure assurance is required. At all other facilities, only closure assurance is necessary.

b/ Inoperative means that the facility is not currently managing hazardous wastes. Closed means that the facility has undergone closure in compliance with RCRA regulations.

c/ Unless otherwise noted, all financial data is based on information provided at the time of the bankruptcy filing. If more recent financial information was available, it is shown along with the date it was provided. The entry N/A indicates that Dun and Bradstreet does not currently have financial information on the firm.

PART 1 - UPDATE TO BANKRUPT RCRA TSD FACILITIES (August 1985)

REGION 8

ility ID	Facility Name	Bankruptcy	Financial Assurance a/	Facility Status b/	Total Assets c/ (000's)	Total Liabilities c/ (000's)	Net Worth c/ (000's)	Comments
)67315390	Gary Refining	Ch 11 - 3/85	No	Operating	92,716	26,716	66,102	Closure cost estimates believed to be too low.
)61465654	Canyonlands 21st Century Corp.	Ch 11 - 3/81 11/83	Unknown	Unknown	N/A 781	N/A 1,397	N/A (616)	

a/ This column indicates whether required financial assurance has been provided. At land disposal facilities, both closure and post closure assurance equired. At all other facilities, only closure assurance is necessary.

b/ Inoperative means that the facility is not currently managing hazardous wastes. Closed means that the facility has undergone closure in compliance RCRA regulations.

c/ Unless otherwise noted, all financial data is based on information provided at the time of the bankruptcy filing. If more recent financial ormation was available, it is shown along with the date it was provided. The entry N/A indicates that Dun and Bradstreet does not currently have ncial information on the firm.

PART 1 - UPDATE TO BANKRUPT RCRA TSD FACILITIES (August 1985)

REGION 9

Facility ID	Facility Name	Bankruptcy	Financial Assurance a/	Facility Status b/	Total Assets c/ (000's)	Total Liabilities c/ (000's)	Net Worth c/ (000's)	Comments
HIT160010021	Pepper Industries	Ch 11 - 10/84	Yes	Unknown	N/A	N/A	N/A	
CAD000627109	Wickes Companies	Ch 11 - 4/82	Unknown	Unknown	953,159	886,233	44,426	

a/ This column indicates whether required financial assurance has been provided. At land disposal facilities, both closure and post closure assurance is required. At all other facilities, only closure assurance is necessary.

b/ Inoperative means that the facility is not currently managing hazardous wastes. Closed means that the facility has undergone closure in compliance with RCRA regulations.

c/ Unless otherwise noted, all financial data is based on information provided at the time of the bankruptcy filing. If more recent financial information was available, it is shown along with the date it was provided. The entry N/A indicates that Dun and Bradstreet does not currently have financial information on the firm.

d/ Facility identification not found in HWDMS or DPRA.

PART 1 - UPDATE TO BANKRUPT RCRA TSD FACILITIES (August 1985)

REGION 10

Facility ID	Facility Name	Bankruptcy	Financial Assurance a/	Facility Status b/	Total Assets c/ (000's)	Total Liabilities c/ (000's)	Net Worth c/ (000's)	Comments
ORD009051442	Allied Plating	Ch 11 - 11/82 Ch 7 - date unknown	No	Inoperative, Not closed	N/A	N/A	N/A	Allied ceased operation 2/84 and liquidated. Region currently taking actions to make lessor of facility land and buildings pay for preliminary assessment.
WAD081482457	Pro Coat (now Pringle d/ Manufacturing)	Ch 7 - 1980 or 1981	Unknown	Inoperative, Closure in progress	N/A	N/A	N/A	Facility purchased by Pringle Mfg. during liquidation; Pringle now closing site. Pringle Manuf. sold to Frontier Machinery, Inc.
IDD000800961	ARRCOM (Rothdrum)	Ch 11 - 3/82 Ch 7 - 12/82	Unknown	Inoperative, Not closed	368	468	(100)	Company owned by Drexler, who was jailed for unrelated fraud; Drexler was evicted from the ARRCOM properties because he did not pay the rent. On NPL. It is possible that these financial data pertain to all companies owned by Drexler, including Western Pacific Vacuum.
WAD087462503	ARRCOM (Woodlawn)	Ch 11 - 3/82 Ch 7 - 12/82	Unknown	Inoperative, Not closed	368	468	(100)	Also owned by Drexler. (See comments above.)
WAD000643593	Western Pacific Vacuum Service	Ch 11 - 5/82 Ch 7 - 12/82	Unknown	Inoperative, Not closed	368	468	(100)	Also owned by Drexler. (See comments above.)
ORD000711739	Drum Recovery	Ch 7 - 10/82	Unknown	N/A	N/A	N/A	N/A	
WAD070054309	HBR Corp. d/	Ch 11 - 6/81	Unknown	Unknown	N/A	N/A	N/A	

a/ This column indicates whether required financial assurance has been provided. At land disposal facilities, both closure and post closure assurance is required. At all other facilities, only closure assurance is necessary.

b/ Inoperative means that the facility is not currently managing hazardous wastes. Closed means that the facility has undergone closure in compliance with RCRA regulations.

c/ Unless otherwise noted, all financial data is based on information provided at the time of the bankruptcy filing. If more recent financial information was available, it is shown along with the date it was provided. The entry N/A indicates that Dun and Bradstreet does not currently have financial information on the firm.

d/ Facility identification not found in HWDMS or DPRA.

Exhibit 22

5 F Cell rules: corr

JAN 1 4 1987

Mr. James Ranson
cc:c:c:3:1
Internal Revenue Service
111 Constitution Avenue
Washington, D.C. 20224

Dear Mr. Ranson:

Mike Karel, of the Internal Revenue Service's (I.R.S.) district staff in St. Paul, has suggested that I contact you. A tax-related question has come up in connection with the development of administrative rules. I have enclosed a copy of my original correspondence with Mr. C. Dudley Switzer, Director of the I.R.S's local district office. This letter will give you a good presentation of the question we raise. Mr. Switzer believes your office is the appropriate place to develop the answer to our question.

I don't believe the response we need fits the definition of a ruling or a determination letter. We are looking for a less formal response because, although we cannot provide you with any real cases, the question is one of real concern to the firms that will have to comply with the rules.

I've also enclosed copies of the relevant portions of the proposed rules. The rule on trust funds begins on line 20 of page 73. The relevant parts of this rule are items G, H and I (pages 78-79). Permittees using trusts to comply with the rules will have to use models written into the rules. The trust fund model begins on page 91, line 24. The relevant parts of the model trust are sections 3 and 17.

We will appreciate any guidance you can give us on this question. I look forward to hearing from you at your earliest convenience.

Sincerely,

Original Signed By:

Robert J. McCarron
Program Development Section
Solid and Hazardous Waste Division

RJM:km
Enclosures

bcc: Dwight Wagenius, Attorney General

Exhibit 23

April 12, 1985

Mr. Dale Brusacker
Income Tax Division
Department of Revenue
Centennial Office Building
658 Cedar Street
St. Paul, Minnesota 55145

Dear Mr. Brusacker:

I want to follow-up on the matters we discussed in our phone conversation of March 28, 1985. My early work on landfill financial assurance rules led me to consider the tax effects of the financial mechanisms customarily used in such rules. I believe you drafted Commissioner Roemer's reply to my first inquiry. The reply is dated July 20, 1984.

The Congress changed applicable federal tax provisions at nearly the same time that you were writing the reply. I believe the relevant law is referred to as the Tax Reform Act of 1984, section 232. There is a brief message appended to this section which may be related to the citation - it reads, "Act Sec. 91, adding Code Sec. 468."

You said in our phone discussion that Minnesota tax treatment will be the same as federal tax treatment. Please send me a written statement to that effect. I will need to incorporate some statement of tax impacts into the statement of need and reasonableness which accompanies the rule.

Thank you for your consideration in this matter.

Sincerely,
Original Signed By:

Robert J. McCarron
Program Development Section
Solid and Hazardous Waste Division

RJM:dd
bcc: Roger D. Bjork

Exhibit 24

Tire Fire Lights Up A National Problem

RECEIVED
SEP 28 1984
MINN. POLLUTION
CONTROL AGENCY

by Susan Tejada

At 12:48 a.m. on October 31, 1983, a fire was reported in Winchester, Virginia. The next day, the State of Virginia requested Superfund assistance from EPA, and the agency dispatched to the site Tom Massey, senior on-scene coordinator for the EPA region encompassing Virginia.

EPA is not normally in the business of fighting fires but, as Massey discovered when he arrived in Winchester on November 1, this was no ordinary fire. Some people in the Frederick County town were already referring to the volcano-like blaze as Mt. Saint Frederick.

Paul Rhinehart, an elderly Winchester resident, had operated a tire disposal operation for many years, collecting about 50 cents apiece for hauling discarded tires from Maryland, Virginia, West Virginia, and Washington, D.C. Efforts of the Frederick County government to slow down accumulation of the tires were unsuccessful, and Rhinehart's tire collection eventually grew to mammoth proportions.

Landfill dumping of tires is prohibited in Frederick County, so Rhinehart tried to develop a method to burn the tires in a furnace and use the resulting oil for heating. By October 31, when the tower of tires was reportedly torched and dreams of a systematic energy conversion process went up in smoke, Rhinehart had amassed somewhere between 5 and 7 million tires. The huge pile was about 80 feet high in places, as tall as an eight-story building. It spread out over more than four acres, covering an area about as big as three and a half football fields. The number of tires was so mind-boggling, *The Washington Post* reported, that there were more tires in Rhinehart's pile than bushels of apples harvested in 1979 in Frederick County, Virginia's leading apple-producing area.

When Massey arrived at the scene of the blaze on November 1, he found that a towering plume of smoke was spreading as far as 50 miles away, creating a visible air pollution problem. Combustion reactions within the tire pile were also generating a stream of pyrolitic oil (synthetic crude oil). It was flowing from the bottom of the pile at rates of up to 50 gallons a minute and creating the potential for serious water pollution of nearby feeder creeks to the Potomac River.

Dr. Joe Lafornara also arrived on scene November 1. Lafornara is Chief of the Analytical Support Section of EPA's Environmental Response Team, a group of 12 hazardous waste specialists based in Cincinnati, Ohio, and Edison, New Jersey who provide scientific expertise to EPA regional response officials. The oil flow, Lafornara said, "looked like a small river, it was coming out of that pile so fast." Preliminary investigations showed the runoff contained about 1,000 different organic compounds.

Lafornara likened the potential effect to that of an oil spill. "The oil would have floated on the surface of the creek, from bank to bank, covering everything," he explained. "When it reached the river, it would have been brought into the water column at the rapids. At calmer points, some of it would have come back up to the surface and floated on top. All the water intakes on the Potomac would have had to be closed. Believe me," said Lafornara, who has had experience in fighting oil spills, "it's cheaper to catch it at the outset than to clean up 60 miles of shoreline."

Fortunately, the local volunteer fire department had already begun to "catch it at the outset." In fact, before 24 hours had passed, the firefighters had constructed a water collection system and two crude filter fences, fashioned out of hay, to contain the flow of oil. And the Virginia Office of Emergency and Energy Services had already set up a command post.

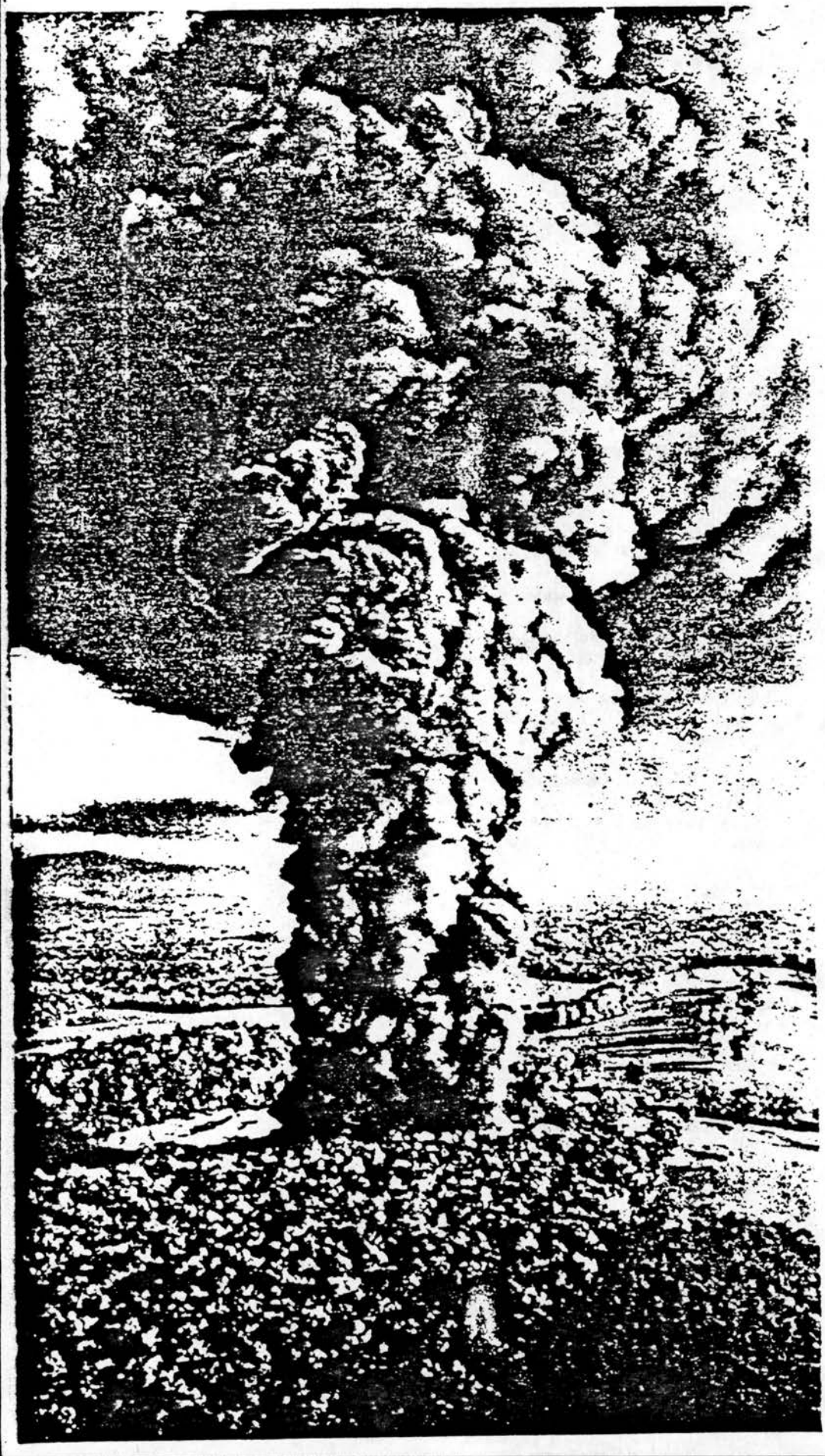
Mobilization Begins

When a Superfund response was authorized on November 2, Massey began one of the largest emergency mobilizations under that law. "The mobilization of resources was phenomenal," says Bob Mason, a scientist under contract to EPA who, along with many others during the first two weeks, worked 20-hour days on site doing air monitoring and technical calculations. "Experts," says Mason, "arrived almost immediately from the tire industry, from the American Petroleum Institute, and from trade associations. And most of them offered their advice and services free."

County government officials, "working as long and hard as anyone," according to Mason, handled community relations. State government representatives, on scene from the beginning, handled the press and will continue to handle site safety and water surveys. The local Sheriff's Department, in cooperation with the Air National Guard, provided round-the-clock site security, essential at this unfenced site where curious onlookers could otherwise have come in direct contact with toxic substances.

All 22 members of the U.S. Coast Guard's Atlantic Strike Team assisted with photo and cost documentation and site safety. The Centers for Disease Control issued a health advisory on air pollution and provided information on potential health effects. The National Institute for Occupational Safety and Health advised on worker safety. The Federal Aviation Administration and the U.S. Air Force loaned fire fighting equipment used in air disasters. Pumps developed by the National Aeronautics and Space Administration for use with the space shuttle were used to recirculate contaminated water back onto the fire, where it could be incinerated into harmless steam.

In all, more than two dozen agencies participated in the early stages of the response. The U.S. Geological Survey described geological conditions. Since weather conditions affect the response — wind can change the direction of the smoke and rain can cause containment ponds to overflow — the U.S. Forest Service provided daily information on short and long range weather predictions. Since the blaze could have started a forest fire — the site was surrounded by for-



Mushroom-shaped cloud of smoke rising from enormous used tire fire near Winchester, Va.

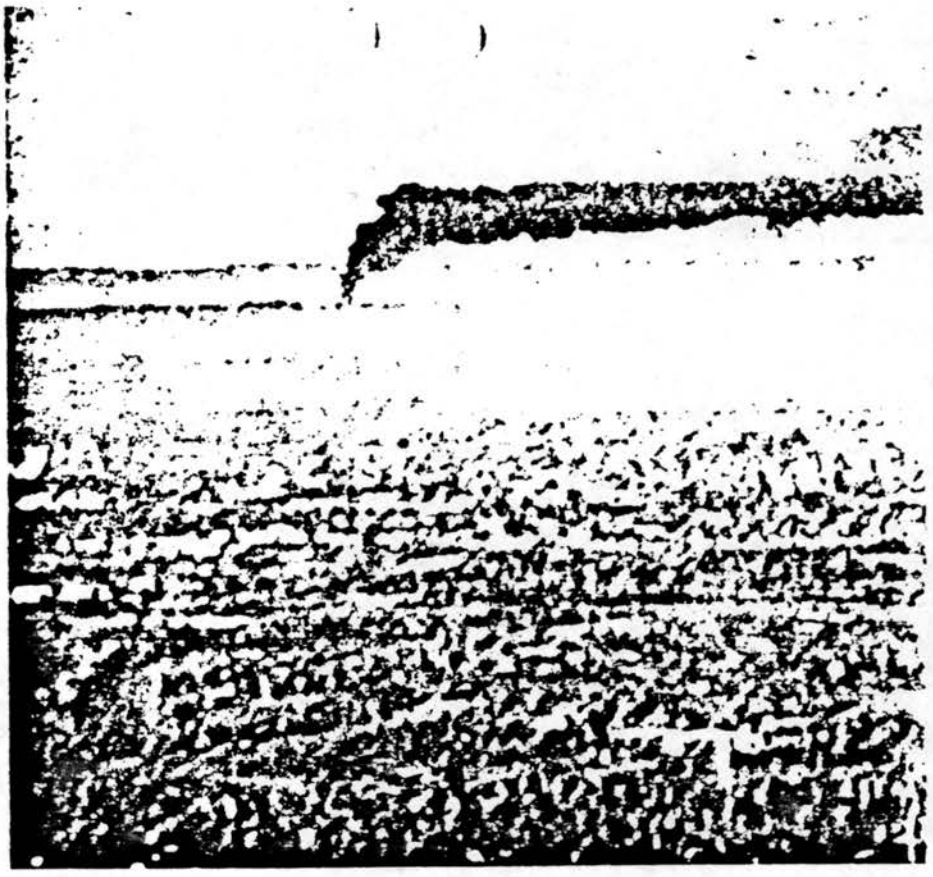
est and oil flowing through the area would have been easily ignitable — both state and federal forest services advised on construction of firebreaks.

The cost ceiling on this Superfund emergency response climbed from $250,000 to $425,000 to $900,000. The limit of $1 million for an emergency response was waived, and the ceiling climbed again to $1,350,000. In mid-November, daily operating costs were running between $25,000-$35,000. That money was buying site security, fire control, runoff collection, air and water monitoring, technical support, and construction of a new containment pond with impervious liners, a new siphon dam, and access roads to handle the influx of heavy equipment.

It is expected that some of this money will be recovered because runoff oil is being collected and sold to recycling companies. Still, the question remains: is the expense justified?

EPA feels the expense to date is justified because of the threat to public health and the environment. In addition to pollutants like carbon monoxide and sulfur dioxide normally produced in the burning of fossil fuels, this particular fire, because of the chemical constituents of the tires, also produced arsenic and tellurium. Fortunately, even in samples taken three yards away from the fire, these substances were present in small quantities only. At a distance of 100 yards from the fire, they presented no health threat. The real threat, as Lafornara explained, came from the chance that the ignitable oil would flow downhill, setting off forest fires, polluting drinking water, entering surface waters, and killing fish and waterfowl.

To date, because of response actions, none of these threats has materialized. The fire, the pyrolitic oil, and the contaminated water have all been contained. On November 17, EPA's Environmental Response Team began an environmental assessment study to determine what long-term remedial actions might be necessary if groundwater contamination has occurred.



Other Tires, Other Fires

The Winchester area blaze is 10 times bigger than any previous tire fire, Lafornara estimates. But it is not the biggest pile of tires in the country. At a site in Westley, California, about 12 million tires are piled up on a 20-acre site. Nor is the Winchester blaze an isolated incident. According to Tony O'Brien of the National Fire Protection Association (NFPA), since 1971 there have been 176 fires at centers that reclaim rubber from used tires and, in the same period, 49 fires at warehouses that store rubber products, including tires. These fires together have caused seven civilian deaths, 208 injuries to civilians and firefighters, and a total estimated economic loss of $90.5 million. And these figures may be incomplete. NFPA's statistics are based on incident reports filed with the group by fire departments and insurance companies. Other incidents may go unreported.

Regulations for dumping of scrap tires in landfills, if issued at all, are written by local governments, not by the federal government. According to an article in the *Akron Beacon Journal*, the City of Akron has tried to ease the threat of dump fires by enforcing a city law requiring that tires be stacked in rows no higher than 20 feet and located within 300 feet of a hydrant.

Mired in Tires

Tire fires are a serious problem because tire disposal is a serious problem. Estimates of the number of tires discarded each year in the United States vary from a low of 135 million to a high of 230 million. According to Ray Oviatt of the Goodyear Tire and Rubber Company, the number has probably dropped somewhat in recent years owing to greater consumer use of long life tires. Still, the number of annual discards today is probably somewhere in the range of 165-175 million.

The great majority of discards, about 73 percent, end up in landfills and dumps, according to a 1979 study done for the U.S. Department of Energy. Another 18 percent are retreaded; 3 percent are burned for fuel; and the remainder are used in rubber reclamation or recycled for uses like artificial reefs, road surfaces, and roofing shingles. These figures probably don't include such other uses as the tire strips that Wayne Newton reportedly nails to the wood posts of the corral on his ranch to protect his thoroughbred horses.

Industry spends an estimated $80 million a year to get rid of scrap tires. Once the discards are dumped, they remain virtually indestructible for years. Buried in landfills, they tend to pop to the surface as air collects in their hollow cavities. Water also seeps into these cavities and forms a breeding ground for mosquitoes.

Looking for a Solution

The amount of recycled rubber used in this country has dropped from an estimated high of 60 percent during World War II, to 20 percent in the early fifties, to only about 3.5 percent in 1980. Unless more tires are recycled, dumps may become blanketed with this rubber refuse. Industry is studying the problem and running experimental projects to find a solution. As long ago as 1969, the Firestone Tire and Rubber Company, working under a cooperative agreement with the U.S. Department of the Interior, tested methods for destructive distillation, or carbonization, of scrap tires. The tests demonstrated that it was technically feasible to dispose of the discards, and potentially to obtain valuable byproducts as a result. However, while the study examined effects of different temperatures of carbonization, it did not address the economic feasibility of the methods.

In 1982, the Rubber Manufacturers Association (RMA) and the National Tire Dealers and Retreaders Association (NTDRA) cosponsored an International Symposium on Scrap Tires. Robert McRee of Environmental Control Products, Inc., in Charlotte, North Carolina, presented a paper on pollution-free incineration of rubber tires coupled with profitable energy recovery. With one incinerated tire capable of yielding two and a half gallons of oil, McRee called landfilling of rubber tires "a shameful removal of a valuable fuel potential from our total energy chain" and concluded that the equipment components for rubber tire incineration "are now a practical reality."

Cooling rather than heating tires was also discussed as a recycling method. Professor Norman Braton of the University of Wisconsin at Madison described how cryogenics, or cooling, "can be an important *recycling* application for such systems as the automobile/truck tire."

Timothy Baker of Baker Rubber Company in South Bend, Indiana discussed the market hierarchy of recycled tires. Baker categorized six areas of tire recycling: retreads, tire splitting, ground rubber, rubber reclaiming through size reduction, energy recovery through incineration, and fringe uses, including the use of rubber in asphalt. Under Baker's six categories come most possible uses for recycled tire rubber: gaskets, seals, flexible spacers, floor mats, high grade filler, binding material, and crash barriers along highways.

In a recent conversation Frank Ryan of the Rubber Manufacturers Association described a Uniroyal project for burning



Plume of black smoke drifts north from a fire involving several million used tires stored at a farm site some five miles west of Winchester, Va. This aerial photo was taken just east of Winchester. The smoke drifted at least 30 miles north into western Maryland.

five percent shredded tires with coal to produce energy. Goodyear's Ray Oviatt also discussed his company's recycling efforts. Goodyear, says Oviatt, has developed systems for making floating breakwaters and artificial reefs from discarded tires. In pilot projects in Florida and Texas, tires were bundled, weighted with concrete, and dumped into the sea at selected sites. Becoming encrusted with marine growth, they attracted aquatic life and promoted game fishing. Goodyear also tried lashing old tires together to form floating breakwaters and shore protection devices. The largest, says Oviatt, was a 6,000-tire-long breakwater in Lorain, Ohio.

Goodyear also ran two experiments to extract energy from controlled tire burning. At the company's Jackson, Michigan plant, now shut down, tires were burned in a boiler to produce steam that could be used in making new tires. The system worked, but was discontinued because it was not cost effective. In another experiment conducted in cooperation with The Oil Shale Corporation (TOSCO), Goodyear tried pyrolytic heating of tires to recover oil and carbon black, a substance used in the production of new tires. Like the other experiment, this too worked, but was not cost effective; the carbon black wasn't of high enough quality for new tires. "This," says Oviatt, "was a noble experiment that didn't live up to our expectations."

Still Struggling with the Scraps

Efforts have been made to solve the problem of scrap tire disposal, but most of the solutions either don't work, are not economically feasible, or involve such a miniscule number of tires as to make no more than a dent in the overall problem. *NTDRA Dealer News*, a publication of the National Tire Dealers and Retreaders Association, last year ran an informal survey of its members to learn how they handle scrap tire disposal. While *Dealer News* found several instances of progress, it concluded that people "are still struggling with the scrap tire problem, and those who have found solutions are in the minority." In terms of recycling rubber tires, "a viable economic program of a substantial nature is yet to come," said Norm Kramer at the RMA-NTDRA symposium. Kramer, of MAC Corporation's Saturn Shredder Division in Grand Prairie, Texas, declared that current recycling efforts "represent a very small percentage of the total quantity of available tire inventory."

Recycling tires is not cheap. But paying for disposal of discards isn't cheap either. And paying the consequences when a disaster of major proportions such as the Winchester fire occurs isn't cheap or easy.

According to Lee Thomas, EPA's Assistant Administrator for Solid Waste and Emergency Response, the agency is considering three options in Winchester: putting the fire out, letting it burn itself out, or accelerating the blaze. Putting the fire out by conventional fire-fighting techniques would probably take over 100 days, require four sets of equipment, and cost up to $15 million. Potentially worst of all, says Tom Massey, the aftermath of an extinguished fire would be "a great big dump of half-burned tires, carbon black, all kinds of residue, and continuing leachate." Letting the fire burn out by itself could take as long as 10 months. The result would be leftover steel rims and a pile of ashes. Meanwhile, collection of the runoff oil is proceeding and the continuing burn is being controlled in a way that does not threaten public health. The third option — accelerating the blaze by blowing air into the center of the pile — is being investigated.

Can any good come out of this disaster? Possibly, says Bob Mason. Previous experiments in burning tires to extract oil have all taken place at controlled temperatures. In Winchester, fire temperatures are uncontrolled. If the core temperatures of the tire pile could be monitored, optimum conditions for pyrolysis of tires could be identified, and information on the most effective rate of burn would become available. Perhaps, says Massey, the interest generated in the scientific community by the Winchester blaze will be a springboard to a new technology that could aid in a solution to the problem of scrap tire disposal.□

HUBERT H. HUMPHREY, III
ATTORNEY GENERAL

STATE OF MINNESOTA
OFFICE OF THE ATTORNEY GENERAL
ST. PAUL 55155

ADDRESS REPLY TO:
SUITE 200
520 LAFAYETTE ROAD
ST. PAUL, MN 55155
TELEPHONE: (612) 297-1075

June 24, 1987

J. Michael Miles
Assistant Attorney General
Office of the Attorney General
204 Administration Building
50 Sherburne Avenue
St. Paul, MN 55155

Re: In the Matter of Proposed Rules Governing the Management of Waste Tires and the Permitting of Waste Tire Facilities, Minn. Rules Pts. 7001.0020, 7001.0040, 7001.0050, 7001.0190, 7001.4000 to 7001.4150, and 7035.8200 to 7035.8710.

Dear Mr. Miles:

On June 23, 1987, the Minnesota Pollution Control Agency adopted the above-captioned rules governing the management of waste tires and the permitting of waste tire facilities. Enclosed for your review are the following:

1. Rules as adopted (original and three copies) reflecting modifications and with revisor's certificate of approval as to form.

2. Findings of Fact, Conclusions, and Order Adopting Rules (two copies).

3. Certificate of Resolution Adopting Rules.

4. Notice of Intent to Solicit Outside Opinion as published in the State Register at 9 S.R. 698 (October 1, 1984).

5. Copies of written comments received pursuant to Notice of Intent to Solicit Outside Opinion.

6. Certificate of Authorizing Resolution.

7. A Notice of Intent to Adopt Rules Without a Public Hearing and Notice of Intent to Adopt Rules with a Public Hearing if 25 or More Persons Request a Hearing, and a Notice of Hearing and Notice of Intent to Cancel Hearing if Fewer than 25 Persons Request a Hearing in

Response to Notice of Intent to Adopt Rules Without a Public Hearing, together with the rules as proposed, as published in the State Register at 11 S.R. 1918-1922 (April 20, 1987).

8. Comment received during the comment period.

9. A Notice of Intent to Adopt Rules Without a Public Hearing and Notice of Intent to Adopt Rules with a Public Hearing if 25 or More Persons Request a Hearing, and a Notice of Hearing and Notice of Intent to Cancel Hearing if Fewer than 25 Persons Request a Hearing in Response to Notice of Intent to Adopt Rules Without a Public Hearing, as mailed.

10. Affidavit of Mailing the Notice of Intent to Adopt Rules Without a Public Hearing and Notice of Intent to Adopt Rules with a Public Hearing if 25 or More Persons Request a Hearing, and a Notice of Hearing and Notice of Intent to Cancel Hearing if Fewer than 25 Persons Request a Hearing in Response to Notice of Intent to Adopt Rules Without a Public Hearing, and Certificate of Mailing List.

11. Rules as proposed with revisor's certificate of approval as to form

12. Statement of Need and Reasonableness.

13. Notice of Submission of Rule Adopted Without Public Hearing to the Attorney General.

14. Affidavit of Mailing of Notice of Submission of Rule Adopted Without Public Hearing to the Attorney General.

15. Declaration of Counsel.

Very truly yours,

Dwight S. Wagenius

DWIGHT S. WAGENIUS
Special Assistant
Attorney General

Enclosures

DSW:sc

Notice of Intent sk

Authority:

115A.914 subd 1
116.07 subd 4

Rule

p 20 line 7 - Change from Proposed to Adopted
p 23 lines 3-4 " " " "
p 42 lines 7-10 " " " "
p 44 lines 21 + 23 + 27 " " " "
p 47 lines 17-19 + 32 " " " "

Pollution Control Agency

Adopted Permanent Rules Governing the Management of Waste Tires and the Permitting of Waste Tire Facilities

Rules as Adopted

7001.0020 SCOPE.

Except as otherwise specifically provided, parts 7001.0010 to 7001.0210 apply to the following:

A. to K. [Unchanged.]

L. An agency permit required for the collection, deposit, storage, or processing of waste tires and tire-derived products.

7001.0040 APPLICATION DEADLINES.

Subpart 1. **Application for new permit.** Except as otherwise required by parts 7001.0530, 7001.1050, and 7001.4060, a permit application for a new facility or activity may be submitted at any time. However, it is recommended that the permit application be submitted at least 180 days before the planned date of the commencement of facility construction or of the activity.

Subp. 2. and 3. [Unchanged.]

7001.0050 WRITTEN APPLICATION.

A person who requests the issuance, modification, revocation and reissuance, or reissuance of a permit shall complete, sign, and submit to the director a written application. The person shall submit the written application in a form prescribed by the director. The application shall contain the items listed in items A to I unless the director has issued a written exemption from one or more of the data requirements. After receiving a written request for an exemption from a data requirement, the director shall issue the exemption if the director finds that the data is unnecessary to determine whether the permit should be issued or denied. The

Approved by Revisor

application must contain:

A. to H. [Unchanged.]

I. other information relevant to the application as required by parts 7001.0550 to 7001.0640, 7001.1050, 7001.1215, 7001.1290, 7001.4000 to 7001.4150, or 7040.0500 and 7040.0600.

7001.0190 PROCEDURE FOR MODIFICATION; REVOCATION AND REISSUANCE; AND REVOCATION WITHOUT REISSUANCE OF PERMITS.

Subpart 1. [Unchanged.]

Subp. 2. **Modification solely as to ownership or control.** Upon obtaining the consent of the permittee, the agency shall consider a request to modify a permit as to the ownership or control of a permitted facility or activity without following the procedures in parts 7001.0100 to 7001.0130 if the agency finds that no other change in the permit is necessary. If the permit is a permit described in part 7001.0020, item A, B, or L, the agency shall also find that the agency has received a binding written agreement between the permittee and the proposed transferee containing a specific date for transfer of permit responsibilities and allocation of liabilities between the permittee and the proposed transferee. Within 60 days of receipt of a complete written application for modification as to ownership and control, the director shall place the matter on the agenda for consideration by the agency. The agency shall not unreasonably withhold or unreasonably delay approval of the proposed permit modification.

Subp. 3. **Minor modification.** Upon obtaining the consent of the permittee, the director may modify a permit to make the following corrections or allowances without following the procedures in parts 7001.0100 to 7001.0130:

A. and B. [Unchanged.]

C. to change a provision in the permit that will not result in allowing an actual or potential increase in the emission or discharge of a pollutant into the environment, or that will not result in a reduction of the agency's ability to monitor the permittee's compliance with applicable statutes and

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rules;

D. if applicable, to make a change as provided in parts 7001.0730, subpart 3 and 7001.1350; and

E. if applicable, to make a change as provided in part 7001.4130, subpart 2.

Subp. 4. [Unchanged.]

7001.4000 SCOPE.

Except as otherwise provided, parts 7001.0010 to 7001.0210 and 7001.4000 to 7001.4150 govern the application procedures for the issuance of and the conditions relating to waste tire facility permits. Parts 7000.0100 to 7000.1100, 7001.0010 to 7001.0210, and 7001.4000 to 7001.4150 shall be construed to complement each other.

7001.4010 DEFINITIONS.

The definitions in part 7001.0010 of the agency's permitting rules, part 7035.8205 of the agency's waste tire rules, and Minnesota Statutes, section 115A.90, apply to the terms used in parts 7001.4000 to 7001.4150.

7001.4020 PERMITS.

Subpart 1. **Permit required.** Except as provided in subpart 2, no person may do any of the following without obtaining a waste tire facility permit from the agency:

A. store, process, or dispose of waste tires or tire-derived products; or

B. establish, construct, modify, own, or operate a waste tire facility.

Subp. 2. **Exclusions.** The following persons are not required to obtain a waste tire facility permit:

A. a retail tire seller for the retail selling site if no more than 500 waste tires are kept on the business premises;

B. an owner or operator of a tire retreading business for the business site if no more than 3,000 waste tires are kept on the business premises;

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C. an owner or operator of a business who, in the ordinary course of business, removes tires from motor vehicles if no more than 500 waste tires are kept on the business premises;

D. a permitted landfill operator with less than 10,000 waste tires stored above ground at the permitted site;

E. a person using waste tires for agricultural purposes if the waste tires are kept on the site of use. Agricultural purposes do not include the burning of waste tires; or

F. a person conducting abatement activities under an abatement order or stipulation agreement entered into under part 7035.8020. This exemption does not exempt the person from the duty to obtain a waste tire facility permit for activities other than the abatement action.

Subp. 3. **Old waste tires.** An owner or operator of a waste tire facility is not eligible to obtain a waste tire facility permit for old waste tires located at the facility.

7001.4030 PERMIT BY RULE.

Subpart 1. **Facilities eligible.** The owner and operator of the following waste tire facilities shall be considered to have obtained a waste tire facility permit without submitting the application described in part 7001.4070 if the director has received the notification described in subpart 2:

A. a waste tire facility used for the storage of no more than 500 waste tires at any one time if the owner or operator, at least once per year, removes all the waste tires, and the facility is in compliance with the locational requirements of part 7035.8240, subpart 2;

B. a waste tire facility used for the processing of no more than 500 waste tires during any 30 days if the facility is in compliance with the locational requirements of part 7035.8240, subpart 2; or

C. a waste tire facility used as a temporary location for mobile shredding or baling equipment if the equipment is

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located at the facility for 30 days or less, and all tire-derived products and residuals from processing are shipped from the facility within 30 days of completion of the shredding or baling operation.

Subp. 2. **Written notification.** To obtain permit by rule status, the owner and operator of a qualifying waste tire facility must submit the following information to the director. For an existing facility, the notification must be submitted within 90 days of the effective date of parts 7001.4000 to 7001.4150. For a new facility, the notification must be submitted 15 days before the operation begins. The notification must contain:

A. the name, address, and telephone number of the owner and operator of the facility; and the name, address, and telephone number of the facility;

B. a description of the general operation of the facility, including quantities of waste tires accumulated or processed per month;

C. a description of arrangements made to acquire fire protection services for the facility;

D. the township, range, and section numbers of the facility; and

E. a description of how the waste tires, tire-derived products, and residuals from processing will be disposed.

Subp. 3. **Termination of eligibility for permit by rule.** The agency shall terminate the eligibility of an owner or operator of a facility for permit by rule status after notice and opportunity for a contested case hearing or a public informational meeting if the agency finds that the facility does not qualify for permit by rule status or that the facility should be permitted to protect human health or the environment. When eligibility to be permitted under this part has been terminated, the owner and operator of the facility must apply for a waste tire facility permit under parts 7001.4000 to 7001.4150 within 90 days or close the facility in compliance with part 7035.8250 and the applicable requirements of part

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7035.8260.

7001.4035 NOTIFICATION BY EXISTING FACILITIES.

Subpart 1. **Notification.** The owner or operator of an existing waste tire facility must submit a signed, written notification to the director not more than 90 days after the effective date of parts 7001.4000 to 7001.4150. The written notification must include:

A. the name, address, and telephone number of the owner and operator of the facility; and the name, address, and telephone number of the facility;

B. a description of the facility and the type of operation, the maximum storage or processing capacity, and where the waste tires and tire-derived products are stored;

C. the approximate quantity and type of waste tires, designating passenger, truck, heavy equipment, or off-the-road tires, and tire-derived products stored on the site;

D. the township, range, and section numbers of the facility, and the zoning classification of the land; and

E. a statement indicating the intent of the owner or operator to continue to accept waste tires at the facility and to apply for a waste tire facility permit or to close the facility in compliance with parts 7035.8250 and 7035.8260.

Subp. 2. **Certification of written notification.** The owner or operator of a waste tire facility must sign the written notification and shall make the following certification: "I certify under penalty of law that this written notification was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete."

Subp. 3. **Closure.** The owner or operator of an existing waste tire facility who has specified in the written

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notification an intent to close the facility, or who does not qualify for provisional status under part 7001.4040, must close the facility in accordance with parts 7035.8250 and 7035.8260.

Subp. 4. **Submittal of closure plan.** The owner or operator of an existing waste tire facility required to close under subpart 3 must submit to the director a closure plan in accordance with part 7035.8250 no later than 60 days after the date of receipt of a written request from the director for submission of the closure plan.

Subp. 5. **Compliance with standards.** The owner or operator of an existing waste tire facility must comply with the requirements specified in items A to C during the period from 90 days after the effective date of parts 7001.4000 to 7001.4150 until a permit is issued by the agency or closure is completed in compliance with parts 7035.8250 and 7035.8260, whichever occurs first.

A. Processes at the facility must be limited to those specified in the written notification.

B. Any waste tires accepted at the facility after the effective date of parts 7001.4000 to 7001.4150 must be stored in a new storage area according to the locational requirements of part 7035.8240, subpart 2, and the storage requirements of part 7035.8240, subpart 3, items D, F, and G.

C. Compliance with the financial assurance requirements of parts 7035.8400 to 7035.8590 must be maintained.

7001.4040 PROVISIONAL STATUS.

Subpart 1. **Scope.** The owner or operator of a waste tire facility that qualifies for provisional status shall be considered to have fulfilled the requirement to obtain a permit so long as provisional status is maintained. When requested by the director, the owner and operator of a facility with provisional status shall submit a permit application within the time period specified in part 7001.4060.

Subp. 2. **Qualifying for provisional status.** To qualify for provisional status, an owner or operator of an existing

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waste tire facility shall submit the notification required under part 7001.4035. However, the notification must contain the information required by this subpart. During the period after the submission of the written notification to the director and until a permit is issued by the agency or closure is completed in compliance with parts 7035.8250 and 7035.8260, the owner or operator of an existing facility shall be considered to be in compliance with the requirement to obtain a permit and shall be considered to have provisional status. The written notification shall include:

A. the information required under part 7001.4035, subpart 1;

B. documentation that the facility is in compliance with the locational requirements of part 7035.8240, subpart 2. For existing facilities located in a 100-year floodplain, a plan meeting the requirements of part 7001.4070, subpart 6, must be submitted with the notification; and

C. documentation verifying that the owner or operator of the facility has informed the local fire protection agency of the facility's location, and describing the arrangements that have been made to immediately acquire fire protection services for the facility, if needed.

Subp. 3. **Termination of provisional status by permitting or closure.** Provisional status shall terminate when a permit is issued or when the director verifies that closure is complete.

Subp. 4. **Termination of provisional status for cause.** The following constitute justification for the director to commence proceedings to terminate provisional status:

A. the director discovers that the owner or operator of the facility has failed to fully disclose all the information required under subpart 2 or has submitted false or misleading information to the agency or the director;

B. the facility is not in compliance with the locational standards of part 7035.8240, subpart 2;

C. the facility is not in compliance with any of the standards established in part 7001.4035, subpart 5;

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D. the director has requested that the owner and operator of the facility submit a permit application and the owner and operator of the facility have failed to submit an application within the time period allowed; or

E. the director discovers that the facility threatens human health or the environment due to the activities conducted at the facility.

7001.4050 DESIGNATION OF PERMITTEE.

The agency shall designate all facility owners and operators of the waste tire facility as co-permittees when issuing a waste tire facility permit.

7001.4060 WASTE TIRE FACILITY PERMIT APPLICATION PROCEDURES.

Subpart 1. **Form.** The application for a waste tire facility permit consists of a general application, which includes the appropriate supporting documents, maps, and additional application information specific to the facility that is the subject of the application. The content requirements of the general permit application are set forth in part 7001.4070. The additional application information requirements specific to the facility type are set forth in parts 7001.4080, 7001.4090, and 7001.4100, and must be submitted with the general permit application.

Subp. 2. **Copies required.** An applicant for a waste tire facility permit shall submit four copies of the complete permit application to the director.

Subp. 3. **Time of submittal.** A person shall submit a permit application for a new or existing waste tire facility or for reissuance of an existing permit for a facility in accordance with items A to C.

A. For a new facility, a person shall submit a permit application at least 180 days before the planned date of the beginning of facility construction or the planned activity, whichever is earlier.

B. For an existing facility, the owner or operator may submit a permit application at any time after the effective

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date of parts 7001.4000 to 7001.4150, except that upon the written request of the director for submission of a permit application, the owner or operator shall submit a permit application no later than 90 days after the date of receipt of the director's request.

C. For the reissuance of an existing permit, part 7001.0040, subpart 3, governs the submittal of an application except that if the applicant receives the written approval of the director, the applicant may submit an application to the agency for reissuance of an existing permit less than 180 days before the expiration of the existing permit.

Subp. 4. **Certification of permit applications and permit reports.** A person who signs an application for a waste tire facility permit, or any portion of it, or any report required by a permit to be submitted to the director or to the agency, shall make the certification required by part 7001.0070. If required by Minnesota Statutes, section 326.03, an engineer registered in the state shall certify all technical documents required to be submitted as part of a permit application or by permit conditions.

7001.4070 GENERAL INFORMATION REQUIREMENTS FOR A PERMIT APPLICATION.

Subpart 1. **Scope.** The information required by this part and the applicable provisions of part 7001.4080, 7001.4090, or 7001.4100, must be submitted for both new and existing waste tire facilities. The information in the permit application must address both existing and proposed operations, structures, and conditions. If a provision does not apply to the particular facility, the applicant must note this on the application.

Subp. 2. **General facility information.** The application shall contain the information in part 7001.0050, except item G, and shall indicate whether the facility to be permitted is new or existing, and whether the application is an initial or amended application.

Subp. 3. **Description of facility operation.** The

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application shall describe the location and operation of the facility. The application shall, at a minimum, include a description of the following:

A. the type of facility operation, the manner in which waste tires will be collected at the facility, and how those waste tires will be stored, processed, or used;

B. the maximum quantity and type of waste tires to be stored ~~on-the-site~~ at the facility at any time, specifying the quantity and type of waste tires stored ~~on-the-site~~ at the facility currently and the storage capacity of the facility;

C. the facility's ability to meet the storage requirements of part 7035.8240, subpart 3, items D, F, and G;

D. the present use of the land at the site of the facility and of the land within a one-quarter mile radius of the facility, identifying the landowners and their addresses, and zoning designations;

E. the access to the site of the facility by roads, including weight or other use restrictions;

F. surface water drainage, the slope of the land, and soil composition;

G. the location of the facility and whether that location complies with the restrictions established in part 7035.8240, subpart 2;

H. the types, sizes, conditions, and availability of equipment needed for operation and emergency response at the facility, and the functions of each piece of equipment described;

I. the security procedures and the location of fences, gates, and other access control measures;

J. the relationship of the facility to the applicable county solid waste management plan, and the area to be served by the facility; and

K. the expected operating life of the facility and how this number was calculated.

Subp. 4. **Topographic map.** The topographic map submitted as part of the general facility information required by subpart 2 shall show the facility and the area surrounding the facility

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for a distance of at least 1,320 feet using a scale of one inch equals 200 feet, and shall show, at a minimum, the following:

A. the date the map was prepared;

B. the map scale and directions;

C. wetlands, floodplains, shorelands, and surface waters, including permanent and intermittent streams and wetlands;

D. legal boundaries and land ownership, including county, township, and municipal boundaries; and township, range, and section numbers; and easements and rights-of-way;

E. the locations of wells, both operating and abandoned;

F. occupied dwellings; and

G. contours that show the pattern of surface water flow in and adjacent to the facility.

Subp. 5. **Development map.** A development map shall be submitted with the application. This map shall show the waste tire facility in detail. At a minimum, the development map shall show the following:

A. the facility design and the location of all waste tire storage areas and fire lanes;

B. all structures and buildings at the facility, including those used in collection, storage, or processing operations;

C. loading and unloading areas;

D. access and internal roads;

E. run-off control measures, ditches, and dikes;

F. the location of the area used for collection, storage, or processing of waste tires, tire-derived products, and residuals from processing; and the total land area in square feet used for storage of waste tires, tire-derived products, and residuals from processing; and

G. the location of water supplies.

Subp. 6. **Floodplains.** If the facility is located within a 100-year floodplain, the application must describe the procedures that the applicant will follow to remove waste tires

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and tire-derived products to safety before the facility is flooded. The following information must, at a minimum, be included:

A. the timing of the removal relative to flood levels, showing that removal can be completed before floodwaters reach the facility;

B. the location of the facility or facilities to which the waste tires and tire-derived products will be moved and information indicating that these facilities will be able to receive waste tires and tire-derived products in accordance with parts 7001.4000 to 7001.4150, and parts 7035.8200 to 7035.8710; and

C. the planned procedures, equipment, and personnel to be used and how these resources will be made available when needed.

Subp. 7. **Closure.** The application shall include an estimate of the cost of closing the facility. This estimate shall be prepared following the procedures in part 7035.8430. The application shall also include a copy of the financial assurance mechanism required by part 7035.8420, and the closure plan required by part 7035.8250.

7001.4080 ADDITIONAL APPLICATION INFORMATION REQUIRED FOR WASTE TIRE TRANSFER FACILITIES.

The application for a waste tire transfer facility must include the following information in addition to the information required by part 7001.4070:

A. the types of vehicles intended to use the facility;

B. information on how the accumulation of waste tires at the transfer facility will be controlled so that no more than 10,000 passenger tires or the equivalent weight of other waste tires shall be present at the transfer facility at any time;

C. information on the type of storage that will be present at the facility, designating drop boxes, containers, trailers, or stockpiles; and

D. information on size, capacity, and volume of drop

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boxes, containers, and trailers to be maintained at the facility.

7001.4090 ADDITIONAL APPLICATION INFORMATION REQUIRED FOR WASTE TIRE PROCESSING FACILITIES.

The application for a waste tire processing facility must include the following information in addition to the information required by part 7001.4070:

A. the maximum quantity and type of tire-derived products and residuals from processing to be stored on the site at any time, specifying the quantity and type of tire-derived products and residuals from processing stored on the site currently and how they are being stored;

B. a description of the processes and procedures used at the facility for processing waste tires;

C. the processing capacity of the facility, and the number of tons of waste tires currently being processed;

D. a description of how the facility will comply with the 75 percent annual processing requirement of part 7035.8270, subpart 3, item B;

E. a description of how residuals from processing will be disposed;

F. the existing and proposed markets for the facility's tire-derived products; and

G. a copy of the emergency preparedness manual required by part 7035.8280, subpart 3.

7001.4100 ADDITIONAL APPLICATION INFORMATION REQUIRED FOR WASTE TIRE STORAGE FACILITIES.

Subpart 1. **General information.** The application for a waste tire storage facility must include the following information in addition to the information required by part 7001.4070:

A. the procedures that will be used at the facility to minimize or prevent mosquito and rodent breeding in the waste tire stockpiles;

B. a copy of the emergency preparedness manual required by part 7035.8290, subpart 2;

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C. a copy of the contingency plan required by part 7035.8290, subpart 5; and

D. information on how the accumulation of waste tires at the waste tire storage facility will be controlled so that no more than 500,000 passenger tires or the equivalent weight of other waste tires are ever stored at the facility.

Subp. 2. **Tire pile limitation exemption.** The owner or operator of a waste tire storage facility who seeks to obtain an exemption from the waste tire pile size or fire lane requirements established in part 7035.8240, subpart 3, items F and G, must demonstrate that compliance with the standards is not technically feasible and that alternative methods can be successfully used to reduce the danger of fires at the facility. The request for an exemption from either requirement shall accompany the permit application, and shall include the following information:

A. a statement of the reason compliance with the requirement cannot be achieved at the facility;

B. the proposed alternative methods for controlling the spread of fire at the facility; and

C. a statement from the fire marshal that the alternative methods have been approved for use at the facility.

If the director finds, based on the information submitted, that compliance with the standards is not technically feasible and that alternative methods can be successfully employed to reduce the danger of fires at the facility, the director shall issue a permit that specifies waste tire pile size and fire lane requirements that reduce to the maximum extent any danger from fire at the facility.

7001.4110 PUBLIC NOTICE OF PRELIMINARY DETERMINATION AND DRAFT PERMIT; PUBLIC COMMENTS.

In addition to the requirements of part 7001.0100, subpart 5, relating to the distribution of the public notice, the director shall mail a copy of the public notice to the governing body of each county and city or township that has jurisdiction

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over the waste tire facility.

7001.4120 TERMS AND CONDITIONS OF WASTE TIRE FACILITY PERMITS.

In addition to the terms and conditions in part 7001.0150, each draft and final waste tire facility permit shall require compliance with parts 7035.8200 to 7035.8710, unless an exemption is permitted under part 7001.4100, subpart 2.

7001.4130 MODIFICATION OF PERMITS; REVOCATION AND REISSUANCE OF PERMITS.

Subpart 1. **Scope.** In addition to the provisions of parts 7001.0170, 7001.0180, and 7001.0190, this part governs the modification, revocation, and reissuance of waste tire facility permits.

Subp. 2. **Minor modifications.** In addition to the authority to modify a permit under part 7001.0190, subparts 2 and 3, upon obtaining the consent of the permittee, the director shall have the authority, without following the procedures in parts 7001.0100 to 7001.0130:

A. to modify a permit to change an interim compliance date in a schedule of compliance provided the new date does not interfere with the attainment of the final compliance date; and

B. to amend the closure plan, emergency preparedness manual, or contingency plan for a waste tire facility.

7001.4140 INTERACTION OF PERMIT AND ABATEMENT RULES.

If a tire collector wishes to obtain an agency permit for a site that is the subject of an abatement action, the tire collector must notify the director of this intent within 90 days of the effective date of parts 7001.4000 to 7001.4150 or at the time the abatement plan is submitted, whichever is later, and agree to develop a plan for bringing the site into compliance with the technical rules for waste tire transfer, processing, or storage facilities. This shall not exempt the owner or operator of a facility that is the subject of an abatement action from the duty to obtain a permit by following the procedures established in parts 7001.4000 to 7001.4150 for activities other

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than the abatement action.

7001.4150 TRANSPORTER APPLICATION REQUIREMENTS.

Subpart 1. **Scope.** A person required to obtain an agency waste tire transporter identification number under part 7035.8710, subpart 3, must follow the procedures established in subpart 2.

Subp. 2. **Application.** To obtain an agency waste tire transporter identification number and approval to transport waste tires, a transporter shall submit a written application to the director. For a transporter currently transporting waste tires, the application must be submitted not more than 30 days after the effective date of parts 7001.4000 to 7001.4150. For a new transporter, the application must be submitted 15 days before the transporter begins transporting waste tires. The application must contain the following information:

A. the name, address, and telephone number of the person who will be transporting waste tires. If a company will be transporting waste tires, the name, address, and telephone number of the officers of the company must be submitted, along with an identification of the number of drivers that will be transporting tires for the company;

B. the geographical area that will be served;

C. the type of vehicle(s) or trailer(s) or both vehicle(s) and trailer(s) that will be used, the license number(s), and registered vehicle owner(s);

D. where the waste tires will be collected, and where delivered or deposited; and

E. an estimate of the quantity and type of waste tires that will be collected quarterly.

WASTE TIRE FACILITY STANDARDS

7035.8200 SCOPE.

Parts 7035.8200 to 7035.8590 apply to owners and operators of waste tire facilities except those who are exempt from the requirement to obtain a waste tire facility permit under part 7001.4020 or are permitted by rule under part 7001.4030. Parts

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7035.8700 to 7035.8710 apply to persons who generate or transport waste tires.

7035.8205 DEFINITIONS.

Subpart 1. **Scope.** For the purposes of parts 7035.8200 to 7035.8710 and parts 7001.4000 to 7001.4150, the terms in subparts 2 to 28 have the meanings given them.

Subp. 2. **Agency.** "Agency" means the Minnesota Pollution Control Agency.

Subp. 3. **Closure.** "Closure" means the removal of all stockpiles of waste tires and other materials from the waste tire facility in compliance with the procedures established by statute, rule, or permit.

Subp. 4. **Director.** "Director" means the executive director of the Minnesota Pollution Control Agency.

Subp. 5. **Existing waste tire facility.** "Existing waste tire facility" means a waste tire facility which has received waste tires after November 21, 1985, and which is in existence on the effective date of parts 7035.8200 to 7035.8710.

Subp. 6. **Floodplain.** "Floodplain" means any land area that is subject to a one percent or greater chance of flooding in any given year from any source.

Subp. 7. **New waste tires.** "New waste tires" means waste tires accumulated at a waste tire facility after November 21, 1985.

Subp. 8. **Old waste tires.** "Old waste tires" means waste tires accumulated at a waste tire facility before November 21, 1985.

Subp. 9. **Operator.** "Operator" means the person responsible for the overall operation of the waste tire facility. An operator is a tire collector or tire processor as defined in Minnesota Statutes, section 115A.90, subdivisions 8 and 10 respectively.

Subp. 10. **Owner.** "Owner" means a person who owns, in whole or in part, a waste tire facility, the waste tires located at a facility, or the land on which the facility is located.

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Subp. 11. **Person.** "Person" has the meaning given in Minnesota Statutes, section 115A.90, subdivision 5.

Subp. 12. **Processing.** "Processing" has the meaning given in Minnesota Statutes, section 115A.90, subdivision 6.

Subp. 13. **Ravine.** "Ravine" means a deep, narrow cleft or gorge in the earth's surface. A ravine cannot be smoothed out by ordinary tillage.

Subp. 14. **Residuals from processing.** "Residuals from processing" means the unusable material resulting from any chemical or physical processing of waste tires.

Subp. 15. **Shoreland.** "Shoreland" means land located within 1,000 feet from the normal high water mark of a lake, pond, or flowage, or land within 300 feet of a river or stream, or a floodplain as established by ordinance.

Subp. 16. **Sinkhole.** "Sinkhole" means a closed depression formed by subsidence of the underlying bedrock.

Subp. 17. **Tire.** "Tire" has the meaning given in Minnesota Statutes, section 115A.90, subdivision 7.

Subp. 18. **Tire collector.** "Tire collector" has the meaning given in Minnesota Statutes, section 115A.90, subdivision 8.

Subp. 19. **Tire-derived products.** "Tire-derived products" means usable materials produced from the chemical or physical processing of a waste tire.

Subp. 20. **Tire dump.** "Tire dump" has the meaning given in Minnesota Statutes, section 115A.90, subdivision 9.

Subp. 21. **Tire processor.** "Tire processor" has the meaning given in Minnesota Statutes, section 115A.90, subdivision 10.

Subp. 22. **Transporter.** "Transporter" means a person who removes waste tires from a source of generation, a tire dump, or a waste tire facility, and who has received an agency waste tire transporter identification number.

Subp. 23. **Waste tire.** "Waste tire" has the meaning given in Minnesota Statutes, section 115A.90, subdivision 11.

Subp. 24. **Waste tire facility or facility.** "Waste tire

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facility" or "facility" means any area where waste tires, including tire-derived products, are collected, deposited, stored, or processed. The incidental storage of tire-derived products at the site of final utilization or tire-derived oil at a refinery does not make the site a waste tire facility.

Subp. 25. **Waste tire processing facility.** "Waste tire processing facility" means any area where waste tires or tire-derived products are processed. A waste tire processing facility must meet the qualifications in part 7035.8270.

Subp. 26. **Waste tire storage facility.** "Waste tire storage facility" means any area where waste tires, or tire-derived products, are collected, deposited, or stored. A waste tire storage facility is a facility which does not meet the qualifications for regulation as a waste tire transfer facility or a waste tire processing facility.

Subp. 27. **Waste tire transfer facility.** "Waste tire transfer facility" means any area where waste tires are concentrated for transport to waste tire processing facilities. A waste tire transfer facility must meet the qualifications in part 7035.8270.

Subp. 28. **Wetland.** "Wetland" means any area that is covered by standing water during any portion of a year. Wetland includes, but is not limited to, wetlands as defined in Classification of Wetlands and Deep Water Habitats of the United States, 1979. This publication was issued by the United States Department of the Interior, Fish and Wildlife Service, Washington, D.C. 20402. This publication is available at the Minnesota State Government Law Library, Ford Building, 117 University Avenue, Saint Paul, Minnesota. This publication is incorporated into this definition by reference and is not subject to frequent change.

7035.8210 LAND DISPOSAL PROHIBITED.

Disposal of waste tires and tire-derived products in landfills is prohibited.

7035.8220 PERMIT REQUIRED.

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An agency permit is required to establish, construct, modify, own, or operate a waste tire facility, unless that facility is exempt from the requirement to obtain a permit by statute or rule. The procedures that must be followed to obtain an agency permit, and the facilities that are exempt from the requirement to obtain an agency permit, are set out in parts 7001.4000 to 7001.4150.

7035.8230 RULE CONFLICTS.

Nothing in parts 7035.8200 to 7035.8710 shall relieve any person from obligations or duties imposed by any other laws, statutes, rules, standards, or ordinances of the federal, state, or local governments or any agency thereof now in effect or which become effective in the future. In the event parts 7035.8200 to 7035.8710 conflict with any such laws, statutes, rules, standards, or ordinances, the more stringent provisions shall apply.

7035.8240 GENERAL STANDARDS FOR PERMITTED FACILITIES.

Subpart 1. Scope. All permitted waste tire facilities must comply with the technical and operational standards in this part. In addition to the requirements in this part, each permitted facility must comply with requirements specific to the operation conducted at the facility and any special conditions established in a permit. Part 7035.8270 establishes qualifications for regulation as a waste tire transfer or processing facility. Facilities that do not meet the standards for regulation as a waste tire transfer or processing facility are subject to regulation as a waste tire storage facility and must comply with the standards of part 7035.8290.

Subp. 2. **Location of facility.** A waste tire facility shall not be constructed or operated in a wetland, sinkhole, shoreland, ravine, 100-year floodplain, or any area where it may be subjected to immersion in water. An existing facility may be located in a 100-year floodplain if the owner or operator submits to the director a plan meeting the requirements of part 7001.4070, subpart 6, with the permit application.

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Subp. 3. **Operation.** A waste tire facility shall be operated in compliance with the following standards:

A. No operations involving the use of open flames, blow torches, or highly flammable substances shall be conducted within 50 feet of a waste tire pile.

B. An approach and access road to the waste tire facility shall be maintained passable for any vehicle at all times. Access to the facility shall be strictly controlled through the use of fences, gates, or other means of controlling access.

C. An attendant shall be present at all times the waste tire facility is open for business.

D. A waste tire storage area shall be designated. Only waste tires and tire-derived products may be stored in the designated waste tire storage area. This area must be maintained free of vegetation.

E. Waste tires stored indoors shall be stored under conditions that meet or exceed those in The Standard for Storage of Rubber Tires, NFPA 231D-1980 edition, written by the NFPA Committee on Standards for Rubber Tires, adopted by the National Fire Protection Association and published by the NFPA Standards Council (Dec. 18, 1980), San Diego, California. This publication is available at the Minnesota State Government Law Library, Ford Building, 117 University Avenue, Saint Paul, Minnesota; the Office of Public Safety, Fire Marshal Division; or any local fire department. This publication is incorporated by reference and is not subject to frequent change.

F. No waste tire pile shall have an area greater than 10,000 square feet or a vertical height greater than 20 feet, except as established in the permit as provided in part 7001.4100, subpart 2.

G. A 50-foot fire lane shall be placed around the perimeter of each waste tire pile, except as established in the permit as provided in part 7001.4100, subpart 2. Access to the fire lane for emergency vehicles must be unobstructed at all times. The fire lane shall be maintained free of rubbish and

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vegetation at all times.

H. All tire piles shall be maintained free of mosquitoes, through the use of mosquito control methods such as briquettes, spraying, or removal of water ponded in the waste tires.

I. All tire piles shall be maintained free of rodents.

J. Surface water drainage must be diverted around and away from the waste tire storage area.

Subp. 4. **Transfer of ownership or operation.** The permittee of a waste tire facility shall notify the director before transferring ownership or operation of a facility during its operating life. The permittee must also notify the new owner or operator in writing of the requirements of parts 7035.8200 to 7035.8710 and existing permit conditions. The requirements of parts 7035.8200 to 7035.8710 are transferred to the new owner or operator immediately upon the transfer of ownership or operation of the facility. A permittee's failure to notify the new owner or operator of these requirements does not relieve the new owner or operator of the obligation to comply with parts 7035.8200 to 7035.8710. No ownership or operation transfer may occur without a permit modification as required in part 7001.0190, subpart 2. The facility must be in compliance with all agency rules before transfer of the permit shall be approved.

Subp. 5. **Annual report.** A permittee of a waste tire facility shall submit a report containing the following information to the director annually, on March 1 of each year:

A. the facility name, address, and permit number;

B. the year covered by the report;

C. the total quantity and type of waste tires or weight of tire-derived products received at the facility during the year covered by the report;

D. the total quantity and type of waste tires or weight of tire-derived products shipped from the facility during the year covered by the report;

E. the total quantity and type of waste tires and

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weight of tire-derived products located at the facility on the date of reporting;

F. for all waste tires and tire-derived products shipped from the facility, the name and agency waste tire transporter identification number of the transporter who accepted the waste tires or tire-derived products for transport, and the quantity of waste tires or volume of tire-derived products shipped with that transporter. If the waste tires were shipped with a person who is not a waste tire transporter, the number of tires shipped, the person's name and telephone number, and the place where the tires were deposited should be noted;

G. for all waste tires and tire-derived products received at the facility, the name and agency waste tire transporter identification number of the transporter who delivered the waste tires or tire-derived products to the facility, and the quantity of waste tires or volume of tire-derived products received from that transporter. If the waste tires were delivered by a person who is not a waste tire transporter, the number of tires delivered, and the person's name and telephone number should be noted;

H. for all waste tires removed for recapping, the quantity and type removed, and the name and location of the recapping facility receiving the tires; and

I. the most recent closure cost estimate prepared using the criteria in part 7035.8430.

7035.8250 CLOSURE.

Subpart 1. **Closure conditions.** The owner or operator of a waste tire facility must cease to accept waste tires and must immediately close the facility in compliance with any special closure conditions established in the permit, this part, and part 7035.8260, if:

A. the owner or operator declares the facility closed;

B. the owner or operator fails to provide alternate financial assurance and obtain written approval of the financial assurance from the director within the specified time period as

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required by parts 7035.8400 to 7035.8590;

C. the agency permit for a facility expires and renewal of the permit is not applied for, or is applied for and denied;

D. the agency permit for the facility is revoked without reissuance;

E. an agency order to cease operations is issued;

F. an agency stipulation agreement specifies closure is to begin; or

G. the owner or operator of a permitted facility has failed to receive and ship waste tires for a continuous six-month period.

Subp. 2. **Submittal of closure plan.** The owner or operator of a waste tire facility shall submit to the director a closure plan with the permit application, upon request of the director, or as required by an order or stipulation agreement. The director shall approve the closure plan as part of the permit issuance procedure or as part of a submittal required by a stipulation agreement, or other enforcement action. Compliance with the approved closure plan shall be made a condition of any permit, order, or stipulation agreement. No closure plan shall be approved unless the closure plan is consistent with this part, and the applicable closure requirements of part 7035.8260.

Subp. 3. **Contents of closure plan.** A copy of the approved closure plan and all revisions to the plan must be kept at the facility until closure is completed and verified by the director. To be approved, a closure plan must identify steps needed to close the facility at any point during its intended operating life and to close the facility completely at the end of its operating life. The closure plan must include:

A. a description of the facility's operation, including the maximum inventory of waste tires and tire-derived products that will be collected at the facility at any time during the operating life of the facility;

B. when or under what circumstances the facility will close;

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C. how all waste tires and tire-derived products will be removed from the facility upon closure, and what end-use is planned for the waste tires and tire-derived products;

D. an estimate of the cost of closing the facility, including an itemized breakdown of the cost of transportation, tipping fees, and labor associated with closure of the facility; and

E. a schedule for the applicable closure procedures of part 7035.8260, including the time period for completing the closure procedures.

Subp. 4. **Amendment of plan.** The owner or operator may amend the closure plan at any time during the life of the facility. Any amendments to the closure plan must be submitted to and approved by the director before they become effective. The owner or operator must amend the closure plan and submit the amended plan to the director for approval whenever changes in the operating plan or facility design affect the closure procedures required, or whenever the expected year of closure changes.

7035.8260 CLOSURE PROCEDURES.

Subpart 1. **Time for completion of closure.** Within 90 days after closure of the facility must begin under part 7035.8250, the owner or operator of a waste tire facility shall complete the closure activities of this part. Additional procedures shall be completed as specified in the facility's approved closure plan. For waste tire processing or waste tire storage facilities, the director may approve a longer, specified period of time for completing the procedures set out in this part, provided the owner or operator demonstrates that all steps have been and will continue to be taken to minimize threats to human health, natural resources, and the environment, and the activities required by this part will take longer than 90 days to complete.

Subp. 2. **Closure procedures.** If the conditions of part 7035.8250, subpart 1 exist, the owner or operator must:

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A. close public access to the facility;

B. post a gate notice indicating to the public that the facility is closed and indicating the nearest facility where tires can be deposited;

C. notify the agency, local units of government, local land use authorities, and fire and health authorities of the closing of the facility;

D. remove all solid waste to a permitted solid waste facility;

E. remove all waste tires to a waste tire processing facility that has a permit or provisional status. If a waste tire processing facility is not available to accept the waste tires, the director shall approve shipment of the waste tires to a waste tire storage or transfer facility willing and able to accept the waste tires;

F. remove all tire-derived products to a market; and

G. notify the director when the closure activities are completed.

Subp. 3. **Certification of closure.** After receiving certification from the owner or operator of the facility that the closure procedures have been completed in accordance with subpart 2, the director shall inspect the facility site. If all procedures have been correctly completed, the director shall verify that the facility has been closed in compliance with parts 7035.8200 to 7035.8710, and that all duties established by parts 7035.8200 to 7035.8710, and by the facility permit, have been discharged.

7035.8270 QUALIFICATIONS FOR REGULATION AS A PERMITTED WASTE TIRE TRANSFER OR WASTE TIRE PROCESSING FACILITY.

Subpart 1. **Scope.** This part sets out the qualifications for regulation as a permitted waste tire transfer facility or waste tire processing facility. Facilities that do not meet the standards for regulation as a waste tire transfer or processing facility shall be subject to regulation as a waste tire storage facility.

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Subp. 2. **Waste tire transfer facility qualifications.** To qualify for regulation as a permitted waste tire transfer facility, the following standards must be met:

A. Waste tires stored at the facility shall be limited to 10,000 passenger tires or the equivalent weight of other waste tires.

B. All waste tires received at the facility shall be transported to a permitted waste tire processing facility at least twice annually or as otherwise provided in the facility's waste tire transfer facility permit as necessary to protect human health, natural resources, or the environment.

Subp. 3. **Waste tire processing facility qualifications.** To qualify for regulation as a permitted waste tire processing facility, the following standards must be met:

A. Waste tires stored shall be limited to one waste tire pile meeting the limits in part 7035.8240, subpart 3, item F, of the general facility standards, which is approximately 70,000 passenger tires.

B. At least 75 percent of the waste tires and tire-derived products must be processed and removed from the waste tire processing facility during a calendar year. This 75 percent annual processing requirement applies to all waste tires and tire-derived products received or produced by the facility during a calendar year. Compliance with the 75 percent annual processing requirement is determined based on the amount of waste tires and tire-derived products that are at the facility at the beginning of the calendar year, that are received or produced at the facility during the calendar year, and that remain at the facility at the end of the calendar year. The volume of waste tires and tire-derived products processed shall be calculated based on weight. This requirement shall not apply to facilities that have a waste tire storage facility permit, or that have received from the director, through the petitioning process established in part 7035.8300, an exemption from the 75 percent annual processing requirement.

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7035.8280 WASTE TIRE PROCESSING FACILITY STANDARDS.

Subpart 1. **Scope.** This part sets out the standards that shall be applied to the operation of a permitted waste tire processing facility in addition to the general standards in part 7035.8240. To qualify for regulation as a waste tire processing facility, the standards in part 7035.8270 must be met.

Subp. 2. **Emergency preparedness.** Equipment for communications and the control of fires shall be provided and maintained at the waste tire processing facility at all times. Arrangements to acquire police and fire protection services for the waste tire processing facility shall be made with local police and fire protection authorities.

Subp. 3. **Emergency preparedness manual.** The permittee of the waste tire processing facility shall maintain an emergency preparedness manual at the facility. This manual shall be submitted to the director with the permit application. Once approved, the manual shall become part of the permit. This manual shall be updated if a change in the operations of the waste tire processing facility occurs, or if the director requires an update. This emergency preparedness manual must, at a minimum, contain:

A. a list of names and telephone numbers of persons to be contacted in the event of a fire, flood, or other emergency involving the waste tire processing facility;

B. a list of the emergency response equipment present at the waste tire processing facility or available for use at the facility, the location of the equipment, and how it should be used in the event of a fire or other emergency;

C. an assessment of the possible hazards to human health and the environment should an emergency occur;

D. the procedures to be followed by facility personnel from discovery of an emergency until the situation is corrected, including the measures that will be taken to minimize the occurrence, recurrence, or spread of fires, explosions, and releases;

E. the locations of known water supplies, fire

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hydrants, dry-chemical extinguishers, or other materials that may be used for fire fighting purposes; and

F. additional relevant information.

No emergency preparedness manual shall be approved unless the permittee demonstrates that arrangements to acquire police and fire protection services for the waste tire processing facility have been made.

Subp. 4. **Emergency procedures.** The permittee of the waste tire processing facility shall implement the emergency procedures of subpart 3, item D, in the event of a fire or other emergency.

Subp. 5. **Emergency notification and reports.** The permittee of the waste tire processing facility shall immediately notify the director in the event of a fire or other emergency with potential off-site impacts. Within one week of correcting an emergency situation at the waste tire processing facility, the permittee of the facility shall submit to the director a report on the emergency. This report shall set out the type of emergency, the date and time of the emergency, the origins of the emergency, the actions that were taken to respond to the emergency, the results of the actions that were taken, and an analysis of the success or failure of the actions.

Subp. 6. **Market information.** In addition to the information to be included in the annual report required under the general facility standards of part 7035.8240, subpart 5, the permittee of a waste tire processing facility shall include a list of markets for the product of the processing operation, and the form and quantity of the product shipped to the markets. The permittee of a waste tire processing facility shall also report on the quantity of residuals from processing produced at the facility, and how and where those residuals were disposed.

7035.8290 WASTE TIRE STORAGE FACILITY STANDARDS.

Subpart 1. **Scope.** This part sets out the standards that shall be applied to the operation of a permitted waste tire storage facility in addition to the general standards in part

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7035.8240. A waste tire facility that cannot qualify for regulation as a waste tire transfer facility or as a waste tire processing facility shall comply with the standards in this part.

Subp. 2. **Emergency preparedness standards.** Waste tire storage facilities shall comply with the emergency preparedness standards for waste tire processing facilities in part 7035.8280, subparts 2 to 5.

Subp. 3. **Storage limitation.** No waste tire storage facility shall store more than 500,000 passenger tires or the equivalent weight of other waste tires or tire-derived products at any time.

Subp. 4. **Additional information.** In addition to the information required to be submitted in the annual report required under the general facility standards of part 7035.8240, subpart 5, the permittee of the waste tire storage facility shall submit:

A. information on the procedures used at the facility to minimize or prevent mosquito breeding and rodent infestation, including the dates when mosquito or rodent control operations were conducted; and

B. reports that identify all incidents that required implementing the contingency plan of subpart 5. The report must contain a description of the actions that have been taken to minimize hazards to human health and the environment since the emergency occurred, and what actions will be taken to continue to correct the emergency if the emergency has not been corrected.

Subp. 5. **Contingency plan.** The permittee of a waste tire storage facility that has more than one waste tire pile, shall prepare and maintain a contingency plan at the facility. This contingency plan must identify the procedures to be followed in the event an emergency causes a release of substances or pollutants that threaten human health, natural resources, or the environment. The contingency plan must include:

A. an identification of the events, including vandalism, spills, fires, explosions, or any incident that could cause a release of substances or pollutants that threaten human

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health, natural resources, or the environment;

B. a detailed description of the procedures that should be followed in the event of a release of substances or pollutants that threaten human health, natural resources, or the environment at the facility including the procedures that should be followed to prevent the contamination of soil and ground water from the release and run-off contaminated with substances discharged from the burning tires;

C. a description of how and where run-off contaminated with substances discharged from the burning tires will be confined and collected;

D. a description of how and where the contaminated run-off will be stored before it is treated, used, or disposed of; and

E. a description of the emergency equipment available on- or off-site to implement the contingency plan, the response time for any emergency equipment available off-site, and the function and capacity of the equipment.

Subp. 6. **Contingency plan submittal.** The contingency plan shall be submitted to the director with the permit application. Once approved, the plan shall become part of the permit. This plan shall be updated if a change in the operations at the waste tire storage facility occurs, or if the plan did not provide for an appropriate response to an emergency situation involving a release, or if required by the director to protect human health, natural resources, or the environment.

Subp. 7. **Contingency plan implementation.** The permittee of the waste tire storage facility shall implement the contingency plan of subpart 5 when needed to prevent, mitigate, or clean up a release of substances or pollutants that threaten human health, natural resources, or the environment.

Subp. 8. **Notification of implementation of contingency plan.** The permittee of the waste tire storage facility must immediately notify the director when the contingency plan is implemented.

Subp. 9. **Removal of contaminated soil.** If required by the

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director to protect human health, natural resources, or the environment, the permittee shall remove soil contaminated by substances released by an event specified in subpart 5. The action shall be taken in accordance with any applicable rules governing the removal, transportation, and disposal of the material.

7035.8300 PETITION PROCEDURES.

Subpart 1. **Scope.** This part sets out the procedures for submitting a petition for an exemption from the 75 percent annual processing requirement established by part 7035.8270, subpart 3.

Subp. 2. **Submission of the petition.** The permittee of a waste tire processing facility may petition the director for an exemption from the 75 percent annual processing requirement by submitting to the director a petition containing the information described in subpart 3, as soon as the permittee becomes aware that compliance with the 75 percent annual processing requirement cannot be achieved.

Subp. 3. **Information required.** The petition for an exemption from the 75 percent annual processing requirement shall contain information sufficient to allow the director to find:

A. that the 75 percent annual processing requirement will be met in the year following the year for which the exemption is obtained;

B. that an exemption from the 75 percent annual processing requirement will not cause the facility to be out of compliance with any other standard applicable to the facility; and

C. that an exemption from the 75 percent annual processing requirement will not cause the facility to become a hazard to human health, natural resources, or the environment.

Subp. 4. **Determination by the director.** If the director, upon evaluation of the information submitted as part of the petition, makes the findings listed under subpart 3, the

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director shall grant the petition. The director shall determine whether the petition shall be granted within 60 days of receiving a petition containing information sufficient for the director to make the required findings. An exemption granted under this part shall be valid for one year. The director shall not grant the permittee of a waste tire processing facility an exemption from the 75 percent annual processing requirement for any two consecutive years.

WASTE TIRE FACILITY FINANCIAL ASSURANCE REQUIREMENTS

7035.8400 SCOPE.

Parts 7035.8400 to 7035.8590 apply to owners and operators of waste tire facilities, except those who are exempt from the requirement to obtain a waste tire facility permit under part 7001.4020, or are permitted by rule under part 7001.4030.

7035.8410 DEFINITIONS.

Subpart 1. **Scope.** When used in parts 7035.8400 to 7035.8590, the terms in subparts 2 and 3 have the meanings given them.

Subp. 2. **Closure plan.** "Closure plan" means the plan for closure as required in part 7035.8250, subpart 2, and the applicable requirements of parts 7035.8250 and 7035.8260.

Subp. 3. **Current closure cost estimate.** "Current closure cost estimate" means the most recent of the estimates prepared in accordance with part 7035.8430.

7035.8420 FINANCIAL ASSURANCE REQUIRED.

The owner or operator of a waste tire facility shall establish financial assurance for closure of the facility within the time periods established in part 7035.8450, by obtaining one or more of the financial assurance mechanisms described in parts 7035.8470, 7035.8480, 7035.8490, and 7035.8500, or a county-held financial assurance mechanism that meets the standards in part 7035.8460. The financial assurance mechanism selected must provide the amount of financial assurance required by part

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7035.8430. No financial assurance is required for old waste tires.

7035.8430 COST ESTIMATE FOR CLOSURE.

Subpart 1. **Amount.** The amount of financial assurance to be provided by the owner or operator of a waste tire facility shall be based on the estimates prepared under this part, and shall be established according to the time schedule in part 7035.8450.

Subp. 2. **Phase I waste tire collection estimate.** The owner or operator of a waste tire facility shall make a written estimate, in current dollars, of the cost of complying with closure standards in parts 7035.8250 and 7035.8260 for all waste tires that have been collected at the facility at any time since the effective date of parts 7035.8200 to 7035.8710 and that will be collected at the facility at any time during the period from July 1, 1988, to July 1, 1990.

Subp. 3. **Phase II waste tire collection estimate.** The owner or operator of a waste tire facility shall make a written estimate, in current dollars, of the cost of complying with closure standards in parts 7035.8250 and 7035.8260 for the maximum number of new waste tires that will be collected at the facility at any time during the operating life of the facility.

Subp. 4. **Submission to director.** The estimates prepared under subparts 2 and 3 shall be submitted to the director with the permit application or upon the request of the director.

7035.8440 ADJUSTMENTS TO FINANCIAL ASSURANCE LEVEL.

Subpart 1. **Yearly adjustment.** After July 1, 1990, the owner or operator of a waste tire facility shall recalculate annually the cost of closure for new waste tires using an inflation factor. This inflation factor shall be calculated using the Implicit Price Deflator for Gross National Product as found in the Survey of Current Business issued annually by the United States Department of Commerce. The inflation factor is the result of dividing the latest published annual deflator by the deflator for the previous year. Upon request, the director

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shall provide the inflation factor to the owner or operator. The closure cost estimate shall be recalculated by multiplying the latest closure cost estimate by the latest inflation factor. The financial assurance mechanism used by the owner and operator of the facility shall be adjusted to reflect changes in the cost of closure caused by inflation. The date upon which the owner or operator of a waste tire facility shall adjust the financial assurance mechanism shall be July 1 of each year.

Subp. 2. **Other revisions.** The owner or operator of the waste tire facility shall revise the closure cost estimate whenever a change in the closure plan changes the cost of closure. If the estimate of the cost of closure changes, the owner or operator of a waste tire facility shall increase or decrease the amount of financial assurance by following the procedures in part 7035.8470, 7035.8480, 7035.8490, or 7035.8500.

Subp. 3. **Record keeping.** During the operating life of the facility, the owner or operator of a waste tire facility shall keep a record of the latest adjusted closure cost estimate, and shall submit this record to the agency upon the request of the director.

7035.8450 SCHEDULE FOR ESTABLISHING FINANCIAL ASSURANCE.

Subpart 1. **Scope.** The owner or operator of a waste tire facility shall establish the required level of financial assurance under this part.

Subp. 2. **Phase I.** By July 1, 1988, the owner or operator of a waste tire facility shall establish financial assurance for all waste tires that have been collected since the effective date of parts 7035.8200 to 7035.8710, and for those waste tires that will be collected at the facility at any time during the next two years of operation. By July 1, 1988, the owner or operator of a waste tire facility shall submit to the director evidence that the financial assurance required under this subpart has been obtained.

Subp. 3. **Phase II.** By July 1, 1990, the owner or operator of a waste tire facility shall establish financial assurance for

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the maximum number of new waste tires that will be collected at the facility at any time during the operating life of the facility. By July 1, 1990, the owner or operator of a waste tire facility shall submit to the director evidence that the financial assurance required under this subpart has been obtained.

7035.8460 COUNTY-HELD FINANCIAL ASSURANCE MECHANISM.

Subpart 1. **Scope.** An owner or operator of a waste tire facility may use a county-held financial assurance mechanism to satisfy the requirements of parts 7035.8400 to 7035.8590 if the county-held mechanism meets or exceeds the requirements of parts 7035.8400 to 7035.8590. The wording of the instruments used to satisfy parts 7035.8400 to 7035.8590 must be identical to the wording in parts 7035.8550 to 7035.8590, except that the language that appears in double brackets must be used.

Subp. 2. **Action by the county.** A county holding a financial assurance mechanism for a waste tire facility in lieu of the agency must take all actions needed to gain access to the funds available through the financial assurance mechanism when the owner or operator of the waste tire facility has failed to:

A. begin or complete closure as required by the permit or part 7035.8260;

B. provide alternate financial assurance and obtain written approval of the financial assurance from the director and the county within the time period required by parts 7035.8400 to 7035.8590; or

C. fund the standby trust fund within the specified time period as required by part 7035.8480.

Subp. 3. **Action by the director.** In the event that the county has failed to gain access to the funds available through the financial assurance mechanism within 30 days of the owner's or operator's failure to perform as specified in subpart 2, or if the county has failed to use any funds obtained under subpart 2 to close the facility in compliance with the closure plan or part 7035.8260, including time schedules, the director shall be

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given access to the funds. The county shall take no action that interferes with the director's access to the funds, and shall cooperate with the director if necessary to allow the director to gain access to the funds.

Subp. 4. **Notice.** In the event that the director takes action under subpart 3, the director shall give notice of this action to the county and all other involved parties, including the owner or operator of the waste tire facility, and any trustee, surety, or letter of credit institution. Failure by the director to give notice shall not invalidate the director's actions under subpart 3.

7035.8470 CLOSURE TRUST FUND.

Subpart 1. **Scope.** Subparts 2 to 13 apply to closure trust funds. For trust funds held by a county under part 7035.8460, provisions in this part that refer to the director shall apply to both the director and the county.

Subp. 2. **Establishment of trust fund.** An owner or operator of a waste tire facility may satisfy the requirements of part 7035.8420 by establishing a closure trust fund that conforms to the requirements of subparts 2 to 13 and by submitting an originally-signed duplicate of the trust agreement to the director. The trustee shall be an entity that has the authority to act as a trustee and whose trust operations are regulated and examined by a federal or state agency. The owner or operator of the waste tire facility shall submit the originally-signed duplicate of the trust agreement to the director with the facility permit application, or in accordance with part 7035.8450.

Subp. 3. **Wording of trust agreement.** The wording of the trust agreement must be identical to the wording in part 7035.8550 and must be accompanied by a formal certification of acknowledgment as shown in part 7035.8560. The trust agreement must be updated within 60 days after a change in the amount of the current closure cost estimate covered by the agreement.

Subp. 4. **Pay-in period.** The owner or operator must make

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annual payments into the trust fund over the period for which the financial assurance is required, hereinafter called the pay-in period. After July 1, 1990, the pay-in period shall equal five years or the remaining operating life of the facility, whichever is shorter.

Subp. 5. **Payments.** For a new facility, the first payment must be made and a receipt submitted to the director before the initial receipt of waste tires. For an existing facility, the first payment must be made no later than 30 days after the originally-signed duplicate of the trust agreement is sent to the director. The first payment must at least be equal to the applicable current closure cost estimate, divided by the number of years in the pay-in period. Subsequent payments must be made no later than 30 days after each anniversary date of the first payment. The minimum amount of each subsequent payment must be determined by this formula:

$$\text{next payment} = \frac{CE - CV}{Y}$$

Where CE is the current closure cost estimate, CV is the current value of the trust fund, and Y is the number of years remaining in the pay-in period.

Subp. 6. **Establishment of trust fund as an alternate financial assurance mechanism.** If the owner or operator chooses to establish a closure trust fund after having used one or more alternate financial assurance mechanisms in parts 7035.8470 to 7035.8500, the first payment into the trust fund must be at least the amount that the fund would contain if the trust fund were established initially and annual payments made according to specifications of this part as applicable.

Subp. 7. **Additional payments.** If, after the pay-in period is completed, the sum of the current closure cost estimate changes, the owner or operator shall compare the new estimate with the trustee's most recent annual valuation of the trust fund. If the value of the fund is less than the amount of the

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new estimate, the owner or operator, within 60 days after the change in the cost estimate, shall either deposit an amount into the fund so that its value after this deposit at least equals the amount of the current closure cost estimate and submit a receipt from the trustee for this payment to the director, or establish other financial assurance mechanisms as specified in parts 7035.8470 to 7035.8500 to cover the difference.

Subp. 8. **Request for release of excess funds.** During the operating life of the facility, if the value of the trust fund is greater than the sum of the current closure cost estimate, the owner or operator may submit a written request, together with supporting documents to the director, for release of the amount in excess of the current closure cost estimate covered by the trust fund.

Subp. 9. **Substitution of alternate financial assurance mechanisms.** If an owner or operator substitutes other financial assurance mechanisms as specified in parts 7035.8470 to 7035.8500 in place of all or part of the trust fund, the owner or operator may submit a written request to the director for release of the amount in excess of the current closure cost estimate covered by the trust fund.

Subp. 10. **Release of funds.** Within 60 days after receiving a request from the owner or operator for release of funds specified in subpart 8 or 9, the director shall instruct the trustee to release any funds in excess of the latest closure cost estimate covered by the trust fund to the owner or operator.

Subp. 11. **Notification.** The trust fund instrument shall require the trustee to notify the owner or operator and the director by certified mail within ten days following the expiration of the 30-day period after the anniversary of the establishment of the trust if no payment is received from the owner or operator during the period. Within 60 days after receipt by the director of a notice of nonpayment of any payment required by this part, the owner or operator shall:

A. make the required payment;

B. provide alternate financial assurance as specified

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in this part and obtain the director's written approval of the assurance provided; or

C. stop accepting waste tires and begin closure of the facility.

Subp. 12. **Reimbursement.** After beginning closure of the waste tire facility, an owner, operator, or other person authorized to perform closure may request reimbursement for completed closure expenditures by submitting itemized bills to the director. Within 60 days after receiving bills for completed closure activities, the director shall determine whether the closure expenditures are in accordance with the closure plan or are needed to ensure proper closure, and if so, the director shall instruct the trustee to make reimbursement in the amount the director specifies in writing. If the director has reason to believe that the cost of closure will be significantly greater than the value of the trust fund, the director may withhold reimbursement of the amount as considered prudent until it is determined, under part 7035.8530, that the owner or operator is no longer required to maintain financial assurance for closure.

Subp. 13. **Termination of trust fund.** The director shall agree to termination of the trust if:

A. an owner or operator substitutes alternate financial assurance as specified in parts 7035.8470 to 7035.8530; or

B. the director releases the owner or operator from the requirements of this part under part 7035.8530.

7035.8480 SURETY BOND GUARANTEEING PAYMENT INTO A STANDBY TRUST FUND.

Subpart 1. **Scope.** Subparts 2 to 10 apply to surety bonds that guarantee payment into a standby trust fund. For surety bonds held by a county under part 7035.8460, provisions in this part that refer to the director shall apply to both the director and the county.

Subp. 2. **Surety bond requirements.** An owner or operator

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may satisfy the requirements of part 7035.8420 by obtaining a surety bond that conforms to the requirements of subparts 2 to 10 and by submitting the bond to the director. The surety company issuing the bond must be among those listed as acceptable sureties on federal bonds in Circular 570, issued by the United States Department of the Treasury, as published annually in the Federal Register on July 1. ~~An~~ The owner or operator of the waste tire facility shall submit the bond to the director with the facility permit application or ~~under~~ in accordance with part 7035.8450.

Subp. 3. **Wording of surety bond.** The wording of the surety bond must be identical to the wording specified in part 7035.8570.

Subp. 4. **Establishment of standby trust fund.** The owner or operator who uses a surety bond to satisfy the requirements of part 7035.8420 shall also establish a standby trust fund. The bond shall require the surety to deposit all payments made under the bond directly into the standby trust fund in accordance with instructions from the director. An originally-signed duplicate of the trust agreement must be submitted to the director with the surety bond. The standby trust fund must meet the requirements of part 7035.8470, except that compliance with the requirements in items A to D is not required until the standby trust fund is funded under this part:

A. payments into the trust fund as specified in part 7035.8470;

B. updating of Schedule A of the trust agreement to show current closure cost estimates;

C. annual valuations as required by the trust agreement; and

D. notices of nonpayment as required by the trust agreement.

Subp. 5. **Performance guarantee.** The bond must guarantee that the owner or operator will:

A. pay into the standby trust fund an amount equal to the penal sum of the bond before the beginning of closure of the

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facility;

B. pay into the standby trust fund an amount equal to the penal sum within 15 days after an order to close the facility is issued by the director, the agency, or court of competent jurisdiction; or

C. provide alternate financial assurance as specified in parts 7035.8470 to 7035.8500 and obtain the director's written approval of the assurance provided, within 90 days after receipt by the director of a notice of cancellation of the bond from the surety.

Subp. 6. **Failure to perform.** Under the terms of the bond, the surety must become liable on the bond obligation when the owner or operator fails to perform as guaranteed by the bond.

Subp. 7. **Penal sum.** The penal sum of the bond must be at least equal to the sum of the applicable current closure cost estimate.

Subp. 8. **Changes to penal sum.** Within 60 days of an increase in the sum of the current closure cost estimate to an amount greater than the penal sum, the owner or operator shall either cause the penal sum to be increased to an amount at least equal to the sum of the current closure cost estimate and submit evidence of the increase to the director, or obtain other financial assurance as specified in parts 7035.8470 to 7035.8500 to cover the increase. Whenever the sum of the current closure cost estimate decreases, the penal sum may be reduced to the sum of the current closure cost estimate following written approval by the director.

Subp. 9. **Notification.** The bond must provide that the surety may cancel the bond only by sending notice of cancellation by certified mail to the owner or operator and the director. The bond must also provide that cancellation shall not be effective until 120 days after the director has received the notice of cancellation, as evidenced by the return receipt. For a surety bond held by a county under part 7035.8460, the bond must provide a 150-day cancellation period rather than a 120-day period.

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Subp. 10. **Cancellation of surety bond.** The owner or operator may cancel the bond if the director has given prior written consent. The director shall provide written consent if:

A. an owner or operator substitutes alternate financial assurance as specified in parts 7035.8470 to 7035.8500; or

B. the director releases the owner or operator from the requirements of this part in accordance with part 7035.8530.

7035.8490 LETTER OF CREDIT.

Subpart 1. **Scope.** Subparts 2 to 11 apply to closure letters of credit. For letters of credit held by a county under part 7035.8460, provisions in this part that refer to the director shall apply to both the director and the county.

Subp. 2. **Letter of credit requirements.** An owner or operator may satisfy the requirements of part 7035.8420 by obtaining an irrevocable letter of credit that conforms to the requirements of subparts 2 to 11, and by submitting the letter to the director. The issuing institution must be an entity that has the authority to issue letters of credit and whose letter of credit operations are regulated and examined by a federal or state agency. ~~An~~ The owner or operator of ~~a~~ the waste tire facility shall submit the letter of credit to the director with the facility permit application or ~~under~~ in accordance with part 7035.8450.

Subp. 3. **Wording of letter of credit.** The wording of the letter of credit must be identical to the wording in part ~~7035.8490~~ 7035.8580.

Subp. 4. **Establishment of standby trust fund.** An owner or operator who uses a letter of credit to satisfy the requirements of part 7035.8420 shall also establish a standby trust fund. Under the terms of the letter of credit, the issuing institution will deposit all amounts paid directly into the standby trust fund in accordance with instructions from the director. An originally-signed duplicate of the standby trust fund agreement must be submitted to the director with the letter of credit.

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The standby trust fund agreement must meet the requirements in part 7035.8470, except that compliance with the requirements in items A to D is not required until the standby trust fund is funded under this part:

A. payments into the trust fund as specified in part 7035.8470;

B. updating of Schedule A of the trust agreement to show current closure cost estimates;

C. annual valuations as required by the trust agreement; and

D. notices of nonpayment as required by the trust agreement.

Subp. 5. **Submittal.** The letter of credit submitted to the director must be accompanied by a letter from the owner or operator referring to the letter of credit by number, issuing institution, date of issuance, the name and address of the waste tire facility, and the amount of funds assured for closure of the facility by the letter of credit.

Subp. 6. **Notification.** The letter of credit must be irrevocable and issued for a period of at least one year. The letter of credit must provide that the expiration date will be extended automatically for a period of at least one year unless, at least 120 days before the current expiration date, the issuing institution notifies both the owner or operator and the director by certified mail of a decision not to extend the expiration date. Under the terms of the letter of credit, the 120 days must begin on the date when the director received the notice, as evidenced by the return receipt. For a letter of credit held by a county under part 7035.8460, the letter of credit must provide a 150-day expiration period rather than a 120-day period.

Subp. 7. **Amount of credit.** The letter of credit must be issued in an amount at least equal to the sum of the applicable current closure cost estimate.

Subp. 8. **Changes to amount of credit.** Within 60 days of an increase in the sum of the current closure cost estimate to

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an amount greater than the amount of the credit, the owner or operator shall either cause the amount of the credit to be increased to an amount at least equal to the sum of the current closure cost estimate and submit evidence of the increase to the director, or obtain other financial assurance as specified in parts 7035.8470 to 7035.8500 to cover the increase. Whenever the sum of the current closure cost estimate decreases, the amount of the credit may be reduced to the sum of the current closure cost estimate following written approval by the director.

Subp. 9. **Failure to perform.** The letter of credit must provide that the director may draw on the letter of credit, when the director has determined that the owner or operator has failed to perform closure when required to do so in accordance with the closure plan or part 7035.8260.

Subp. 10. **Failure to establish alternate financial assurance.** The director shall draw on the letter of credit if the owner or operator does not establish alternate financial assurance as specified in parts 7035.8470 to 7035.8500 and obtain written approval of alternate assurance from the director within 90 days after the director receives notice that the issuing institution has decided not to extend the letter of credit beyond the current expiration date. The director may delay the drawing if the issuing institution grants an extension of the term of the credit. During the last 30 days of any extension, the director shall draw on the letter of credit if the owner or operator has failed to provide alternate financial assurance as specified in parts 7035.8470 to 7035.8500 and obtain written approval of the assurance from the director.

Subp. 11. **Termination of letter of credit.** The director shall return the letter of credit to the issuing institution for termination if:

A. an owner or operator substitutes alternate financial assurance as specified in parts 7035.8470 to 7035.8500; or

B. the director releases the owner or operator from the requirements of this part in accordance with part 7035.8530.

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7035.8500 SURETY BOND GUARANTEEING PERFORMANCE OF CLOSURE FOR PERMITTED FACILITIES.

Subpart 1. **Scope.** Subparts 2 to 11 apply to surety bonds that guarantee performance of closure. Surety bonds that guarantee performance of closure can only be used for permitted facilities with approved closure plans. For surety bonds held by a county under part 7035.8460, provisions in this part that refer to the director shall apply to both the director and the county.

Subp. 2. **Surety bond requirements.** An owner or operator may satisfy the requirements of part 7035.8420 by obtaining a surety bond that conforms to the requirements of subparts 2 to 11 and by submitting the bond to the director. The surety company issuing the bond must be among those listed as acceptable sureties on federal bonds in Circular 570, issued by the United States Department of the Treasury, as published annually in the Federal Register on July 1. ~~An~~ The owner or operator of ~~a~~ the waste tire facility shall submit the bond to the director with the facility permit application or in accordance with part 7035.8450.

Subp. 3. **Wording of surety bond.** The wording of the surety bond must be identical to the wording specified in part 7035.8590.

Subp. 4. **Establishment of standby trust fund.** The owner or operator who uses a surety bond to satisfy the requirements of part 7035.8420 shall also establish a standby trust fund. The bond shall require the surety to deposit all payments made under the bond directly into the standby trust fund in accordance with instructions from the director. An originally-signed duplicate of the standby trust fund agreement must be submitted to the director with the surety bond. The standby trust fund must meet the requirements of part 7035.8470, except that compliance with the requirements in items A to D is not required until the standby trust fund is funded under this part:

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A. payments into the trust fund as specified in part 7035.8470;

B. updating of Schedule A of the trust agreement to show current closure cost estimates;

C. annual valuations as required by the trust agreement; and

D. notices of nonpayment as required by the trust agreement.

Subp. 5. **Performance guarantee.** The bond must guarantee that the owner or operator will:

A. perform closure in accordance with the closure plan, and other requirements of the permit for the facility whenever required to do so; or

B. provide alternate financial assurance as specified in parts 7035.8470 to 7035.8500 and obtain the director's written approval of the assurance provided, within 90 days after receipt by the director of a notice of cancellation of the bond from the surety.

Subp. 6. **Failure to perform.** Under the terms of the bond, the surety must become liable on the bond obligation when the owner or operator fails to perform as guaranteed by the bond. Following a determination by the director that the owner or operator has failed to perform closure in accordance with the closure plan, and other permit requirements, under the terms of the bond the surety shall deposit the amount of the penal sum into the standby trust fund.

Subp. 7. **Penal sum.** The penal sum of the bond must be at least equal to the sum of the applicable current closure cost estimate.

Subp. 8. **Changes to penal sum.** Within 60 days of an increase in the sum of the current closure cost estimate to an amount greater than the penal sum, the owner or operator shall either cause the penal sum to be increased to an amount at least equal to the sum of the current closure cost estimate and submit evidence of the increase to the director, or obtain other financial assurance specified in parts 7035.8470 to 7035.8500.

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Whenever the sum of the current closure cost estimate decreases, the penal sum may be reduced to the sum of the current closure cost estimate following written approval by the director.

Subp. 9. **Notification.** The bond must provide that the surety may cancel the bond only by sending notice of cancellation by certified mail to the owner or operator and to the director. The bond must also provide that cancellation shall not be effective until 120 days after the director has received the notice of cancellation as evidenced by the return receipt. For a surety bond held by a county under part 7035.8460, the bond must provide a 150-day cancellation period rather than a 120-day period.

Subp. 10. **Cancellation of surety bond.** The owner or operator may cancel the bond if the director has given prior written consent. The director shall provide written consent if:

A. an owner or operator substitutes alternate financial assurance as specified in parts 7035.8470 to 7035.8500; or

B. the director releases the owner or operator from the requirements of this part in accordance with part 7035.8530.

Subp. 11. **Limitation on liability.** The surety will not be liable for deficiencies in the owner's or operator's performance of closure after the director releases the owner or operator from the requirements of this part in accordance with part 7035.8530.

7035.8510 USE OF MULTIPLE FINANCIAL ASSURANCE MECHANISMS.

An owner or operator may satisfy the requirements of part 7035.8420 by establishing more than one financial assurance mechanism per waste tire facility. These mechanisms are limited to trust funds, surety bonds guaranteeing payment into a trust fund, and letters of credit. The mechanisms must be established as specified in parts 7035.8470, 7035.8480, and 7035.8490, except that it is the combination of mechanisms, rather than a single mechanism, that must provide financial assurance at least equal to the sum of the current closure cost estimate. If an

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owner or operator uses a trust fund in combination with a surety bond or a letter of credit, the owner or operator may use the trust fund as the standby trust fund for the other mechanisms. A single standby trust fund may be established for two or more mechanisms. The director may use any or all of the financial assurance mechanisms to provide for closure of the facility.

7035.8520 USE OF FINANCIAL ASSURANCE MECHANISM FOR MULTIPLE WASTE TIRE FACILITIES.

An owner or operator may use a financial assurance mechanism specified in parts 7035.8470 to 7035.8500 to meet the requirements of part 7035.8420 for more than one waste tire facility. Evidence of financial assurance submitted to the director must include a list showing, for each facility, the name, address, and the amount of funds for closure assured by the mechanism. The amount of funds available through the mechanism must be no less than the sum of funds that would be available if a separate mechanism had been established and maintained for each facility. When directing disbursement of funds for closure at any of the facilities covered by the mechanism, the director shall direct that only the amount of funds designated for that facility be disbursed unless otherwise agreed to by the owner or operator.

7035.8530 RELEASE OF OWNER OR OPERATOR FROM FINANCIAL ASSURANCE REQUIREMENTS.

When an owner or operator has completed, to the satisfaction of the director, all closure requirements in accordance with the closure plan or other closure requirements, the director shall notify the owner or operator in writing that financial assurance for closure of the waste tire facility is no longer required.

7035.8540 INCAPACITY OF OWNERS OR OPERATORS, GUARANTORS, OR FINANCIAL INSTITUTIONS.

Subpart 1. **Notification of bankruptcy.** An owner or operator shall notify the director by certified mail of the

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commencement of a voluntary or involuntary proceeding under United States Code, title 11, Bankruptcy, naming the owner or operator as a debtor, within ten days after commencement of the proceeding.

Subp. 2. **Incapacity of financial institutions.** An owner or operator who fulfills the requirements of part 7035.8420 by obtaining a trust fund, surety bond, or letter of credit will be considered to be without the required financial assurance in the event of bankruptcy of the trustee or issuing institution; or in the event that the authority of the trustee to act as trustee is revoked or suspended; or in the event that the institution's authority to issue the surety bond or letter of credit is revoked or suspended. The owner or operator shall establish other financial assurance within 60 days after such an event.

7035.8550 LANGUAGE REQUIRED FOR TRUST AGREEMENT.

A trust agreement for a trust fund as specified in part 7035.8470 must be worded as specified in this part. Instructions in brackets must be replaced with the relevant information and the brackets deleted. Instructions or language in double brackets shall be used when the instrument is to serve as a county-held financial assurance mechanism.

TRUST AGREEMENT

Trust Agreement, the "Agreement," entered into on [date] by [name of the owner or operator], a [name of state] [insert "corporation," "partnership," "association," or "proprietorship"], the "Grantor," and [name of corporate trustee], [insert "incorporated in the state of ....." or "a national bank"], the "Trustee."

RECITALS:

° The Minnesota Pollution Control Agency (Agency), an agency of the state of Minnesota, has established rules applicable to the Grantor, requiring that an owner or operator of a waste tire facility shall provide assurance that funds will be available when needed for closure for the facility.

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° The Grantor has chosen to establish a trust to provide the financial assurance for the facilities identified in this Agreement.

° The Grantor, acting through its duly authorized officers, has selected the Trustee to be the trustee under this Agreement, and the Trustee is willing to act as trustee.

AGREEMENT:

The Grantor and the Trustee agree as follows:

Section 1. **Definitions.** As used in this Agreement:

a. The term "Grantor" means the owner or operator who enters into this Agreement and any successors or assigns of the Grantor.

b. The term "Trustee" means the Trustee who enters into this Agreement and any successor Trustee.

c. The term "beneficiary" means the Minnesota Pollution Control Agency [[substitute "The term "1st beneficiary" means the [name of county]; the term "2nd beneficiary" means the Minnesota Pollution Control Agency" for the entire definition]].

Section 2. **Identification of Facilities and Cost Estimates.** This Agreement pertains to the facilities and cost estimates, if any, identified on attached Schedule A [on Schedule A, for each facility list the name, address, and the current closure cost estimate for which financial assurance is demonstrated by this Agreement].

Section 3. **Establishment of Fund.** The Grantor and the Trustee establish a trust fund, the "Fund," for the benefit of the Agency [[substitute "1st and 2nd beneficiaries" for "Agency"]]. The Grantor and the Trustee intend that no third party have access to the Fund except as provided in this Agreement. The Fund is established initially as the property, which is acceptable to the Trustee and described in Schedule B attached to this Agreement. This property and any other property subsequently transferred to the Trustee is referred to as the Fund, together with all earnings and profits, less any payments or distributions made by the Trustee under this Agreement. The Fund shall be held by the Trustee, IN TRUST, as

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provided in this Agreement. The Trustee shall not be responsible or undertake any responsibility for the amount or adequacy of, or any duty to collect from the Grantor, any payments necessary to discharge any liabilities of the Grantor established by the Agency.

Section 4. **Payment for Closure.** The Trustee shall make payments from the Fund as the Agency Director [[substitute "1st or 2nd beneficiary" for "Agency Director"]] shall direct, in writing, to provide for the payment of the costs of closure of the facilities covered by this Agreement. [[Add the following sentence "Direction to the Trustee shall be given by the 1st or 2nd beneficiary in accordance with Section 14."]] The Trustee shall reimburse the Grantor or other persons as specified by the Agency Director [[substitute "1st or 2nd beneficiary" for "Agency Director"]] shall direct in writing. In addition, the Trustee shall refund to the Grantor the amounts the Agency Director [[substitute "1st or 2nd beneficiary" for "Agency Director"]] specifies in writing. Upon refund, these funds shall no longer constitute part of the Fund.

Section 5. **Payments Comprising the Fund.** Payments made to the Trustee for the Fund shall consist of cash or securities acceptable to the Trustee.

Section 6. **Trustee Management.** The Trustee shall invest and reinvest the principal income of the Fund as a single fund in accordance with general investment policies and guidelines. In investing, reinvesting, exchanging, selling, and managing the Fund, the Trustee's duties with respect to the trust fund shall be discharged solely in the interest of the beneficiary [[substitute "1st and 2nd beneficiaries" for "beneficiary"]] and with the care, skill, prudence, and diligence under the circumstances then prevailing that persons of prudence, acting in a like capacity and familiar with such matters, would use in the conduct of an enterprise of a like character and with like aims; except that:

a. securities or other obligations of the Grantor, or any other owner or operator of the facilities, or any of their

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affiliates as defined in the Investment Company Act of 1940, United States Code, title 15, section 80a-2(a), shall not be acquired or held, unless they are securities or other obligations of the federal or state government;

b. the Trustee is authorized to invest the Fund in time or demand deposits of the Trustee, to the extent insured by an agency of the federal or state government; and

c. the Trustee is authorized to hold cash awaiting investment or distribution uninvested for a reasonable time and without liability for the payment of interest thereon.

Section 7. **Commingling and Investment.** The Trustee is expressly authorized in its discretion:

a. to transfer from time to time any or all of the assets of the Fund to any common, commingled, or collective trust fund created by the Trustee in which the Fund is eligible to participate, subject to all of the provisions thereof, to be commingled with the assets of other trusts participating therein; and

b. to purchase shares in any investment company registered under the Investment Company Act of 1940, United States Code, title 15, sections 80a-1 et seq., including one that may be created, managed, underwritten, or to which investment advice is rendered or the shares are sold by the Trustee. The Trustee may vote such shares in its discretion.

Section 8. **Express Powers of Trustee.** Without in any way limiting the powers and discretions conferred upon the Trustee by the other provisions of this Agreement or by law, the Trustee is expressly authorized and empowered:

a. to sell, exchange, convey, transfer, or otherwise dispose of any property held by it, by public or private sale. No person dealing with the Trustee may be bound to see to the application of the purchase money or to inquire into the validity or expediency of a sale or other disposition;

b. to make, execute, acknowledge, and deliver any and all documents of transfer and conveyance and any and all other instruments that may be necessary or appropriate to carry out

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the powers granted in this Agreement;

c. to register any securities held in the Fund in its own name or in the name of a nominee and to hold any security in bearer form or in book entry, or to combine certificates representing the securities with certificates of the same issue held by the Trustee in other fiduciary capacities, or to deposit or arrange for the deposit of the securities in a qualified central depository even though, when so deposited, the securities may be merged and held in bulk in the name of the nominee of the depository with other securities deposited therein by another person, or to deposit or arrange for the deposit of any securities issued by the United States Government, or any agency or instrumentality thereof, with a federal reserve bank, but the books and records of the Trustee shall at all times show that all these securities are part of the Fund;

d. to deposit any cash in the Fund in interest-bearing accounts maintained or savings certificates issued by the Trustee, in its separate corporate capacity, or in any other banking institution affiliated with the Trustee, in its separate corporate capacity, or in any other banking institution affiliated with the Trustee, to the extent insured by an agency of the federal or state government; and

e. to compromise or otherwise adjust all claims in favor of or against the Fund.

Section 9. **Taxes and Expenses.** All taxes of any kind that may be assessed or levied against or in respect of the Fund and all brokerage commissions incurred by the Fund shall be paid from the Fund. All other expenses incurred by the Trustee in connection with the administration of this Trust, including fees for legal services rendered to the Trustee, the compensation of the Trustee to the extent not paid directly by the Grantor, and all other proper charges and disbursements of the Trustee shall be paid from the Fund.

Section 10. **Annual Valuation.** The Trustee shall annually, at least 30 days prior to the anniversary date of establishment

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of the Fund, furnish to the Grantor and to the Agency Director [[substitute "1st and 2nd beneficiaries" for "Agency Director"]] a statement confirming the value of the Trust. Any securities in the Fund shall be valued at market value as of no more than 60 days prior to the anniversary date of establishment of the Fund. The failure of the Grantor to object in writing to the Trustee within 90 days after the statement has been furnished to the Grantor and the Agency Director [[substitute "1st and 2nd beneficiaries" for "Agency Director"]] shall constitute a conclusively binding assent by the Grantor, barring the Grantor from asserting any claim or liability against the Trustee with respect to matters disclosed in the statement.

Section 11. **Advice of Counsel.** The Trustee may from time to time consult with counsel with respect to any question arising as to the construction of this Agreement or any action to be taken hereunder. The Trustee shall be fully protected, to the extent permitted by law, in acting upon the advice of counsel.

Section 12. **Trustee Compensation.** The Trustee shall be entitled to reasonable compensation for its services as agreed upon in writing from time to time with the Grantor.

Section 13. **Successor Trustee.** The Trustee may resign or the Grantor may replace the Trustee, but the resignation or replacement shall not be effective until the Grantor has appointed a successor trustee and this successor accepts the appointment. The successor trustee shall have the same powers and duties as those conferred upon the Trustee hereunder. Upon the successor trustee's acceptance of the appointment, the Trustee shall assign, transfer, and pay over to the successor trustee the funds and properties then constituting the Fund. If for any reason the Grantor cannot or does not act in the event of the resignation of the Trustee, the Trustee may apply to a court of competent jurisdiction for the appointment of a successor trustee or for instructions. The successor trustee shall specify the date that it assumes administration of the trust in a writing sent to the Grantor, the Agency Director

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[[substitute "1st and 2nd beneficiaries" for "Agency Director"]] and the present Trustee by certified mail ten days before the change becomes effective. Any expenses incurred by the Trustee as a result of any of the acts contemplated by this Section shall be paid as provided in Section 9.

Section 14. **Instructions to the Trustee.** All orders, requests, and instructions by the Agency Director [[substitute "1st or 2nd beneficiary" for "Agency Director"]] to the Trustee shall be in writing, signed by the Agency Director [[substitute "a designee of the 1st or 2nd beneficiary" for "the Agency Director"]]; and the Trustee shall act and shall be fully protected in acting in accordance with the orders, requests, and instructions [[add, "except that the Trustee shall not act in accordance with the orders, requests, and instructions of the 1st beneficiary if the 2nd beneficiary notifies the Trustee, in writing, that the Trustee shall only act in accordance with the orders, requests, and instructions of the 2nd beneficiary. In the event that the Trustee has received such notice from the 2nd beneficiary, the Trustee shall only act in accordance with the orders, requests, and instructions from the 2nd beneficiary"]]. The Trustee shall have the right to assume, in the absence of written notice to the contrary, that no event constituting a change or a termination of the authority of any person to act on behalf of the Grantor or the Agency [[substitute "1st or 2nd beneficiary" for "Agency"]] under this Agreement has occurred. The Trustee shall have no duty to act in the absence of orders, requests, and instructions from the Agency Director, [[substitute "a designee of the 1st or 2nd beneficiary" for "the Agency Director"]] except as provided in this Agreement.

Section 15. **Notice of Nonpayment.** The Trustee shall notify the Grantor and the Agency Director [[substitute "1st and 2nd beneficiaries" for "Agency Director"]] by certified mail within ten days following the expiration of the 30-day period after the anniversary of the establishment of the Trust, if no payment is received from the Grantor during that period. After the pay-in period is completed, the Trustee shall not be

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required to send a notice of nonpayment.

Section 16. **Amendment of Agreement.** This Agreement may be amended by an instrument in writing executed by the Grantor, the Trustee, and the Agency Director or by the Trustee and the Agency Director, if the Grantor ceases to exist.

Section 17. **Irrevocability and Termination.** Subject to the right of the parties to amend this Agreement as provided in Sections 13 and 16, this Trust shall be irrevocable and shall continue until terminated at the written agreement of the Grantor, the Trustee, and the Agency Director [[substitute "1st and 2nd beneficiaries" for "Agency Director"]] or by the Trustee and the Agency Director [[substitute "1st and 2nd beneficiaries" for "Agency Director"]] if the Grantor ceases to exist. Upon termination of the Trust, all remaining trust property, less final trust administration expenses, shall be delivered to the Grantor or any successors or assigns of the Grantor.

Section 18. **Immunity and Indemnification.** The Trustee shall not incur personal liability of any nature in connection with any act or omission, made in good faith, in the administration of this Trust, or in carrying out any directions by the Agency Director [[substitute "1st or 2nd beneficiary" for "Agency Director"]] issued in accordance with this Agreement. The Trustee shall be indemnified and saved harmless by the Grantor or from the Trust Fund, or both, from and against any personal liability to which the Trustee may be subjected by reason of any act or conduct in its official capacity, including all expenses reasonably incurred in its defense in the event the Grantor fails to provide a defense.

Section 19. **Choice of Law.** This Agreement shall be administered, construed, and enforced according to the laws of the state of Minnesota.

Section 20. **Interpretation.** As used in this Agreement, words in the singular include the plural and words in the plural include the singular. The descriptive headings for each Section of this Agreement shall not affect the interpretation or the legal efficacy of this Agreement.

Approved
by Revisor _____

The parties have caused this Agreement to be executed by their respective officers duly authorized and their corporate seals to be affixed and attested on the date first above written. The parties below certify that the wording of this Agreement is identical to the wording specified in Minnesota Rules, part 7035.8550, as the rules were constituted on the date of signing.

[SIGNATURE OF GRANTOR]

[TITLE]

Attest:

[TITLE]

[SEAL]

[SIGNATURE OF TRUSTEE]

Attest:

[TITLE]

[SEAL]

7035.8560 LANGUAGE REQUIRED FOR CERTIFICATE OF ACKNOWLEDGMENT.

This part contains an example of the certification of acknowledgment that must accompany the trust agreement for a trust fund as specified in part 7035.8470.

CERTIFICATION OF ACKNOWLEDGMENT

State of _____

County of _____

On this [date], before me personally came [owner or operator] to me known, who, being by me duly sworn, did depose and say that she/he resides at [address], that she/he is [title] of [corporation, proprietorship, local government entity], the entity described in and that executed the above instrument; that she/he knows the seal of said [corporation, local government entity]; that the seal affixed to the instrument is the [corporate, local government entity's] seal; that it was so affixed by order of the [Board of Directors, Board of Commissioners, City Council] of said [corporation, local government entity] and that she/he signed her/his name thereto by like order:

Approved
by Revisor _____

_____

(signature of Notary Public)

7035.8570 LANGUAGE REQUIRED FOR SURETY BOND GUARANTEEING PAYMENT INTO A STANDBY TRUST FUND.

A surety bond guaranteeing payment into a trust fund as specified in part 7035.8480 must be worded as in this part. The instructions in brackets must be replaced with the relevant information and the brackets deleted. Instructions or language in double brackets must be used when the instrument is to serve as a county-held financial assurance mechanism.

FINANCIAL GUARANTEE BOND

Date bond executed: _____

Effective Date: _____

Principal: [Legal name and business address of owner or operator]

Type of organization: [insert "individual," "joint venture," "partnership," or "corporation"]

State of incorporation: _____

Surety(ies): [name(s) and business address(es)]

Name, address, and closure amount(s) for each facility guaranteed by this bond:

Total penal sum of bond: $_____

Surety's bond number: _____

Know All Persons By These Presents, That we, the Principal and Surety(ies) are firmly bound to the Minnesota Pollution Control Agency (hereinafter called Agency) [[and the [name of county] (hereinafter county)]] in the penal sum for the payment we bind ourselves, our heirs, executors, administrators, successors, and assigns jointly and severally; provided that, where the Surety(ies) are corporations acting as co-sureties, we, the Sureties, bind ourselves in the sum "jointly and severally" only for the purpose of allowing a joint action or actions against any or all of us, and for all other purposes each Surety binds itself, jointly and severally with the Principal, for the payment of the sum only as is set forth

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opposite the name of the Surety; but if no limit of liability is indicated, the limit of liability shall be the full amount of the penal sum.

Whereas said Principal is required to have a permit or provisional status in order to own or operate each waste tire facility identified above, and

Whereas said Principal is required to provide financial assurance for closure as a condition of the permit or provisional status, and

Whereas said Principal shall establish a standby trust fund as required when a surety bond is used to provide financial assurance;

Now, Therefore, the conditions of the obligation are such that if the Principal faithfully, before the beginning of closure of each facility identified above, funds the standby trust fund in the amount(s) identified above for the closure of the facility,

Or, if the Principal funds the standby trust fund in the amount(s) identified above for closure of the facility within 15 days after an order to begin closure is issued by the Agency Director, the Agency, [[county,]] or court of competent jurisdiction,

Or, if the Principal provides alternate financial assurance, as specified in parts 7035.8470 to 7035.8500 as applicable and obtains the Agency Director's [[and the county's]] written approval of assurance, within 90 days after the date the notice of cancellation is received by the Agency Director from the Surety(ies),

Then this obligation shall be null and void, otherwise it is to remain in full force and effect.

The Surety(ies) shall become liable on this bond obligation only when the Principal has failed to fulfill the conditions described above. Upon notification by the Agency Director [[or the county]] that the Principal has failed to perform as guaranteed by this bond, the Surety(ies) shall place funds in the amount guaranteed for the facility(ies) into the standby

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trust fund as directed by the Agency Director [[or the county]].

The liability of the Surety(ies) shall not be discharged by any payment or succession of payments hereunder, unless and until payment or payments shall amount in the aggregate to the penal sum of the bond, but in no event shall the obligation of the Surety(ies) hereunder exceed the amount of said penal sum.

The Surety(ies) may cancel the bond by sending notice of cancellation by certified mail to the Principal and to the Agency Director [[and to the county]]; provided, however, that cancellation shall not occur during the 120 [[substitute "150" for "120"]] days beginning on the date of receipt of the notice of cancellation by the Agency Director, as evidenced by the return receipt.

The Principal may terminate this bond by sending written notice to the Surety(ies); provided, however, that no such notice shall become effective until the Surety(ies) receive(s) written authorization for termination of the bond by the Agency Director [[and the county]].

(The following paragraph is an optional rider that may be included but is not required.)

The Principal and Surety(ies) agree to adjust the penal sum of the bond yearly so that it guarantees a new closure amount, provided that the penal sum does not increase by more than 20 percent in any year, and no decrease in the penal sum takes place without the written permission of the Agency Director [[and the county]].

The Principal and Surety(ies) have signed this Financial Guarantee Bond on the date set forth above.

The persons whose signatures appear below hereby certify that they are authorized to sign this surety bond on behalf of the Principal and Surety(ies) and that the wording of this surety bond is identical to the wording specified in Minnesota Rules, part 7035.8570, as the rules were constituted on the date this bond was signed.

Principal
[SIGNATURE(S)]

Approved
by Revisor _____

[NAME(S)]
[TITLE(S)]

Corporate Surety(ies)
[NAME AND ADDRESS]
State of incorporation: _____
Liability limit: $_____
[SIGNATURE(S)]
[NAME(S) AND TITLE(S)]
[For every co-surety, provide signature(s), and other information in the same manner as for Surety above.]

Bond premium: $_____

7035.8580 LANGUAGE REQUIRED FOR LETTER OF CREDIT.

A letter of credit, as specified in part 7035.8490, must be worded as specified in this part. The instructions in brackets must be replaced with the relevant information and the brackets deleted. The instructions or language in double brackets must be used when the instrument is to serve as a county-held financial assurance mechanism.

IRREVOCABLE STANDBY LETTER OF CREDIT

[Agency Director]
Minnesota Pollution Control Agency

[[county designee]]
[[(name of county)]]

Dear Director [[and county designee]]:

We hereby establish our Irrevocable Standby Letter of Credit No. _____ in your favor, at the request and for the account of [owner's or operator's name and address] up to the aggregate amount of [in words] U.S. dollars $_____, available upon presentation of:

1. your sight draft, bearing reference to this Letter of Credit No. _____, and

2. your signed statement reading as follows: "I certify that the amount of the draft is payable pursuant to the State of Minnesota's rules regarding the management of waste tires."

This letter of credit is effective as of [date] and shall expire on [date at least one year later], but the expiration date shall be automatically extended for a period of [at least one year] on [date] and on each successive expiration date, unless, at least 120 days before the current expiration date, we notify you by certified mail that we have decided not to extend

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this letter of credit beyond the current expiration date. In the event you are so notified, any unused portion of the credit shall be available upon presentation of your sight draft for 120 days after the date of receipt by you, as shown on the signed return receipt.

Whenever this letter of credit is drawn on and under and in compliance with the terms of this credit, we shall duly honor the draft upon presentation to us and we shall deposit the amount of the draft directly into the standby trust fund of [owner's or operator's name] in accordance with your instructions.

We certify that the wording of this letter of credit is identical to the wording specified in Minnesota Rules, part 7035.8580, on the date shown immediately below.

[SIGNATURE(S) AND TITLE(S) OF OFFICIAL(S) OF ISSUING INSTITUTION]
[DATE]

This credit subject to (insert "the most recent edition of the Uniform Customs and Practice for Documentary Credits, published by the International Chamber of Commerce," or "the Uniform Commercial Code published in Minnesota Statutes, chapter 336").

7035.8590 LANGUAGE REQUIRED FOR SURETY BOND GUARANTEEING PERFORMANCE OF CLOSURE.

A surety bond guaranteeing performance of closure as specified in part 7035.8500, must be worded as specified in this part. The instructions in brackets must be replaced with the relevant information and the brackets deleted. The instructions and language in double brackets must be used if the instrument is to serve as a county-held financial assurance mechanism.

PERFORMANCE BOND

Date bond executed: _____
Effective date: _____
Principal: [legal name and business address of owner or operator]
Type of organization: [insert "individual," "joint venture," "partnership," or "corporation"]
State of incorporation: _____
Surety(ies): [name(s) and business address(es)]
Name, address, and closure amount(s) for each facility guaranteed by this bond: _____

Approved by Revisor _____

Total penal sum of bond: $_____
Surety's bond number: _____

Know All Persons By These Presents, That we, the Principal and Surety(ies) are firmly bound to the Minnesota Pollution Control Agency (hereinafter called Agency) [[and the [name of county] (hereinafter called county)]], in the penal sum for the payment we bind ourselves, our heirs, executors, administrators, successors, and assigns jointly and severally; provided that, where the Surety(ies) are corporations acting as co-sureties, we, the Sureties, bind ourselves in the sum "jointly and severally" only for the purpose of allowing a joint action or actions against any or all of us, and for all other purposes each Surety binds itself, jointly and severally with the Principal, for the payment of the sum only as is set forth opposite the name of the Surety, but if no limit of liability is indicated, the limit of liability shall be the full amount of the penal sum.

Whereas said Principal is required to have a permit in order to own or operate each waste tire facility identified above, and

Whereas said Principal is required to provide financial assurance for closure; or closure action as a condition of the permit, and

Whereas said Principal shall establish a standby trust fund as is required when a surety bond is used to provide financial assurance;

Now, Therefore, the conditions of this obligation are such that if the Principal faithfully performs closure, whenever required to do so, of each facility for which this bond guarantees closure, in accordance with the closure plan and other requirements of the permit including any amendments, and pursuant to all applicable laws, statutes, rules, and regulations, as currently in force and as may in the future be in force.

Or, if the Principal provides alternate financial assurance as specified in Minnesota Rules, parts 7035.8470 to 7035.8500,

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by Revisor _____

and obtains the Agency Director's [[and the county's]] written approval of the assurance, within 90 days after the date the notice of cancellation is received by the Agency Director from the Surety(ies),

Then this obligation shall be null and void, otherwise it is to remain in full force and effect.

The Surety(ies) shall become liable on this bond obligation only when the Principal has failed to fulfill the conditions described above.

Upon notification by the Agency Director [[or the county]] that the Principal has been found in violation of the closure requirements for a facility that this bond guarantees performance of closure, the Surety(ies) shall either perform closure in accordance with the closure plan and other permit requirements or place the closure amounts guaranteed for the facility into the standby trust fund, as directed by the Agency Director [[or the county]].

Upon notification by the Agency Director [[or the county]] that the Principal has failed to provide alternate financial assurance as specified in Minnesota Rules, parts 7035.8470 to 7035.8500, and obtain written approval of the assurance from the Agency Director [[and the county]] during the 90 days following receipt by the Agency Director of a notice of cancellation of the bond, the Surety(ies) shall place funds in the amount guaranteed for the waste tire facility(ies) into the standby trust fund as directed by the Agency Director.

The Surety(ies) hereby waive(s) notification of amendments to closure plans, permits, applicable laws, statutes, rules, and regulations and agrees that no amendment shall in any way alleviate its (their) obligation on this bond.

The liability of the Surety(ies) shall not be discharged by any payment or succession of payments hereunder, unless and until the payment or payments shall amount in the aggregate to the penal sum of the bond, but in no event shall the obligation of the Surety(ies) hereunder exceed the amount of said penal sum.

The Surety(ies) may cancel the bond by sending notice of

Approved
by Revisor _____

cancellation by certified mail to the owner or operator and to the Agency Director [[add "and the county"]], provided, however, that cancellation shall not occur during the 120 [[substitute "150" for "120"]] days beginning on the date of receipt of the notice of cancellation by the Agency Director, as evidenced by the return receipt.

The Principal may terminate this bond by sending written notice to the Surety(ies); provided, however, that no notice shall become effective until the Surety(ies) receive(s) written authorization for termination of the bond by the Agency Director [[add "and the county"]].

(The following paragraph is an optional rider that may be included but is not required.)

The Principal and Surety(ies) hereby agree to adjust the penal sum of the bond yearly so that it guarantees a new closure amount, provided that the penal sum does not increase by more than 20 percent in any one year, and no decrease in the penal sum takes place without the written permission of the Agency Director [[add "and the county"]].

The Principal and Surety(ies) have signed this Performance Bond on the date set forth above.

The persons whose signatures appear below hereby certify that they are authorized to sign this surety bond on behalf of the Principal and Surety(ies) and that the wording of this surety bond is identical to the wording in Minnesota Rules, part 7035.8590, as the rule was constituted on the date this bond was signed.

Principal
[SIGNATURE(S)]
[NAME(S)]
[TITLE(S)]

Corporate Surety(ies)
[NAME AND ADDRESS]
State of incorporation: _____
Liability limit: $_____
[SIGNATURE(S)]
[NAME(S) AND TITLE(S)]
[For every co-surety, provide signature(s), and other information in the same manner as for Surety above.]

Bond premium: $_____

REQUIREMENTS FOR WASTE TIRE

Approved by Revisor _____

GENERATION AND TRANSPORTATION

7035.8700 WASTE TIRE GENERATION.

Subpart 1. **Scope.** The requirements of subpart 2 apply to all persons who generate waste tires. The requirements of subpart 3 only apply to persons who generate more than 50 waste tires in a calendar year.

Subp. 2. **Waste tire generation.** Within 60 days of the effective date of parts 7035.8200 to 7035.8710, any person who generates waste tires, and who contracts or arranges with a person for their disposal, shall only contract or arrange for disposal of waste tires with a person displaying an agency waste tire transporter identification number, or a person exempt under part 7035.8710, subpart 2.

Subp. 3. **Generator record keeping.** All persons who generate more than 50 waste tires in a calendar year shall maintain a record of the quantity and type of waste tires sent for disposal. For shipments made in accordance with subpart 2, this record shall also note the name of the person transporting the waste tires, the identification number of the waste tire transporter, if applicable, and the date of the transaction. For persons who transport their own waste tires for disposal, this record shall also note the date of shipment, and the name of the waste tire facility where the waste tires were delivered. When requested by the director, this record shall be made available for inspection. This record shall be retained for three years from the date of the transaction.

7035.8710 WASTE TIRE TRANSPORTATION.

Subpart 1. **Scope.** This part sets out the requirements that shall be applied to persons who are in the business of transporting waste tires.

Subp. 2. **Exempt persons.** The requirements of this part shall not apply to:

A. a person who transports household quantities of waste tires incidental to municipal waste collection, and delivers those waste tires to a permitted solid waste facility,

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a waste tire facility with a permit or provisional status, or a waste tire facility that is exempt from the requirement to obtain a waste tire permit;

B. a person who receives waste tires incidental to the collection of recyclable materials and who delivers those waste tires to a permitted solid waste facility, a waste tire facility with a permit or provisional status, or a waste tire facility that is exempt from the requirement to obtain a waste tire facility permit;

C. a person transporting no more than ten waste tires to a permitted solid waste facility, a waste tire facility with a permit or provisional status, or a waste tire facility that is exempt from the requirement to obtain a waste tire facility permit;

D. a person transporting waste tires that will only be used for agricultural purposes which do not include burning;

E. a person transporting tire-derived products to a market; and

F. a person who generates waste tires and removes those waste tires from the waste tire generation site and delivers those waste tires to a waste tire facility.

Subp. 3. **Agency identification number required.** Except as exempt by subpart 2, any person who transports waste tires must obtain and display an agency waste tire transporter identification number when transporting waste tires. The information that must be submitted to the director to obtain an agency waste tire transporter identification number is specified in part 7001.4150.

Subp. 4. **Waste tire transportation.** A transporter who collects waste tires from a person who generates waste tires, a waste tire facility, or a tire dump must deliver the waste tires to a waste tire facility with a permit or provisional status, or a waste tire facility that is exempt from the requirement to obtain a waste tire permit.

Subp. 5. **Record keeping.** Transporters shall record and maintain the following information regarding their activities

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for each month of operation:

A. the type and quantity of waste tires collected;

B. where the waste tires collected were deposited, specifying the number and type deposited at each location; and

C. where or from whom the waste tires were collected.

Subp. 6. **Submittal of operating record.** Transporters shall submit to the director an operating record that identifies the transporter by name and identification number, and that summarizes the information accumulated under subpart 5 for the three months preceding the month the record is to be submitted. This record shall be submitted ten days after April 1, July 1, October 1, and January 1 of each year.

Approved
by Revisor _____

STATE OF MINNESOTA
DEPARTMENT OF STATE
FILED
JUL - 9 1987
Joan Anderson Growe
Secretary of State
9:05 AM

APPROVED AS TO FORM AND LEGALITY
7/8 1987
HUBERT H. HUMPHREY, III
ATTORNEY GENERAL
BY _____
ASSISTANT ATTORNEY GENERAL

Exhibit 15

REPORT TO MINNESOTA POLLUTION CONTROL AGENCY ON

SCRAP TIRES IN MINNESOTA

OCTOBER 1985

FINAL REPORT

PREPARED BY

WASTE RECOVERY, INC.

SCRAP TIRE ANALYSIS

FOR

MINNESOTA

FINAL REPORT

Contracted by
Minnesota Pollution Control Agency

Conducted by
WASTE RECOVERY, INC.
8501 N. Borthwick
Portland, OR 97217

(503) 283-2261

Project Manager - Mark W. Hope
Project Specialist - Charles Lederer

Prepared pursuant to:
Minnesota Laws (1984)
Chapter 654, Article 2
Section 13(g)

Published by:
State of Minnesota
October, 1985

Preface

This "Scrap Tire Analysis for Minnesota" report was prepared by Waste Recovery, Incorporated, through its Waste Management Consulting Group, pursuant to a contract with the Minnesota Pollution Control Agency. The statements, findings, conclusions and recommendations in this report are based on information supplied by industry, internal divisions of Waste Recovery, Inc. and on current technology. Tire generation rates, identified in Objective A, are best used for statewide quantitative analysis. All processes (mechanical or management) included in this study under Objectives B,C,D,E,G,H, and I are technically feasible. A determination as to the technical feasibility of those processors evaluated under Objective F (Recycling Options) could not be made for this study. Sufficient information was not made available to Waste Recovery, Inc. to make such a determination. Many of the facilities could not provide an established record to prove claims of technical, managerial, and financial capabilities when processing whole tires.

The principal investigators were Mark W. Hope, Project Manager and Charles A. Lederer, Project Specialist.

Valuable suggestions and review advice were provided by Karen Ryss, Andrew Ronchak, Shelly Sporer and Patrick Carey of the Minnesota Pollution Control Agency. Editing support was provided by Michael Sievers.

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EXECUTIVE SUMMARY

Disposal of scrap tires is a serious national problem. Public recognition of the health and fire hazards associated with large tire stockpiles has increased as a result of recent tire fires near major metropolitan areas in Virginia, Florida, Washington, and Texas. Tire fires are virtually impossible to extinguish and often generate massive volumes of dense smoke for many months. These fires may also create toxic oils requiring the expenditure of millions of dollars for the prevention of groundwater contamination and the restoration of each site.

The state of Minnesota has assumed a leadership position in focusing upon its disposal problem and anticipated scrap tire recovery. This study is a first step in developing practical solutions through a careful definition of the problem parameters and alternative methods for environmentally and economically sound tire recovery. Each objective within the text of this report is presented separately. Appendixes and references specific to each objective are found at the end of each objective. The following sections provide a summary of the study's conclusions.

OBJECTIVE A

Scrap Tire Generation Demographics

An extensive mail survey was conducted to define scrap tire volumes, demographics, existing stockpile locations, current collection and disposal/recovery practices, and costs. Three thousand possible scrap tire generators were surveyed and all 87 Minnesota counties were contacted to define stockpiles, local collection and disposal/recovery practices, and applicable ordinances. The consumer is the actual generator of scrap tires. Tire dealers, etc., assume responsibility for disposal and/or recovery of the scrap tire once they have accepted the tire back from the consumer. Tire businesses who take the consumer's scrap tire are referred to as generators for study purposes.

This survey was conducted in April, 1985, at which time approximately 10% of the scrap tire volume was delivered to processors for recovery. The disposal methods designated for the remaining 90% are either illegal (landfilling), undesirable (stockpiling), or unknown. Due to the limited capacity of the State's existing processors, it is probable that a high percentage of the scrap tires are accumulating or being disposed of illegally. The reported tire

collection/disposal costs varied widely. 30% of the respondents indicated costs of less than $0.05 per tire, while 20% reportedly pay over $0.50/tire. Lower disposal costs were reported in rural areas due to the prevalence of self-haul and landfill disposal. 80% of the generators favored development of a low-cost tire disposal program within the State if costs were reasonable. 50% felt that a disposal cost of $0.60/tire or more would be high, while 49% indicated that $0.40 per tire or less was unreasonable.

Based upon the generator survey the following quantities of scrap tire types are produced annually in Minnesota:

Scrap Tire Type	Estimated Annual Volume	Passenger Tire Weight Equivalent
Auto/light truck	2,211,730	2,211,730
Truck	188,757	943,785
Tractor	20,682	82,728
Duplex	5,059	25,295
Earthmover	3,998	(1)
Other	14,498	(1)
Total	2,444,724	3,263,538
Recapped or Reused (8.22%)	200,956	268,263
Net Scrap Tire Total	2,243,768	2,995,275

(1) Not included because of specialized processing requirements or undefined size.

The 3,000,000 passenger tire equivalents generated annually in Minnesota is significant but represents less than 2% of the total national scrap tire volume. 63% of Minnesota's scrap tires are generated in the Minneapolis-St. Paul region, with the remainder distributed evenly throughout the state. 80% of the urban generators and 50% of the rural generators use commercial collection services for tire disposal. The remainder are disposed of by the generator.

The county survey demonstrated that scrap tire disposal was addressed by a local solid waste plan or ordinance in 14% of the counties and that 40% were planning to consider the issue in the near future. Counties were typically stockpiling tires at the landfill, burying them, or utilizing private stockpiles. There was limited licensing of tire collectors/disposers and bonding was the most commonly used performance assurance for solid waste collectors. Counties have been approached by potential tire processors/recyclers but few of these have achieved or maintained operation. The counties preferred state or regional flow assurance regulations due to limited resources for program development and enforcement. Seventy-seven existing stockpiles were identified involving tire quantities ranging from several hundred to several million.

OBJECTIVE B

Financial Assurance Methods

The historical failure of many scrap tire generators, collectors, and processors has resulted in a huge public liability for the clean up of deserted stockpiles throughout the United States. The establishment of licensing and financial assurance requirements similar to those utilized in the garbage and construction industries can minimize potential future public liability in Minnesota. These licensing procedures allow identification of tire haulers and processors as well as the procedures they follow. The failure to perform ethically should result in the loss of a license and enforcement of appropriate penalties. Since many failed collectors/processors have inadequate assets for site clean up, the development of bonding requirements could help prevent public assumption of required clean up costs. These bonding requirements could be based upon the permitted quantity of inventoried scrap tires as adjusted for the company's experience, records, expertise, and assets. A detailed bonding requirement model is discussed in the report. Such a system would discourage scrap tire stockpiling while providing financial resources for tire recovery in the event of a business failure. Reasonable licensing fees and bonding requirements should not have a significant financial impact on viable collectors or processors. Permit and enforcement activities could be supported by the licensing fees and supplemented, if necessary, by funds from the state's existing vehicle title transfer tax.

OBJECTIVE C

Financial Conditions for Tire Recycling

A statewide tire collection and recovery system can be effective if it functions within a reasonable financial framework that does not discourage its utilization. A reasonable system includes collection, transportation and processing operations. Alternative methods and costs associated with each component have been analyzed in this study. Utilizing established collection methods and equipment, 300 scrap tires can be collected and transported within a 20 to 30 mile radius for $0.19 - $0.24 per tire. Longer distance transport costs of small tire quantities escalates rapidly, reaching $0.56 per tire for a 150 mile round trip. Consolidation of smaller tire loads into 1,500 tire van loads decreases collection and hauling costs to $0.25 per tire for service within a 150 mile radius. Regional collection centers could operate as consolidation points in remote areas at an added cost of $0.18 per tire. Transportation savings for the small collector could offset operating costs for collection centers located at existing landfills for areas more than 60 miles from the processing centers.

Processing center economics depend upon the process, product, and volume of the facility. A plant capable of processing 2,000,000 tires per year into a tire derived fuel would have an estimated capital cost of $1,780,100. Direct operating costs are projected to be about $600,000 per year or $0.30 per tire. Total costs (including general and administrative expense, insurance, interest, marketing, and profit margin) would double direct expense, making the total cost $1,200,000 per year or $0.60 per tire. If the tire derived fuel product has a market value of $45.00 per ton, a tipping fee of $0.20 per tire would be required to support the facility. Since many of the operating costs are fixed and independent of volume, smaller facilities would have proportionately higher unit operating costs and tipping fee requirements. For example, with a market value of approximately $45/ton, a one million tire per year facility would require a $0.30/tire tipping fee.

A crumb rubber production facility capable of processing 2,000,000 tires would have an estimated capital cost of $3.5 million and an operating cost of $1.16 million per year. It could operate profitably at this volume without a tipping fee. However, in the event that limited competitive markets forced operation of the plant at lower rates, tipping fees may escalate dramatically. If the volume were only 0.5 million tires per year, the tipping fee would become $0.50 per tire.

Calculations in the report demonstrate volume sensitivity and vulnerability of a facility to tire flow in addition to market conditions.

Due to the volume sensitivity of processing operations, collection centers can be operated in outlying areas more economically than local processing centers. Minnesota's overall tire recovery economics are optimized by having the fewest possible processing centers with the highest possible production rates.

OBJECTIVES D & I

Collection Site Locations and Statewide Collection System Economics

The development of an economical statewide tire collection and transportation network requires balancing the need for nearby tire recovery sites against the cost of collection site operation. Based upon an analysis of regional tire generation rates, 17 to 22 regional collection centers could service Minnesota's rural areas with associated local hauling distances of less than 50 miles. Required recovery costs have been calculated for each region, including collection center operating costs and transportation to the processing center(s). Costs range from $0.15 per tire to $0.88 per tire plus the processing center tipping fee. Including a tipping fee of $0.25 per tire, total recovery costs would be $0.40 to $1.08 per tire. Generators in the Twin Cities area would have lower cost due to direct, low-cost transport to the processing plant.

Tire recovery costs in remote areas would be most affected by the implementation of this system. This cost would increase significantly from current low levels. The state, to counterbalance this impact, could choose to partially support these costs through tax-based payments, or permit continued landfilling of tires in designated remote areas. If the latter choice were made, the probability of tire shipments into these areas from surrounding regions must be recognized. The quantities of such shipments to approved remote landfills would depend on the economic incentive. For example, if the processing center's tipping fee were $0.25 per tire and the landfill had no tipping fee, the cost difference would allow economical transport of 1,500 tire truckload quantities from distances of up to 185 miles (at $1.06 per mile, 370 miles

round trip). If both sites had equivalent tipping fees, then tires would flow to the closest point. As a result, the estimated 20-30% of Minnesota's scrap tire volume that is generated more than 100 miles from a centralized processing center(s) in the Twin Cities area would probably be landfilled.

Tire collection at the household level would be insignificant but must be addressed if the garbage collector provides this service. If the quantities are small, a collector could segregate the tire from the regular garbage and place it on the truck in an appropriate storage rack. As the collector enters or leaves the landfill, he can place the collected tire in a designated recovery container. The garbage collector may wish to refuse the tire and encourage his customer to haul the tire to either a tire dealer or a regional collection/processing site.

OBJECTIVE E

Alternative Tire Collection Methods

The costs associated with the collection of scrap tires from generators or stockpiles is dependent upon equipment, labor, volumes, and methods utilized. Cost comparisons, advantages, and disadvantages of the various methods have been discussed in detail for use by the state and others interested in the collection network. Drop boxes, modified pick-up trucks, trailers, and commercial vans can be used for this purpose. Collection methods include service routes, receptacle spotting, bulk loading, and hand loading of large trailers.

For the removal of existing stockpiles, the following general conclusions can be reached: (1) For stockpiles containing less than 50,000 tires, dense packing of the tires in 40-45 foot vans is most economical; (2) For quantities greater than 50,000, bulk loading may be appropriate if transport distances are reasonable, i.e. 100 mile radius as a primary haul or 200 mile radius as a back haul; (3) Use of mobile shredding equipment for volume reduction is only appropriate for large piles located long distances from recovery sites.

OBJECTIVE F

Recycling Options for Alternative Markets

Many creative applications have been developed for products derived from scrap tires. The ideal application should have at least the following characteristics: (1) no adverse environmental impact; (2) conserve renewable natural resources; (3) provide reliable and ethical tire recovery with minimum adverse impact on established industries; (4) adaptability to widespread use with products having commercial value in existing markets; and (5) competitive economics permitting minimum disposal fees with little or no continued public support. Many unsuccessful approaches have ignored one or more of these criteria.

Major existing and developmental applications have been examined in this study, with emphasis on those representing possible options for Minnesota. Uses for whole tires include resalable used tires, retreading, artificial reefs, floating breakwaters, and others. All of these markets are mature and declining, representing combined consumption of less than 10% of Minnesota's annual scrap tire volume. Fabricated products such as gaskets, sandals, dock bumpers, and fence guards consume only small quantities of specific tire types, thus it is improbable that a new Minnesota manufacturer would be able to use a major portion of the state's scrap tires.

Scrap tires and retread buffings can be ground into small particles called crumb rubber. This is used in molded rubber products, pneumatic tires, friction brake materials, and rubberized asphalt. Approximately 60-65 million pounds of crumb rubber are consumed annually on a national level at an average market price of $0.11 to $0.13 per pound. If all of this was produced from scrap tires, the total national market would require only 3-4 million tires. This market is extremely competitive, with existing production facilities operating at roughly 50% of capacity due to low market demand. Use of crumb rubber in asphalt mixtures for highways and athletic surfaces is a potential market, but it has failed to consume large quantities due to its higher cost and variable performance. Minnesota's highway department has used only small test quantities with mixed results to date. A new Minnesota manufacturer would have to capture the entire existing national market for crumb rubber or double the total existing market through new applications in order to consume Minnesota's annual scrap tire flow.

Intense competition from large national operations would make either event improbable within a reasonable time frame. The economics of small-volume production from whole-tire feedstock

are prohibitive in today's intensely competitive market, especially with the transportation cost disadvantages that a Minnesota manufacturer would encounter.

Pyrolysis, or thermal decomposition of tires in the absence of oxygen, has been applied to rubber products since the 19th century. The process yields a gas stream used to fuel the reaction, a liquid hydrocarbon stream which can be blended to yield a salable fuel oil, and a char-stream containing a mixture of titanium dioxide, zinc oxide, and multiple types of carbon black. Tremendous financial and technical resources have been applied to the development of commercially viable pyrolysis systems within the last 20 years. Over 30 significant projects have been undertaken but not one appears to be operating on a commercial scale within the economic constraints likely to be encountered in Minnesota. Projects have failed because of operating problems, feed quality/availability, product quality, low product pricing, economics, or a combination of these factors. Although history dictates that development of a technically and economically viable pyrolysis process is unlikely, an evaluation checklist for new processes has been provided. Careful screening of potential processors could help the state avoid direct or indirect participation in future unsuccessful pyrolysis ventures.

Scrap tires can also be processed into tire derived fuel (TDF) for use as a supplemental fuel in boiler systems. TDF has a higher heating value than coal (14-15,500 Btu's/pound vs. 10-12,000 Btu's/pound). It is currently used by a number of major companies in many regions of the United States. TDF may be used only in systems having adequate air pollution abatement equipment for control of particulate emissions. Environmental restraints may limit TDF usage to 3-10% of boiler fuel requirements. TDF is priced below competing fuels like coal and wood to provide incentive for its use, resulting in revenues of $40-50/ton. Based upon the preliminary market analysis presented in Objective H, it appears that Minnesota manufacturers could consume quantities of TDF equal to or greater than the total volume of scrap tires generated annually within the state. This high volume usage in a developed local market makes TDF the most viable short-term use for Minnesota's scrap tires.

OBJECTIVE G

Scrap Tire Supply Assurance

It is clear from the preceding discussions that public and state interests may be best served by regulatory measures to assure the development of appropriate collection mechanisms and recovery facilities. The existing systems, as described, demonstrate that the bulk of all scrap tires are accumulated by replacement tire dealers. The current problem is the disposal methods employed by some of these dealers or tire collectors. It may be desirable for the state to consider regulatory measures that would include permitting, licensing, and bonding of scrap tire generators and haulers to prevent stockpiling and its associated potential public liability. These regulations should have sufficient penalties and enforcement measures to restrict economic incentive for violators.

The enforcement of collection and hauling regulations can only be successful if appropriate recovery operations exist. Since the capital and operating costs associated with processing centers are volume sensitive, it may be advantageous for the state to consider license restrictions or franchise arrangements to minimize tax-based government subsidies and recovery costs. Unrestricted licensing without performance evaluations and financial assurances may result in development of a number of small-volume, financially and/or technically weak operators. The result of uncontrolled operators could be large direct subsidies, high recovery costs, and/or significant public liability for the clean up of illegal tire stockpiles.

The structure of a meaningful regulatory framework for processing centers should include: (1) licensing procedures based upon evaluation of probable technical and economic success; (2) appropriate bonding requirements based upon previous operating history to minimize public liability; (3) enforcement capabilities; and (4) sufficient penalties against owners/operators to enhance enforcement.

OBJECTIVE H

Incineration Report

Tire Derived Fuel Market Analysis

The processing of scrap tires into tire derived fuel, as previously discussed, may offer a viable disposal mechanism for Minnesota's scrap tires if an adequate local TDF market exists. Major Minnesota fuel users were identified and categorized as possible TDF users to quantify potential demand. An evaluation model was developed utilizing the following parameters: current fuel type, total energy demand, emission control systems, seasonal demand variations, and current competitive fuel pricing. Forty-nine possible TDF users were evaluated, and discussions were held with the twenty users offering the greatest potential. The six best potential customers could consume TDF quantities roughly equivalent to 3.5 million tires per year.

The development of TDF customers would require demonstration test burns to confirm environmental and operational suitability, as well as compliance with the following customer requirements: 1) TDF supply assurances; 2) consistent 2" product free of bead and cord wire; 3) installation of TDF feeding systems for uniform addition; and 4) incentive prices vs. existing fuels.

This preliminary analysis indicates that a local TDF demand capable of consuming Minnesota's annual scrap tire volume can be developed within a reasonable time frame. The use of centralized, high-volume production facilities would permit operation with $0.25 or less per tire tipping fee. The apparent absence of other suitable high volume applications makes TDF the best short-term use for Minnesota's scrap tire volumes.

OBJECTIVE A

SCRAP TIRE GENERATION DEMOGRAPHICS

OBJECTIVE A

SCRAP TIRE GENERATION DEMOGRAPHICS

This objective was to determine the demographics of scrap tire generation throughout the state as well as identifying major tire stockpiles. Two separate surveys were done to meet this objective: Part I to question scrap tire generators; and Part II to question the 87 county solid waste departments. Tire generators have provided information on the current economics of tire collection generation rates, disposal options, and potential collection sites. The county questionnaire identified existing stockpiles, local disposal options, landfill disposal acceptance, and other local issues.

It is important to note that both surveys were conducted prior to the Minnesota ban on tire landfilling, which took effect on July 1, 1985. The immediate impact of the ban on disposal will be discussed by using the information gathered during the tire generators survey.

The availability of raw material (scrap tires) is a critical component in determining the economics of scrap tire recovery systems. As noted in subsequent sections of this study, economics are sensitive to economies of scale. Logically, because of the heavy capital costs for processing machinery, greater volumes can lower overall production costs. Once a tire generation rate has been established a fixed raw material base can be spread over one or several processors. Based on end markets, an economic determination can be made as to the viability of any combination of recovery facilities.

The tire pile survey conducted at the county level identified piles that may need abatement. Furthermore, some of these piles may fall under the Minnesota Pollution Control Agency's waste tire permitting program covering collection, storage and processing.

PART I

Survey Development for Scrap Tire Generators

The following objectives were developed for the Scrap Tire Survey:

1) Determine the geographical distribution of scrap tire generation by tire types on a county, regional and statewide basis.

2) Identify tire disposal options currently in use.

3) Identify existing collection/disposal costs.

4) Identify any seasonal variation of tire generation.

A mass mail questionnaire was chosen as the method for surveying the generators. This method was used to ensure that all tire generators had an opportunity to respond to the survey. The mailing also provided an opportunity to distribute information about the 1984 tire legislation to the tire generators. A copy of the survey is included in Appendix IA, (page 55).

The mailing list was developed from appropriate categories as listed in the yellow pages statewide. The survey was mailed on April 24, 1985 to 3,036 potential tire generators. The mailing list included:

222	New Car Auto Dealers
661	Tire Dealers
155	Truck Equipment and Auto Parts Shops*
1,418	Gasoline Service Stations
196	Automotive Repair Centers
67	Tire Wholesalers
73	Tire Retread and Repair Shops
244	Truck Repair Service Centers
3,036	Total

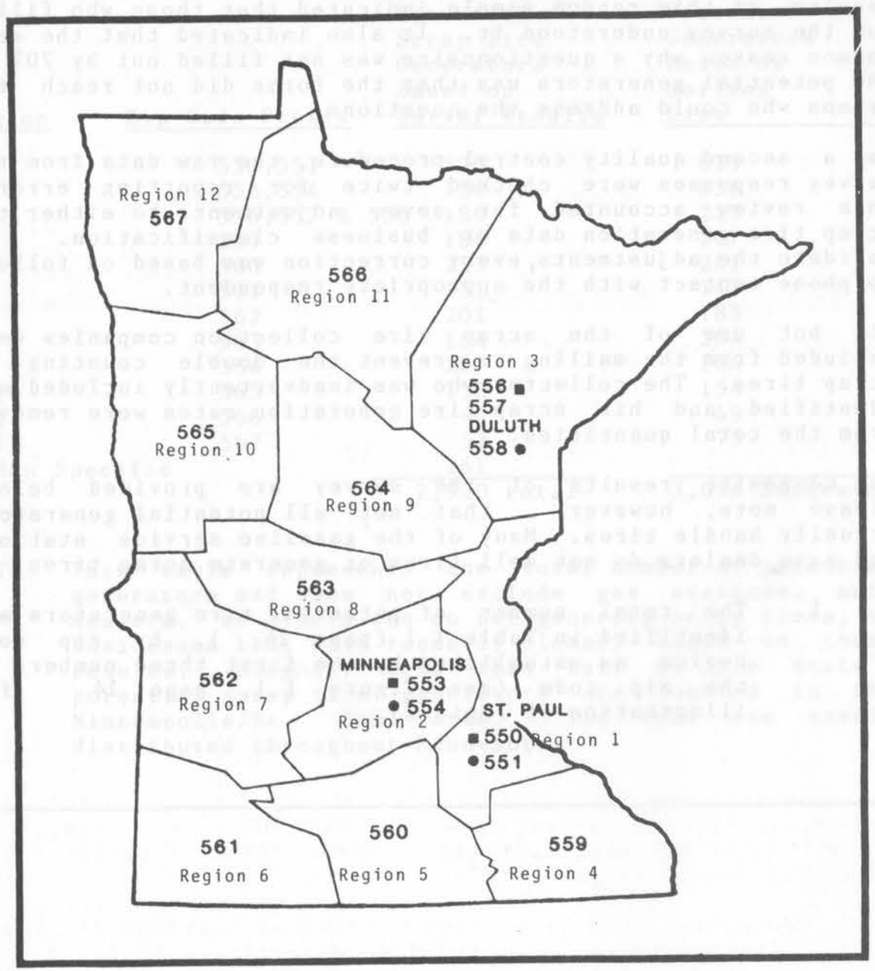
* Auto salvage yards were represented in this category.

A deadline of May 10 was established for the return of the survey and a reminder notice was sent out on May 1 to encourage a response. A return rate of 30% was projected. Of the original 3,036 surveys mailed, 116 were returned by the post office as undeliverable due to business closure, thus reducing the total number of potential tire generators to 2,920. A total of 871 acceptable survey forms were returned for a response rate of 29.8%.

For analysis purposes, the survey results were categorized by county, zip code region, and statewide totals. Results at the county level were required so that individual counties would have specific information available for planning purposes. The state was split into 12 regions (see figure 1.1, page 14) as identified by zip code groupings. Regions were formed because many of the counties were already taking a regional approach to solid waste issues.

Figure 1.1

MINNESOTA ZIP CODE REGIONS



To assure the validity of the information developed by the tire generators survey, two quality control procedures were used. The first procedure was a random phone sampling of 30 potential respondents as chosen from the initial mailing list. The purpose was to canvas a cross-section of potential tire generators to determine if they had received a survey, understood the questions, and had responded accurately. Results of this random sample indicated that those who filled out the survey understood it. It also indicated that the most common reason why a questionnaire was not filled out by 70% of the potential generators was that the forms did not reach the person who could address the questions.

As a second quality control procedure, the raw data from the survey responses were checked twice for reporting errors. This review accounted for seven adjustments to either the scrap tire generation data or business classification. To validate the adjustments, every correction was based on follow-up phone contact with the appropriate respondent.

All but one of the scrap tire collection companies were excluded from the mailing to prevent the double counting of scrap tires. The collector who was inadvertently included was identified and his scrap tire generation rates were removed from the total quantities.

The composite results of the survey are provided below. Please note, however, that not all potential generators actually handle tires. Many of the gasoline service stations and auto dealers do not sell tires or generate scrap tires.

1. The total number of potential tire generators are identified in Table 1.1 (page 16), by zip code region as established by the first three numbers of the zip code (see Figure 1.1, page 14 for illustration of regions).

Table 1.1

Potential Scrap Tire Generators by Region

Region	Zip Code Prefix	Total # of Potential Scrap Tire Generators Based on Survey Results	Total # of Potential Generators Based on Mailing List
1	550,551	520	619
2	553,554	734	834
3	556,557 & 558	184	223
4	559	184	207
5	560	255	241
6	561	151	143
7	562	201	185
8	563	164	204
9	564	107	104
10	565	158	154
11	566	44	49
12	567	57	73
Non Specific		161	
		2,920 total	3,036 Statewide

NOTE: This table represents the total number of potential generators and does not exclude gas stations, auto dealers, or others who do not generate scrap tires, or businesses that have recently closed. Based on these results, slightly less than half of the state's potential scrap tire generators are located in the Minneapolis/St. Paul area. The rest are evenly distributed throughout Minnesota.

2. Respondents to the survey were asked to identify themselves by business type. The business type distribution for potential tire generators was analyzed based on actual responses. This was compared to their percentage of the total scrap passenger tires generated and then to Modern Tire Dealer's facts on the national averages of where passenger tires are purchased.[1] This comparison illustrates the portion that each tire sales outlet contributes to the total scrap tire generation rate. An assumption is made that old (scrap) tires are left where people purchase new tires.

Table 1.2
Potential Scrap Tire Generators by Business Type

Business Type	% of Respondents	% of Scrap Tire Generation	Modern Tire Dealer Facts Tire Sales[2]
Gasoline Service Station	49	15	9
Tire Dealers & Retreaders	9	46	65
Automotive Service Centers	15	25	21
Truck Service Centers	3	1	0
New Auto Dealers	24	3	2
Other	0	10	3
	100%	100%	100%

As illustrated by Table 1.2 (page 17), tire dealers and automotive service centers generate over 70% of the scrap tire volume although they represent less than 25% of the total potential number of generators.

3. Potential tire generators were asked to identify their location by county. Based on an analysis of the survey results, the following count of potential scrap tire generators was developed for each county as presented in Table 1.3 (page 18). These results were developed from a system of averages and should be viewed as an estimate. They do indicate the concentration of potential scrap tire generators.

Table 1.3
Potential Scrap Tire Generators by County

County	Survey	County	Survey
Aitkin	17	Murray	7
Anoka	63	Nicollet	27
Becker	27	Nobles	50
Beltrami	20	Norman	13
Benton	20	Olmsted	43
Big Stone	3	Otter Tail	67
Blue Earth	40	Pennington	7
Brown	33	Pine	23
Carlton	30	Pipestone	23
Carver	27	Polk	43
Cass	10	Pope	3
Chippewa	27	Ramsey	257
Chisago	10	Red Lake	3
Clay	30	Redwood	23
Clearwater	10	Renville	30
Cook	10	Rice	33
Cottonwood	23	Rock	23
Crow Wing	57	Roseau	10
Dakota	116	St. Louis	113
Dodge	17	Scott	60
Douglas	20	Sherburne	17
Faribault	27	Sibley	13
Fillmore	30	Stearns	83
Freeborn	27	Steele	10
Goodhue	30	Stevens	9
Grant	7	Swift	20
Hennepin	464	Todd	10
Houston	7	Traverse	10
Hubbard	17	Wabasha	30
Isanti	20	Wadena	14
Itasca	13	Waseca	17
Jackson	13	Washington	53
Kanabec	8	Watonwan	23
Kandiyohi	47	Wilkin	17
Kittson	10	Winona	37
Koochiching	7	Wright	57
Lac Qui Parle	13	Yellow Medicine	23
Lake	3		
Lake of the Woods	0		
Le Sueur	20		
Lincoln	10		
Lyon	30		
McLeod	40		
Mahnomen	3		
Marshall	17		
Martin	33		
Meeker	10		
Mille Lacs	13		
Morrison	23		
Mower	33		

4. Potential scrap tire generators were asked which method they used to remove their scrap tires from their premise. The results are reported on a regional basis to illustrate differences between rural and urban areas. Regions 1, 2, and 3 are considered urban due to concentrated population centers located within them. Other regions may be affected by their proximity to urban areas because collection services may cross regional boundaries. See Table 1.4.

Table 1.4

How Tires Are Collected

Region	% Self Haul	% Hire Haul
1	18	82
2	22	78
3	35	65
4	58	42
5	53	47
6	64	36
7	59	41
8	46	54
9	53	47
10	45	55
11	58	42
12	47	53
Statewide	37%	63%

From the table, it is apparent that in Regions 1 and 2 (Twin Cities Metro Area), the bulk of the scrap tires are hauled by tire collection service companies. Outside of the urban centers, scrap tire generators are likely to haul their own tires to a disposal site. Collection service companies are either not available or must charge higher fees to compensate for the lower volumes and/or longer travel distances to disposal sites.

5. The question of how a scrap tire generator classifies his/her business (independent or franchised), was asked to gain insight into how a national tire manufacturer might influence scrap tire disposal for recovery. The

assumption is that a franchised tire store could be influenced by its corporate office to conform to specific corporate policies covering scrap tire disposal. Tire manufacturers have less control over independent tire dealerships because they usually carry more than one brand of tire. See Table 1.5, (below) for survey results to this question. Results are inconclusive as to what influence a national tire manufacturer might have over the dealers.

Table 1.5

Statewide Scrap Tire Generators

Independent	Franchised	Other
37%	6%	57%

6. Scrap tire generation rates were developed on a county, regional, and statewide basis. This was done to allow for local planning of tire collection programs. Table 1.6, (page 21), presents regional and statewide scrap tire generation rates by tire type, while Table 1.6A does this on a county level. Please refer to Appendix IIA for Table 1.6A (page 57). These generation rates are extrapolated from the data reported in the survey.

As previously stated, the availability of raw materials is one of several components required when evaluating the economics of different recycling alternatives. Such information can be used to establish per tire processing costs as well as developing market commitments.

For the purposes of this study total scrap tire availability is quoted in passenger/light truck equivalents. Calculations are:

Assumptions: 1 truck tire = 5 passenger/light truck
1 duplex tire = 5 passenger/light truck
1 tractor tire = 4 passenger/light truck

Deductions: Earthmovers are not calculated as part of the total raw material supply because highly specialized equipment would be required to process them and their overall quantity is low. "Other" tires are not calculated as a part of the total raw material supply due to the unspecified type of tires included in this category.

Table 1.6

SCRAP TIRE GENERATION RATE
(Tires per year)
REGIONAL AND STATEWIDE

Region	Auto/Light Truck	Tractor	Earthmover	Truck	Duplex	Other
Non-Specific	152,006	868	335	15,517	201	301
1	504,091	1,447	1,765	36,471	2,613	2,940
2	846,927	1,671	439	27,641	1,440	1,424
3	69,898	1,300	335	8,338	0	1,631
4	60,172	740	0	4,707	67	502
5	139,350	2,499	90	8,412	335	2,060
6	89,696	1,655	0	12,368	0	613
7	107,800	4,764	509	18,230	245	2,144
8	131,397	3,159	291	48,960	107	543
9	22,160	536	50	1,042	17	234
10	51,684	1,112	50	3,343	34	1,172
11	28,358	824	134	2,626	0	904
12	8,191	107	0	1,102	0	30
State Total	2,211,730	20,682	3,998	188,757	5,059	14,498

Note: These are actual tire counts, not passenger tire equivalents.

Equation 1: Minnesota Scrap Tire Generation Rate

x = total scrap tire generation rate
a = auto/light truck tires
b = tractor tires
c = truck tires
d = duplex tires

x = a + 4(b) + 5(c) + 5(d)
x = 2,211,730 + 4(20,682) + 5(188,757) + 5(5059)
x = 2,211,730 + 82,728 + 943,785 + 25,295
x = 3,263,538 scrap tires per year (passenger tire equivalents)

Regional, metropolitan, and state planning groups have often used an annual per capita scrap tire generation rate to determine quantities for a region or state. For Minnesota, the per capita tire generation rate is calculated as follows:

Equation 2: Minnesota Per Capita Scrap Tire Generation Rate

x = per capita tire generation rate
a = annual scrap tire generation rate
b = Minnesota's population[3]

x = a/b
x = 3,263,538/4,075,970
x = .8 annual per capita generation rate

7. The identification of current disposal practices defines the suitability of an existing system. This information allows state and local regulatory authorities to assess their future requirements. Scrap tire generators, therefore, were asked to describe current disposal methods. Table 1.7 (page 23), summarizes disposal practices on a statewide basis for each type of business. 20% of the total respondents did not know the fate of their scrap tires. This may be explained by the fact that a majority of the tire generators hire collection firms, and were not aware of their firm's method of disposal.

   Table 1.7A (page 24), illustrates disposal options as practiced within the regions. It is important to note that the rural regions, generating smaller quantities of scrap tires, have traditionally disposed of tires by landfilling. The ban on landfilling tires, which took affect on July 1, 1985, will force rural regions to either stockpile tires or haul them long distances to processors. Neither the adequacy of transportation networks nor the long term viability of existing and proposed tire

TABLE 1.7

STATEWIDE DISPOSAL OPTIONS BY BUSINESS TYPES

Disposal Option (% utilized by individuals among business type)

Business Type	Non-Specific	Landfill	Slash Burn	Stock-pile In-State	Stock-pile Out-State	Scrap tire Processor	Don't know	Other	Total
Gasoline Service Station	18	30	7	7	1	7	20	10	100%
Retread Shops & Other Dealers	3	22	8	11	0	26	22	8	100%
Auto-motive Service Centers	5	31	6	7	0	15	30	6	100%
Truck Service Centers	20	25	5	5	0	10	15	20	100%
New Auto Dealers	11	49	2	2	1	7	17	11	100%

STATEWIDE TOTALS

Area	Non Specific	Landfill	Slash Burn	Stock-Pile in State	Stock-Pile out State	Scrap Tire Processor	Don't Know	Other	Total
State-Wide	13	32	7	6	1	11	20	10	100%

Table 1.7A
REGIONAL
Disposal Options - % Utilized

Region	Non Specific	Landfill	Slash Burn	Stock-Pile in State	Stock-Pile out of State	Scrap Tire Processor	Don't Know	Other
1	15.48	20	1.29	2.58	1.29	17.42	29.68	12.26
2	15.98	18.26	5.94	5.02	.46	19.18	28.31	6.85
3	9.09	65.45	3.64	5.45	0	1.82	5.45	9.09
4	9.09	20	10.91	5.45	5.45	7.27	25.45	16.36
5	13.16	42.11	9.21	7.89	0	6.58	11.84	9.21
6	13.33	60	8.89	4.44	2.22	0	2.22	8.89
7	13.33	41.67	13.33	10	3.33	0	8.33	10
8	12.24	26.53	14.29	6.12	0	6.12	24.49	10.2
9	21.88	21.88	6.25	6.25	0	3.13	21.88	18.75
10	10.64	51.06	6.38	10.64	0	0	10.64	10.64
11	7.69	46.15	7.69	15.38	0	0	7.69	15.38
12	0	70.59	0	5.88	0	0	5.88	17.65

recycling operations had been evaluated prior to the landfilling ban. The net effect may be the creation of more tire piles that would expand the nuisance problem over a larger area. Urban regions have disposed of tires in greater percentages through methods other than landfilling.

8. Understanding current disposal economics provides a framework for evaluating the impact that alternative recovery and the collection systems may have on the current cost of tire disposal. The survey addressed the current costs of disposal. The tables present a range of tire disposal costs. Statewide aggregate disposal costs for all types of tires are summarized in Tables 1.8A - 1.8F and are found in Appendix IIIA - Current Tire Disposal Costs. A regional analysis is provided in Table 1.9, (page 26). County reporting is given in Table 1.10 for passenger/light truck tires only, because they constitute the bulk of the tire waste stream. Table 1.10 is also found in Appendix IIIA, (page 62).

   A minimum of 50% of the tire generators pay $.50 or less per tire for disposal. The largest percentage (30%), pay $0 - $.05/tire. The regional data on tire disposal costs indicate that the more rural the area, the lower the disposal costs. Region 12, in the northwest corner of the state, demonstrates that 88% of the tire generators pay $.50/tire or less for disposal. In Region 2 (Minneapolis) 58% are in the same category. It is important to note that the development of a statewide tire recycling program may reverse these costs due to the higher incremental transportation costs required to move scrap tires from rural locations to central processing centers (assuming they are located in the more densely populated areas).

9. Seasonal variations in the volumes of generated scrap tires can have a significant impact on collection systems, processing equipment needs, and product marketability. The survey asked the tire generators to identify peak and low periods during the year. Graphs 1.1A & B, (page 27), illustrate that the busiest season begins in the March - May period and ends in the September - December period. This demonstrates that the scrap tire volume encountered in April through November may be significantly greater than in the remaining months.

   The tire sales season, from this data, begins to build in early spring. Tire sales then begin to taper off in the late summer or early fall and do so throughout the rest of the year.

Table 1.9

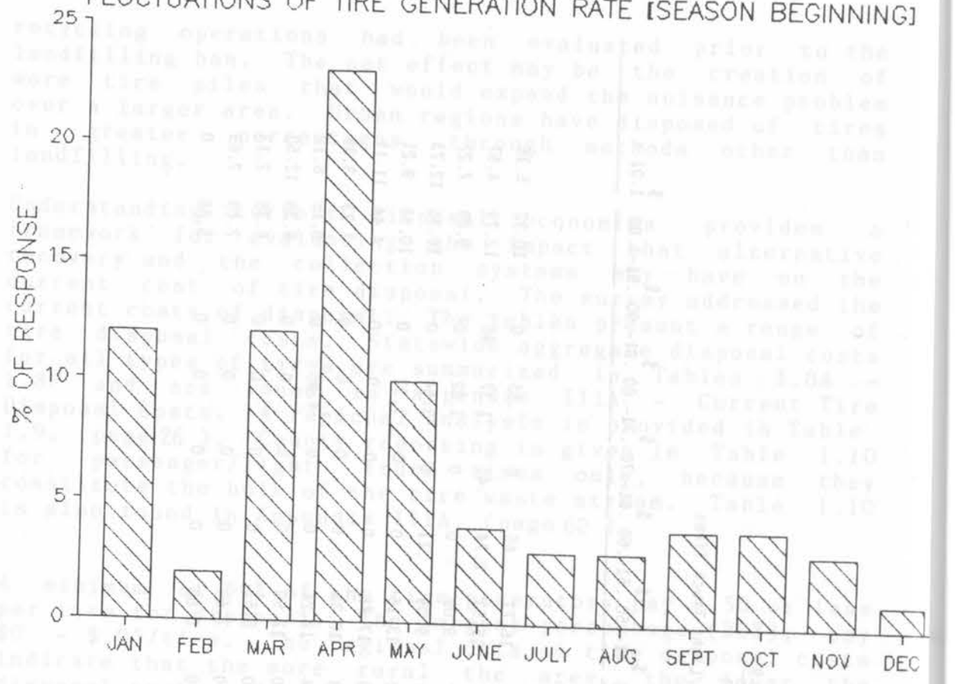
Regional

Cost to Dispose of Auto/Light Truck Tires

Disposal Costs	Non Specific	$ 0-.05	$ .06-.10	$ .11-.20	$ .21-.30	$ .31-.40	$ .41-.50	$ .51-.60	$ .61-.70	$ .71-.80	$ .81-.90	$ .91-1.00	$ 1.01 +
% of responses by region													
1	21.94	25.16	.65	1.94	5.81	10.97	16.77	.65	0	.65	0	10.32	5.16
2	21.92	24.66	.91	.91	5.02	8.68	15.53	2.74	.46	1.37	.46	12.79	4.57
3	25.45	36.36	3.64	5.45	0	1.82	9.09	0	0	1.82	0	9.09	7.27
4	18.18	30.91	1.82	1.82	0	3.64	9.09	.11	0	3.64	0	16.36	12.73
5	21.05	35.53	2.63	1.32	5.26	0	13.16	0	0	1.32	0	10.53	9.21
6	13.13	31.11	4.44	8.89	8.89	0	17.78	0	0	0	0	4.44	11.11
7	21.67	38.33	6.67	3.33	1.67	3.33	18.33	0	0	0	0	3.33	3.33
8	24.49	34.69	0	6.12	2.04	2.04	12.24	0	0	4.08	0	8.16	6.12
9	25	34.38	3.13	0	3.13	0	12.50	0	0	0	0	9.38	12.50
10	36.17	36.17	4.26	4.26	2.13	0	8.51	0	0	0	0	6.38	2.13
11	30.77	23.08	7.69	7.69	7.69	0	7.69	0	0	0	0	7.69	7.69
12	17.65	47.06	5.88	5.88	11.76	0	5.88	0	0	0	0	5.88	0

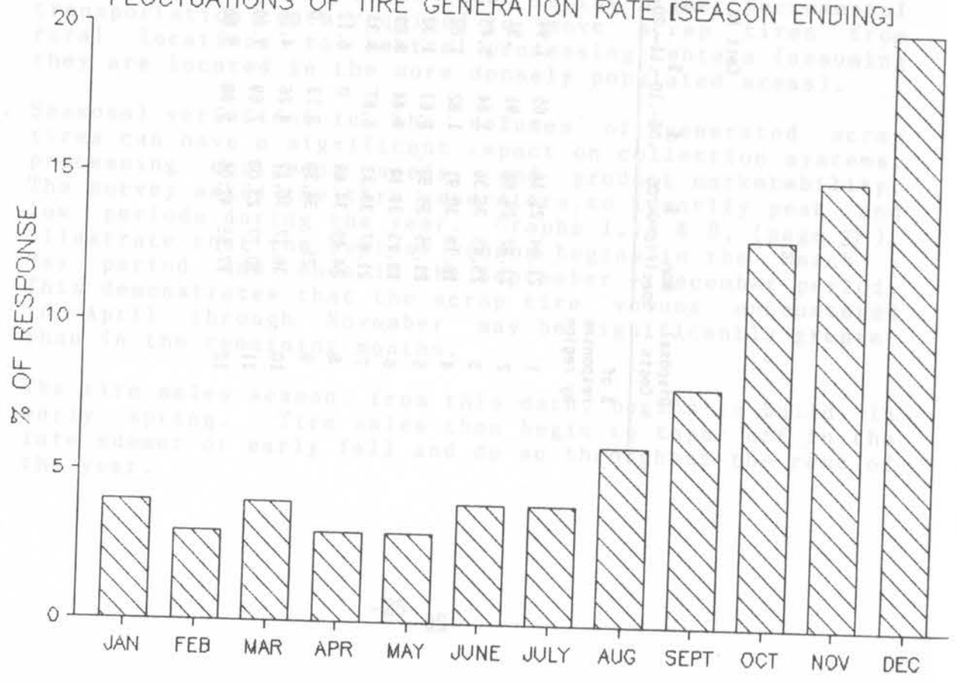
GRAPH 1.1A

FLUCTUATIONS OF TIRE GENERATION RATE [SEASON BEGINNING]



GRAPH 1.1B

FLUCTUATIONS OF TIRE GENERATION RATE [SEASON ENDING]



10. Scrap tires can be sorted and graded to recover tires that are suitable for reuse, recapping, or other recovery applications. The extent to which this occurs decreases the number of scrap tires requiring disposal by other methods. The generators were asked to define the percentage of their tires that are graded for recovery applications. Little or no grading was performed in over 50% of the responses, and an additional 23% of the respondents were unaware of any grading because they contracted with outside parties for disposal. See Table 1.11, (page 28), for the survey results on the amount of tires graded out.

    A conservative estimate of tires that are graded out of the scrap tire flow for recap or reuse is 8.22%. This rate was calculated using the information presented in Table 1.11. The number of gradable casings fluctuates depending on the recap market. The recap market, for the last few years, has continued a downward trend in the passenger/light truck tire line. The recap market for truck tires is strong and shows good growth potential.[4] Truck tires account for 30% of the generation rate by weight.

    Taking into account those tires subtracted as gradable from the total scrap tire generation rate in point #7, the total amount of scrap tires available to scrap tire processors is estimated to be:

    3,263,538 - (3,263,538 x .0822) = Available Scrap Tires
    3,263,538 - 268,262 = Available Scrap Tires
    2,995,276 = Available Scrap Tires

Table 1.11

Statewide Quantity of Scrap Tires Graded for Recap or Other Reuse

	% Graded Out						
	0-5%	6-10%	11-15%	16-20%	21-25%	26%+	Don't Know
% Response	58%	6%	3%	3%	2%	5%	23%

11. A computing error did not allow for the analysis of the types of tires graded or whether the tire generator was paid for his gradable casings.

12. The survey asked the question of whether or not a potential scrap tire generator supports a low cost alternative to recover or dispose of scrap tires in an environmentally sound manner. This question was used to evaluate the attitude of those who will be affected most by the state tire legislation and ensuing regulations by MPCA to abate tire pile nuisances and control collection sites and processing centers. Graphs 1.2 and 1.3 (page 32), illustrate the responses to this issue on a statewide and regional level. Statewide results are indicative of the regional results. The majority of scrap tire generators support a tire recovery program but Graph 1.2 indicates this support is sensitive to cost.

13. As a qualification of the previous question, scrap tire generators were asked to define the cost they thought to be unreasonable for a legal and proper tire disposal service. Question #12 was vague when referring to low cost, but this question asked the respondent to assign a specific unreasonable cost, suggesting that a cost below that amount was acceptable. This information is valuable when evaluating tire recovery programs and how acceptable they may be to the customer. Graph 1.4 (page 34), illustrates what percent of the survey respondents felt what costs were unreasonable charges on a statewide level. Graphs 1.5 through 1.16 illustrate, on a regional level, that the attitudes are consistent with the statewide totals. Graph 1.5 through 1.16 are found in Appendix IVA (page 70). On a statewide basis, 51% of the respondents felt that unreasonable charges were $0.60/tire or higher. 17% took the view that any charge was unreasonable, possibly reflecting their apathy toward illegal dumping practices. 21% indicated that $1.00/tire was reasonable, but that $5.00/tire was unreasonable.

SURVEY SUMMARY

An analysis of the responses to the range of survey questions provided data for the scrap tire generation demographics and parameters within which future disposal systems should function. This information provides a data base from which local, regional, and state planners, as well as potential tire recovery people can formulate a viable tire recovery program. The major conclusions include:

1) Tire dealers and retreaders account for the greatest percent of scrap tire generation, followed by (in order) automotive service centers (i.e. K-Mart, Target, Sears, etc.), gasoline service stations, new auto dealers and truck service centers.

2) The larger the population base of a county, the greater the number of potential tire generators. Hennepin County and Ramsey County had the largest number of potential tire generators.

3) A tire generator is more likely to subscribe to a tire collection service in an urban area. A scrap tire generator in a rural location is inclined to self-haul scrap tires to a collection or recovery site.

4) The majority of potential scrap tire generators are either independent or operate under some form of contractual agreement with tire manufacturers to sell tires. Only 6% of the potential tire generators operate under a franchise agreement. It would be difficult, therefore, for tire manufacturers to initiate a comprehensive tire recovery policy.

5) The Minnesota scrap tire generation rate is an equivalent of 3,263,538 scrap passenger/light truck tires per year. This rate includes passenger/light truck, tractor, truck and duplex tires. The Minnesota per capita scrap tire generation rate is .8 on an annual basis. When subtracting those tires graded for recapping and reuse, the quantity of scrap tires available for a processor is 3,000,000 tires per year.

6) Statewide, of all the options given for disposal of scrap tires, landfilling was used most frequently (32.26%). These results indicate that the landfilling of tires versus other disposal options was a function of whether a region was rural or within an urban center. Areas with denser urban centers had a greater variety of disposal/recovery options available to the scrap tire generators than the rural areas.

7) 50% or more of the tire generators pay $.50 or less per tire for the disposal of passenger/light truck tires. The more rural the location of the tire generator, the cheaper his cost of disposal before the landfill ban.

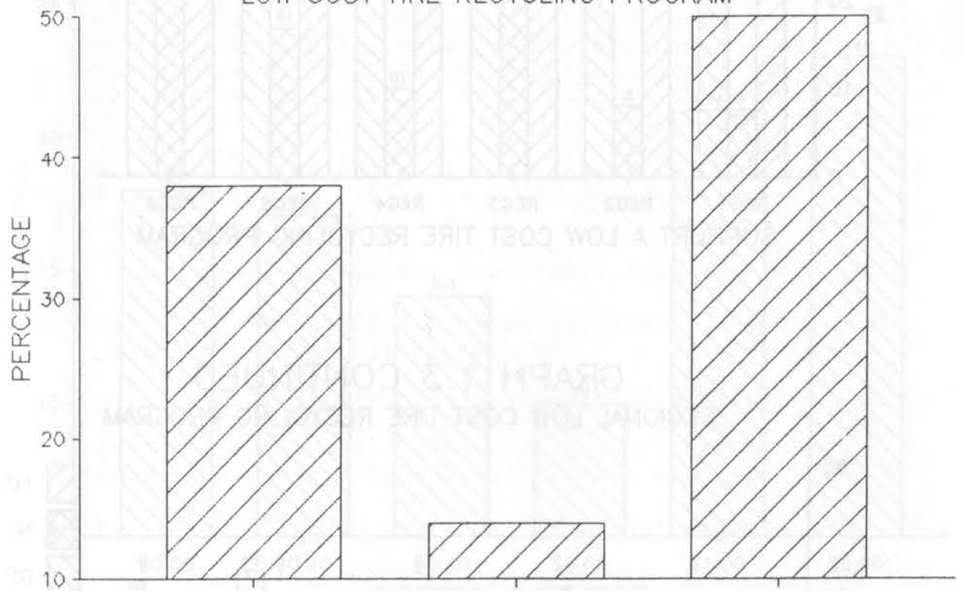
8) Seasonal highs for tire sales begin in early spring and end in late fall. Winter is the slowest period for tire sales and associated scrap tire generation.

9) The majority of scrap tire generators support a low cost tire recovery program. It is important to note that this support is cost sensitive and could evaporate if disposal costs are unreasonably high.

10) Statewide, 51% of the potential tire generators feel that a disposal cost of $.60/tire or greater is unreasonable.

GRAPH 1.2

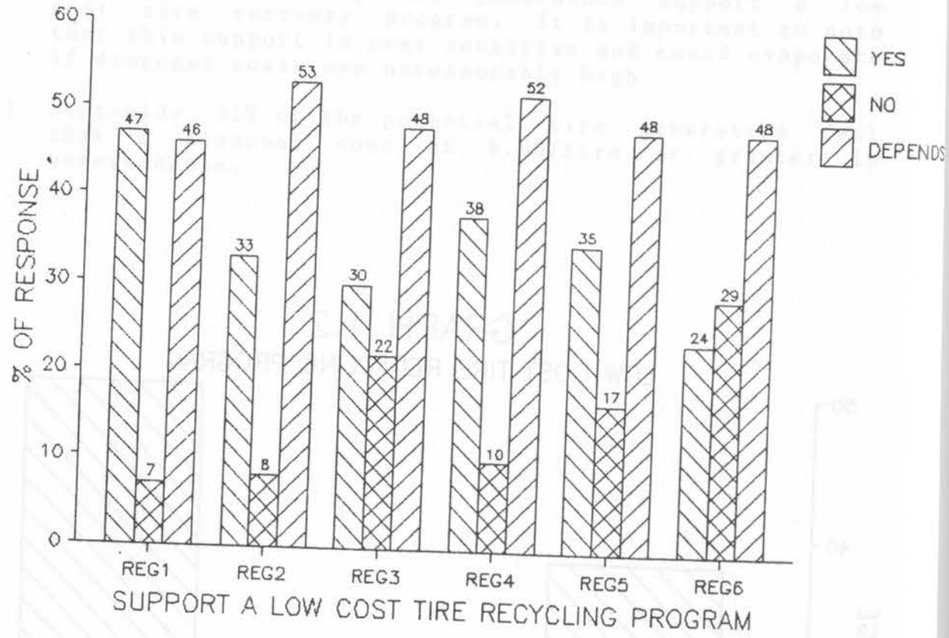
LOW COST TIRE RECYCLING PROGRAM



750 RESPONSES

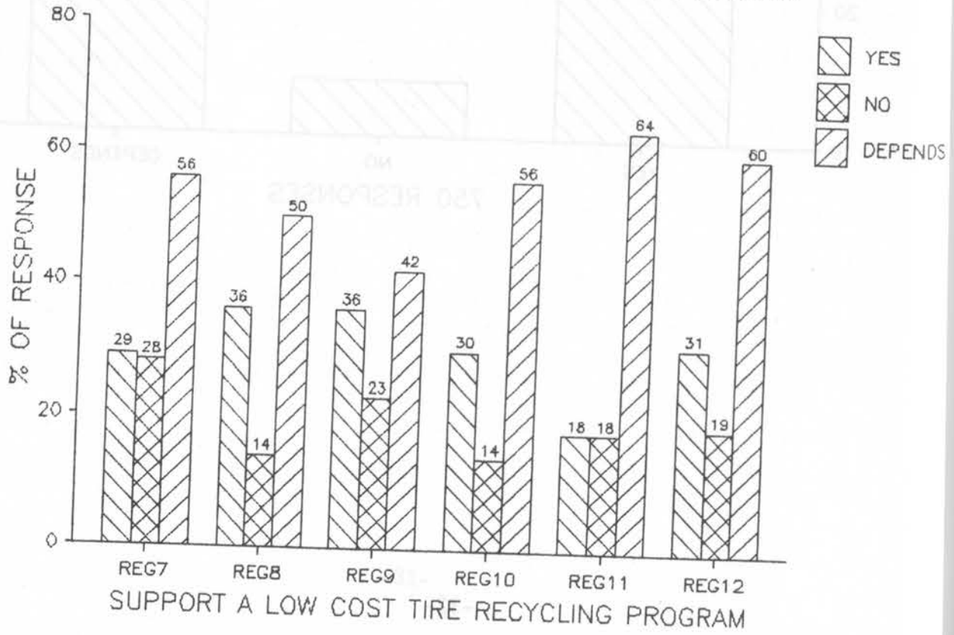
GRAPH 1.3

REGIONAL LOW COST TIRE RECYCLING PROGRAM



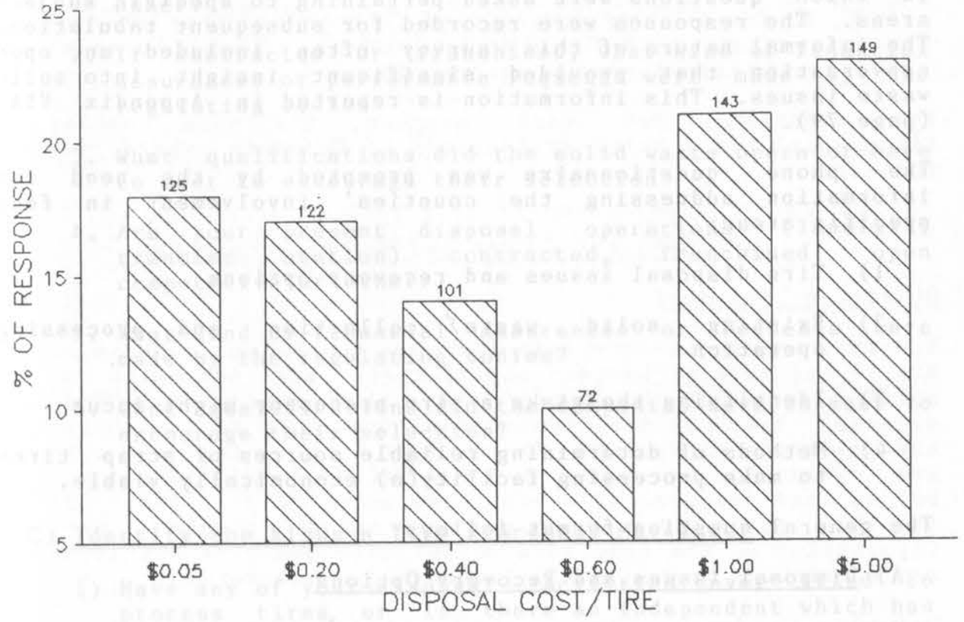
GRAPH 1.3 CONTINUED

REGIONAL LOW COST TIRE RECYCLING PROGRAM



GRAPH 1.4

STATEWIDE – WHAT COST IS UNREASONABLE FOR TIRE DISPOSAL



Part II

County Questionnaire

The county questionnaire was intended to allow local governments direct input for tire disposal methods because it is at this level that enforcement, collection, and regional cooperation is required for a successful program. The counties' present and changing attitudes play a major role in the development and support of waste tire recovery systems.

The MPCA provided a list of solid waste officers for each county. Each officer was contacted through a phone interview in which questions were asked pertaining to specific subject areas. The responses were recorded for subsequent tabulation. The informal nature of this survey often included an open conversation that provided significant insight into solid waste issues. This information is reported in Appendix VIA, (page 79).

The phone questionnaire was prompted by the need for information addressing the counties' involvement in four specific areas:

1) Tire disposal issues and recovery options

2) Existing solid waste collection and processing operation

3) Identifying the risks a tire processor might incur

4) Methods of determining reliable sources of scrap tires to make processing facility(s) economically viable.

The general question format follows:

A) Disposal Issues and Recovery Options

1. Does your solid waste plan or ordinances presently address tire disposal?

2. Does your county feel tire disposal is a subject to be immediately addressed?

3. What priority do you feel is being put on tire disposal in your county?

4. How are tires presently being dealt with in your county? (Stockpiled, buried, etc.)

5. Could you name the locations and the number of tires at these locations, or would you be willing to send such information on these disposal sites?

6. What options do you see as viable for the recovery of scrap tires?

B) The Collection and Recovery Operation

1. Are your present solid waste collection operations (haulers) contracted, franchised, open competitive or other?

2. If contracted or franchised, what kind of financial assurances or performance requests were made by the regulating bodies?

3. What qualifications did the solid waste operator have to meet to encourage their selection?

4. Are your present disposal operations (landfill, transfer station) contracted, franchised, open competitive or other?

5. What kind of financial assurances or requests were made by the regulating bodies?

6. What qualifications did the companies have to meet to encourage their selection?

C) Identify the Risks a Tire Processor May Incur

1) Have any of your disposal facilities ever tried to process tires, or is there an independent which has approached the county on tire disposal or shredding?

2) Are they still in operation, and at what capacity are they operating, or did they operate?

3) Was a permit or contract required?

4) If a tire recovery facility failed, what was the reason?

5) What do you feel are the major issues with this type of operation?

D) Methods of Establishing Reliable Sources of Scrap Tires

1. Does a flow control ordinance currently exist or are you currently evaluating it for your solid waste program?

2. Does flow control or could flow control currently address scrap tires?

3. Would there be a preference toward a state, regional or county wide flow control on tires?

4. What advantages or disadvantages do you see of any alternatives?

5. Do you see any alternative incentives other than flow control which could be implemented to make scrap tires gravitate toward a central facility?

The objective for each section, the data tabulation (frequency) and a brief explanation of the data where needed follows:

A) Disposal Issues and Recovery Options

Objective Statement

In this area the intent is first to determine if scrap tires are of significant concern and if tires are addressed as a specific waste by the county? Second, what priority does tire disposal have at the county level from both an environmental and political viewpoint. Third, what tire disposal options are currently available, and how may they be affected by the ban on land disposal of scrap tires as of July 1, 1985? It is at this point the counties are asked to also provide information on the locations, quantities and site specifics of any stockpiles within their geographical boundaries.

Question 1) Does your solid waste plan or ordinances presently address tire disposal.

a) If yes - could you send me a brief description of the plan?

b) If no - are there any future plans for the drafting of such an ordinance?

Responses:	YES	NO	PLANNING TO ADDRESS	NA	TOTAL
Frequency:	12	39	35	1	87
% of Total:	13.9	44.8	40.2	1.1	100

54% of the counties are addressing, or have addressed tires in their solid waste plan or ordinance. This percentage will change as counties have their solid waste plans periodically revised to meet MPCA standards.

Question 2) Does your county feel tire disposal is a subject to be immediately addressed?

Responses:	Yes	No	Addressing	NA	Total
Frequency:	36	40	7	4	87
Percent of Total:	41	46	8	5	100

49.4% of the counties felt tire disposal should be addressed. The main reasons given were: 1) They can no longer landfill; and 2) Land stockpiling is not an acceptable solution.

Question 3) What priority do you feel is being put on tire disposal in your county?

*Politically and/or
*Environmentally

Responses:	High	Medium	Low	NA	Total
Frequency:	8	6	69	8	91

Most counties had a difficult time distinguishing between a political or environmental priority, and stated they are at the same level. Nine counties in the low category stated the priority will take a higher ranking in the near future.

Those stating high or medium priority were not necessarily those with large generations or stockpiles. A common thread would be difficult to ascertain except for the mere awareness of the problems associated with the disposal.

Question 4) How are tires presently being dealt with in your county? (stockpiled, buried, don't know) (Several counties indicated more than one option)

Response	Frequency
Stockpiled at Landfill	42
Buried	32
Stockpiled/Private	30
Demolition Landfill	7
Disposed of outside County	6
Transfer Station	3
County Storage Areas	3
Other	14
NA	2

Counties often have more than one disposal option for tires, and these were indicated and recorded. Of the 87 counties: 48% are stockpiling at the landfill, 37% are burying the tires, and 34.4% have private stockpiles.

Question 5) Could you name the locations and the number of tires at a location, or would you be willing to send such information on these disposal sites?

1) Location
2) Number of Tires
3) Brief analysis of location, management and ease of recovery.

Responses:	Yes	Not Aware of Piles	NA	Total
Frequency:	50	34	3	87
Percent of Total:	57	39	4	100

A significant number of counties indicated that there were no complaints of stockpiles or that they were not aware of any stockpiles. This was not to say there were not stockpiles located within their counties. The location and size were not verified. The question on site analysis was deleted from the survey because several solid waste officers stated that this would be difficult information to gather within a reasonable time period.

A list of identified scrap tire pile locations and size is included in Appendix IXA, (page 86).

Question 6) What options do you see as viable for the disposal of scrap tires?

Responses:

	Burn as Fuel	Shred	Process for Reuse	What has Economic Viability	Asphalt	Other
Frequency:	32	23	18	17	12	5

No Opinion: 27

27 counties had no opinion or stated they were not adequately informed to have an opinion. Counties often indicated more than one response.

Conclusion of Section A

It has been determined that counties are taking an active role in addressing the tire problem even though its priority is low in their solid waste plan.

Counties have indicated that they, as well as public and private sites, are stockpiling tires as a disposal method. Their options for eliminating the tire disposal problem vary, with a unity toward some economical use. Their current disposal options, however, other than stockpiling, are either limited (landfill) or non-existent.

B) The Collection and Processing Operation

Objective Statement

This section, while addressing a number of collection and processing operations, was further designed to determine the type of existing operations in service, the financial assurances required, if any, and the general requirements for operations within the county's jurisdiction. This information provided insight into what possible qualifications may be required of the tire haulers and processing facility operators. It also provided an overview of existing collection and processing networks.

Question 1) Are your present solid waste collection operations (haulers):

a) Contracted?
b) Franchised?
c) Open Competitive?
d) Local municipality?
e) Mixture?

Responses:

	Contracted	Franchised	Open Competitive	Local Municipality
Frequency:	6	1	43	40

Collection of waste has traditionally been handled by local municipalities. The counties' involvement is often limited to permitting, guidelines, licensing and the operation of transfer stations and disposal facilities.

The counties indicated that there are often several haulers and that the type of agreements may vary. This accounts for the 90 total responses.

Question 2) If contracted or franchised, what kind of financial assurances or performance requests were made by the regulating bodies.

Responses:

	None	Other	NA	Total
Frequency:	19	15	53	87
Percent of Total:	21	17	62	100

40% indicated a form of financial assurance or regulation requested outside of contract or franchise agreements. The dollar amounts reported are listed in Appendix VIIA, Bonding as a Form of Assurance (page 82).

Question 3) What qualifications did the solid waste collection operator have to meet to encourage their selection?

Rank	Response	Frequency	% of counties
1	"don't know" municipalities determine	33	37.9
2	Licensing	27	31
3	Ability to meet bonding requirements	18	20
4	No qualifications	17	19.5
5	Satisfactory equipment	10	11.5
6	Meets minimum performance standards	5	5.7
7	Met permit requirements	4	4.6
8	Gentlemen's Agreement	3	3.4
9	Qualifications are being drafted- none at this time		
10	Meet MPCA standards	1	1
11	No answer	9	10

To assure performance, more than one method is often used.

The responses to questions 1-3 are not definitive. The counties generally do not intervene in the collection process except for license or permit functions. The collection process is overseen by local jurisdictions and municipalities.

The counties' major concern and obligation is in the area of solid waste disposal. Questions 4-6 address disposal and/or processing operations.

Question 4) Are your present disposal operations (landfill, transfer station)

1. Contracted
2. Franchised
3. Open Competitive
4. Owned by County

Rank	Response	Frequency	% of Counties Indicating
1	County Owned	32	37
2	Private Owned	28	32
3	No Landfill	21	24
4	Open Competitive	5	6
5	Contracted	4	5
6	City Owned	4	5
7	In Operation Before Solid Waste Plan	1	1
8	Franchised	0	0

Several counties indicated more than one disposal site within the county. These sites often operate under differing categories.

Question 5) What kind of financial assurance or requests were made by the regulating bodies.

Rank	Response	Frequency	% of Counties Indicating
1	County Holds Bond	32	37
2	Operator Holds Bond	22	25
3	City Holds Bond	5	6
4	Insurance	3	3
5	Meet MPCA Requirements	2	2
6	License	2	2
7	No Answer (NA)	21	24

Question 6) What qualifications did the companies have to meet to encourage their selection?

Could you send us a copy of both the collector and disposal agreements and qualifications requested?

Rank	Response	Frequency	% of Counties Indicating
1	Owns Proper Equipment	37	43
2	Owned Landfill	26	30
3	MPCA License	6	7
4	NA	45	52

45 NA includes 21 counties with no landfill and those who were not sure of the county's requirements. Several counties indicate more than one qualification.

Conclusion Section B

It was determined that the counties play a limited role in the development of financial assurance and contractual agreements for solid waste collection. This is a local jurisdiction function. The county may intervene in a licensing or permitting function, or provide service to areas that might not be served under a collection system.

A county's major role in solid waste is in processing or landfilling of the waste. The county often owns or operates the landfill. The mechanisms for assurance of performance for operators varies based upon the needs of the counties.

Examples of county's need for assurance:

1) An incineration plant could be required to post a performance bond of $20 million and gain approval from state agencies for operation.

2) A rural county may require a minimal closure bond. This would most likely occur when the person has performed above satisfaction for several years and has continually met state requirements.

3) If the county owns and operates the landfill there is no need for an assurance bond.

4) Since most of the county performance requirements are loosely structured or non-existent, those initiated by the MPCA would set the standard and provide assurances for a county.

C) Identifying the Risks that Tire Processors May Incur

Objective Statement

Three major issues were addressed pertaining to scrap tire processing and the risks associated with such an operation. First, have the counties ever considered or been approached regarding a tire processing or disposal operation and, if so, what action was taken? Second, if a county was approached or if a company is presently in operation, what are the issues surrounding their potential operations relating to markets, tire flows, financial assurance, and operating expertise? Finally, what issues should the county address if approached by a potential operator. (In assessing these present and hypothetical situations, it was felt that existing and creative solutions may surface.)

Question 1) Have any of your disposal facilities tried to process tires, or is there an independent who has approached the county on tire recovery or shredding?

Responses:	Yes	No	Not Sure	NA	Total
Frequency:	24	60	3	0	87
Percent of Total:	28	69	3	0	100

NOTE: This is on the county level. A city or municipality may have been contracted without the counties' knowledge. The number of proposals may be greater due to this fact.

Question 2) If yes, are they still in operation and at what capacity are they operating, or did they operate?

Responses:	Yes	No	NA	Total
Frequency:	13	4	70	87
Percent of Total:	15	5	80	100

Counties did not specify what type of facility was in operation. They could and did include recapers, haulers and collectors along with processors.

Question 3) Was a permit or contract required?

Responses:	Yes	No	NA	Total
Frequency:	4	1	82	87

Question 4) If a tire recovery facility failed, what was the reason?

Responses:	Equipment Breakdown*	Market Problems*	NA	Total
Frequency:	2	4	81	87

* Both equipment breakdown and market problems may have contributed to failure.

Question 5) What do you feel are the major issues with this type of operation?

Responses are ranked in order of frequency, many counties gave more than one response.

Rank		Frequency
1	Economics	18
2	Environmental issue	12
3	Location/zoning	10
4	Storage	10
5	Marketing of product	10
6	County financing/control	8
7	Method of processing	6
8	Access to facility	5
9	Just dispose of	4
10	Fire	2
11	Mosquito control	1
12	NA	26

Conclusion of Section C

It was determined that several counties have been contacted by companies interested in tire processing or recovery. Few, however, have actually operated or presently exist.

The issues concerning the location and operation of a processing facility vary. Several of the counties understand these issues and are willing to address them.

D) Methods of Establishing Reliable Sources of Scrap Tires for a Central Processing Facility

Objective Statement

A reliable source of waste tires for a processing facility is critical to guarantee the minimum quantity of tires required to make a facility economically viable. This is the issue of raw material flow assurance. Funding for waste recovery facilities is directly tied to raw material availability.

Thus, the method of destination control to ensure an adequate tire supply is important. It was possible to determine, through this series of questions, what methods are already in place, and what methods the counties are willing to adopt to ensure the movement of tires to an appropriate facility.

Question 1) Does a flow control ordinance currently exist or are you currently evaluating it for your solid waste program?

Responses:	Yes	No	Somewhat/possible	NA	Total
Frequencies:	9	54	22	2	87
Percent of Total:	10	62	25	3	100

Question 2) Does or could flow control address scrap tires?

Responses:	Yes	Could	No/Problems Exist	NA	Total
Frequencies:	4	34	11	38	87
Percent of Total:	5	39	13	43	100

Those answering "No/Problems exist" were mainly counties bordering other states. Flow control cannot prevent interstate movement of waste.

Question 3) Would there be a preference toward a state, region or county wide flow control on tires?

Responses:	Region	State	County	No Preference	Other	NA
Frequencies:	33	22	11	6	14	17

More than one answer could be given. Because of coordination difficulties and lack of funding, the counties indicated the emphasis should be on state or regional programs.

Question 4) What advantages or disadvantages do you see of any alternatives?

Responses:	Response	No Response	Total
Frequency:	23	64	87
% of Total:	26	74	100

Responses in Appendix VIIIA, page 84 .

Rural counties are apprehensive about the burden that stringent guidelines will place on them, specifically when they feel that they don't have a problem. Enforcement, monitoring, and other possible functions are beyond their financial capabilities. A state flow control program is acceptable if applied on a regional level for the purpose of funding and conforming to a region's specific needs.

Question 5) Do you see any alternative incentives, other than flow control, that could be implemented to ensure that scrap tires flow to a central facility? (Disposal credits, rebates, refunds, tax, etc.)

Ranked in order of frequency:

Rank		Frequency
1	Redemption/bounty	16
2	None/no opinion	15
3	Deposit	10
4	High disposal fee at landfills	8
5	Tax	7
6	Develop markets	7
7	Flow control	5
8	Free enterprise/competition	4
9	Surcharge	4
10	Enforcement	4
11	Free disposal	3
12	Location of collection or processor	3
13	NA	16

More than one answer could be given.

General conclusion of Section D

It was determined flow control could exist within the state, but several legal issues must be addressed first. If flow control or other methods are to be implemented, the control should be extended beyond the county boundaries to a regional or state program. Alternatives to flow control varied, with many counties indicating the possibility of using more than one program.

COUNTY SURVEY OVERVIEW

Survey Problems

Viewpoints are those of the respondent and may not represent those of a county's general population.

Tire recovery issues were new for some respondents. As a result, questions may have been difficult and an explanation was added to assist the respondent.

Survey Attributes

The informal interview approach created on interaction between the parties, permitting a discussion of county problems.

The phone survey provided for the rapid gathering of pertinent information within the time constraints of the study.

How The Results Of The Survey Can Be Used

1) To study the location of statewide collection sites. A series of variables are referenced in Table 1.12 (page 53). This information should be used to find counties where the atmosphere and location would be conducive to the collection process. (See Objective D)

2) To determine the guidelines for the tire haulers and processors. Financial assurances and requirements existing or similar to solid waste financial assurance mechanisms should be used in order to avoid developing prohibitive requirements and "recreating the wheel." Furthermore, a sense of fairness would be developed among all solid waste processors.

3) To locate stockpiles within the state and help define areas where abatement measures may be required. (For a list of stockpiles see Appendix IX, page 86).

4) To gather information on those who have tried to process tires. This information can be used to determine the tire processor's site requirements and liabilities (See Objective F and B).

5) To determine the method most suitable for a county, and to ensure the flow of tires to a central processing operation. (See Objective G).

6) To determine which counties are involved in waste recovery incinerator proposals. This information, and review of the proposals, will indicate how these plants may affect the flow and supply of tires. (See Objective H)

7) To determine which counties are presently working together on projects. This will provide a basis for establishing programs where counties interact to develop economies of scale. (See Objective D)

The information gathered from the counties will be used in other parts of this study.

Conclusions

Section A) Counties place a low priority on addressing tire disposal problems when compared to other solid waste issues. Some action, varied as it might be from county to county, is being taken to address tire disposal.

Section B) A county's major role is to provide solid waste disposal, while that of the municipality is to provide for collection systems. Mechanisms for financial assurance vary, depending on the type of facility.

Section C) Proposals have been made to several counties for the operation of tire recovery facilities. Many of the counties are willing to address the major issues of monitoring, financial abilities, and environmental concerns.

Section D) Several of the counties agreed that flow control could address scrap tires. A majority of the counties felt that if flow control were implemented, it should be done on a regional or statewide basis. This regional and statewide emphasis on flow control is a result of concerns regarding local and county government to implement a control system.

TABLE 1.12

COUNTY COLLECTION SITE VARIABLES

	DESIGNATED COLLECTION SITES	COUNTY	DISPOSAL SITE	INDICATED POSSIBLE GARBAGE INCINERATORS	COUNTY CONCERNS	SOLID WASTE PLAN-TIRE DISPOSAL	PREFERENCE TOWARD TYPE OF FLOW CONTROL	HOW PRESENTLY DISPOSED OF
1.	Thief River Falls	Pennington	No land fill-want facility	Yes	Economics, Access	Addressing	Other	buried
2.	Crookston	Polk	County owned	Yes	None indicated	Addressing	County	Stockpile private, buried
3.	International Falls	Koochiching	County owned	No	Economics, market of product, county financing	Addressing	Combination no problem	Stockpile private
4.	Virginia/Hibbing	St. Louis	County/City	Yes	Economics, environment	Addressing	Other	Stockpile landfill private
5.	Bemidji	Beltrami	Tribal Landfill	No	Economics, market for product, storage Access	Addressing	State	Stockpile landfill private/ buried
6.	Grand Rapids	Itasca	County owned	No	Economics, market for product	Addressing	Region	Stockpile transfer station/ landfill
7.	Moorhead	Clay	County owned	Yes	Economics, county financing, fire	Addressing	NA	Stockpile Private Demo Site
8.	Detroit Lakes	Becker	County owned	No	County Financing	Addressing	State	Stockpile landfill
9.	Duluth	St. Louis	City owned	Yes	Economics, Environment	Addressing	Other	Stockpile landfill private
10.	Brainard	Crow Wing	County owned	No	None indicated	Addressing	Region/ State	Stockpile landfill private

(Cont.)

TABLE 1.12

COUNTY COLLECTION SITE VARIABLES

	DESIGNATED COLLECTION SITES	COUNTY	DISPOSAL SITE	INDICATED POSSIBLE GARBAGE INCINERATORS	COUNTY CONCERNS	SOLID WASTE PLAN-TIRE DISPOSAL	PREFERENCE TOWARD TYPE OF FLOW CONTROL	HOW PRESENTLY DISPOSED OF
11.	Alexandria	Douglas	Private	Yes	None indicated	Addressing	Other	Stockpile landfill
12.	St. Cloud	Sherburne	City of St. Cloud	No	location, county financing & control	Addressing	NA problems	Stockpile landfill & Demo site
13.	Benson	Swift	Benson City landfill	No	None indicated	No	NA	Stockpile private
14.	Marshall	Lyon	Contractor	No	Economics	No	NA	Other
15.	Redwood Falls	Redwood	Private	No	Location	No	Region	Stockpile landfill & buried
16.	Worthington	Nobels	Private	No	Location	No	Combination	Stockpile private
17.	Mankato	Blue Earth	Private	No	Location, mosquitos, storage, access, fire	Addressing	Region	Stockpile private & landfill
18.	Albert Lea	Freeborn	City of Albert Lea	No	Economics, mkt of product	Addressing	Region	Stockpile demo & Landfill
19.	Rochester	Olmsted	Private/ County	Yes	Market for product	Addressing	Region	Stockpile Demo site
20.	Winona	Winona	Private	No	Economics, Environmental	Addressing	Region	Stockpile landfill & private
21.	Willmar	Kandiyohi	County owned	No	Economics, county financing or control	Addressing	NA	Buried, stockpile landfill & private

APPENDIX IA

SCRAP TIRE GENERATOR'S SURVEY

APPENDIX IA

SCRAP TIRE GENERATORS' SURVEY

1. Please indicate the first 3 digits of your zip code.

2. Please indicate your type of business.

3a. Using a list of county codes, please indicate your county code.

3b. Write in the name of your county.

4. How are all, or most of your scrap tires hauled off?

5. How do you classify your business?

6. To the best of your knowledge, how many scrap tires per year do you generate?

7. Where do most of your scrap tires that aren't graded out go?

8. What do you pay to dispose of your scrap tires?

9. Identify beginning and end of the busy season, i.e. highest scrap tire generation period.

10. What percent of your scrap tires are graded out for recapping, reuse or other uses?

11. Are you paid for your scrap tires that cannot be used for recap or reuse?

12. Do you support a low cost alternative to recycle or dispose of scrap tires in an environmentally sound manner.

13. What cost do you believe to be unreasonable for a legal and proper tire disposal service?

APPENDIX IIA

SCRAP TIRE GENERATION TABLES 1.6A

NOTE: These are actual tire counts, not passenger tire equivalents.

Table 1.6A

SCRAP TIRE GENERATION RATE BY COUNTY
(Tires per year)

County	Auto/Light Truck	Tractor	Earthmover	Truck	Duplex	Other
Non-Specific	4355	0	0	100	0	0
01 Aitkin	9547	408	33	619	17	234
02 Anoka	225991	40	0	3186	0	0
03 Becker	11055	278	0	951	0	67
04 Beltrami	9226	0	0	13	0	0
05 Benton	7085	0	0	838	0	201
06 Big Stone	1675	40	0	335	0	0
07 Blue Earth	8104	84	0	248	0	0
08 Brown	8998	167	0	20	0	167
09 Carlton	2060	904	0	23	0	0
10 Carver	8241	0	0	167	0	0
11 Cass	1025	0	0	0	0	0
12 Chippewa	23982	670	0	502	0	0
13 Chisago	2680	0	0	201	0	0
14 Clay	4690	0	0	84	0	335
15 Clearwater	4372	415	0	34	0	234
16 Cook	881	13	0	117	0	3
17 Cottonwood	5494	275	0	509	0	335
18 Crow Wing	6415	100	17	368	0	33
19 Dakota	41959	449	1682	17956	2512	1072
20 Dodge	6626	80	0	737	67	335
21 Douglas	3471	188	84	241	33	33

Table 1.6A (continued)

SCRAP TIRE GENERATION RATE BY COUNTY
(Tires per year)

County	Auto/Light Truck	Tractor	Earthmover	Truck	Duplex	Other
22 Faribault	7722	502	0	757	0	0
23 Fillmore	10100	201	0	435	0	0
24 Freeborn	4878	0	0	502	0	0
25 Goodhue	8995	151	0	603	0	167
26 Grant	8626	502	0	251	0	0
27 Hennepin	589788	506	137	31825	1306	1139
28 Houston	5527	67	0	251	0	0
29 Hubbard	4020	67	0	87	0	33
30 Isanti	8938	20	0	0	0	0
31 Itasca	3601	20	0	157	0	67
32 Jackson	10753	368	0	335	0	0
33 Kanabec	167	0	0	0	0	33
34 Kandiyohi	21886	1203	20	5618	178	704
35 Kittson	1122	67	0	107	0	0
36Koochiching	12897	375	134	2546	0	670
37LacQuiParle	2201	67	7	168	0	335
38 Lake	1005	0	0	34	0	0
39 Lake of the Woods - No Report						
40 Le Sueur	8023	167	7	251	0	0
41 Lincoln	3518	0	0	0	0	0
42 Lyon	29788	1842	402	9782	0	0
43 McLeod	17095	570	67	2077	100	0

Table 1.6A (continued)

SCRAP TIRE GENERATION RATE BY COUNTY
(Tires per year)

County	Auto/Light Truck	Tractor	Earthmover	Truck	Duplex	Other
44 Mahnomen	670	0	0	0	0	0
45 Marshall	1122	34	0	134	0	0
46 Martin	22395	740	34	1424	0	0
47 Meeker	4020	234	67	234	0	335
48 Mille Lacs	4027	0	0	368	0	0
49 Morrison	2174	10	0	23	0	0
50 Mower	4620	0	0	1246	0	0
51 Murray	419	0	0	0	0	0
52 Nicollet	16130	335	34	2010	335	1675
53 Nobles	53764	677	0	8040	0	268
54 Norman	3836	0	0	168	0	335
55 Olmsted	21098	30	0	402	0	0
56 OtterTail	20414	241	50	1588	33	435
57 Pennington	988	0	0	0	0	0
58 Pine	4087	17	0	50	0	0
59 Pipestone	10887	335	0	3384	0	0
60 Polk	17795	140	0	516	0	0
61 Pope	33500	1675	0	23450	0	0
62 Ramsey	230584	174	84	8284	94	670
63 Red Lake	1223	0	0	0	0	0
64 Redwood	3032	502	0	67	0	0
65 Renville	15617	352	34	1424	67	1088

Table 1.6A (continued)

SCRAP TIRE GENERATION RATE BY COUNTY
(Tires per year)

County	Auto/Light Truck	Tractor	Earthmover	Truck	Duplex	Other
66 Rice	6063	117	0	670	7	67
67 Rock	2030	0	0	34	0	10
68 Roseau	1507	0	0	687	0	30
69 St Louis	74326	439	670	9262	67	1494
70 Scott	90229	368	17	840	0	385
71 Sherburne	3075	0	0	0	0	0
72 Sibley	3786	0	0	134	0	0
73 Stearns	79049	1256	208	23956	74	375
74 Steele	355	34	0	0	0	0
75 Stevens	1330	234	0	100	0	0
76 Swift	14606	439	46	452	0	100
77 Todd	2412	30	0	84	0	100
78 Traverse	1280	0	0	184	0	0
79 Wabasha	5715	335	0	27	0	0
80 Wadena	1340	0	0	0	0	0
81 Waseca	9175	0	0	1022	0	0
82Washington	218681	402	0	9212	0	770
83 Watonwon	17527	301	0	1474	0	0
84 Wilkin	4888	0	0	0	0	0
85 Winona	12881	27	0	1819	0	168
86 Wright	25480	335	168	2864	167	0
87 Yellow Medicine	4904	67	0	84	0	0

APPENDIX IIIA

CURRENT STATEWIDE TIRE DISPOSAL COSTS BY TIRE TYPE

TABLES 1.8A - 1.8F

COST TO DISPOSAL OF AUTO/LIGHT TRUCK TIRES

BY COUNTY

TABLE 1.10

Table 1.8A

STATEWIDE
COST TO DISPOSE OF AUTO/LIGHT TRUCK TIRES

Disposal Costs	% of Response Statewide
Non Specific	22.27
$0 - .05	30.08
$.06 - .10	2.30
$.11 - .20	2.76
$.21 - .30	4.71
$.31 - .40	5.28
$.41 - .50	13.55
$.51 - .60	1.03
$.61 - .70	.11
$.71 - .80	1.15
$.81 - .90	.11
$.91 - 1.00	10.22
$1.00 or greater	6.43

Table 1.8B

STATEWIDE
COST TO DISPOSE OF TRUCK TIRES

Disposal Costs	% of Response Statewide
Non Specific	60.28
$ 0 - .50	37.31
$.51 - 1.00	.57
$1.01 - 2.00	.11
$2.01 - 3.00	.23
$3.01 - 5.00	.80
$5.01 - 10.00	.46
$10.00 or greater	.23

Table 1.8C

STATEWIDE
COST TO DISPOSE OF DUPLEX TIRES

Disposal Costs	% of Response Statewide
Non Specific	60.85
$ 0 - .50	37.08
$.51 - 1.00	.46
$1.01 - 2.00	.46
$2.01 - 3.00	.11
$3.01 - 5.00	.92
$5.01 or greater	.11

Table 1.8D

STATEWIDE
COST TO DISPOSE OF TRACTOR TIRES

Disposal Cost	% of Response Statewide
Non Specific	50.86
$ 0 - .50	36.51
$.50 - 1.00	8.27
$1.01 - 2.00	2.30
$2.01 - 3.00	.92
$3.01 - 5.00	.57
$5.01 - 10.00	.46
$10.01 or greater	.11

Table 1.8E

STATEWIDE
COST TO DISPOSE OF EARTHMOVERS

Disposal Costs	% of Response Statewide
Non Specific	57.52
$ 0 - .50	36.39
$.50 - 1.00	2.18
$1.01 - 2.00	1.26
$2.01 - 3.00	.69
$3.01 - 5.00	1.15
$5.01 - 10.00	.69
$10.00 or greater	.11

Table 1.8F

STATEWIDE
COST TO DISPOSE OF OTHER TIRES

Disposal Costs	% of Response Statewide
Non Specific	60.51
$ 0 - .50	37.20
$.51 - 1.00	1.38
$1.01 - 2.00	.34
$2.01 - 3.00	.23
$3.01 - 5.00	.11
$5.01 - 10.00	.11
$10.00 or greater	.11

Table 1.10

By County
Cost to Dispose of Auto/Light Truck Tires

Disposal Costs	Non-Specific	$ 0-.05	$ .06-.1	$ .11-.2	$ .21-.3	$ .31-.4	$ .41-.5	$ .51-.6	$ .61-.7	$ .71-.8	$ .81-.9	$ .91-1	$ 1.01-+
% of Response													
Aitkin	0	20	20	0	20	0	20	0	0	0	0	20	0
Anoka	10.53	26.32	0	5.26	10.53	0	21.05	10.53	0	0	0	5.26	10.53
Becker	37.50	37.50	0	25	0	0	0	0	0	0	0	0	0
Beltrami	50	16.67	0	16.67	0	0	16.67	0	0	0	0	16.67	0
Benton	16.67	50	0	0	0	0	0	0	0	0	0	16.67	0
Big Stone	0	100	0	0	0	0	0	0	0	0	0	0	0
Blue Earth	16.67	33.33	8.33	0	8.33	0	0	0	0	0	0	8.33	0
Brown	40	20	0	0	10	0	0	0	0	0	0	10	0
Carlton	11.11	33.33	0	0	0	0	0	0	0	0	0	11.11	0
Carver	25	25	0	0	12.50	0	0	0	0	0	0	12.5	0
Cass	33.33	33.33	0	0	0	0	0	0	0	0	0	0	0
Chippewa	12.50	50	0	0	0	12.50	25	0	0	0	0	0	0
Chisago	33.33	0	0	0	0	0	33.33	0	0	0	0	33.33	0
Clay	33.33	55.56	0	0	0	0	11.11	0	0	0	0	0	0
Clearwater	33.33	33.33	0	33.33	0	0	0	0	0	0	0	0	0
Cook	33.33	66.67	0	0	0	0	0	0	0	0	0	0	0
Cottonwood	0	57.14	0	0	14.29	0	28.57	0	0	0	0	0	0
Crow Wing	29.41	35.29	0	2.94	0	14.71	5.88	0	0	0	0	17.65	11.76
Dakota	14.71	26.47	0	0	0	20	17.65	2.94	0	0	0	20.59	0
Dodge	20	0	0	20	0	0	20	0	20	0	0	0	0
Douglas	33.33	16.67	0	16.67	0	0	0	0	0	0	0	16.67	16.67
Faribault	25	25	12.5	0	0	0	12.5	0	0	0	0	12.5	12.5
Fillmore	22.22	33.33	11.11	0	0	0	0	0	0	0	0	33.33	0
Freeborn	0	37.50	0	12.5	0	11.11	0	0	0	0	0	37.5	12.5
Goodhue	11.11	44.44	0	0	11.11	0	0	0	0	0	0	0	22.22
Grant	50	50	0	0	0	0	0	0	0	0	0	0	0
Hennepin	20.14	17.27	1.44	0	7.91	11.51	15.83	3.60	.72	2.16	.72	14.39	4.32
Houston	50	0	0	0	0	0	50	0	0	0	0	0	0
Hubbard	20	60	0	0	0	0	20	0	0	0	0	0	0

Table 1.10
continued

Disposal Costs	Non-Specific	$ 0-.05	$ .06-.1	$ .11-.2	$ .21-.3	$ .31-.4	$ .41-.5	$ .51-.6	$ .61-.7	$ .71-.8	$ .81-.9	$ .91-1	$ 1.01+
% Of Response													
Isanti	33.33	33.33	0	0	0	0	0	0	0	0	0	0	33.33
Itasca	0	50	0	25	0	0	0	0	0	0	0	0	25
Jackson	0	50	25	25	0	0	0	0	0	0	0	0	0
Kanabec	50	50	0	0	0	0	0	0	0	0	0	0	0
Kandiyohi	21.43	35.71	7.14	7.14	7.14	7.14	14.29	0	0	0	0	0	0
Kittson	33.33	66.67	0	0	0	0	0	0	0	0	0	0	0
Koochiching	0	0	0	0	50	0	0	0	0	0	0	0	50
Lake of the Woods -	-	-	-	-	-	-	-	-	-	-	-	-	-
LacQuiParle	25	25	25	0	0	0	0	0	0	0	25	0	0
Lake	0	0	0	100	0	0	0	0	0	0	0	0	0
Le Sueur	16.67	33.33	0	0	0	0	16.67	0	0	0	16.67	0	0
Lincoln	33.33	33.33	0	0	0	0	0	0	0	16.67	0	16.67	0
Lyon	11.11	11.11	11.11	0	0	11.11	22.22	0	0	0	0	33.33	0
McLeod	58.33	33.33	0	0	0	0	0	0	0	0	0	0	33.33
Mahnomen	0	0	0	0	0	0	0	0	0	0	0	8.33	0
Marshall	40	40	20	0	0	0	0	0	0	0	0	100	0
Martin	10	50	0	0	0	0	10	0	0	0	0	0	0
Meeker	0	33.33	0	0	0	0	33.33	0	0	0	0	10	20
Mille Lacs	0	25	0	0	0	0	0	0	0	0	0	33.33	0
Morrison	14.29	42.86	0	0	25	0	28.57	0	0	0	0	50	0
Mower	0	20	0	0	0	0	10	0	0	0	10	0	14.29
Murray	0	50	0	0	0	0	50	0	0	0	0	0	60
Nicollet	25	25	0	0	0	0	12.5	0	0	0	0	0	0
Nobles	20	26.67	0	6.67	12.5	0	20	0	0	0	0	25	0
Norman	25	75	0	0	13.33	0	0	0	0	0	0	0	13.33
Olmsted	23.08	30.77	0	0	0	0	7.69	7.69	0	0	0	7.69	0
Otter Tail	35	30	10	0	0	23.08	10	0	0	0	0	5	0
Pennington	0	50	0	0	5	0	50	0	0	0	0	0	0
Pine	28.57	14.29	14.29	0	0	0	28.57	0	0	0	0	0	0
Pipestone	14.29	14.29	14.29	0	14.29	0	28.57	0	0	0	0	0	0
Polk	15.38	53.85	0	7.69	28.57	0	7.69	0	0	0	0	0	0
Pope	0	100	0	0	7.69	0	0	0	0	0	0	7.69	0
Ramsey	27.27	23.38	0	0	9.09	14.29	15.58	0	0	1.3	0	3.9	5.19
Red Lake	0	0	0	0	100	0	0	0	0	0	0	0	0
Redwood	42.86	42.86	0	0	0	0	14.29	0	0	0	0	0	0
Renville	33.33	44.44	0	0	0	0	11.11	0	0	0	0	11.11	0
Rice	20	40	0	0	0	0	30	0	0	0	0	10	0

Table 1.10
continued

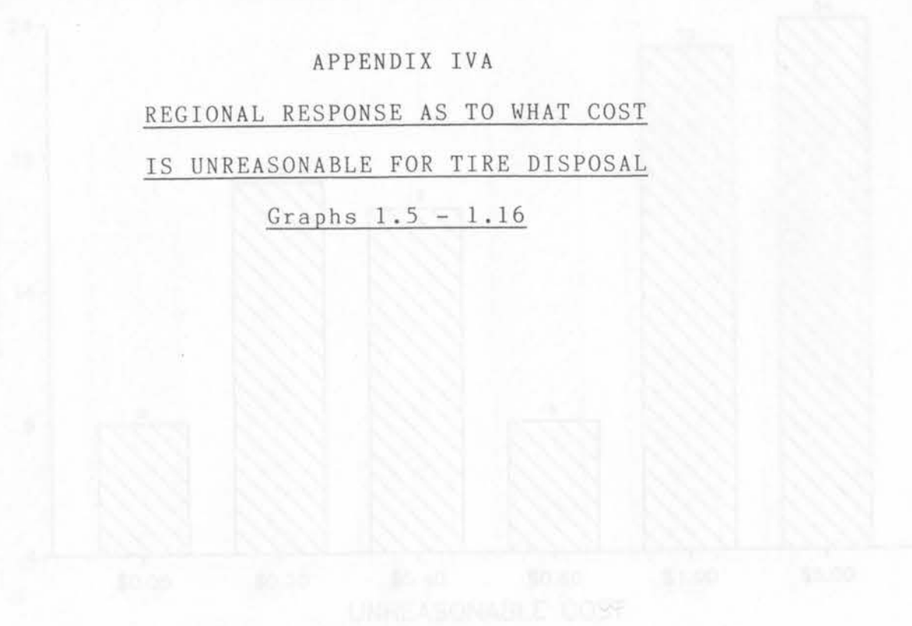
Disposal Costs	Non-Specific	$ 0-.05	$ .06-.1	$ .11-.2	$ .21-.3	$ .31-.4	$ .41-.5	$ .51-.6	$ .61-.7	$ .71-.8	$ .81-.9	$ .91-1	$ 1.01+
% of Response													
Rock	14.29	28.57	0	28.57	0	0	14.29	0	0	0	0	0	14.29
Roseau	0	66.67	0	0	0	0	0	0	0	0	0	33.33	0
St. Louis	29.41	32.35	8.82	2.94	0	2.94	5.88	0	0	2.94	0	8.82	5.88
Scott	33.33	27.78	0	5.56	5.56	11.11	5.56	0	0	0	0	5.56	5.56
Sherburne	20	20	0	0	0	0	20	0	0	0	0	20	20
Sibley	25	25	0	0	0	0	25	0	0	0	0	0	25
Stearns	20	40	0	8	0	0	12	0	0	8	0	8	4
Steele	0	33.33	0	0	0	0	33.33	0	0	0	0	33.33	0
Stevens	100	0	0	0	0	0	0	0	0	0	0	0	0
Swift	33.33	50	0	0	0	0	0	0	0	0	0	0	16.67
Todd	0	0	0	0	0	33.33	0	0	0	0	0	0	66.67
Traverse	33.33	33.33	0	0	0	0	33.33	0	0	0	0	0	0
Wabasha	11.11	55.56	0	11.11	0	0	0	0	0	0	0	22.22	0
Wadena	25	75	0	0	0	0	0	0	0	0	0	0	0
Waseca	0	60	20	0	0	0	20	0	0	0	0	0	0
Washington	12.50	12.50	0	6.25	0	18.75	18.75	0	0	0	0	31.25	0
Watonwan	14.29	57.14	0	0	14.29	0	0	0	0	0	0	14.29	0
Wilkin	40	20	0	0	0	0	20	0	0	0	0	20	0
Winona	27.27	18.18	0	0	0	0	0	0	0	0	0	27.27	27.27
Wright	17.65	35.29	0	0	5.88	0	17.65	0	0	0	0	17.65	5.88
Yellow Medicine	14.29	42.86	14.29	0	0	0	28.57	0	0	0	0	0	0

APPENDIX IVA

REGIONAL RESPONSE AS TO WHAT COST

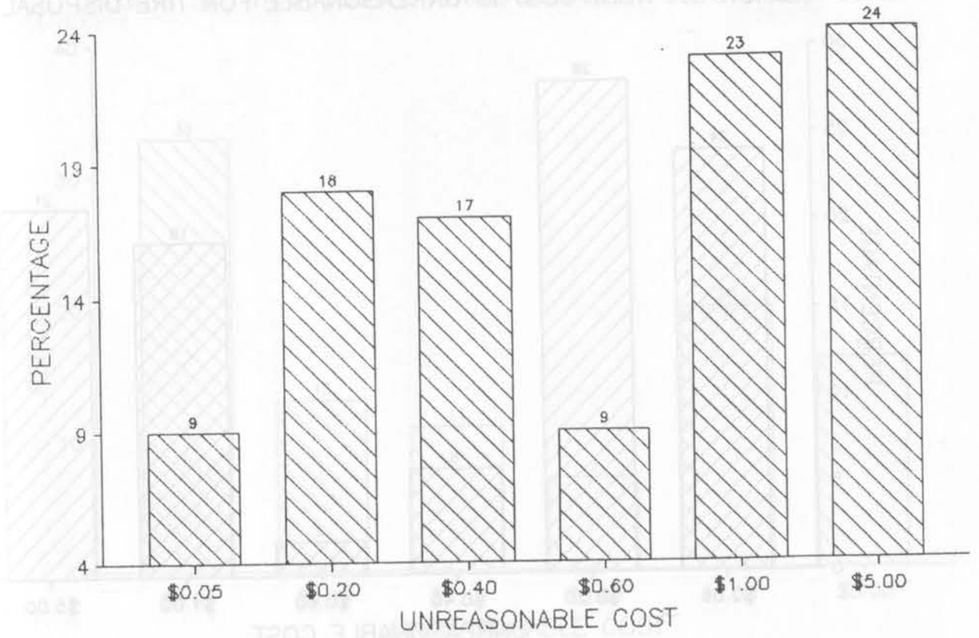
IS UNREASONABLE FOR TIRE DISPOSAL

Graphs 1.5 - 1.16



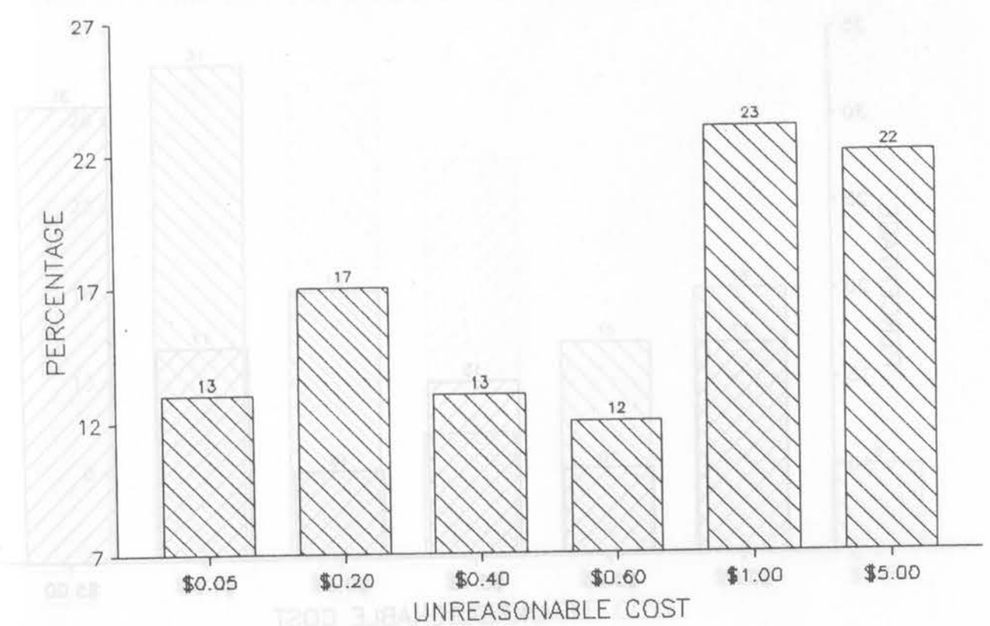
GRAPH 1.5

REGION 1: WHAT COST IS UNREASONABLE FOR TIRE DISPOSAL



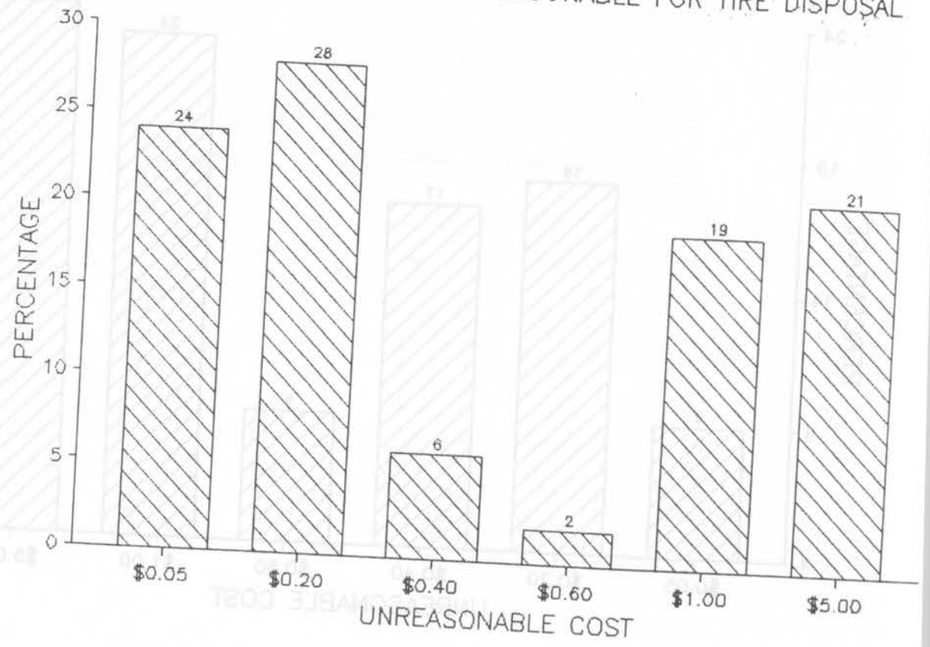
GRAPH 1.6

REGION 2: WHAT COST IS UNREASONABLE FOR TIRE DISPOSAL



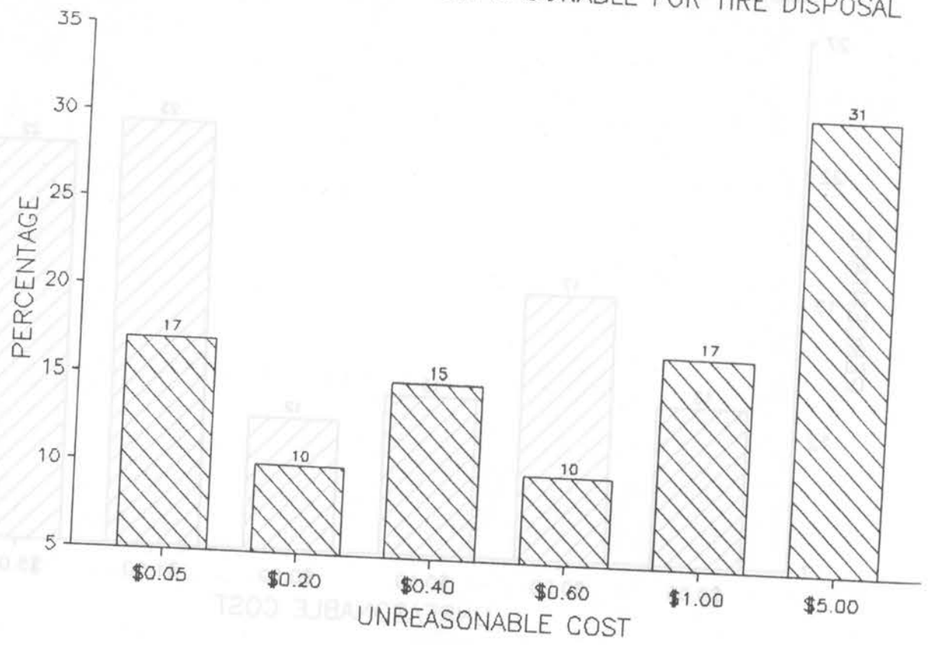
GRAPH 1.7

REGION 3: WHAT COST IS UNREASONABLE FOR TIRE DISPOSAL



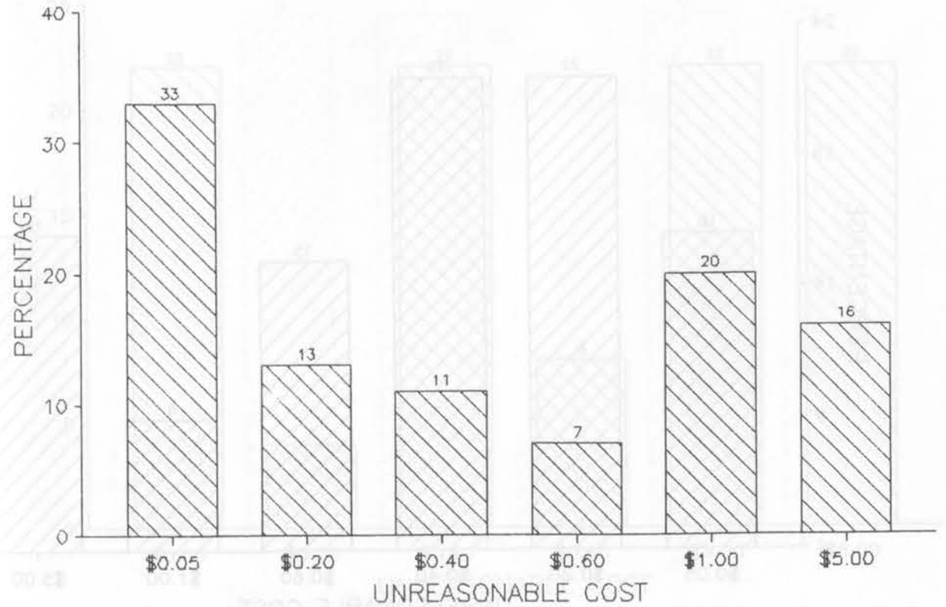
GRAPH 1.8

REGION 4: WHAT COST IS UNREASONABLE FOR TIRE DISPOSAL



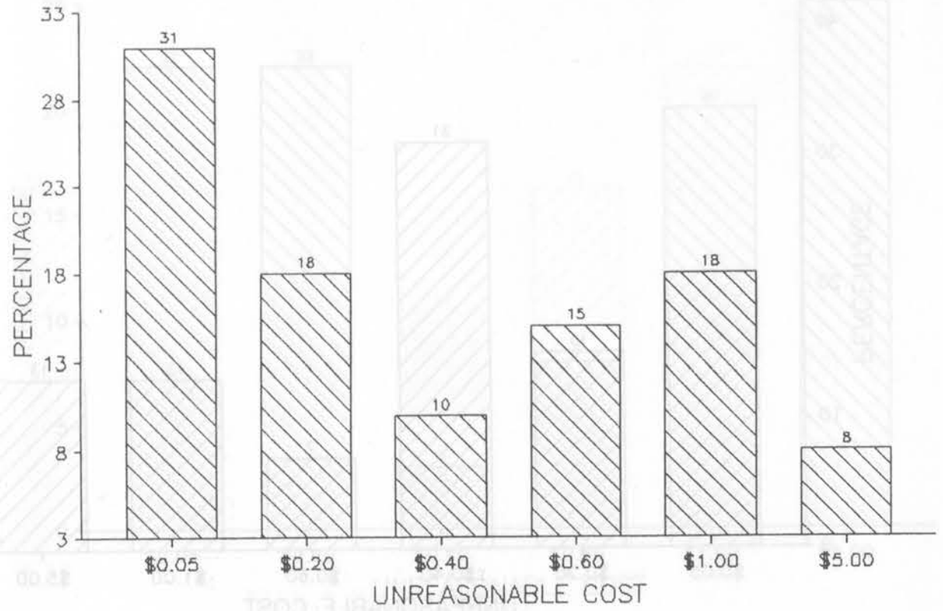
GRAPH 1.9

REGION 5: WHAT COST IS UNREASONABLE FOR TIRE DISPOSAL



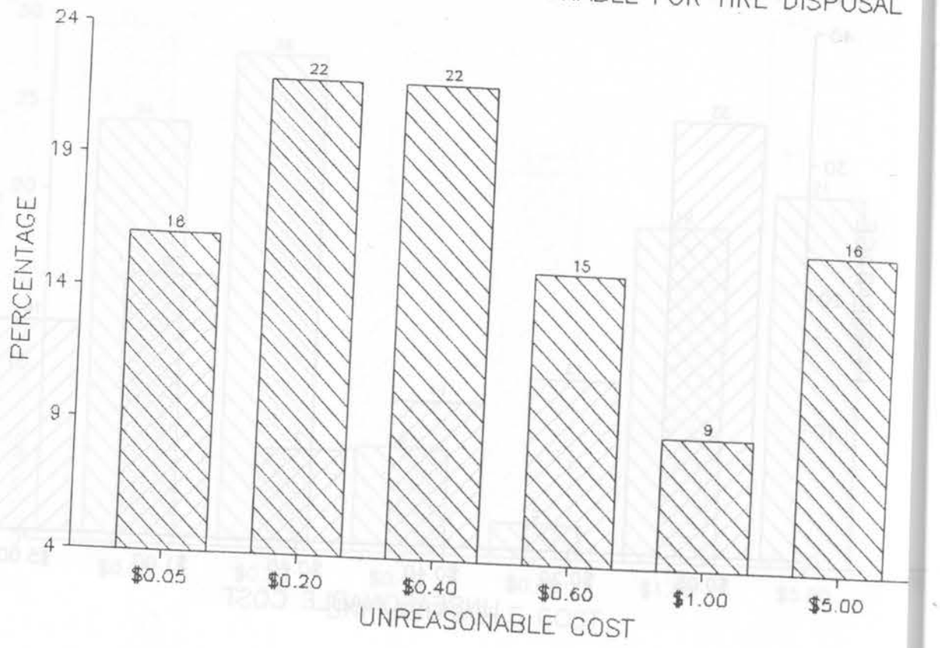
GRAPH 1.10

REGION 6: WHAT COST IS UNREASONABLE FOR TIRE DISPOSAL



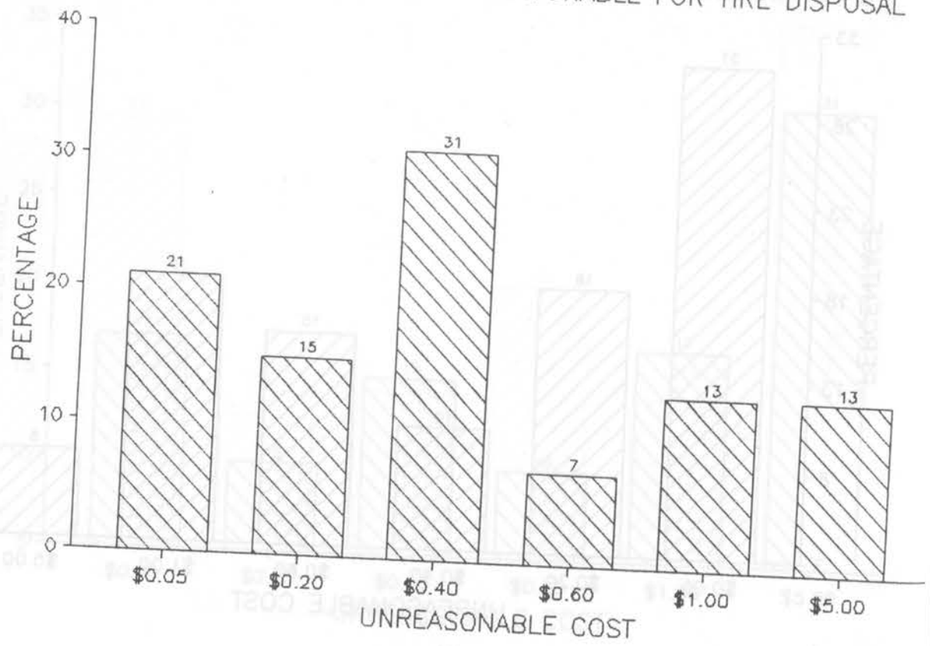
GRAPH 1.11

REGION 7: WHAT COST IS UNREASONABLE FOR TIRE DISPOSAL



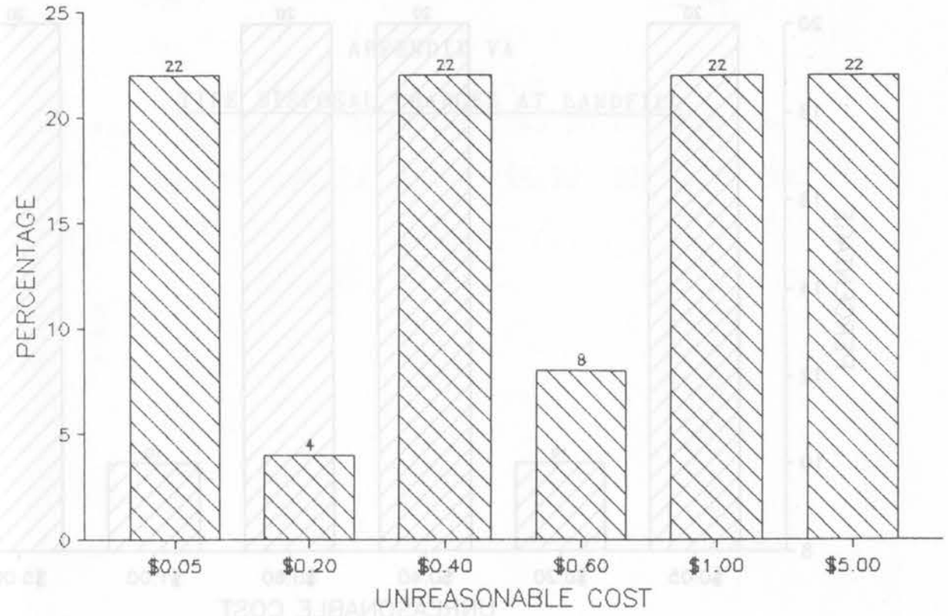
GRAPH 1.12

REGION 8: WHAT COST IS UNREASONABLE FOR TIRE DISPOSAL



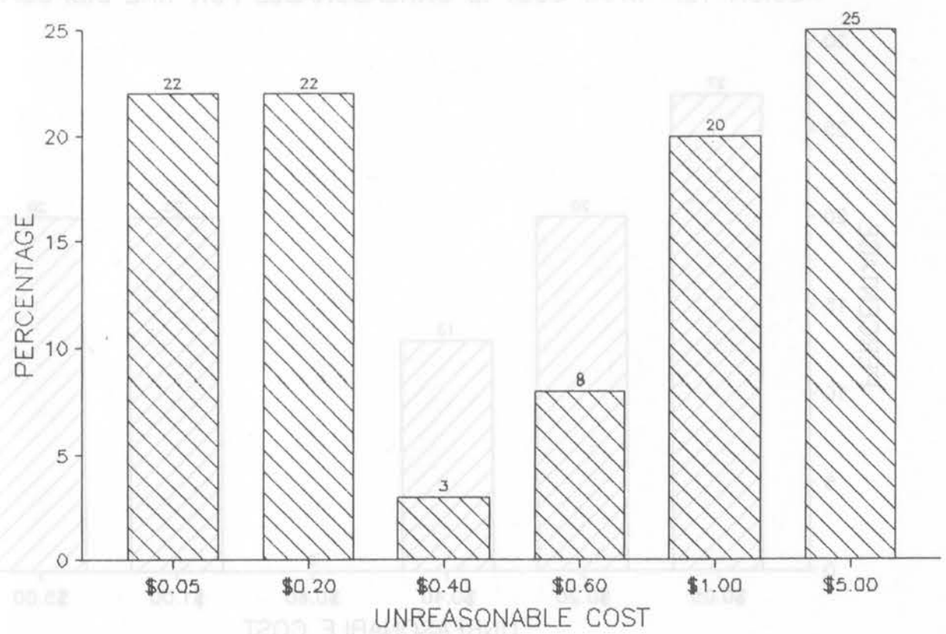
GRAPH 1.13

REGION 9: WHAT COST IS UNREASONABLE FOR TIRE DISPOSAL



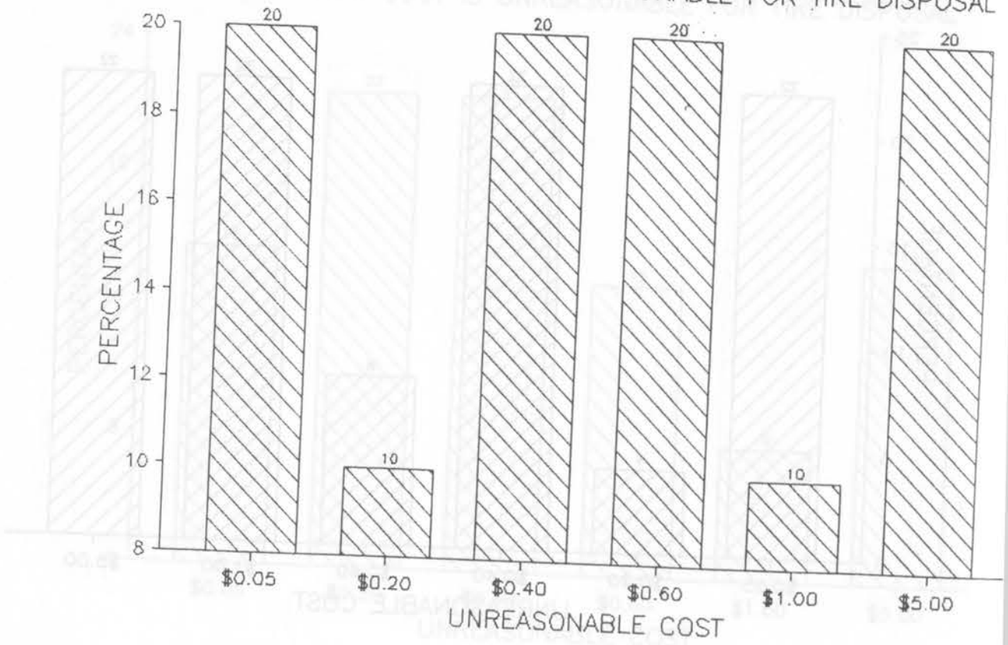
GRAPH 1.14

REGION 10: WHAT COST IS UNREASONABLE FOR TIRE DISPOSAL



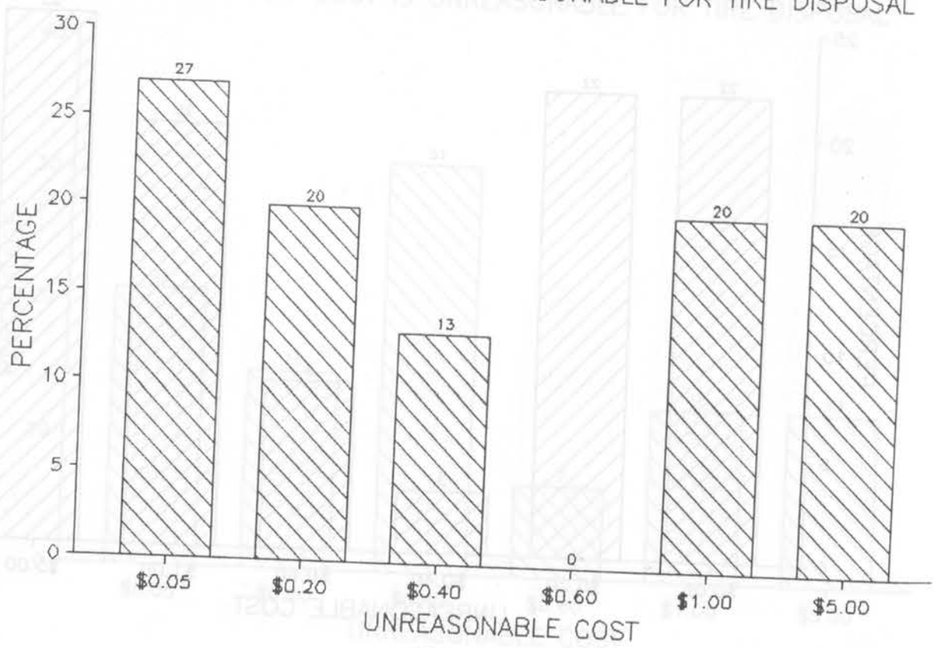
GRAPH 1.15

REGION 11: WHAT COST IS UNREASONABLE FOR TIRE DISPOSAL



GRAPH 1.16

REGION 12: WHAT COST IS UNREASONABLE FOR TIRE DISPOSAL



APPENDIX VA

TIRE DISPOSAL CHARGES AT LANDFILL

APPENDIX VA

Tire disposal charges at landfill from 20 respondents

Charges:	$0.25	$0.50	$1.00	$2.00	$2.50	$3.00	$4.00
Frequency:	1	2	10	2	1	3	1

mean = $1.54
mode = $1.00
median = $2.00

APPENDIX VIA

PERTINENT EXTRA COMMENTS
COUNTY SURVEY

Appendix VIA

Pertinent Extra Comments:

1. The problem with tires is no different than old furniture, appliances, lawn mowers or beer cans. These, in fact, are sometimes a greater problem.

2. Farmers are using scrap tires for erosion control and anchors for silage covers.

3. The county doesn't like the state to intervene in problems. However, it feels that this may be the only way to solve the problem.

4. 5 counties indicated that they will incinerate the tires in RDF Plant for high BTU value.

5. 2 counties would like to see state become active since many counties are not able to implement a plan.

6. Speculators should not be allowed to collect/stockpile tires.

7. 2 counties indicated tire piles catching fire within the last year and causing pollution and firefighting problems.

8. If the counties have to control the flow of tires it will be a disjointed effort.

9. Not enough tires are generated in rural areas to support a facility. They must locate close to population base.

10. Counties will possibly continue to bury scrap tires in the landfill.

11. A county has created an area zoned for a tire recovery or shredding operation.

12. The formation of 2 non profit citizen action groups in the southeast part of the state to address the problem within their areas.

13. Those who produce tires should pay and not put the burden on rural communities.

14. If a lot of tire processors are involved, then a program will not work due to too much competition for a limited resource.

15. St. Paul picks up 50 tires a day out of vacant lots.

16. Tires could be used as erosion control or wave breaks for sewage lagoons.

17. Many counties indicated that the state or counties should not subsidize a tire operation. It should be self-supporting.

APPENDIX VIIA

BONDING AS A FORM OF ASSURANCE

COUNTY SURVEY RESPONSE

16. Tires could be used as erosion control or wave breaks for sewage lagoons.

17. Many counties indicated that the state or counties should not subsidize a tire operation. It should be self-supporting.

APPENDIX VIIA

BONDING AS A FORM OF ASSURANCE

COUNTY SURVEY RESPONSE

APPENDIX VIIA

Bonding indicated as form of assurance for disposal and processing facilities.

$ Amount:	3,000	5,000	10,000	20,000	100,000	250,000
Frequency:	1	2	3	1	3	1

350,000	500,000	1,000,000
2	1	1

mean = $ 187,533
mode = $10,000 or 100,000
median = $100,000

APPENDIX VIIIA

ANSWERS TO QUESTION D4-COUNTY SURVEY

APPENDIX VIIA

These are the most frequent answers given for Question D4:

1. Whichever method will assure the greatest number of tires for the best economic reason.

2. A regional approach has a good chance of working.

3. County control is not the solution for flow control. A regional program may better address the issue.

4. A statewide program will be difficult to manage.

5. The state will place an unfair burden on small counties.

6. County level easy for enforcement.

7. A statewide program would be good because of the economies of scale, but questions exist pertaining to enforcement.

8. Due to the difference in resources and the problems within each county, it is felt that the state should enact policies and leave enforcement/implementation to the counties.

9. The state would be the most effective implementation method.

10. Emphasize local programs because it's difficult to work with the state.

11. Whatever method is most efficient.

12. State control is a big can of worms.

13. Regional programs can be tailored to fit needs of border areas.

14. County funding of a tire program will be difficult. It is already difficult to fund existing programs.

15. A regional approach is preferred because it keeps hauling costs down for the county's population and haulers.

APPENDIX IXA

LIST OF TIRE STOCKPILES

MINNESOTA STOCKPILES

County	Company or Owner's Name	Location	Approximate Size of Stockpile	Presently Taking Tires	Ability to Properly Dispose
Aitkin					
Anoka	Minn. Tire Recycling	Andover Oak Grove	5+ million 100,000 +	Yes	Yes
Becker	County Landfill Johnson Tire Center	Detroit Lakes	10,000 + Unknown	Yes Abandoned	No No
Beltrami	Chuck Cummer		1,000 +	Yes	No
Benton	Jim Williams	Foley	1,000 +	Unknown	Unknown
Big Stone	Unknown	Several	10,000 +	Unknown	Unknown
Blue Earth	Mankato Ag Lime	Mankato	40,000 +	Yes	Considering
Brown					
Carlton	Blackey Laitinen	Esko	20,000 +		No
Carver	Unknown	Several	1,000 +	Unknown	Unknown
Cass					
Chippewa					
Chisago	County Unknown Unknown	Landfill Hwy. 8 & C.R. 26 Chisago Lakes Twsp.	Unknown Large Pile Unknown	Yes Unknown Unknown	No No No

County	Company or Owner's Name	Location	Approximate Size of Stockpile	Presently Taking Tires	Ability to Properly Dispose
Clay	County	Demo Site	Unknown	Yes	No
	Hutterite Colony	Spring Prairie	1,000 +	Unknown	Unknown
Clearwater	County	Demo Site	Unknown	Unknown	No
Cook					
Cottonwood	County	Landfill	50/yr.	Yes	No
Crow Wing	Unknown				
Dakota	Viking Auto Salvage	Hwy. 3 & 264 St.	20,000 +	Unknown	Unknown
Douglas	La Grange Landfill		Unknown	Unknown	No
Dodge	Dennis McNielus	Dodge Center	100 +	Yes	No
	Laverne Knutson	West Concord	200-500	Unknown	Unknown
	Danny Fenske	Kasson	200-500	Unknown	
	Lloyd Unger	Kasson	200-500	Unknown	
	Kenneth Stafford	Dodge Center	500 +	Unknown	
	David Noble	Blooming Prairie	500 +	Unknown	
	Kim Ibach	Hayfield	200-500	Unknown	
Faribault					
Fillmore	Jenning Junkyard	Spring Valley	50,000	Unknown	

County	Company or Owner's Name	Location	Approximate Size of Stockpile	Presently Taking Tires	Ability to Properly Dispose
Freeborn					
Goodhue					
Grant	OK Tire	Elbow Lake	Unknown	Unknown	
Hennepin	Greenfield		150,000	Unknown	
Houston					
Hubbard	Several	Junkyards			
Isanti	Wallace Watson	Rum River	150,000		
		Springfield Twsp.	Unknown		
	Isanti/Chisago	Landfill	Unknown	Yes	Collection
Itasca	Drews		100,000	Yes	No
Jackson	Private/speculation	Unknown	Unknown	Yes	No
Kanabec	Unknown	Mora Area	Unknown		
Kandiyohi		Landfill	Unknown	Unknown	
Kittson					
Kochiching	Moonlight Rock	International Falls	2,000 +	Unknown	No

County	Company or Owner's Name	Location	Approximate Size of Stockpile	Presently Taking Tires	Ability to Properly Dispose
Lac Qui Parle					
Lake	County		500 +		
Lake of the Woods					
LeSueur					
Lincoln					
Lyon					
Mc Leod	Roger Cohrs	Hellen Twsp.	300-500	Yes	No
Mahnomen					
Marshall	Tire Dealer	Warren	Large/Unknown	Yes	No
	Tire Dealer	Stevens	Large/Unknown	Yes	No
Martin	Zelmann's Recycling	Fairmont	1 AC		
Meeker	County Landfill		2,000 +		
Mille Lacs					
Morrison					

County	Company or Owner's Name	Location	Approximate Size of Stockpile	Presently Taking Tires	Ability to Properly Dispose
Mower		Watham Twsp.	1,000 +		
		Udolpho Twsp.	250	Burned	
	County	Demo Site	Unknown		
Murray					
Nicollet					
Nobles	Fredrig Gruis	Reading	1 Million		
Norman		Ada	Unknown		
	OK Tire Co.		Unknown		
Olmsted	Jim Adams		Unknown		
Ottertail	County Landfill	Fergus Falls	100 yds. x 30 yds. x 4 ft. high	Yes	
Pennington	Small, not documented				
Pine					
Pipestone					
Polk	Wang	Fertile	2,000 +		
	Peirce Tire	Crookston	300		
	LePeir Oil	Fosston	300		

County	Company or Owner's Name	Location	Approximate Size of Stockpile	Presently Taking Tires	Ability to Properly Dispose
Pope					
Ramsey					
Red Lake					
Redwood	Fire Stone Dealer	Redwood Falls	200 ft.^{2}	Yes	No
Renville					
Rice					
Rock	County	Landfill	4,000		
Roseau	County Landfill	Landfill	Unknown		
St. Louis	Reserve Mining	Babbit	165 AC	No	No
	Union Compress		600 +	No	No
	County	Landfills	Unknown		
Scott	Amex Tire	Savage	Unknown	Yes	Possible
	Frank Muelken	Prior Lake	1 million		No
	V & S Auto Salvage	Belle Plaine	100,000		
Sherburne	Maple Grove Farms	Plymouth	500,000	No	Proposed
	Gravel Pit (Unknown)	St. Cloud	100,000	No	
		Becker	75,000		

County	Company or Owner's Name	Location	Approximate Size of Stockpile	Presently Taking Tires	Ability to Properly Dispose
Sibley					
Stearns					
Steele	Louis Fetterer	Owatonna	5-10,000		
Stevens					
Swift					
Todd	County	Maintenance Shed	Unknown		
Traverse	James Graham		Unknown		
Wabasha	Dorence Gerkin	Hammond	150-200,000		
Wadena					
Waseca	County	Landfill	Unknown		
Washington	Pilquist Recycling	Bayport	200,000	No	Possible
	Bellaire Sanitation	Stillwater	50,000	No	Possible
Watonwan					
Wilkins	Ed Poppel	Wolverton	500,000		

County	Company or Owner's Name	Location	Approximate Size of Stockpile	Presently Taking Tires	Ability to Properly Dispose
Winona	County	Landfill	13,077		
	Brad Ragen	Goodview	Unknown		
	Hiawatha Tire	Winona			
	Albert Hubenthal	Stockton	200 +		
Wright	Powell	Clearwater	60,000		
Yellow Medicine					

This listing was developed through conversations with County solid waste officials and private parties. The on site verification to quantity or location has not been provided by Waste Recovery, Inc.

References

Objective A

1. "Modern Tire Dealer, Facts 1984." Bill Communications, Akron, Ohio, 1985.

2. Ibid., report.

3. State of Minnesota Population, Rand McNally & Co., 1984.

4. Roulston & Co., Saul Ludwig - Rubber Industry Stock Analyst, Cleveland, Ohio, 28th Annual Louisville Retreaders' Conference, April 19-21, 1985.

OBJECTIVE B

FINANCIAL ASSURANCE METHODS

OBJECTIVE B

FINANCIAL ASSURANCE METHODS

The objective of this section was to identify financial assurance mechanisms that state and local authorities may use to minimize illegal tire disposal in Minnesota. Financial assurance requirements are common in the construction and solid waste industries and may be applied to scrap tires as well. A model has been developed to assist regulatory agencies in evaluating financial assurances for companies that collect or process scrap tires.

A mechanism may exist within the state's regulatory structure to issue permits to tire collectors. If this authority does not exist, it should be developed because it is at the collection level where the system for proper recovery may be weakest.

Background

Financial assurance is an economic obligation payable to a party if the service provider fails to perform in a specific manner. This section examines the issues surrounding the need for processors and collectors to have financial assurances, what values should be placed on these assurances, and the available methods of applying assurance provisions. A proposed method will be outlined that assures a regulating body regarding the ability of a processor or collector to function in the marketplace.

Tire collectors and processors frequently create stockpiles of tires which are then abandoned and thus become a public nuisance. There has been no incentive or disposal/recovery method available that would deter the tire flow from this stockpiling process. Collectors often claim that they are doing the public a service by removing the tires and storing them. What has not been realized is that the clean up of the site has now become a liability that in many cases may involve public funding.

The inclusion of financial assurance in the collection and processing operations will provide an economic incentive for an operator to act in an appropriate manner. Financial assurance is done in conjunction with permitting or licensing functions where failure to perform results in a monetary penalty. Thus, the issuing party can be assured that sufficient funds will be available if improper performance occurs. It is also as a method acquiring a third party's evaluation of anticipated performance.

It is difficult to determine a cost benefit relationship that provides assurances for the proper handling of scrap tires. A dollar value must be established that discourages improper performance and at the same time is not an economic burden for viable service providers.

The most threatening situation that exists for a collector or processor is a stockpile fire. The assurances for such a case would involve costs for firefighting, monitoring, security, and clean up of ash and leftover tires. Documentation of the cost from the Winchester, Virginia, tire fire estimated that 1.7 million Superfund dollars were spent at the site. A more recent tire fire located at Everett, Washington, involving 1.5 million tires, is estimated to exceed 1 million dollars for clean up and may reach 3 million dollars.

Cost estimates for tire fire cases vary because each site is unique. If financial assurances were based on tire fire costs, it may be assumed that securing such amounts is not feasible for present or future collectors. There is also question of the linkage between a tire fire and the reason for financial assurance. Historically, tire fires have been caused by arson. This may not be a function of a collectors inability to perform in a sufficient manner, other than providing security measures. It may actually be a function of what should be covered by liability insurance.

The problems associated with collectors who stockpile tires surfaces when they abandon or cease the tire recovery operation without a proper disposal/recovery method. The development of a disposal/recovery option with a financial assurance requirement assigns a dollar value to the clean up of such a site. The clean up of a site will involve expenses for labor, transportation, disposal charges, and may also include a loader with some form of mobile volume reduction. The cost associated with different methods of clean up and transportation of tire piles is discussed in Objective E, Collection Methods.

Example: A clean-up method using a trailer loading with the assistance of a loader and a moderately sized stockpile of 40,000 tires:

Cost per tire, clean up	$0.22 (A)
Cost per tire, disposal fee	.20 (B)
Overhead (30%)	.13 (C)
Total disposal cost/tire	$0.55

.55 x 40,000 = $22,000 total clean up.

A) Identified in Objective C as appropriate.
B) Current disposal cost at Andover, MN.
C) State administration fee to oversee the clean up.

The cost of $22,000 is the liability associated with this stockpile. This method of financial assurance is currently being used by Anoka County for processors within its jurisdiction. Minnesota Tire Recycling, located in Andover, MN, is required to post a performance bond of $12,500 on 25,000 tires. This bond is part of other specific permit and insurance requirements. Anoka County is the only county in Minnesota which requires financial assurance.

Basing the value of financial assurance on the number of tires stockpiled directly links the liability to associated cost. This creates an objective requirement which must be met and can be monitored effectively and consistently by a third party.

Several methods exist for creating funds for the use of compliance assurance. Performance bonds, trust funds and letters of credit are common methods.

Bonding

A performance bond is the most frequent and convenient financial assurance method used by government for private industry. This method requires the service or product provider to secure a bond for a specified amount from an issuing party. The bond becomes payable to the receiver of the product or service if non-compliance of an agreement occurs. This provides for financial compensation to the state for unsatisfactory performance. These funds allow for proper site clean up with limited additional public liability.

Bond costs are based on a percentage of the bonded amount and the assessed risk. This is usually 1.25% of the face value of the bond. The issuer requires that three conditions be met in order to secure a bond.[1]

1) The company must have net worth approximately 10 times the face value of the bond.

2) The officials of the company must co-sign for the bond.

3) A financial statement must be submitted to demonstrate financial stability.

These requirements give the bonding company an indication of the risk factor involved in the bond issuance and an assurance that the financial obligation is covered by company and personal assets in case of forfeiture of the bond. The bond makes the bonded party liable for the debt and insures that the entity requiring the bond receives payment in the event of non-performance.

A bond provides immediate coverage of performance from the time of issuance and allows for the changing of amounts of coverage based on different needs. A bonding for the product or service provider, is a low cost assurance mechanism that does not consume large amounts of capital. Bonds are issued on the premise that performance will be met satisfactorily.

Trust Fund

A trust fund is the payment of funds into a secured account that may be used for noncompliance with a specific performance agreement. Trust funds are created for the future maintenance of public facilities. They are used as an insurance policy against future liabilities arising from the closure of a facility.

The use of a trust fund as an assurance method for collectors and processors of tires, is not a good idea. The collection of funds would occur over a period of time, thus there is no immediate assurance or incentive to act responsibly. It requires the firm to set aside a portion of its working capital for a fund, suggesting the operation has a high probability of failure. This creates a negative atmosphere for the collector while causing an increase in the disposal cost to the consumer(since it can be assumed that the cost will be passed on). A trust fund will involve extensive record keeping and administrative duties by both the regulator and the tire collector.

Proposed Financial Assurance for Collectors

A performance bond to insure the proper clean up of the collector's site is the most reasonable method of financial assurance. This bond should be proportional to the stockpile size limitation as established by the state, (i.e. 5,000 tire limit would have $2,500 bond; 10,000 tire limit would have a $5,000 bond, etc.).

A bond requirement to collect tires will provide an incentive to move tires to a proper recovery facility. This incentive will result in less tires being stockpiled for speculation. An additional benefit will be the minimization of the elapsed time from collection to proper recovery. This turnover time has often been so long that a portion of the collection fee designated for a tipping fee has been spent for other operation purposes. This results in the stockpiling or dumping of tires.

Table 2.1 (page 103), provides an example of bonding requirements and approximate costs associated with stockpiled quantities. The development of a schedule allows the quantities of tires to be determined by the cost of the bond, the companies net worth and, the desired amount a collector wishes to hold. The net worth figure provides a ceiling on the amount of tires any collector may stockpile. Examples:

1) A collector with a net worth making him eligible for a $27,500 bond against 50,000 tires may choose only to hold a $2,750 bond for 2,000 tires.

2) A collector with a net worth of $55,000 wishing to collect tires can secure a bond for a maximum of $5,500. This will limit his ability to only stockpile 10,000 tires or less.

The collector should determine the number of tires he anticipates holding at the time of permitting. The bond value should be determined at this point and match the values of tires and bonding requirements.

Table 2.1

BONDING REQUIREMENTS

Stockpile Limitation (tires)	Cost to Clean-up $0.55/tire	Approximate Bond Cost	Collector or Collection Sites Net Worth Required
1000 or less	$ 302.50	$ 25.00	$ 3,025.00
5000	2,750.00	35.00	27,500.00
10,000	5,500.00	69.00	55,000.00
20,000	11,000.00	138.00	110,000.00
30,000	16,500.00	206.00	165,000.00
40,000	22,000.00	275.00	220,000.00
50,000	27,500.00	344.00	275,000.00
60,000	33,000.00	412.00	330,000.00
70,000	38,500.00	481.00	385,000.00
80,000	44,000.00	550.00	440,000.00
90,000	49,500.00	618.00	495,000.00
100,000	55,000.00	688.00	550,000.00

The amount of tires secured by the bond will be the maximum amount that can be held without being in violation of a permit.

Proposed Performance Assurance for Processors

Performance assurances requirements for processors should be based on an evaluation of the companies financial and experience resources, the number of tires stockpiled, and the companies ability to provide sufficient liability insurance. This involves both subjective and objective evaluation. This method of evaluating, licensing and/or permitting is consistent with established county and local municipal ordinances for the solid waste industry throughout Minnesota. Processors demonstrating consistent performance are required to post minimal or no bonding while unproven processors are required to post greater bonds.

The following format is typical of the questioning involved in evaluating the financial and experience resources of a company. The development of a model to evaluate a company's capability must assume that the government will directly or indirectly provide a regulatory environment for the industry by requiring a special operating license.

Assumption

In developing a model to evaluate a processor's ability, it may be assumed that the state is the source of capital funding. If the state is not the source, then there may be no need for them to perform an evaluation. However, the state may want to do an evaluation if it establishes tire processing/collection as a regulated industry and requires licensing for it.

The following progressive question/check list is recommended when evaluating a company from a financial and experience resource perspective: (See Table 2.2 for Flow Chart, page 109). The objective of this model is to protect the public from undue liability resulting from improper or failed operations.

A MODEL TO EVALUATE FINANCIAL AND EXPERIENCE RESOURCES

Prior experience:

This area is used to identify the extent of review necessary. An experienced recovery company with a good history may not need the same close detail review as a new company. Suggested key questions:

A) How many tire processing/collection facilities does the company have in operation?

B) Does the company have experience in manufacturing and/or recycling environments?

C) How long has the company been in existence?

D) What is the Company's net worth and total assets?

A positive response to these questions would indicate a general review (path #1). A less positive outcome, indicating that the Company may be new or entering an unfamiliar area of business for them, should require a more detailed review (path #2).

For example, assume the following results were received for Company A.

Key Questions:

A) How many tire processing/collection facility does the Company have in operation?
Response - One facility

B) Does the Company have experience in manufacturing and/or recycling environments?
Response - The obvious answer to this question may be "yes" as the Company has a tire processing facility. However, assume the Company does not have a tire process facility but has experience in other recycling and manufacturing areas. This should be viewed as a positive response.

C) How long has the Company been in existence?
Response: 3-1/2 years

D) What is the Company's net worth and total assets?
Response: $750,000 net worth
$1,000,000 Total assets

The above information indicates that a general review following path #1 is required.

Path #1

I) How is the Company legally and internally organized? i.e., corporation, etc. The purpose of this step is to formulate a general idea as to the Company's size, structure and business capabilities.

Key Questions:

A) What is the Company's legal structure?
B) What is the Company's organizational structure?
C) If the Company has tire operations, the details of these operations should be obtained.

II) What are the details of the proposed tire facility? The purpose of this step is to obtain the business plan for the proposed tire facility.

Key Questions:

A) What quantity of tires will the facility handle on a yearly basis?
B) What will the Company do with the recycled tires?
C) How does the Company foresee obtaining the tires?
D) Are customers in place to use the recycled product? i.e. contracts, letters of intent, etc.

III) What is the financial position of the company?

The purpose of this step is to obtain information as to the financial health of the company, the economics of the proposed facility and the impact the facility will have on the Company.

Key Questions & Review Procedures:

A) What has been the Company's financial history? Obtain historical financial statements and perform normal financial ratio reviews and trend analysis reviews.

B) What is the Company's current financial position? Obtain current financial statements and perform normal financial ratio reviews.

C) What are the projected economics for the proposed facility? Obtain financial projections for the facility. Compare them with the Company's current or similar operations. Obtain support for or rational for projected amounts. Determine what effect the projected financing and results of the facility will have on the Company. (Financial position and Operating results).

IV) What references can the Company provide?

The purpose of this step is to obtain support for the representations made by the Company in the preceding steps.

Examples:

A) Current customer lists
B) Local government contacts where current processing is being done.
C) Banking relationships
D) Trade creditors
E) Holders of Company debt

V) Evaluation:

All the information should be reviewed and an evaluation made as to determine the viability of the company's programs.

Referring back to the track record review step, had the results been less positive for Company A, a more detailed review should be done. For example:

A) How many tire processing/collection facilities does the Company have in operation?
Response - None

B) Does the Company have experience in manufacturing and/or recycling environments?
Response - None

C) How long has the Company been in existence?
Response - 6 months.

D) What is the Company's net worth and total asset amounts?
Response - $ 900,000 net worth
$ 1,000,000 total assets

Review of these responses would indicate that the Company is new and just entering the recycling industry. A detailed review under path #2 would be indicated.

Path #2

I) How is the Company legally and internally organized? (Similar to Path #1)

II) What are the details of the proposed tire facility? (Similar to Path #1)

III) Who are the key personnel?

The purpose of this step is to identify key personnel and their backgrounds. As the Company is new or new to recycling, often key management or owners have experience that will help to qualify the Company.

Key Inquiries:

A) Identify owners and their background
B) Identify management team and their background
C) Identify financial position of owners individually.

IV) What is the financial position of the Company?

The purpose of this step is to obtain information as to the financial health of Company, the economics of a proposed facility, and the impact the facility will have on the Company. (Similar to Path #1)

V) Review equipment and process technology. The purpose of this step is to determine if the Company has defined its needs as to equipment and process technology required to achieve their project objectives. As the company is new or new to recycling, satisfaction as to their awareness of what is needed must be obtained.

Key Inquiries:

A) What equipment is to be used?
B) Where is equipment being obtained?
C) What is the operating history of the equipment?
D) What is the process layout?
E) What does the process call for as to direct cost requirements?

VI) What references can the Company provide?
Same as Path #1

VII) Evaluation:
Same as Path #1

The preceding text describes two alternative paths for the evaluation of a prospective company entering into a tire recycling project. This recommended approach has been developed to address the type of Company that has historically attempted to or has operated in the tire recycling industry. The evaluation process can never be too detailed and often involves some subjective review.

Table 2.2

FINANCIAL AND EXPERIENCE RESOURCE EVALUATION FLOW CHART

TRACK RECORD - PRIOR EXPERIENCE REVIEW

PATH #1	PATH #2
YES	NO
Organization Review	Organization Review
Proposed Project Review	Proposed Project Review
Financial Review	Key Personnel Review
Review of References	Financial Review
	Review of Equipment and Process Technology
Evaluation/Conclusion	Review of References
	Evaluation/Conclusion

SUMMARY

A company that can satisfy the required scrutiny may be considered a viable tire operation. Minimal or no bonding may be required for the operation except for the anticipated amount of tire storage. If the company's evaluation proved less favorable, and it was allowed to pursue bonding, the bond amount required may be increased above any minimal standards to compensate for the uncertainty.

The bond amount for processors may be prohibitive if based upon anticipated numbers of stockpiled tires. Due to seasonal fluctuations and scheduled downtime the quantity of tires may become so large that, when applying the collection scenario, the cost becomes prohibitive. 600,000 tires or one quarter of the Minnesota yearly tire generation rate could be stockpiled due to seasonal fluctuations. For this amount of tires a bond of $330,000 would be required for a clean up of the site. The company's net worth would have to exceed $3.3 million.

A $3.3 million bond requirement would be prohibitive for the processor. For the processor who has met the scrutiny of the financial and experience evaluation, and can provide the required liability insurance, a bond requirement for 100,000 tires should not prove to be financially unreasonable. This assumes that the processor would continuously process tires, and that the scrap tire surge pile would ever exceed this mark. The pile may exceed the bonding value in certain instances, but this must be viewed subjectively before action is taken. The stockpiling of tires must be stopped. If the facility has been in continuous operation, and the overage is due to seasonal fluctuations, the operation should continue, but close attention should be paid to it. Performance bonding should not be for the general flow of tires through the facility, but to ensure that those stockpiled tires for surge or seasonal flow are assured proper recovery.

As a method of financial assurance, bonding provides beneficial features that will enhance the flow of scrap tires, allow for the evaluation of collectors and processors, and ensure funding in case of unsatisfactory performance. The net effect of a bond which is tied to a permit or license is that reliable and responsible parties are involved in the tire flow system.

APPENDIX IB

COLLECTOR'S APPLICATION FORM

A MODEL

APPENDIX IB

COLLECTORS APPLICATION FORM
A MODEL

The information submitted in your application will determine your qualifications and bonding requirements. Please submit with this application a letter of intent stating that you have the ability to secure the required performance bond.

Date: _____

General Information:

1) Collection agencies:

Name:
Address:
Phone Number:

2) Owners of the operation:

Name: _____ _____
Address: _____ _____
_____ _____
Phone: _____ _____

3) Years in tire collection: _____

4) Do you process tires? Yes _____ No _____

5) Recovery method intended for scrap tires?

_____ your own stockpile
_____ other disposal facility
Name: _____
Address: _____
Phone #: _____

6) Total number of tires held on premise (include graded casings, waste, and resaleables)

Site Information:

1) Site location:

Legal description _____
Section _____ township _____ range _____

2) Site size: _____ Acreage

3) Owner of facility property (lien holder, leasing agent)

Name: _____
Address: _____
_____
Phone #: _____

4) Zoning: Present land use zoning: _____
Restrictions: _____
_____

5) Other permits: Applied for or issued:

State: _____
County: _____
City/Local _____

6) Years of operation at site: _____

7) Previous location and years of operation here.

Address: _____
_____
Years of
Operation: _____

8) Will your site be open to the public? _____ Yes
_____ No

Hours: Monday _____ to _____
Tuesday _____ to _____
Wednesday _____ to _____
Thursday _____ to _____
Friday _____ to _____
Saturday _____ to _____
Sunday _____ to _____

Other products being collected or stored on the site:

_____ glass
_____ paper/corrugated
_____ garbage
_____ aluminum
_____ metals/steel
_____
_____
_____

Will a subcontractor or other collector be using or allowed to drop tires at your facility? _____ Yes _____ No.

Sub Contractors:

Name: _____ _____ _____
Address: _____ _____ _____
_____ _____ _____
Phone: _____ _____ _____

Haulers:

_____ _____ _____
_____ _____ _____
_____ _____ _____

Collection:

1) Counties or region providing service to:

_____
_____
_____

2) Estimated population of collection area:

_____ 1980 census.

3) Type of service being offered:

_____ hire haul
_____ haul on demand
_____ route service
_____ contract
_____

4) Estimated number of tires being collected:

Daily _____
Monthly _____
Yearly _____

5) Estimated number of tires being graded _____%
resold _____%
scrap _____%

6) Present equipment being used and number in operation:

_____ pick-up truck
_____ pick-up with box rack
_____ pick-up with 5th wheel
_____ stake truck
_____ semi trailer

7) Propose average collection fees you intend to charge by region you intend to serve:

Region _____

_____ passenger/light truck
_____ truck
_____ duplex
_____ tractor
_____ other

If more than one region, please identify and list average charges as appropriate.

Financial:

1) Financing institutions for operation (if any):

Name: _____
Address: _____
_____
Phone #: _____

2) Bonding agent:

Name: _____
Address: _____
_____

$ value of bond: $_____

References - Objective B

1. Interview with Harry Denny, Cleary Agency, (bonding agent), Wayzata, MN (9/27/85).

OBJECTIVE C

FINANCIAL CONDITIONS FOR TIRE RECYCLING

OBJECTIVE C

FINANCIAL CONDITIONS FOR
TIRE RECYCLING

This objective was to define the financial conditions required to make the recovery of tires economically feasible. Tire movement costs, transportation networks, processing economics, and a summary of risks for tire processing are discussed in this Objective. A per tire recovery cost was developed for Objective D and I, Collection System, from this analysis.

I. Transportation Costs and Networks

Many factors must be examined in evaluating the movement of scrap tires and their associated products throughout Minnesota. The two key issues of tire transporting are the flexibility of routes and service levels. The available equipment, commodity classification and restrictions, terminal cost, seasonality and regionality of service all have a role in the final transportation choice. The final system should maximize service and minimize cost.

The methods available for transporting scrap tires and products in Minnesota are rail, river barge, and truck. The use of barge or rail for intrastate transportation of tires is not efficient due to exorbitant terminal cost and/or limited route serviceability. Terminal costs are incurred when a shipper brings his goods to a carrier's loading point at one end of the journey and removes them from the unloading point at the other end. Terminal costs tend to be lower for truck than for rail, and lower for rail than for barge shipments. Terminal costs do not vary with the length of haul and have the effect of making a short haul more expensive per ton mile than a long haul. Rail and barge rates in Minnesota are competitive with truck rates on a per ton mile rate basis. Terminal costs drastically decreases their competitiveness for hauls under 200 miles. (Ex., 80,000 Net Weight rail for 200 miles would cost approximately $2.20/100 wt. 48,000 lbs Net Wt. trucked for 200 miles would cost approximately $.44/100 wt.). As a result barge and rail terminal costs are too great to be offset by the short distances traveled by intrastate transportation. Special rates for barge and rail may be negotiable but one is dependent on unique circumstances.

Route serviceability for rail and barge is also a limited solution. The product is dependent upon the scheduled movement of equipment, and is not conducive to the erratic flow involved in scrap tire movement. The use of rail or

barge becomes an alternative method of transportation when loading and unloading are done by the supplier and market, and the rail or barge company has only to drop off and pick up the transportation vessels. Barge and rail are suited for interstate transportation of goods.

The trucking industry allows for greater flexibility in routes and service. It charges minimal terminal fees. The trucking industry provides the most feasible transportation method for the intrastate transporting of scrap tires and by-products based on published tariffs for maximum quantity loads on file with the Minnesota Department of Transportation.

The trucking industry is divided into two categories by the Minnesota Department of Transportation (MDOT).

1) Permit Carriers - These are irregular route carriers which must apply for tariffs based upon specifics of load.

2) Common Carriers - These carriers have specific routes and product classifications.

Due to the strict regulations imposed on common carrier routes and commodity classifications which allow for little flexibility, common carriers will not meet the needs of scrap tire transporting. Permit carriers provide the greatest flexibility of routes and commodity. Within the permit carriers is a small subclassification referred to as "grandfathered carriers." These long established companies are granted the overriding authority on rates and routes for intrastate transporting of goods. Specific rates for the "grandfathered carriers" are not published. Rates are usually quoted from existing published rate tables or are on a bid per load basis.

Scrap tires are specified by MDOT under a general commodity number 169880. This indicates a rate schedule for the commodity. These schedules determine rates for full, partial, and minimal truckloads based on weights. Scrap tires fall into class 50 within these schedules. Eighteen sets of rate tables exist for flexibility and competition within the regulated trucking industry. Each table provides a different set of rates for the classifications. Companies choose a table which meets its specific profit projections, overhead expenses, and competitive pricing requirement. A firm may apply for a class change on a commodity allowing a decrease in charges and the ability to be more competitive.

This study will use an estimated trucking rate of $1.25 per mile due to the variable nature of rates. Through contact with several trucking firms and MDOT, it was determined that

for this rate, tires could be transported from any area within Minnesota. (Refinement of collection costs are presented in "II. Collection Service Economics.")

Transportation equipment available within the state is weighted toward 45-foot enclosed trailers. A survey of intrastate carriers who currently haul scrap tires provided the following general equipment information:

1) Specialty equipment such as flatbeds, top loaders and doubles are in limited supply.

2) Live bottom trailers are nonexistent.

3) 45 and 48 foot enclosed trailers are available.

4) Capacity load ranges between 40,000 to 50,000 lbs.

The quoted load capacities are based on MDOT regulations stating that gross vehicle weight must not exceed 80,000 lbs.

Service provided is a function of the frequency of use of a specific transportation firm. A survey of trucking firms indicated a willingness to provide spotted trailers for short periods of time (1-2 days) for a consistent drop/pick situation. Companies allow two hours for loading and unloading time if a trailer is not spotted. This cost is included in quoted rates, with overages charged to the customer.

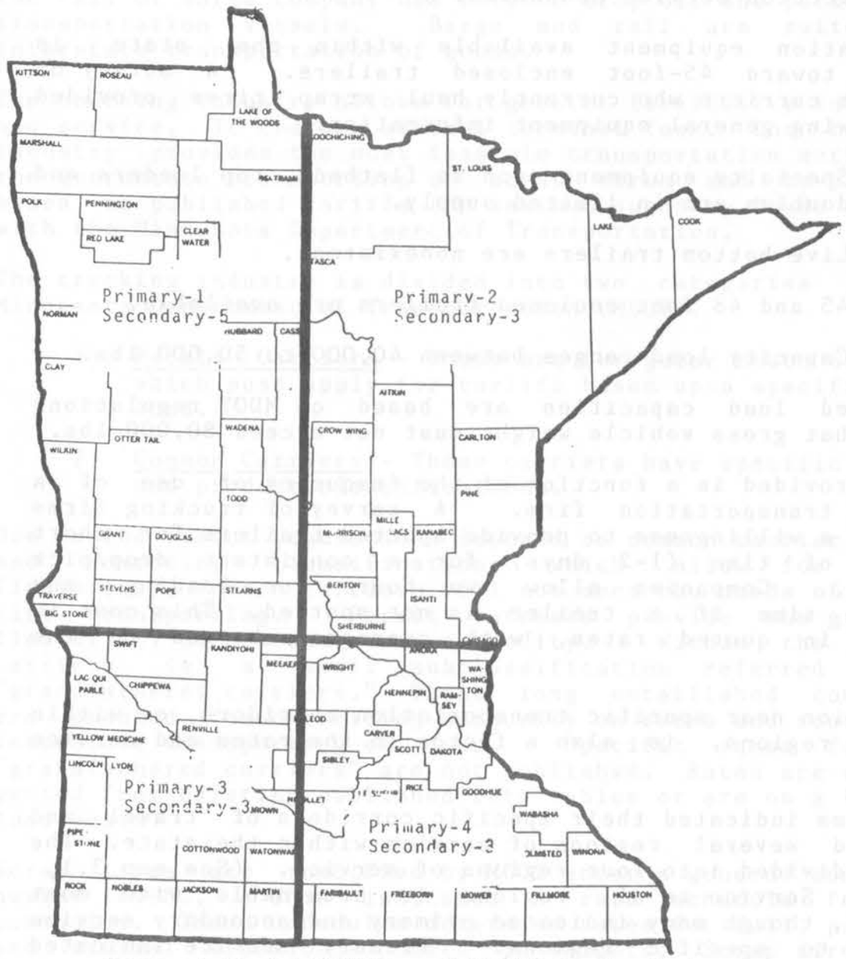
The location near specific transportation corridors, or within specific regions, is also a factor in the rates and service provided.

These firms indicated their specific corridors of travel and identified several regions of service within the state. The state is divided into four regions of service. (See map 3.1, page 121). Service to all regions is attainable with most companies, though many indicated primary and secondary service provided to specific regions. Primary service indicated greater flexibility in rates and service. The eastern and southern regions of the state are well served while the northwestern region has limited service. This is a function of population and commodity flow. Retrieval of scrap tires from the northwestern region will be expensive.

The transportation of tires within the state is not difficult. Adequate service is provided or can be provided to all regions. The possibility of using one transportation firm is not realistic because most companies indicated primary service to only one or two regions. The low generation of tires in rural areas may add cost due to more frequent stops for

MAP 3.1

Transportation Divisions



Company Indicated PRIMARY or SECONDARY Service Regions

partial loads and, thus, longer loading times in order to achieve full loads. The development of a statewide collection site network, however, will eliminate such problems in the transportation system and will develop an integrated effort for efficient material flow. An organized collection system will ensure full loads of scrap tires from approved sites when transportation is required to central processing facilities.

Table 4.1 in Objective "D" (page 157), identifies transportation costs for specific areas within the state for both primary and secondary haul costs. A primary haul rate represents a truck dedicated only to move scrap tires. A secondary haul represents a backhaul rate.

II. Collection Service Economics

Operation and Maintenance Costs

The method of a collection system will determine operating costs. The most common method of collection is via truck providing door to door service for scrap tire generators. The tires are loaded manually onto the truck by the driver and/or helper. The need for a helper and the type of equipment required is contingent on the nature of the route.

The trucking industry standards may provide the best source of projected operating costs. A review of the Private Fleet Cost Index, 1984 Survey Results presented by the Private Truck Council of America, Inc., indicated the following average cost per mile for the Northern Plain region:

General and administrative	$0.08
Drivers	.52
Equipment	.67
Total cost per mile	$1.27*

*This cost represents the average for a dry van, non-union, small sized, Northern Plain private fleet.

The components of these cost categories are as follows:

General and Administrative
- Salaries/Wages
- Fringes
- General supplies and expenses
- Communications

Drivers
- Salaries/Wages
- Fringes
- Expenses
- Driver lease costs

Equipment
- Salaries/Wages (Vehicle Repair and Service)
- Fringes
- Maintenance parts
- Tires and tubes
- Maintenance outside vendors
- Lease costs - fixed
- Lease costs - variable
- Fuel and oil
- License/permits
- Taxes - State and Federal
- Insurance
- Depreciation
- Truck-trailer rental

The cost per mile for this study, based on survey responses, may be as follows:

General and Administrative

- A tire collection company would require, based upon normal existing operations, a one person office staff. Sophisticated communications equipment would not be necessary. It would be reasonable to assume that G & A costs would be 50% lower than the survey indicated. Thus, the cost per mile would be $0.08 - (50% of $0.08) = $0.04 per mile.

Drivers

- The survey indicated that the average base wage for a non-union driver is $9.19 per hour. A review of the Minnesota labor market has indicated that a base wage of $6 per hour would be reasonable. As wage and fringes are the largest component of this cost category and fringes are a function of the wage, a reduction in the survey cost which includes fringes and other associated labor costs, 33% would be reasonable. Thus, the cost per mile would be $0.52 - (33% of $0.52) = $0.35 per mile.

Equipment

- Equipment costs will vary depending on factors such as the type of equipment, age of equipment, in base vs. outside repair, etc. The equipment cost per mile has not been adjusted down due to these uncertainties.

The adjusted cost per mile would be as follows:

General and Administrative	$0.04
Drivers	.35
Equipment	.67
Total adjusted cost	$1.06

It should be noted that the above cost does not include the cost of a helper if required to go with the truck. Once again, based upon our review of the Minnesota job market, a rate of $4.50 per hour appears reasonable for this type of job. This cost should be added where appropriate. See Table 3.1, below, for a summary of Transportation/Collection costs which do not include additional labor.

Table 3.1 Transportation Costs

	Cost Per Mile			
	G/A	Driver	Equip.	Total
Dry Van	.07	.52	.64	1.23
Non-Union	.08	.51	.68	1.27
Small	.07	.54	.69	1.30
North Plains	.08	.52	.65	1.24
Total - 4 = Average	$0.08	$0.52	$0.67	$01.26

To determine actual collection costs, it is necessary to factor in time, labor and hauling capacities. The following calculations were developed in order to establish a collection cost per tire assuming a regional transfer station or processing facility is located within a 30 mile distance.

Collection Cost Calculations:

Using previously projected transportation costs for hauling and assuming a 30 mile radius of service.

Assumptions

Time period	one day	
Trips per day	3	(A)
# of tires per trip	300	(B)
Average mileage per trip (Total)	45	(C)
Loading/unloading time	4.5 hrs.	(D)
Driving time per day	3.5 hrs.	
Operating cost per mile	$1.06/mi	(E)
Labor rate of driver (including benefits)	$6/hr.	(F)

$$\frac{(A)\ (C)\ (E) + (D)\ (F)}{(A)\ (B)} = \text{Collection cost per tire}$$

$$\frac{3(45)\ (\$1.06) + (4.5)\ (\$6)}{(3)\ (300)} = \$.19 \text{ per tire}$$

Table 3.2 (page 126) represents a cost analysis of several collection route ranges. Note that collection costs for the routes with the greater ranges do not increase significantly from those routes with fewer miles. The increased number of tires per load controls cost increases due to the type of collection equipment used.

Table 3.2 Collection Range Cost Analysis

r = Radius

Factors:	30mi r	50mi r	100mi r	150mi r
Time Period	8 hrs.	8 hrs.	8 hrs.	10 hrs.
(A) Trips per period	3	2	2	1
(B) # of tires per load	300	300	900*	1500*
(C) Average mileage per round trip	45	60	150	300
(D) Loading/unloading time (hrs)	4.5	3	5	4
(E) Operating cost per mile	1.06	1.06	1.06	1.06
(F) Labor rate of drivers	$6/hr	$6/hr	$6/hr	$6/hr
(G) Labor rate of helper	N/A	N/A	$4.5/hr	$4.5/hr
(H) Hours helper needed	-0-	-0-	8 hrs.	8 hrs.
Collection Cost per Tire	$0.19	$0.24	$0.21	$0.25

Formula: $\frac{(A)\ (C)\ (E) + (D)\ (F) + (G)\ (H)}{(A)\ (B)}$

1. Overtime wage rate has been ignored
*2. This will depend on type of equipment used

III. Collection Center Economics

Collection centers have different variables which affect costs. The reason for developing collection centers is to offer a local disposal option to regions where transport distances to a processing facility become cost prohibitive for small quantities of tires. Collection sites take advantage of large truck transport equipment and reduce unit transportation costs to processing facilities.

The basic requirements for a collection site are:

1) Property with good access to main arterials such as freeways, highways, etc.

2) Minimum area requirement for storage and truck access is 100' x 100'. Larger areas are preferred if tire flows are greater.

3) Area surface must be clean with compacted gravel. A hard surface such as asphalt or concrete is preferred.

4) Area must have security either by a fence or watch person to prevent pilferage and unauthorized dumping.

5) Area gradient should be reasonably level.

6) Small office space for record keeping, communications and weather protection for workers.

7) Dock and loading conveyor (optional).

Actual collection site design and staffing are a function of:

1) Tire Flow
2) Property - rental or in kind service at public landfills
3) Frequency of tire transport to processing facilities

Model collection site economics are provided below:

Assumptions -

- Volume of 20,000 tires/mo
- Maximum loading capacity of 2 laborers in 8 hrs. is 1000 tires
- Average of 21 working days/mo
- Rural property, low value
- Security is supplied through pooled security service
- Office is portable (construction industry prototype)
- Dock or loading conveyor (equipment) is amortized at 15% interest over 5 years
- Labor costs are $8/hr for site attendant and $5/hr for assistants with an average labor cost of $6.50/hr

Site Costs

Rent = $400/mo
Security = $ 50/mo
Office
Utilities = $200/mo
Loading
Dock = $119/mo
Fixed
expenses = $769/mo

Labor Costs-full time

x = $6.50/hr x 168 hrs/mo x 2 laborers x 1.3 (benefits)
x = $2,839/mo
x = Labor Costs

Total monthly expenses = fixed expense + labor
= $769 + $2,839
= $3,608

Cost/Tire = Total monthly expenses ÷ Total tires/mo
= $3,608 ÷ 20,000
= $0.18

Profit was not calculated as a part of the cost. A specific region's site costs can be used to develop the actual costs.

Major savings can occur in site and labor costs. If site costs are provided for by a county or regional landfill, then the collection site cost for tires would be reduced to $0.14/tire. If tire flows are reduced to 3,000, a crew is then only required 3 days/mo to load vans then collection costs are reduced to $.07/tire.

Collection site costs in Table 4.1 (page 157) are derived from an average quantity of tires coming to a collection site subsidized somewhat by its location at existing solid waste facilities.

IV. Processing Center Economics

Part A

Tire Derived Fuel (TDF) Processing Economics Identification

Capital Costs: of a tire processing facility to produce tire derived fuel (TDF) would encompass these items:

- Real property
- Equipment
- Utility Service hook-ups

1) Real Property:

Assuming the purchase of real estate in the Minneapolis/St. Paul area, the price ranges for industrial zoned land would be as follows: (price quotes via Coldwell Banker's Minnesota Office)

a) Raw land - $1 to $2.50 per square foot
b) Warehouse- $18-20 per square foot

2) Equipment:

The cost of equipment for a facility will depend upon the number of tires to be processed and the size of the product. (As detailed in Objective E, the cost

of a processing machine can vary from $263,000 to $350,000 with a product size range of a 1-1/2" to 5" chip. This machinery is projected to process 1 million tires per year.) It would be reasonable, as a result, to double the machinery if 2 million tires per year were to be processed.

The additional equipment added to process 2 million tires per year could be structured in a manner to avoid additional process labor by placing them in series format.

In addition to the tire processing machinery, equipment such as conveyors, loaders, maintenance tools, would be needed for the site.

The cost for these items will range from $150,000 to $300,000, depending upon the size and type of the facility.

3) Utility Service Hook-ups:

The most common type of processing equipment is electrical and will require a large service. This hook-up, and other utility services, may cost $5,000 to $8,000 based upon our review of electrical requirements.

4) Summary:

To summarize the Capital Cost requirement, assume a projected facility will require:

a) 4 acres of land
b) 25,000 sq. ft. of building
c) Processing equipment to recycle 2 million tires.

Land: 4 acres
(43,560 sq.ft./acre x4) @ $2.50/sq.ft. = $435,600

Building: 25,000 sq.ft.
@ $20/sq.ft. = $500,000

Equipment: Processing equipment (average),
2 machines required,
[($263,000 + 350,000) ÷ 2] x2 = $613,000.

Support equipment (average)
($150,000 + 300,000) ÷ 2 = $225,000.

Utility Hook-Up:
($5,000 + 8,000) ÷ 2 = $6,500

TOTAL COST $1,780,100

Operating Costs:

The components of operating costs for a facility would be as follows:

1) Direct:

Labor
Repairs and maintenance
Utilities
Fuel
Supplies
Depreciation
Knife cost

2) Overhead:

Office (including labor)
Taxes and licensing
Insurance
Professional services
Debt service
Miscellaneous

Determination of amounts for a site to produce 2 million tires per year:

Labor:

Objective E demonstrates that labor costs are $43,680 per year for a mobile site to process 1 million tires. It appears that more labor will be incurred in a permanent facility environment. This increase is due to more of support labor. More machinery is being used, so a larger maintenance staff will be required. Furthermore, the site will be receiving tires from haulers, and gate personnel will be required to direct the flow. These factors suggest a total of $100,000 per year for a processing site.

Repairs and Maintenance:

10% of capital cost appears to be the industry standard. Thus, 10% of equipment cost totalling $839,000 would result in an annual repairs and maintenance cost of $83,900.

Utilities:

Electricity will represent a major cost. The amount depends upon the type of machinery in the facility. A review of present rates indicates that $50,000 per year would be incurred for utilities.

Fuel and Supplies:

These costs are supportive and will be incurred at various rates. 2% of capital cost will be used to represent the cost of Fuel & Supplies. (2% of $839,000 = $16,780/year.)

Depreciation:

To calculate depreciation these assumptions will be made:

- Straight line method
- 5 year life for equipment
- 15 year life for depreciable real property
- No salvage value

Calculation:

Equipment:	$839,000 ÷ 5 =	$167,800/year
Building:	$500,000 ÷ 15 =	33,333
Total		$201,133

Cost of Knives:

The cost of knife replacement should be a major concern. These costs range from 4 to 15 cents per tire depending on the type of machinery. For model purposes we will use 7 cents to present a conservative position.

Direct Cost Summary:

Labor	$100,000
Repairs & Maintenance	83,900
Utilities	50,000
Fuel & Supplies	16,780
Depreciation	201,133
Total	$451,813
Number of tires processed	÷ 2,000,000
Production cost per tire	.23
Knife cost per tire	.07
Total cost per tire	$0.30

Overhead:

Overhead costs will be determined by factors such as:

- Capitalization of the facility
- Current insurance rates
- Sales effort & staff required
- Company organization
- Current tax rates

A review of similar industries demonstrated that a company's ability to cover an overhead amount equal to its direct cost of operation should provide an adequate profit margin. This logic, applied to a model for a fixed processing site, suggests an amount of 30 cents per tire will provide an adequate projection of overhead costs and profit margin. See Table 3.3, (page 133) for the economics of a tire derived fuel facility as described.

Table 3.3 Basic Economics of a Tire Derived Fuel Facility

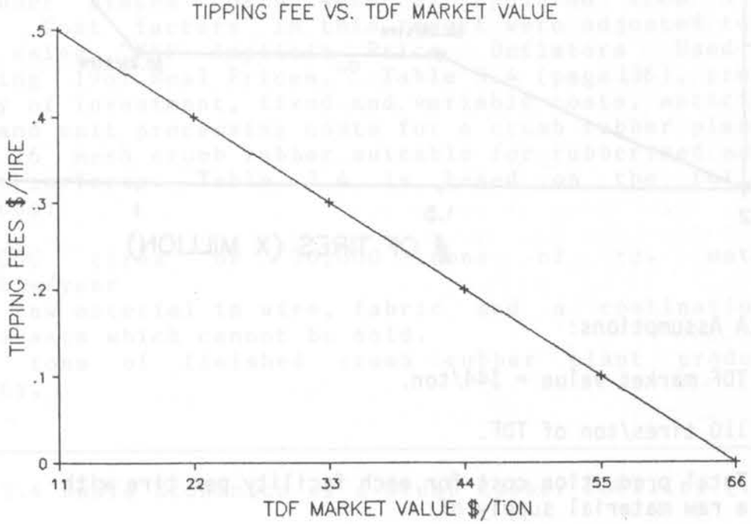
	Scrap Tire Tonnage Req. Per Year	Production Output W/ Wire Tons/ Year	Investment Cost $	Operational Cost $/Yr	Net Processing Cost/ Ton	Gross Revenue Processing G&A Profit
TDF Facility	20,000	20,000	1,780,100	591,813	$33/ton or .30/tire	$66/ton or .60/tire

A total gross revenue requirement of $66/ton may now be used to evaluate how this gross revenue might be generated in Minnesota. (assume 110 passenger/light truck tires equivalent per ton). There are two ways to generate revenues for a TDF operation: market value of the TDF and/or tipping fees to accept the whole tire. Market value and tipping fees are referred to as back end and front end revenue. The greater the value gained on the back end, the less required on the front end to attain the gross revenue requirement. Graph 3.1 (page 134) illustrates this relationship and indicates what the tipping fee would be given certain market values. The potential market survey conducted in Objective H demonstrates that $40-$50/ton is a reasonable market value for TDF in Minnesota.

A factor that may affect tipping fees would be plant output as influenced by raw material supply. If a processing facility has its gross revenue based on $66/ton with a tire supply of 2,000,000 as illustrated in Table 3.3 (page 133), then a lesser supply of tires would not significantly reduce the gross revenue requirements because a large part of the operational costs are fixed. Graph 3.1A (page 135), illustrates the effect flow variations have on tipping fee values for a tire derived fuel (TDF) facility, given a fixed market value of $44/ton. This graph measures lower capital investment and operating costs for a plant with less output than the 2,000,000 tire/year facility. Capital and operating costs are the same for a 1 million and .5 million tire facility. The smaller facilities, however, will share the same overhead costs as the large ones, due to the same personnel requirements.

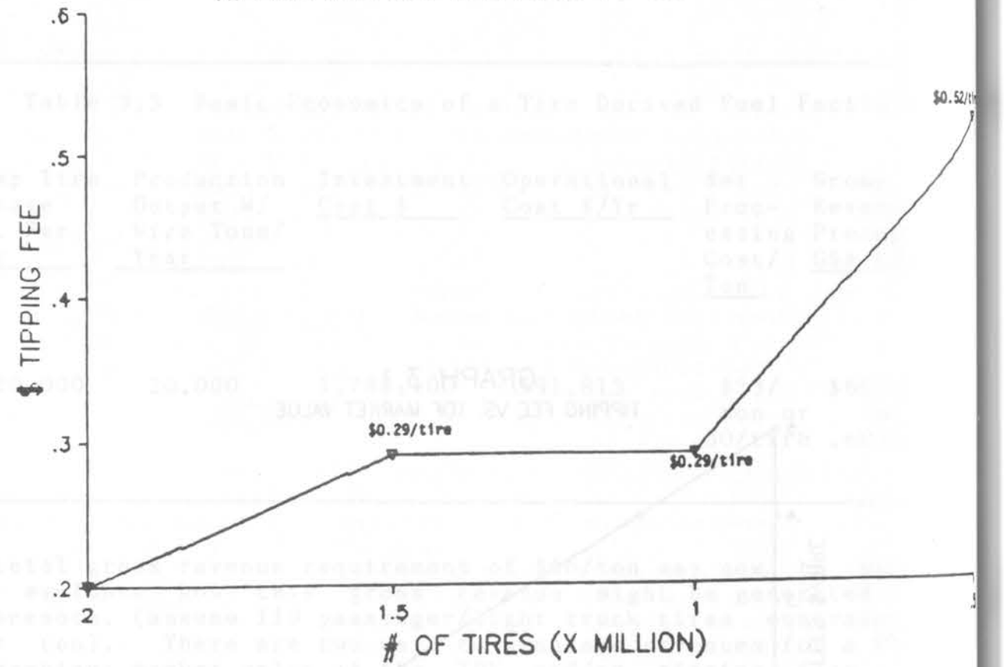
GRAPH 3.1

TIPPING FEE VS. TDF MARKET VALUE



GRAPH 3.1A

TIPPING FEE VS. TIRE FLOW TO TDF FACILITY



Graph 3.1A Assumptions:

1. TDF market value = $44/ton.

2. 110 tires/ton of TDF.

3. Total production cost for each facility per tire with a raw material supply of:

   2 million tire facility = $.30/tire for production
   1.5 million tire facility = $.37/tire for production
   1 million tire facility = $.37/tire for production
   .5 million tire facility = $.56/tire for production

4. Overhead cost the same for each facility, approximately $.18/tire add on.

5. Profit is calculated at 25% on gross revenue before taxes, so add on:

   $.12 for a 2 million tire facility
   $.14 for a 1.5 million tire facility
   $.14 for a 1 million tire facility
   $.18 for a .5 million tire facility

Part B

Crumb Rubber Processing Requirement Identification

The existing crumb rubber manufacturers were reluctant to provide capital and operating costs for a crumb rubber facility. This information is considered proprietary. Such a system is much more complex and involves the placement of several different types of equipment with a sophisticated production line orientation. Furthermore, no new crumb rubber production facilities using scrap tires as a feed stock have been built in the last few years, so construction costs are difficult to develop.

Crumb rubber system costs were extrapolated from a 1971 report.[5] Cost factors in this report were adjusted to 1981 dollars using "GNP Implicit Price Deflators Used for Calculating 1981 Real Prices."[6] Table 3.4 (page 136), presents a summary of investment, fixed and variable costs, anticipated income, and unit processing costs for a crumb rubber plant to produce 16 mesh crumb rubber suitable for rubberized asphalt and sport surfaces. Table 3.4 is based on the following assumptions:

- 3,000,000 tires or 30,000 tons of raw material available/year
- 16% of raw material is wire, fabric and a combination of contaminants which cannot be sold.
- 25,200 tons of finished crumb rubber plant production capacity.

Table 3.4 Basic Economics of a Crumb Rubber Facility (16 mesh)

	Scrap Tire Tonnage Per Year	Production Output Tons/Year	Investment Cost $	Operational Cost $ per year	Net Processing Cost $/ton	Gross Revenue Req. Processing G&A Profit
Crumb Rubber Facility	30,000	25,200	7,074,657	2,150,425	$85.33	170.67 or $0.085/lb

* Profit, G&A costs were determined using same basic assumptions in TDF processing costs.

The cost estimate provided in Table 3.4 for 16 mesh is consistent with the current market value of 16 mesh crumb rubber as explained in Objective F. In Objective F a 10-20

mesh (16 mesh average) price on the low end was reported at 11.5cents/1b. This would allow for a 3 cents/1b. transportation charge or $60/ton which would allow for supply to markets at distances of 600 miles away or greater.

To summarize the crumb rubber processing economics for 16 mesh, suitable for rubberized asphalt and sport surfaces assuming a facility sized large enough to recycle the state's total scrap tire generation rate, are:

1) Gross Revenue Requirement - $170/ton.
2) Market price of end product - $.085/1b. FOB plant.
3) Raw material supply of 3 million tires.

Graph 3.2 (page 138), shows the price volume sensitivity of the plant, reflecting initial capital costs which are high and fixed at the levels identified in Table 3.4. (page 136). A plant to be competitive in today's market must sell the product at 8.5 cents/1b. FOB plant.

The front end tipping fees would be required to supplement those costs for a processor who does not have sufficient raw material flow over which to adequately spread production and profit costs. The following calculations and assumptions were made to evaluate the influence of raw material flow on tipping fees:

Assumption:

- A base operational cost for 16 mesh crumb rubber facility - $2,150,425/year.

- The base operational cost is fixed regardless of scrap tire in flow if a plant was constructed to handle 3,000,000 tires/year.

Calculations:

- Tire tipping fees = $\frac{\text{Operational Cost-Total Market Value}}{\text{Scrap Tire Unit Inflow}}$

Calculation Note:

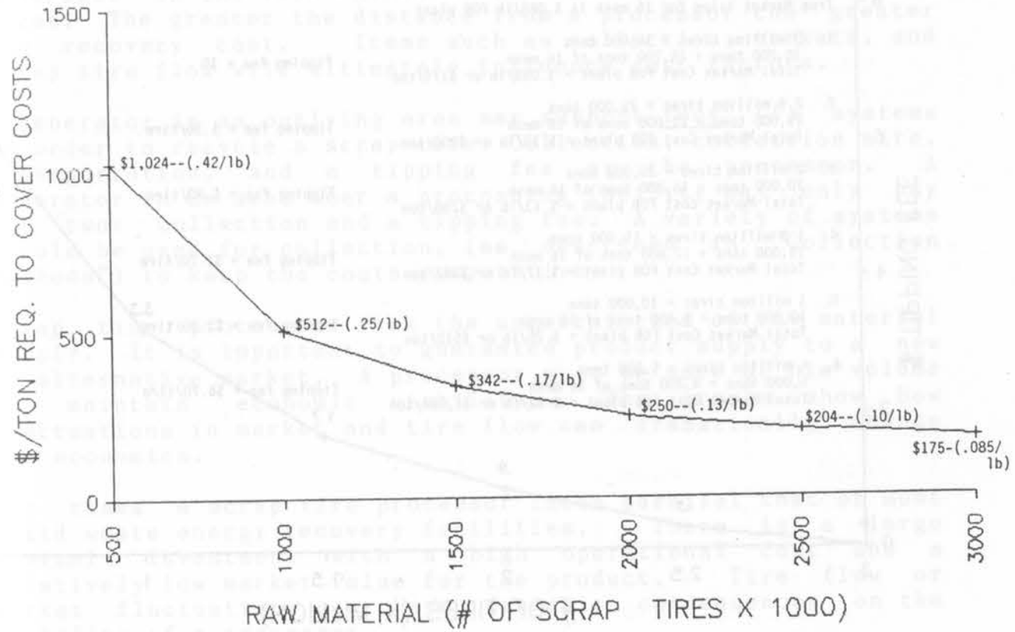
- 2,000 1bs of finished product started with 2,381 1bs. of whole tires or 119 tires assuming 20 1bs/passenger tire equivalent.

Graph 3.3 (page 139), illustrates tipping fee variances, and how tipping fees are sensitive to plant capacity and utilization. Actual operational costs may be less if fewer tires are received assuming fewer production hours. However, the bulk of operational costs are fixed (approx. 75%). The graph illustrates how high tipping fees would be associated with low levels of production. Tipping fees may change

GRAPH 3.2

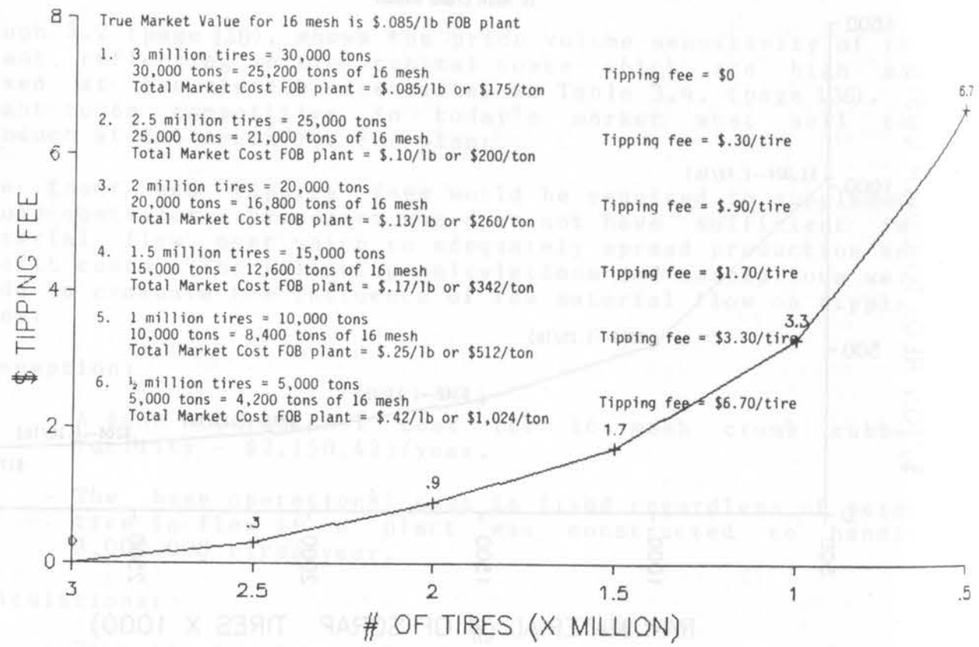
FINISHED PRODUCT MARKET PRICE AS A FUNCTION OF FLOW

16 Mesh Crumb Rubber



GRAPH 3.3

TIPPING FEES AS FUNCTION OF RAW MATERIAL FLOW



Note: This is to illustrate the importance of not over-sizing a facility.

depending on how a facility is sized, financed, and managed. If a Minnesota plant does not capture a significant portion of the total U.S. market, a high tipping fee will be required, unless highly subsidized by public financing or cost supports. To better evaluate the economics of crumb rubber plants sized to handle a quantity of tires less than the state's total generation rate, please refer to Table 3.5 (page142).

V. Summary

The cost to recover a tire in Minnesota may range from $.40/tire in the Twin Cities to $.90/tire or more in outlying areas. The greater the distance from a processor the greater the recovery cost. Items such as collection, markets, and scrap tire flow will ultimately influence cost factors.

A generator in an outlying area may support four (4) systems in order to recycle a scrap tire: Collection, collection site, transportation, and a tipping fee at the processor. A generator in an area near a processing facility may only pay for two: Collection and a tipping fee. A variety of systems should be used for collection, (as described in "Collection Methods") to keep the costs competitive.

Scrap tire processors risk the uncertainties of raw material supply. It is important to guarantee product supply to a new or alternative market. A processor must be sure of his volume to maintain economic viability. The graphs show how fluctuations in market and tire flow can dramatically change the economics.

The risks a scrap tire processor faces parallel that of most solid waste energy recovery facilities. There is a large capital investment with a high operational cost and a relatively low market value for the product. Tire flow or market fluctuation can have dramatic consequences on the viability of a processor.

Many risks are confronted by processors and collectors. They include:

1) Lack of experience.
2) Poorly developed technology or system development.
3) Environmental issues.
4) Poor Management.
5) Competition.
6) Low profit margins.
7) Competition for raw material.

Since the success rate for whole tire processing is low, appropriate scrutiny is required for any new enterprise. A cost/benefit of market value, operational costs, and tipping fees should be done to determine whether raw material flow

assurances may be necessary. Such assurances may be necessary to convince a prospective market of quantity assurance and/or to provide low tipping fees. Such a balance is routine in the development of solid waste recovery facilities to assure waste flow, establish tipping fees, and provide for assurance that a facility can meet long term contractual agreement with a market.

Table 3.5 - CRUMB RUBBER PLANT ECONOMICS[7]

	Equipment and Operating Costs	PLANT SIZE ACCORDING TO SCRAP TIRE INFLOW 2,000,000 tires/yr	1,000,000 tires/yr	500,000 tires/yr
	TDF Size as a Feedstock			
A	1. Front end production cost same as TDF evaluation	$ 600,000/yr or $0.30/tire	$ 370,000/yr or $0.37/tire	$ 280,000/yr or $0.56/tire
	Capital Costs			
	2. Main cracker mill	$ 235,000	$ 235,000	$ 235,000
	3. Small cracker $180K each	(3)$ 540,000	(2)$ 360,000	(1)$ 180,000
	SUB TOTAL	$ 775,000	$ 595,000	$ 415,000
	4. Installation (20% of Capital Cost)	$ 145,000	$ 120,000	$ 83,000
	SUB TOTAL	$ 920,000	$ 715,000	$ 498,000
	Additional Capital Costs			
	5. Screens and Conveyors (est.)	$ 160,000	$ 120,000	$ 80,000
	6. Air Classifier (est.)	$ 80,000	$ 70,000	$ 60,000
	7. Magnetic Separation (est.)	$ 20,000	$ 20,000	$ 20,000
B	8. Add. conveyors and storage - packaging system not included	---	---	---
	9. Installation (40% of capital est.)	$ 104,000	$ 84,400	$ 64,000
	10. 10,000 sq. ft. additional building at $200/sq.ft (est)	$ 200,000	$ 200,000	$ 200,000
	11. Miscellaneous allowance 20% of total capital	$ 296,800	$ 241,880	$ 184,400
	Total Capital Costs	$1,780,800	$1,451,280	$1,106,400
	Operating Costs			
	1. Labor - add 3 employees to production and bagging	$ 43,680	$ 43,680	$ 43,680
	2. Repairs and maintenance 10% of capital	$ 178,080	$ 145,128	$ 110,640
	3. Utilities (based on similar power comsumption of TDF facility)	$ 70,000	$ 60,000	$ 50,000
	4. Fuels and supplies 2% of capital	$ 35,000	$ 29,000	$ 22,000
	5. Depreciation equip.& add. building	$ 249,333	$ 198,333	$ 156,333
	Total Operating Costs	$ 576,093 ($0.29/tire)	$ 476,141 ($0.47/tire)	$ 382,653 ($0.76/tire)
C	Net Processing Cost	$0.59/tire	$0.84/tire	$1.32/tire
D	Processing, G&A and Profit	$1.18/tire	$1.68/tire	$2.64/tire

A. Assume equipment similar to TDF operation is required to pre-process material into a form that is acceptable for further processing into crumb rubber.

B. A packaging system, bagging operation, would probably have to be added to capital costs. However, market demand will dictate how the material will be shipped.

C. A per tire production cost is based on adding TDF and crumb rubber operating costs then dividing by the number of anticipated tires.

D. Total gross revenue cost includes processing, G&A and profit costs as calculated using the same assumption of overhead for a TDF facility.

References: Objective C

1. Phone conversation with Dorothy Taylor, Burlington Northern Railroad, St. Paul, MN (8/6/85).

2. Associated Motor Carriers Tariff Bureau, Inc., "Rate Table #9," as provided by Minnesota Department of Transportation, St. Paul, MN.

3. Phone interview with E.E. Keechr, Rate section of MDOT Motor Carrier Safety and Compliance, St. Paul, MN 6/10/85.

4. "Private Fleet Cost Index, 1984 Survey Results," provided by the Private Truck Council of America.

5. "A Systems and Methods Analysis of the Reuse of Consumer Rubber Goods," RMA, by Roy F. Weston, 1971 (page 7)

6. "GNP Implicit Price Deflaters Used for Calculating 1981 Real Prices," Economic Indicators, June 1982, U.S. Printing Office, Washington D.C.

7. Phone interview with Archie Swayze, Farrel Corporation, Asonia, CT, 9/85, a manufacturer of cracker mills.

OBJECTIVE D & I

COLLECTION SITE LOCATIONS

AND

STATEWIDE COLLECTION SYSTEMS

OBJECTIVE D-I

COLLECTION SITE LOCATIONS AND STATEWIDE COLLECTION SYSTEMS

Objective D was to identify collection points in regions where independent processing facilities may not be justified. The need for collection sites was determined by economies of scale associated with high volume, low cost transportation networks. A collection site must be justified by transportation cost savings while providing a service for the local collector and/or tire generator. A central processing facility would serve as a collection site for the region.

Objective I was to identify a system of transportation networks, trucking costs, and logistics for tire collection. The emphasis has been placed on defining the economic impact of alternatives. Cost projections have been made for tire recovery. System components and ownership were discussed and detailed cost analysis of the collection methods have been made under Objective E.

Collection

A statewide collection system should provide adequate, efficient, and cost effective service to all regions of the state. The objective was to determine what collection methods and levels of service are presently in place throughout the state and then propose a statewide collection system to broaden existing service. The scrap tire generation rate, transportation networks, and regional collection issues must be considered in the development of such a plan. A functional state program has been proposed using these parameters with an emphasis on incorporating present collection systems.

While evaluating the present system, and developing a broader state system, several problems and variables became apparent. They include such things as variability of generation rates, economics of transportation, type of equipment and service provided, determination of service boundaries, and intergovernmental cooperation. Past collection systems have been orientated toward removing the easily accessible tires from the waste stream for grading purposes, while leaving the remainder for burial or stockpiling. The awareness of problems created by this method has increased within the state due to the resulting stockpiles of tires. The foundation for a proper disposal solution is based on developing the flow of scrap tires to include proper recovery of the total waste stream.

Present collection services provide pick-up service for large generators of scrap tires and for smaller generators willing to pay a premium for on call service. The major motivation of collection companies is to ensure a consistent flow of gradable casings for markets. The sale of these casings, and the collection fee, provide the revenues that cover operating expenses. The present system is based on serving larger accounts because of the higher percentage of good casings. The low level generators are overlooked unless they are near an existing route system.

The method of transportation/collection often used by small scrap tire generators is self-haul. This method provides a low cost alternative to any collection method and is the only method available in many rural areas of the state. Proper recovery is neither ensured nor encouraged by this method. A closer dumping site will be found if the distance to an appropriate recovery site is too great. However, self hauling of tires should remain an alternative method of disposal, provided appropriate recovery sites are used.

The two weaknesses of the collection system in Minnesota are: 1) collection alternative and/or sites are not available for all generators; and 2) the flow of waste tires is not directed toward an identified collection or recovery site. The development of a state collection program should address these issues. See Scrap Tire Flow Present and Proposed. (Diagrams 4.1 and 4.2, page 147&148).

Proposed Scrap Tire Flow

The initial source of a scrap tire must be addressed in order to ensure proper recovery. The person who is changing the tire must take a responsible role at the point of generation. It is at this point that the tire must enter the legitimate recovery process. The tire dealer should keep the tire rather than return it to the customer for disposal. If a tire recovery charge is necessary, it should be charged to the consumer at the point of exchange, in order to cover all incurred recovery costs.

Key points about the recovery charge:

(1) If the recovery fee is too high, it becomes a disincentive to proper recovery and the system breaks down.

Diagram 4.1

SCRAP TIRE FLOWS
Present

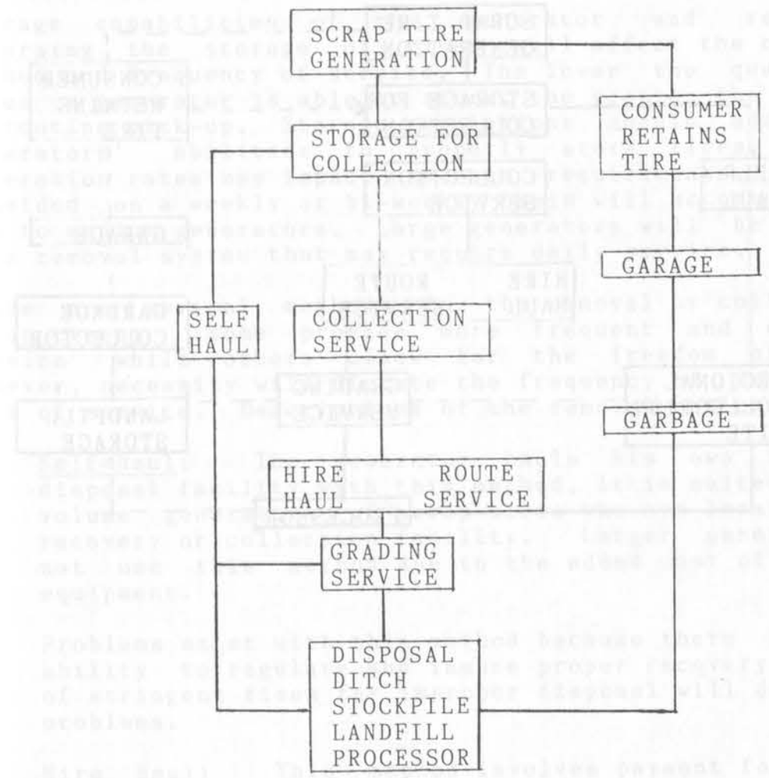
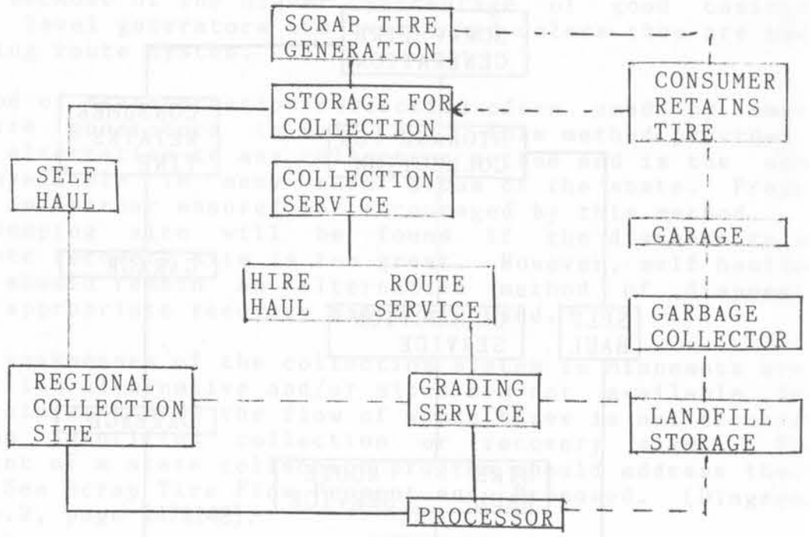


Diagram 4.2

Scrap Tire Flows

Proposed



(2) The fee should not be exaggerated in order to provide exorbitant profits. The purpose of this fee is to provide funds for the proper flow through a recovery system. 84% of the respondents indicated that disposal costs were $1.00 or much less per auto tire in the scrap tire generation survey. The proposed system should strive not to change these costs.

Storage capabilities of the generator and regulations governing the storage of tires will affect the collection method and frequency of service. The lower the quantity of tires a generator is able to store, the greater the frequency of routine pick-up. Storage regulations should address the generators' abilities to properly store tires, and how generation rates may impact storage requirements. Service provided on a weekly or bi-weekly basis will accommodate most low to medium generators. Large generators will be involved in a removal system that may require daily service.

There are several methods for the removal or collection of scrap tires; some provide more frequent and dependable service while others allow for the freedom of choice. However, necessity will dictate the frequency of removal and type of service. Descriptions of the removal options follow:

Self-Haul: The generator hauls his own tires to a disposal facility with this method, it is suited for low volume generators of scrap tires who are located near a recovery or collection facility. Larger generators do not use this method due to the added cost of labor and equipment.

Problems exist with this method because there is little ability to regulate and insure proper recovery. The use of stringent fines for improper disposal will deter such problems.

Hire Haul: This method involves payment for service. Many options are available to the generator for service agreements. Contract service is used by large generators of waste tires to ensure consistent service. Different agreements may exist in hire hauling such as contract on demand or competitive on demand. The need for a specific service level is the criteria for the service agreement. All methods ensure the removal of tires, with the flexibility of changing service, if service is not satisfactory.

Problems exist in the hire haul method because cost-effective collection is only provided to the lucrative accounts. Low generation accounts generally do not provide enough income for hire haul to be used frequently or effectively.

Route Service: Route service involves the systematic collection of waste tires from a designated area at a specific time. The most effective method of servicing a route is to start at the most distant in the route and work toward the processing or grading facility. The route system can involve franchised, contracted, or competitive accounts. This method allows for the flexibility to serve both medium and low generators of scrap tires efficiently and effectively.

A discussion on equipment, labor and cost considerations for the various methods of transportation is offered in Objective E, Alternative Collection Methods.

The collection services in the past existed to supply the graders with a consistent flow of tires. Graders pull the resalable tires out of the scrap tire flow. The scrap is then sent on to a disposal site such as a landfill, a stockpile, or a processor. Collection cost, not disposal method, was the determining factor for the disposal method. Not all collected tires flow through the grading process; some go directly to the disposal site. The economics of scrap tire grading are dependent on markets for recaps and the percentage of recoverable casings from a specific account.

A group of tire collection sites should be located throughout the state within a proposed state collection system. These sites will act as an area to store scrap tires, provide a transfer station to enhance the economics of transportation, and provide a proper recovery alternative. Self-hauling generators, graders, the public, and auto salvage yards will be encouraged to use these facilities. The tipping fee will reflect the cost of handling and transporting large quantities of tires. The fee will be great enough so that large generators, such as graders and stockpile clean up operations, will find the use of these depositories unattractive because the collection site fee will be higher than the transportation and recovery fees incurred for direct movement to a processor.

A viable processing method for recovery has been the flaw in past collection systems. Past disposal methods must now be supplemented by a legitimate processor(s) capable of cost-effectively handling large volumes. The incentive to collect scrap tires has often been negated by the problems associated with the discarding of the tires. An authorized method of recovery must exist within the state system.

The Proposed Collection System

A statewide system of collection sites is formulated using the following assumptions:

- In addition to the Twin Cities area, outstate areas need an accessible collection method.
- Location near transportation corridors will increase efficiencies of tire flow.
- Regional sectioning will minimize transportation to a collection site and to central processing facilities.
- Population and generation of scrap tires show a direct correlation. Urban areas will generate greater quantities of scrap tires per square mile than rural areas.

Part A

OUTSIDE TWIN CITIES METRO AREA

Population centers were chosen throughout the state as areas for collection site locations. The selected sites would provide regional sites accessible to the less populated areas. The selection of sites near population centers also ensures that existing landfill facilities would be near these sites. These facilities should be used as tire collection points similar to other recovery sites. The use of available space at landfills for collection sites offers an established low capital investment solution. A method of monitoring and enforcing disposal practices is already established on a statewide level for landfills. Landfills provide a mechanism for fee collection and proper direction of where to deposit specific wastes. A designated collection area could be easily established. With the use of landfills as collection sites, and the ability to hold start-up costs down for the program, the major emphasis of the collection program can be on establishing public awareness and enforcement of the programs.

The problem of shared liability for the scrap tire collection site may exist because the flow is from a region rather than from a specific county or city. It is important for the collection sites to allow efficient shipment quantities of scrap tires to accumulate before shipment to a central processing facility. This maximum accumulation limit means that liability for the tire pile is small (1,500 - 2,000 tires).

The location of the collection sites close to major transportation corridors is important for flexible and efficient use of the transportation network. It is most effective when backhauls are available for the transportation of tires from rural regions to a central location. Location on a major corridor increases the probability that transportation advantages may exist in the long term.

The location of collection sites in regional population and trade centers will allow for easy access and thus encourage use. Regions have been loosely defined in order to ensure flexibility and freedom of location choice. A designation ordinance is needed, if boundaries are based upon counties' jurisdiction, and tires have to move greater distances than 50 miles. With the proposed overlapping regional program, the maximum distance a tire should be moved to a central collection site is 50 miles, and in most cases only 30 miles. In several regions, more than one collection site is suggested for added coverage. (See figure 4.1, page 155.) It is assumed that most tire generators will either haul their own tires to the collection site or hire haul with small regional collectors. Advantages and components of collection sites located throughout the state are:

(1) A series of collection sites located regionally will provide a convenient recovery option for generators and collectors and should discourage the improper disposal of tires.

(2) It will insure the cost effective movement of tires to a centralized processing recovery facility.

(3) The use of landfills as collection sites provides for low cost implementation of a program using existing solid waste systems.

(4) Many of the landfills currently stockpile tires. (See Objective A, Table 1.12, page 53).

PART B

TWIN CITIES METRO AREA

The Twin Cities metropolitan region of the state requires a different approach to collection. A higher concentration of generators exist and greater quantities of scrap tires are generated within a smaller geographical area. The central processing facility(s) will be located with easy access to the generators. The determining factor for a transportation or collection method will depend on the generators' generation rate, and storage capabilities. A general classification of generator and the method of service applicable to their needs

is as follows:

Note: This may apply to generators outside the Metro area also.

Low Generation: 0-99 per month. If the business is on the low end of this generation classification, the owner may choose to self-haul his scrap tires. If not, the best method is to call for a collector to haul on demand or notice. This category of generators may pay a premium for removal of their scrap tires because of the infrequent service or may benefit from a regular route service that covers their area.

Medium Generators: 100-999 tires per month. A once a week route service would provide the most effective method of collection.

High Generators: Greater than 1,000 tires per month. A once-a-week route service or a spotted trailer at the location would provide the most effective service.

Landfills within the Metro area could accept tires for the purpose of offering a collection point for small generators, homeowners, and garbage collectors. This provides a collection site much like those outside the Metro area. This is not expected to be the major collection method, but does provide an option for convenience and may stop the illegal dumping of tires. A drop box should fill the need at a landfill.

These collection methods provide a range of service that can meet any generator's requirements. The option of self-haul also exists for the generator. The emphasis in the Metro area, however, will be on collection methods rather than collection sites. This emphasis assumes that the processing facilities will be located in the Twin Cities area. These facilities would also take tires from the collector and serve as the collection site.

SUMMARY

To create a viable collection program involves cooperation from state, county, and local authorities. State involvement should be minimal. The county and local jurisdiction is where the authority for collection has existed and should remain. The following are functions which should be provided by the proper authorities:

(1) A statewide referral hotline for collection companies and sites. The hotline number should be used as a promotional tool for the program with the call numbers having an appropriate meaning (ex. 476-TIRE).

(2) The permitting of collectors and graders to ensure proper recovery of scrap tires and to limit storable quantities.

(3) The state should implement a permit program for permitting of regional collection sites to determine acceptable storage requirements, including the maximum quantities each facility is able to store.

(4) The state should provide an education program to inform local and regional governments of storage requirements.

(5) The state should provide an education program to inform generators, collectors, and processors of regulations and advancements in the tire recovery program.

(6) The state or county should implement an inspection and enforcement program for collectors, collection sites, and processing facilities.

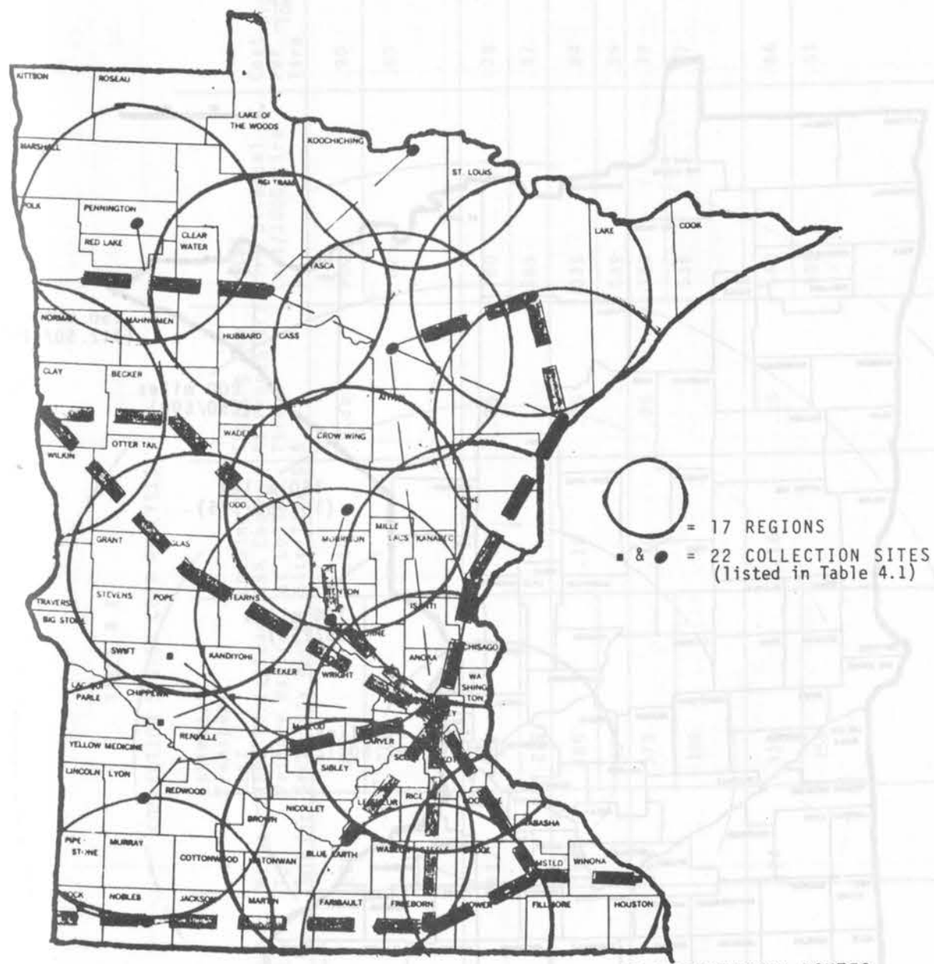
(7) The state should provide technical assistance to the county or region for creating collection sites and implementing storage guidelines.

(8) Provide an education program to inform the public and generators of tire recovery activities.

This collection system is based upon allowing free market forces to solve the scrap tire problem. The government's roles are to provide education, and monitor the collection and recovery of tires to ensure proper recovery. Collectors and generators may enter into service agreement that meets their requirements. If service is not adequately supplied, then the ability exists to self haul or subscribe to another service. Regardless of how tires are collected, collection activities are a cost of doing business for the scrap tire generator. The emphasis of this collection program is to encourage a logical system for the collection and movement of tires to a recovery facility. The intent is not for the governing bodies to operate the system but to provide a regulatory framework to ensure proper recovery of scrap tires.

For a regional per tire disposal cost analysis, please refer to Figure 4.1 and 4.2 and Table 4.1 (page 157).

FIGURE 4.1
REGIONAL COLLECTIONS SITES
AND
TRANSPORTATION ROUTES



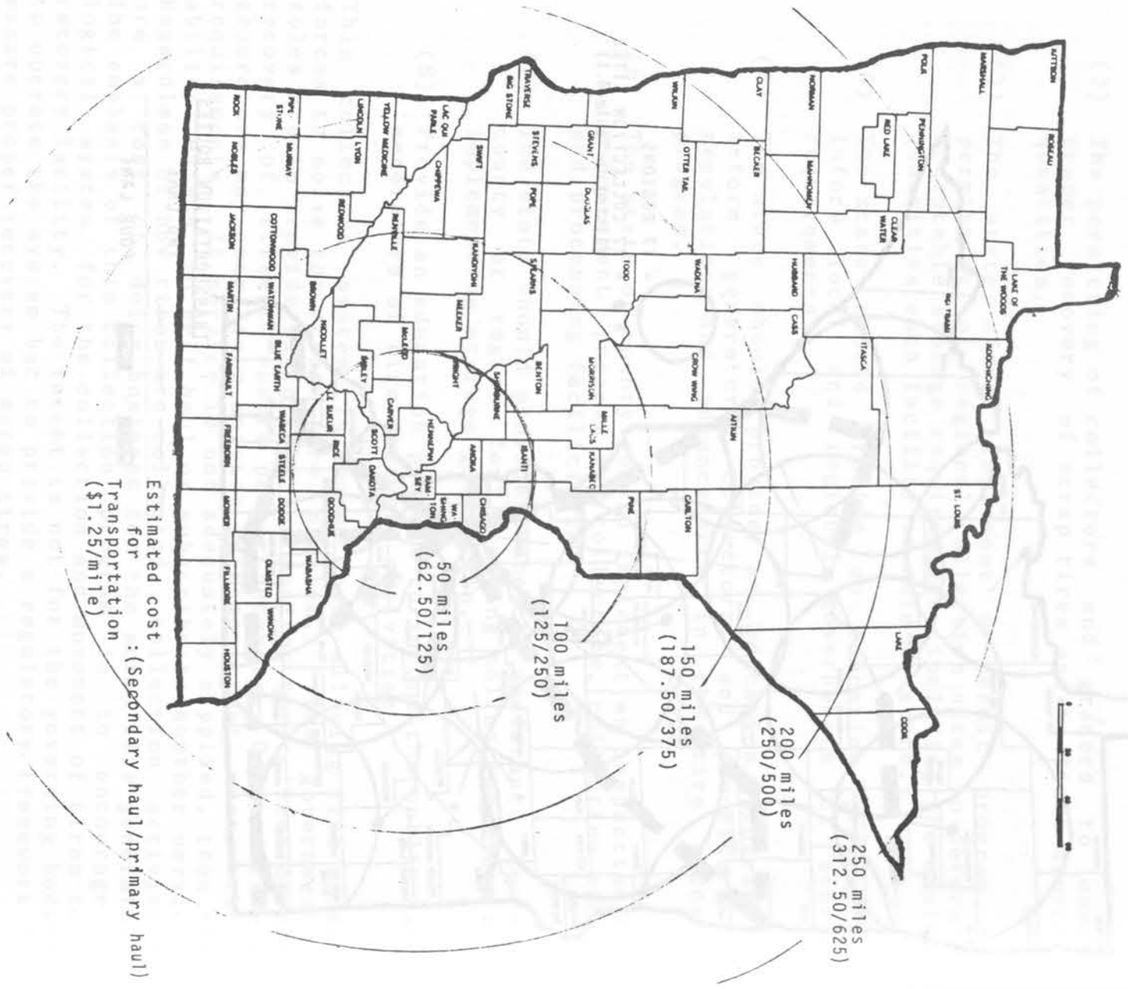


FIGURE 4.2
TRANSPORTATION COSTS FROM COLLECTION SITES
MINIMUMS/MAXIMUMS
($)

TABLE 4.1

COLLECTION SYSTEM COST ANALYSIS

City	Counties Served	Landfill Located Near By	Miles To Twin City	Estimated Transport Cost 1000 tires/load Primary Haul/ Secondary Haul $	Loading & G&A Cost At Collect-Site/Tire $	Tipping fee At Processor/ Tire $	Total Tire Disposal Cost/1000 tire $	Cost Per Tire high $ / low $
Bemidji	Beltrami Clearwater Hubbard Cass Isanti Mahnomen	Yes	220	550 275	.10	.25	900 625	.90 .63
Grand Rapids	Itasca Cass Aitkin	Yes	172	430 215	.10	.25	780 565	.78 .57
Virginia	St. Louis Lake	Yes	194	485 243	.10	.25	835 539	.84 .59
Duluth	St. Louis Lake Cook Carlton Pine	Yes	149	373 186	.10	.25	723 536	.72 .57
Brainerd	Kanabec Crow Wing Cass Wadena Todd Morrison Aitkin Mille Lacs	Yes	124	310 155	.10	.25	660 505	.66 .51

TABLE 4.1

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Pine City	Carlton Pine Kanabec Aitkin Isanti Chisago	Yes	65	163 81	.10	.25	513 431	.51 .43
St. Cloud	Benton Sherburne Stearns Morrison Todd Wright McLeod Mille Lacs	Yes	64	160 80	.10	.25	510 430	.51 .43
Alexandria	Douglas Grant OtterTail Stevens Pope Todd Traverse	Yes	127	318 159	.10	.25	668 509	.67 .51
Benson	Swift Big Stone Stevens Pope	Yes	140	350 175	.10	.25	700 525	.70 .53

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Mankato	Brown Watonwan Blue Earth Martin Faribault Nicollet Waseca LeSueur	Yes	76	190 95	.10	.25	540 445	.54 .45
Albert Lea	Faribault Freeborn Mower Waseca Steele Dodge	Yes	99	248 124	.10	.25	598 474	.60 .47
Rochester	Olmsted Dodge Mower Fillmore Wabasha Goodhue Rice	Yes	83	166 104	.10	.25	516 454	.52 .45

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International Falls	Koochiching Lake of Woods	Yes	289	722 361	.10	.25	1072.00 711	$1.07 .71
Thief River Falls	Marshall Kittson Roseau Red Lake Beltrami Clearwater	Yes	290	725 362	.10	.25	1075.00 712	1.08 .71
Crookston	Polk Norman Red Lake Clearwater	Yes	286	715 357	.10	.25	1065.00 707	1.07 .70
Moorhead	Clay Wilkin Norman	Yes	229	572 286	.10	.25	922.00 636	.92 .64
Detroit Lakes	Becker Otter Tail Hubbard Wadena	Yes	196	490 245	.10	.25	840.00 595	.84 .60

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Montevideo	Chippewa Lac Qui Parle Yellow Medicine Renville	Yes	130	325 163	.10	.25	675 513	.68 .51
Marshall	Yellow Medicine Lincoln Lyon Pipe Stone Murray	Yes	144	360 180	.10	.25	710 530	.71 .53
Willmar	Kandiyohi Meeker Renville	Yes	91	228 114	.10	.25	578 464	.58 .47
Worthington	Rock Pipestone Nobles Jackson Murray Cottonwood	Yes	173	433 216	.10	.25	783 566	.78 .57

TABLE 4.1

COLLECTION SYSTEM COST ANALYSIS

City	Counties Served	Landfill Located Near By	Miles To Twin City	Estimated Transport Cost 1000 tires/load Primary Haul/ Secondary Haul $	Loading & G&A Cost At Collect-Site/Tire $	Tipping fee At Processor/ Tire $	Total Tire Disposal Cost/1000 tire $	Cost Per Tire high$ / low $
Winona	Winona Houston Fillmore Wabasha Olmsted	Yes	119	298 149	.10	.25	648 499	.65 .50
TC Area Twin Cities	Ramsey Hennepin Dakota Scott Carver Wright Anoka Sherburne Washington Chisago Goodhue Rice	Yes	25	63 31	.10	.25	413 381	.41 .38

*Transportation cost estimates are based on $1.25 per mile secondary and $2.50 per mile primary haul. It can be assumed these costs are maximums and less expensive transportation may be found.

*Total tire disposal cost are determined on a load size 1000 tires. The capability to transport greater numbers may exist.

*The cost figures are estimated to give a maximum cost of disposal and transportation of tires. The actual cost may be far less than indicated.

OBJECTIVE E

ALTERNATIVE TIRE COLLECTION METHOD

OBJECTIVE E

ALTERNATIVE TIRE COLLECTION METHODS

The objective of this section was to evaluate different collection methods. Efficiency and cost control are key elements in providing competitive service to scrap tire generators and tire customers. An assumption can be made that any scrap tire recovery cost will be passed to the customer. A tire dealer's concern is to remain competitive. Customers will travel across state boundaries to buy tires at a lower cost if local dealers prices are increased significantly by high scrap tire collection and recovery costs.

For comparison purposes, the costs of using the following collection equipment have been identified:

I. Drop box - same as garbage industry
II. Pick-Up/Light duty trailer
III. Enclosed freight vans 27' - 45' lengths

The following collection methods have also been studied:

I. Service Route - similar to domestic garbage service
II. Spotting of collection receptacles
III. Bulk loading

Collection Equipment

Drop Boxes

A standard drop box is from 10-50 cubic yards in size, with the optimum size 30 yards or more. Transportation costs are relatively fixed, the per tire collection cost is a function of the number of tires that can fit into the box. A specially equipped truck, known as a "roll-off", is required to drop, pick-up, dump and transport the boxes. This truck is equipped with a bed that hydraulically raises and lowers, and with a hook to load and unload the containers. These trucks are limited to 80,000 pounds gross weight.

A 30-yard drop box will hold approximately 300 tires. A 50 yard drop box will hold approximately 500 tires. The following are the advantages and disadvantages of using drop boxes:

Advantages	Disadvantages
1. Accounts can be serviced by one person - the truck driver.	1. Specialized equipment is required, suitable only for drop boxes.
2. Containers fit into small areas.	2. High operating & maintenance costs due to the complexity and size of equipment
3. Tires are contained in a storage bin while accumulating at the generators site.	3. Drop box design allows for illegal dumping of tires or trash into the boxes.
4. Easy loading by tire generator, i.e. the tires are thrown in over the open top of the box.	4. Open top boxes allow pilferage of reusable casings.
5. Garbage collection industry already uses this type of equipment.	5. Large capital investment.
6. Easy unloading by dumping the tires at the recovery site.	

System Information

- Cost per collection vehicle	$60,000 (approx.)
- Annual Amortization Per Vehicle (10 years, 12%)	$10,618
- Operating & Maintenance Costs	$ 1.25/mile
- Drop Box Cost	$ 2,000/box (approx.)
- Design Capacity	300-500 tires*/load
- Unloading Time	12 minutes (approx.)

* Tires = passenger/light truck

Recommended use: For tire collection accounts where scrap tire storage is a problem. The best use is at landfill collection centers where the public can easily place their tires in the boxes.

Pick-Up/Light Duty Trailer

Pick-Up

A standard 3/4 or 1 ton capacity pick-up truck can be modified with a metal rack on a standard bed or a flat bed to contain tires. The hauling capacity ranges from 150 to 300 auto tires depending on the design of the rack and size of the truck. The truck is normally loaded by the driver. This equipment is used by individually owned and operated tire collection services. A small trailer may be pulled behind the truck to increase hauling capacity by approximately 100 tires.

Light Duty Truck w/Trailer

A small one to three ton truck can be modified with a hitching system to pull trailers specifically designed for tire collection. The trailer is typically a 20-27 feet long flatbed with metal racks for tire containment. Such a system can haul 300-500 tires. The advantages and disadvantages of these systems are as follows:

Advantages	Disadvantages
1. Can be loaded by one person	1. Only small volumes can be transported each trip
2. Easily maneuvered into congested areas	2. A single visit to a customer may not adequately service a customer due to capacity limitations
3. Operating costs of small trucks are less.	3. Significant portions of the drivers time is consumed by hand loading and unloading of tires
4. Small volume accounts become economically viable.	
5. Low capital cost to enter the collection business.	
6. Tire grading can be performed during loading or unloading operations.	

System Information

- Cost per collection vehicle
  - + 1 ton pick-up retail = $12,500*
  - + 2 ton light duty retail = $19,900*
- Amortization per vehicle (5 years @ 12%)
  - + 1 ton $ 3,467/yr
  - + 2 ton $ 5,520/yr
- Operating and Maintenance Costs
  - + 1 ton $ 0.20/mi
  - + 2 ton $ 0.30/mi
- Trailer Cost
  - + trailer capital cost $ 5,000
- Design Capacity
  - + 1 ton 150 tires
  - + 2 ton 400 tires
- Unloading time
  - + 1 ton 10-15 minutes
  - + 2 ton w/trailer 30-45 minutes
- Loading time (1 person)
  - + Pick-up 1 hour
  - + Truck w/trailer 20-27' long 4 hours

Recommended Case: Primarily used for small to medium sized scrap tire generators, i.e. those that generate 100 tires/week or less.

*Truck prices quoted by Ford Motor Company.

Enclosed Freight Vans/Truck

Regular enclosed freight vans sizes range from 27' to 45', depending upon collection volume requirements. The vans are either loaded by the customer or by the driver and a helper. Used vans are purchased for this service because stringent performance is not required. The vans must be safe and roadworthy. The sides and doors must contain the tires during transit, but the van does not need to be watertight.

Advantages

1. Range of van sizes permits efficient application of equipment.
2. Large tire volumes can be transported per trip
3. Vans can secure tires from illegal dumping and pilferage.
4. Tires are protected from weather elements (rain, snow, etc.)

Disadvantages

1. Harder to load because of trailer height
2. Truck and trailer is more expensive to purchase, operate and maintain
3. Would normally require at least two people to load within efficient time period
4. Long loading and unloading time

System Information

- Cost per collection vehicle
  - + Truck (new) class 6 Retail - $ 29,340
- Trailers
  - + 27' trailers (used) 4,000
  - + 40' trailers (used) 4,000
  - + 45' trailers (used) 5,000
- Amortization per vehicle (5 years @ 12%)
  - + Truck $ 8,139
  - + Trailers
    - 27' $ 1,109/yr
    - 40' $ 1,109/yr
    - 45' $ 1,387/yr
- Operating and Maintenance Costs (gas, insurance, maintenance)
  - + Truck $ 0.40/mi
  - + Trailers $ 0.05/mi
- Design Capacity
  - + 27' trailer 600 tires
  - + 40' trailer 1,200 tires
  - + 45' trailer 1,500 tires

- Unloading Time

+ 27' trailer	30 min
+ 40' trailer	60 min
+ 45' trailer	75 min

- Loading Time w/2 people

+ 27'	4 hrs
+ 40'	6 hrs
+ 45'	8 hrs

* Truck price quoted by Ford Motor Company.
* Design capacity and loading time based on WRI experience.

Recommended use: For hauling tires long distances and/or collecting tires at large scrap tire generators.

Collection Methods

Service Route

A service route for tire collection is similar to normal garbage collection service. Established routes are routinely scheduled for service on the same day of each week. Routes are established on the basis of tire quantities generated, number of customers, and service area. Routes are created so that full loads are achieved at the end of each one. A route should be structured so that it ends at the shortest distance from the recovery point. This is important because transportation costs increase with greater truck loading distances.

A model can be developed to evaluate the type of service equipment necessary for a specific route. The equation for the model is:

$$L = VT/Q + B + C + R + Y$$

Where the variables are:

L = Elapsed time for collection (minutes).
V = Truck capacity.
Q = Average quantity of tires at each stop.
T = Average time required for the collection of tires at a stop plus travel to the next stop (minutes).
B = One-way travel time from the route to recovery site entrance and/or from the recovery site back to a route.
C = Disposal time at the tire receiving station.

R = Relief time, including lunch and coffee breaks.
Y = Travel time from yard to beginning of route and from disposal site back to the yard at the end of the day.

The following examples illustrate the model's use, with assumptions that may be modified to reflect each case:

Method A	Method B
Small Pick up Truck 1 ton	Truck w/light duty trailer 2 ton w/trailer
L1= Collection time	L2= Collection time
V = 150 tires	V = 400 tires
Q = 83 tires	Q = 83 tires
T = 30 minutes	T = 30 minutes
B = 15 minutes	B = 15 minutes
C = 15 minutes	C = 45 minutes
R = 80 minutes	R = 80 minutes
Y = 40 minutes	Y = 40 minutes

$$L = VT/Q + B + C + R + Y$$

L1 = 150 x 30/83 + 15 + 15 + 80 + 40
L1 = 204.22 minutes to collect 150 tires and disposal
L2 = 400 x 30/83 + 15 + 45 + 80 + 40
L2 = 252.57 minutes to collect 400 tires and disposal

If the Method A or B crew returns to the route after emptying the first load, the time remaining for actual collection is estimated as follows, assuming 480 minutes in a normal work day:

A 480 - L1 - 2B - C = 480 - 204.22 - 30 - 15 = 230.78 minutes

B 480 - L2 - 2B - C = 480 - 252.57 - 30 - 45 = 152.43 minutes

The important question is: how many tires can be collected by either crew within a normal working day of 480 minutes? This may be calculated by dividing the total number of minutes in a working day by the elapsed time for collection (L1 or L2) and multiplying by the tire hauling capacity of the truck as follows:

$$\text{One Day's Effort} = \frac{\text{Total time in a day}}{\text{Elapsed time for collection (L1 or L2)}} \times \text{Tire Hauling}$$

Method A	Method B
$\frac{480}{204.22}$ x 150 = 352 tires/day	$\frac{480}{252.57}$ x 400 = 760 tires/day

One crew with method A equipment could collect an average of 7,392 casings (scrap tires) per month, while crew B could collect 15,960 casings per month.

The method to compare collection cost efficiencies is structured by using equipment operating costs that have been divided by collected tire quantities to establish unit tire collection costs. The following operating costs have been used for unit cost comparison:

Cost Items	Method A	Method B
Truck-amortization	$ 288.92/mo	$ 460.00/mo
Operation & Maintenance based on 50/mi day - 21 day 1 mo	$ 210.00/mo	$ 315.00/mo
Additional Equipment Rack	$ 46.24/mo	$ 115.58/mo
Labor - 2 crew men w/salary & fringes ($6/hr x 2 men x 1.3 fringes x 8 hrs x 21 days (1 month)	2,620.80	2,620.80
Overhead of 30% .3 x 2,620	786.24	786.24
	$ 3,952.20/mo	$4,297.62/mo

To compare tire collection costs use:

$$\frac{\text{Monthly Operation cost}}{\text{Total \# of tires/month collection capacity}} = \text{per tire collection cost}$$

Method A	Method B
1 ton truck w/ racks collection cost per tire would be: $\frac{\$3,952.20}{7,392}$ = $0.53/tire	2 ton truck w/trailer, collection cost per tire would be: $\frac{\$4,297.62}{15,960}$ = $0.27/tire

These represent actual collection costs. Total cost would include an additional figure to cover management, office overhead, and profit.

An evaluation of this case offers the following conclusions:

1) The economics of scale for the same collection route favors using a truck w/trailer if the monthly tire collection volume requirement exceeds by 10% the maximum number of tires that a one ton pick-up w/racks can haul. The only way more tires can be hauled under collection Method A is to increase the hours of operation. If this is done, labor and operation costs increase proportionately and per tire costs are still not as low in Method B. The reasons for this conclusion are: a) larger quantities of tires can be collected before returning to a recovery site; and b) the cost to operate a truck w/trailer is not much greater than operating a one ton truck w/racks.

2) A smaller truck may be justified for isolated routes where the distance covered and quantity of tires generated equal the haul and collection capacity of the truck.

Spotting Collection Receptacles

The spotting of collection receptacles is a common method used in the recovery industry. An example of such a method is a recovery material buy-back center where containers/vans are spotted so that material is deposited in the proper receptacle. Non-profit groups often have fund raising events utilizing the spotting of freight vans at high traffic areas where the public can drop their recovery items directly into the transportation receptacle.

Receptacles are often either standard drop boxes or standard freight vans. This method of tire collection involves dropping an empty container at a tire generator's site for collection. The scrap tire generator may be a recap

business, a landfill operation where the public is directed to place their tires in a receptacle, or a large volume retail tire outlet.

It is critical that this method be economically viable. As a result, a sufficient volume of scrap tires must be generated to fill the receptacle within two weeks to avoid idling capital equipment for a long period of time. The van or drop box must generate routine revenue to cover its cost for amortization and depreciation.

To compare the economies of freight vans and drop boxes, scenario A was developed for a drop box and scenario B for a freight van.

Scenario A - Drop Box

Customer: Landfill or other general municipal waste receiving facility.

Need: Several hundred tires are brought to the facility each month by the public and/or garbage collectors. Most of these tires are generated by homeowners cleaning out garages or commercial accounts that infrequently generate scrap tires. The landfilling of tires is prohibited by law.

Service Equipment: One 30 yard drop box designed and constructed to be dropped, picked, and transported on a hydraulic roll- off truck. The average dimensions of a 30 yard drop box are 8' wide x 6.5' high x 16' long. This box can store a maximum of 300 loose tires.

Drop Position: The drop box is placed near other receptacles dedicated to recovery, source-separated materials. If such a location does not exist, one should be created near a gate house or other supervised areas to ensure that other waste materials are not placed with the tires.

Discard: As the public/garbage collectors arrive at the waste receiving facility, they would be directed to place tires in the dedicated drop box for recovery. The gate keeper, at that time, would charge an appropriate disposal fee to cover drop box rental, transportation to a recovery facility, and recovery fee that the recovery facility may charge. Landfill operators may add tires that they find in the operational area.

Service Frequency: When the box is filled, the gate operator calls to have the full box switched out for an empty one.

Typical Costs:

+ $40/month per drop box rental
+ $50 minimum collection and transportation fee, (this is a function of distance to the recycler, assumed to be 20 minutes for this case.)
+ $60 tipping fee at tire recycler (assumed to be $20/ton or $0.20/tire).

$ 150.00
x 1.05 Administration fee by Gate Keeper (5%)
7.50
+ 150.00
$ 157.50 per box charge

$ .53/per tire collection cost at the landfill*

*NOTE: The costs noted in this scenario represent averages for the industry. Actual costs may differ for each case. A greater number of movements per month will decrease the fixed unit rental cost, thereby reducing total costs and drop off fees charged by a collector. Profit is calculated as a part of the assumed costs.

Scenario B - Freight Van

Customer: Tire recapper, grader, or retailer who generates large quantities of scrap tires.

Need: Several hundred or more scrap tires may be generated each week as a result of the normal grading procedure for selection of good recappable tire casings. A situation may exist at the retail level where the sales volume is great enough to result in a large accumulation of scrap tires.

Service Equipment: A 27', 40' or 45' freight van may be spotted at the scrap tire generator's facility, depending on the scrap tire generation rate. These vans are typical freight vans used by common carriers. A smaller service truck is required (class 6 - two axle) for a 27' van. A larger (class 8 - 3 axle) truck tractor would be required for the loaded weight of the 40-45' vans. A 27' van can haul 600 tires, a 40' van can haul 1,200 tires, and a 45' van can haul 1,500 tires.

Drop Position: The van is placed at a convenient location near the grading or storage area. A facility with a loading dock will usually place the van at the dock for easy access.

Discard: The tire generator is responsible for loading the tires into the van. He/she may do this as the scrap is generated or may use idle labor during slow periods. Scrap tires are stacked in the van to reduce voids and increase density. Loading cost labor is low because it involves increased utilization of existing labor in most cases.

Typical Costs:

The rental costs associated with van placement would be calculated into the overall collection fee if the van is moved twice a week.

Assume one hour to move a van including travel time to the generator, to the recovery facility, and back to the yard. Actual time will be site specific.

27' van holding 600 tires:*

$ 71 operating cost/hr
120 tipping fee (6 tons at $20/ton).
$ 191
÷ 600 tires/van.
$ .32 disposal cost/tire to tire generator.

45' van holding 1500 tires:*

$ 71 operating cost/hr.
300 disposal cost (15 ton @$20/ton).
$ 371
÷ 1500
$ .25 disposal cost/tire to tire generator.

*Note: The costs in this scenario are assumed and represent a conservative average found in the industry. Actual costs may differ. Profit is calculated as a part of the assumed cost to operate the truck.

Bulk Loading

The bulk loading of tires for transport is a method in which whole tires are picked up by a front-end loader and dumped into an open-top trailer. An open top truck and/or trailer includes equipment such as dump trucks, chip vans, and certain open-top grain trucks. A comparison can be made to that of mining, sand, and gravel trucks. Equipment is used to scoop the tires from the ground and drop them into the transfer truck. The truck then transports the tires to a receiving facility where they can either be dumped or off-loaded by hand.

Open-top containers range in capacity from 30 cubic yards to 150 cubic yards. The economy of scale indicates that the larger the container the cheaper the unit transportation cost per tire because transport fees are usually fixed, regardless of the quantity hauled within maximum tariff load limits. The maximum weight limits are generally not exceeded due to the high void volume associated with loosely loaded tires.

A brief example explains this economy of scale concept. A dump truck and pup trailer operator hauls 30 cubic yards (300 tires) 150 miles for $300 at a cost per tire of $1 for transportation and excluding loading costs. The hauling of tires in a 150 cubic yard chip van (1,500 tires), at a $300 charge for 150 miles yields a transport charge of only $.20/tire. The numbers presented in this example are for comparison purposes only and do not represent true costs in Minnesota.

The recommended use of bulk loading is for the rapid movement of a large accumulation of tires over a short period of time. Average loading time for a 150 cubic yard chip van using a front-end loader is 45-60 minutes. This method eliminates the hand loading of tires into containers, which for an equivalent quantity would take two laborers 8 hours. An added cost that must be considered, however, is that of operating a front-end loader.

The following comparison is made for illustration:

Customer: A large pile of approximately 40,000 tires.

Need: The tires accumulated at an undesirable location must be moved to an authorized collection station approximately 100 miles away.

Plan A - Bulk Load		Plan B - Freight Van	
Service Equipment:	Cost		Cost
1 Rubber Wheel Loader w/operator	$ 50/hr	3 laborers to load (3 x $5/hr x 1.3 Benefits)	$22.50/hr
1 Open Top Freight/chip van	$200/trip	1 Freight van to move 1500 tires (minimal air voids)	$200/trip
Loader Mobilization transport to & from job site	$1,000		

LOADING:

Plan A: Assume the loading of one open top trailer takes 45 minutes. To clean up 40,000 tires, assuming 1000 tires/trip, requires 40 trips.

Cost/tire = (loader cost/load + transport fee/load x # of trips) + mobilization Costs ÷ # of tires to clean up

Cost/tire = [($50 + $200) x 40] + $1000 ÷ 40,000

Cost/tire = $0.27 (does not include G&A and profit)

Plan B: Assume the loading of one freight van takes 8 hours. To clean up 40,000 tires, assuming 1500 tires/trip, requires 27 trips.

Cost/tire = (Labor $ to load one van + transport fee/load) x # of trips ÷ # of tires to clean-up

Cost/tire = ($180 + $200) x 27 ÷ 40,000

GRAPH 5.1

LOADING COST COMPARISON - BULK VS. LABOR

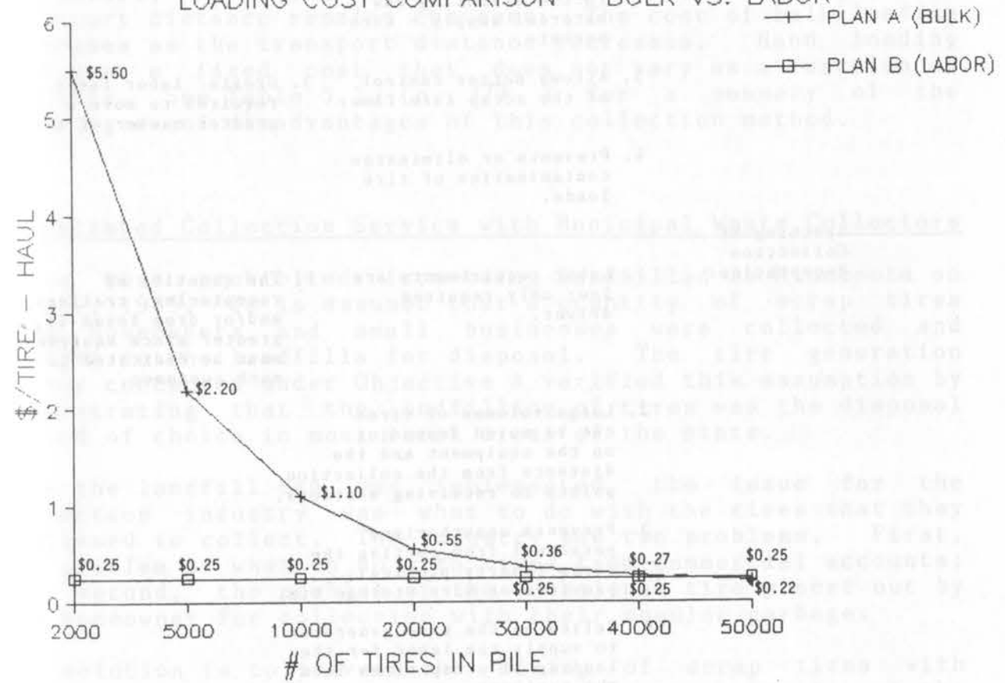


TABLE 5.1
TIRE HAULING METHODS SUMMARY

Method	Advantages	Disadvantages
Service Route: (Labor pick-up)	1. Maintains personal contact on regular basis w/customer.	1. Labor and management requirements.
	2. Promotes better flow of information to the forces affecting raw material supply - tire markets.	2. Labor costs.
	3. Allows better control of the scrap tire flow.	3. Greater labor force required to move a greater number of tires.
	4. Prevents or eliminates contamination of tire loads.	
Spotting of Collection Receptacles:	1. Labor requirements are low; only requires driver.	1. The quantity of receptacles, trailers, and/or drop boxes is greater since equipment must be dedicated to each customer.
	2. Large volumes of tires can be moved depending on the equipment and the distance from the collection points to receiving stations.	
	3. Prevents unauthorized personnel from sorting the tires (cherry picking); provides on site storage bin.	
	4. Relies on the tire generator to supply the labor for the loading of scrap tires into the trailers.	
Bulk Load:	1. A large volume of tires can be loaded in a short time.	1. Open-top trailers or dumps are specialized equipmeent; expensive to purchase and maintain.
	2. Only one person is needed to load; the loader operator.	2. Difficult to keep contaminants such as dirt, rocks, garbage, and organic debris out of tires when scooping tires with a loader.

Cost/tire = $0.25 (does not include G&A and profit).

As Graph 5.1, (p.178) indicates, at a pile of less than 50,000 casings, it is more economical to hand load casings than to incur the additional loader mobilization cost. The costs of plans A & B are similar at 50,000 casings. It is more economical, at 50,000 casings, to bulk load as long as the transport distance remains the same. The cost of bulk loading decreases as the transport distance increases. Hand loading includes a fixed cost that does not vary as a function of quantity. See Table 5.1, (p. 179) for a summary of the advantages and disadvantages of this collection method.

Established Collection Service with Municipal Waste Collectors

Tires were prohibited from being landfilled in Minnesota on July 1, 1985. It is assumed that a quantity of scrap tires from homeowners and small businesses were collected and brought to the landfills for disposal. The tire generation survey conducted under Objective A verified this assumption by demonstrating that the landfilling of tires was the disposal method of choice in most rural areas of the state.

Once the landfill ban was implemented, the issue for the collection industry was what to do with the tires that they continued to collect. The industry saw two problems. First, the problem of what to do with tires from commercial accounts; and second, the problem of the occasional tire placed out by the homeowner for collection with their regular garbage.

The solution is to prevent the mixing of scrap tires with other garbage by asking their customers to separate out the tires. Scrap tire generation may be significant enough to dedicate a receptacle for collection and storage. Traditional garbage collection services, due to the special requirements of tire collection, may want to evaluate whether to offer commercial tire collection service. Tire collectors, rather than garbage collectors, have traditionally collected the bulk of scrap tires from tire dealers.

Existing tire collection companies usually offer a competitive edge when collecting tires. This competitive edge exists through their ability to grade casing and salvage a percentage for resale. The tire collector then offsets his collection costs with tire grading revenue. It is also clear that a tire collector's equipment costs are lower. Operation costs for a garbage truck, (i.e. roll-off truck) are greater than those for a pick-up truck or light duty freight truck.

The problem for the residential collector with an occasional tire is addressed through the following options:

1. The garbage collector may refuse to pick up the tire(s).

The garbage collector's refusal to collect tires is often a function of "how many" tires. The homeowner, without the option of using their normal collection source, must dispose of the tire(s) by transporting them to a recovery site or tire dealer willing to take them. As people were educated that garbage collectors would not take tires, public pressure would often keep the scrap tire at the retailer who sold the replacement tires. A spot check of Block Sanitation, which serves residential customers in the Minneapolis area, indicated that from the time the landfill ban took effect through 7/15/85, they were averaging 4-5 calls per week for tire pick-up. Block refuses tire collection, and encourages its customers to haul the tires to recovery sites or neighborhood tire dealers.

2. The collector may pick up tires on normal residential routes if storage racks are placed on the trucks to accomodate them.

Waste Management, Inc., the operator of a major Twin Cities area landfill, has placed drop boxes at their facility to serve as a tire collection point for both the public and commercial collector. There is a charge for this service. This does provide a method, however, for the garbage collector to collect an occasional tire and channel it into a recovery system. An appropriate charge should be passed to the customer for the extra service.

Practices prior to the landfill ban had occasional tires from both residential and commercial accounts mixing with the regular garbage via drop boxes or packer trucks. This mixing of small quantities of tires usually went unnoticed at the landfill. Today, if a landfill operator notices a tire in the operation area, he can remove the tire and deposit it in an appropriate drop box. When the box is filled, it is then hauled to an appropriate tire recovery facility.

Mobile Systems for the Volume Reduction of Tires

Mobile tire reduction systems are designed to be transported from location to location. The two basic technologies

currently used for the volume reduction of tires are shredding or baling. The mobile shredding concept has been time-tested for the processing of scrap tires. The baling of recovery materials has been documented and applied to scrap tires. The purpose of this section is to evaluate and compare these methods of volume reduction.

The transporting of scrap tires to a processing facility adds from 10 cents to 20 cents, or more, to the cost of tire recovery, depending upon the loading and transportation method. A 45' van can hold, due to tire bulk, an estimated 1500 passenger tires with a total weight of 30,000 lbs. This is significantly less weight than legal load limits allow, and is a labor intensive operation.

Volume reduction equipment may be added to the collection system in order to increase both labor and transportation efficiencies. Volume reduction methods strive to transport 2,400 tires or approximately 48,000 pounds per shipment, or the legal load limit. The labor and processing equipment are used continuously except for scheduled maintenance downtime, labor breaks and mobilization. Volume reduction activities are scheduled as a regular work shift. Volume reduced material can either be stockpiled in anticipation of a future shipment and/or loaded directly into a transport vehicle.

Mobile processing in Minnesota has several factors which may impact its effectiveness. These are:

Weather: Mobile processing work periods may follow that of the construction industry due to the extreme periods of sub-zero temperatures. The period between November 15 and December 25 is considered marginally productive. The period between January 1 and March 15 is considered a difficult period for outdoor processing due to the extremely low temperatures. The equipment would have marginal productivity during these periods.

Stockpiles and scrap tire generation: The quantity of tires stockpiled in rural regions is not as great as the quantity in the Twin Cities. Outside the Metro area, stockpile sizes vary from 250 to 2,000 tires.

Labor: A work force travels with a mobile processing unit. This force has expenses for travel, accommodations, and meals. The effects of winter weather would mean layoffs during that period. These factors may directly add to the existing costs or create problems for the processor because of a changing labor force.

Maintenance/Breakdowns: A mobile system's expenses for maintenance and/or breakdown can be greater than a stationary unit. The costs of providing service and parts for a rural location can be significant.

Operating expenses and capital cost: A mobile processing unit means that all operating costs are variable because of variable work schedules and situations. The only fixed expense is the initial capital investment.

Volume reduction with mobile shredding units has been used for years with products such as steel, glass, and aluminum. The major emphasis of mobile tire shredders has been to either course grind the tires for landfilling, or to produce a 2 inch or smaller chip for use as boiler fuel.

These two processes are not without problems. The landfilling of tires (whole or shredded) is prohibited due to the landfill ban as of July 1, 1985. The mobile equipment available for tire shredding has not been developed to the point where production of a quality two-inch chip for fuel is achieved on a consistent and/or high volume scale. Present machines rely on the recirculation of chips to achieve adequate size reduction, thereby decreasing capacity. The ability to remove wire has not been adapted to the mobile process. These factors directly affect production, maintenance and product sales.

Tire shredding machines, for the purpose of this analysis, will be used for pure volume reduction because this method has a better history than mobile processing for producing a marketable product.

The advantages and disadvantages of a mobile shredding unit are:

Advantages:

1. Removes one step in the refinement process.
2. Reduces product volume for transportation.
3. Reduces water holding capacity to inhibit mosquito breeding.
4. Several manufactures of available equipment.

Disadvantages:

1. Need for specialized equipment for loading.
2. Maintenance is frequent and costly.
3. Quality of product is difficult to control.
4. High initial capital investment.

Many variables exist in an evaluation of different mobile shredding systems. The machine used must be matched to the anticipated use. These are the basic criteria used to evaluate such systems:

1) Maintenance figures: These are a function of labor, blade cost, oil, grease, life of blades, type of tires being processed, and contamination.

2) Production rates: The figures quoted are often theoretical capacities. Realistic figures are in the range of 500-700 passenger tires per hour. This considers the labor factor and is for pure volume reduction. (example: one manufacture claims 11,500 tires per hour theoretically, with an actual rate of around 600 tires per hour).

3) Production rates do not reflect downtime.

4) Capital cost estimates: Standard items on one machine are often not included, or are options on a competitive machine. The initially quoted price may not reflect these differences.

5) Most shredders are sold on a horsepower basis. This directly relates to the electrical power consumption or fuel cost. Operational costs may directly increase with an increase in Horsepower.

6) The horsepower requirement is a function of the machine design. The term shredding encompasses a range of action, making it necessary to clearly define whether the machine tears, shears, grinds, or any combination of the three.

7) Blade replacement cost usually does not include downtime, lost production, and labor inefficiencies.

8) Less expensive blades show a lower maintenance cost but have a shorter life period.

9) A specific evaluation of a mobile system's costs should include where the tires are located, the number of tires to be processed, set up time, wear on equipment, and power sources.

10) Shredding equipment should be amortized over a 5-year period due to the extensive wear on the equipment.

An Economic Analysis of Three Shredders

The optimum shredding unit, for the purpose of this study should contain the following:

Trailer, shredder, generator or other power source, input and output conveyors, and fuel tanks.

Options often offered that are helpful include:

Running lights, cherry picker, compressor, magnetic separator, and stabilization equipment.

Three mobile shredding units presently available on the market are reviewed for this analysis. Specifications, cost factors, and a per tire evaluation for each machine are provided in this analysis. Information was gathered from literature review and personal contact with manufactures representatives. Several other manufacturers of shredders were contacted, including Systems Shredders of Wilsonville, Oregon, and AST Corporation of Eden Prairie, MN., an O&E Representative. Information was either not made available or the manufacturer indicated that their system was not specifically designed to shred tires.

These economic analysis do not contain a profit margin. The profit margin, theorectically, is demonstrated by adding at least 20% to the final processing cost per tire.

Mobile Shredder 1

Manufacturer:

G. Class Recycling Systems
E.A.C. Engineering Representative
2430 Mountain Industrial Blvd.
Atlanta, GA 30084

Model: Unicrex U25, Mobile Unit
H.P.: 60HP electric motor
Feed Opening: 47.2 x 47.2"
Total weight: 30,800 lbs.
End particle size: 4 inch course grind
Rate through put: Passenger 600-700 tires/hr.; 200 - 250 truck tires/hr.
Capital cost: 350,000 F.O.B.
Includes: Flatbed, cherry picker, shredder, operational lights, conveyors, generators, compressor.
Excludes: Tractor, freight, tax.
Blade maintenance: 1 million auto tires, $.15/tire for blade replacement and maintenance.
Capital Cost - 5 year total amortization 12% interest

Cost mobile unit	$350,000
Capital recovery	x .27741
Debt service	97,093
Labor	56,784(1)
Maintenance	35,000(2)
Insurance	15,000(est)
Utilities/fuel	+10,000(3)
Total annual cash outlay	$213,877
Depreciation	+ 70,000
Total annual cost	$283,773
Annual tons processed	10,000(4)
Cost per ton	28.38
Cost per tire	$ 0.28

(1) Labor
(A) 1 Supervisor $10.00/hr
(B) 2 Employees 5.50/hr each
$21.00/hr
2080 hrs/year.
(C) Labor Cost $43,680.00
Employee Fringes x1.30
Total Labor Cost $56,784.00

(2) 10% of original capital investment/year

(3) Utilities/fuel: $1.25/gal. diesel, consumption 8,000 gallons, 5 gallons per hour. Operation at approximately 1600 hrs/yr.

(4) Based on a feasible 500-700 tires/hr. rate, total yearly production one million tires.

Mobile Shredder 2

Manufacturer:

Garbalizer Machinery Corporation
10 Exchange Place
Suite 507
Newhouse Office Building
Salt Lake City, UT 84111

Model: No. M51-358
H.P.: 400 H.P., 8V 92 Detroit diesel w/torque convertor
Feed Opening: tires to 50 inches in diameter
Total weight: 42,000 lbs - excluding trailer
End particle size: 3" x 5"
Rate through put: Truck: 1,000 tires/hr
Passenger: 1,000 tires/hr
Capital cost: $263,000 F.O.B. Salt Lake City, UT
Includes: Diesel engine, fuel tanks, shredder, lowboy trailer, one year warranty, instructions and training.
Excludes: Tractor, conveyors, tax, freight
Blade maintenance: replace blade every 100,000 auto tires
Blade replacement - 4.25 ton plus labor

Capital Cost: 5 year total amortization 12% interest

Cost mobile unit	$288,000(1)
Capital recovery	x .27741
Debt service	79,894
Labor	56,784(2)
Maintenance	28,800(3)
Insurance	15,000(est)
Utilities/fuel	+ 10,000(4)
Total annual cash outlay	$190,448
Depreciation	+ 57,600
Total annual cost	$248,048
Annual tons processed	10,000
Cost per ton	24.80
Cost per tire	$ 0.25

Explanations:

(1) Mobile Unit $263,000
Conveyors/input/output 25,000
Total Unit Cost $288,000

(2) (A) 1 Supervisor $ 10.00/hr
(B) 2 Employees 5.50/hr each
$ 21.00/hr
2080 hr/year
Labor Cost $ 43,680.00

(C) Employee Fringes x 1.30
56,784

Total Labor Cost $ 56,784.00

(3) 10% of original capital investment/year.

(4) Utilities/Fuels: $1.25/gal. diesel, consumption 8,000 gal., 5 gallons per hour. Operation at approximately 1600 hr/yr.

(5) Based on a feasible 500-700 tires/hr. rate, total yearly production 1 million tires.

Mobile Shredder 3

Manufacturer:

Mitts and Merrill
P.O. Box 151
Carthage, NY 13619

Model: MS-6028 mobile unit, totally self contained
H.P.: 125 H.P. Diesel drive/torque converter
Feed opening: 60 x 28"
Total weight: 25,000 lbs.
Torque: 18,500 lb. ft.
End particle size: Variable
Rate through put: trucks - 350 tires/hr
passenger - 1,000 tires/hr
Capital Cost: $325,000 F.O.B. Carthage, NY
Included: shredder, power source, trailer.
Excludes: Tractor, tax, freight, conveyors ($25,000).
Capital Cost: 5 year total amortization 12% interest

Cost mobile unit	$350,000 (1)
Capital recovery	x .27741
Debt service	$ 97,093
Labor	56,784 (2)
Maintenance	35,000 (3)
Insurance	15,000 (est)
Utilities/fuel	+ 10,000 (4)
Total annual cash outlay	$213,877 (5)
Depreciation	70,000
Total annual cost	283,773
Annual tons processed	10,000
Cost per ton	$ 28.38
Cost per tire	$ 0.28

Explanations

(1) Mobile unit $325,000
Mfg. suggested conveyors 25,000
Total Unit Cost $350,000

(2) Labor (A)1 Supervisor $10.00/hr
(B)2 Employees 5.50/hr each
$21.00/hr
2080/hr/year (260 days)
Labor Cost $43,683.00

(C) Employee Overhead x 1.30
Total Labor Cost $56,784.00

(3) 10% of original capital cost/year

(4) Utilities/fuel: $1.25/gal. diesel, consumption 8,000 gal., 5 gallons per hour. Operating at approximately 1600 hr/yr.

(5) Based on a feasible 500-700 tires/hour rate, total yearly production 1 million tires.

An Economic Analysis of a Baler

Volume reduction by baling is used in materials such as paper, corrugated cardboard, and metals. Technology has been developed in which the properties of tires (extensive spring back) have been overcome. The baler reduces tire volume for transportation and allows processing to take place in a controlled environment. Baling systems may present a low cost, mechanized solution to mobile volume reduction.

Baled tires provide three options: (1) bales can be landfilled, solving the resurfacing problems with tires, while decreasing their volume (not an option in Minnesota); (2) bales allow for transportation via traditional equipment (either flatbed or van); and (3) bales allow the storage of tires at a location for easy retrieval.

The mobile baling system consists of several specialized components. The tire baler is mounted on a customized lowboy trailer that has a mechanical stabilization system to provide a ridged operational base. An electric generator to provide power for the baler, and the feed conveyor and skid steer loader for materials handling, are included in the system.

The advantages and disadvantages of a baling system are:

Advantages

1. Allows for the continual use of manpower.
2. Allows for the near capacity use and greater flexibility of transportation equipment.
3. Decreases the costs associated with unloading tires at processors.
4. Reduces the storage needs for incoming tires at recycling facilities (volume reduction).
5. Prevents the collection of water which is conducive to mosquito breeding.
6. Allows for easy record keeping of inventories at tire processing or collection sites.
7. Allows for the long term storage of raw material so fluctuations in market trends can be met by easy access of these materials at a later date.
8. Reduces fire hazard by reducing surface area.

Disadvantages

1. Few manufacturers of such equipment.
2. High initial capital cost of equipment.
3. Unknown learning curve involved with engineering and operation of mobile system.
4. Mobilization of this type of equipment may cause transportation difficulties as a function of height restrictions.

Mobile Baler

Manufacturer:

International Baler Corporation
P.O. Box 6922
Jacksonville, FL 32236

Model: STB - 60 Tire Baler
Bale Size: 60 x 36 x 48" / Approx. 2,000 lbs
Production rate: 2-3 approx. bale/hr.
Feed opening: 60 x 30"
Baler weight: 16,000 lbs.
Stroke cycle: 48 seconds
Platten force: 112,000 lbs
H.P.: 25HP. 3 phase 60 cycle
Capital Cost: Mobile system $129,210.00
Includes: Baler, hydraulic oil purification, lowboy trailer and modifications, stabilization system, generator, conveyors, fuel tanks, truck, freight.
Excludes: Tax
Maintenance: Baler 1-2% of total cost per year - seals on cylinders.

Capital Cost: 10 year total depreciation/12% interest.

Capital Cost	$ 129,210	(1)
Capital Recovery	x .17698	
Debt Service	23,000	
Labor	41,912	(2)
Maintenance	13,000	(3)
Insurance	15,000	(est)
Utilities/fuel	+ 10,000	
Total annual cash outlay	$ 102,912	
Depreciation	12,921	
Total annual cost	$ 115,833	
Annual tons processed	6,270	
Cost per ton	$ 18.47	
Cost per tire	$ 0.19	

(1) Capital cost. Mobile System:

Baler	$ 54,010
Loader	23,200
Generator	12,000
Conveyor	2,000
Truck, Trailer	38,000
	$ 129,210

(2) Labor:

(1) Supervisor	$10.00/hr x 2080	=	$ 20,800
(1) Employee	5.50/hr x 2080	=	11,440
	$15.50/hr		$ 32,240
	Employee Fringes		x 1.3
	Total Labor Cost		$ 41,912

(3) Maintenance: 10% of capital invested/year. Includes truck and trailer maintenance.

(4) Utilities/fuel: $1.25/gal. diesel, consumption 8,000 gal., 5 gallons/hr. 1600 hrs at operation

Model: Mobile Volume Reduction Cost/Tire - Site Specific Equation

This is a model for the evaluation of different mobile systems. It considers the common factors involved in mobile processing. A more detailed model can be derived by adding variables that are specific to a company's need factors. This model considers the costs of transportation, processing, and mobilization, and then determines a processing cost per tire.

$$\text{Total cost per tire for mobile processing} = \frac{\text{Trans. Cost} + \text{Processing Cost} + \text{Mobilization Cost}}{\text{\# of tires}}$$

$$TC = \frac{[(x/y)\ Z] + [(n)(x)] + [(d)(m)]}{x}$$

Where: TC = total cost per tire for mobile processing
x = number of tires at location
y = number of tires in load
z = transportation cost per truck load
n = cost per tire for processing
d = total round trip distance
m = cost per mile for mobilization

Example of model use:

Objective: To compare the clean up costs of stockpiles using different mobile systems. The comparison is based on factors of transportation, labor, and production.

Situation: Tire piles of different sizes are located 200 miles from the processor.

Assumptions:

1. Trucking costs are $250.00 per 200 mile backhaul rate.
2. Truck hauling net legal weight is 48,000 pounds.
3. Bales contain 100 tires and weigh 2,000 pounds.
4. Truckload of bales consist of 24 bales or 48,000 lbs which is the equivalent of 2,400 tires.
5. Shredded truckload net weight can be 48,000 pounds which is the equivalent of 2,400 tires.
6. Mobilization cost is $1.00 per mile round trip.

Table 5.2, (p. 194) and Graph 5.2, (p.195) represents a cost comparison of the different volume reduction methods using the developed equation.

TABLE 5.2

VOLUME REDUCTION METHODS

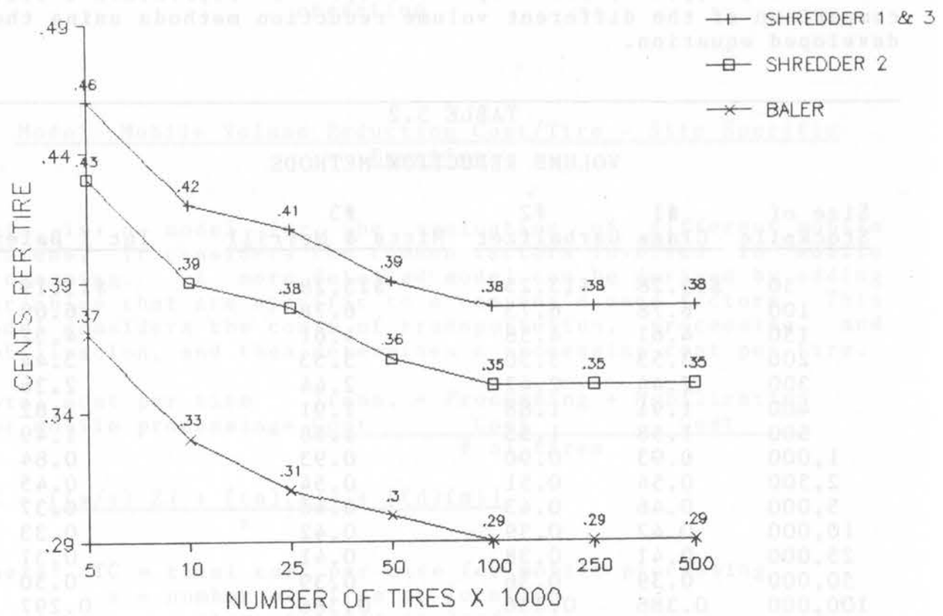
Size of Stockpile	#1 Class	#2 Garbalizer	#3 Mitts & Merrill	Int'l Baler
50	$13.28	$13.25	$13.28	$13.19
100	6.78	6.75	6.78	6.69
150	4.61	4.58	4.61	4.52
200	3.53	3.50	3.53	3.44
300	2.44	2.42	2.44	2.36
400	1.91	1.88	1.91	1.82
500	1.58	1.55	1.58	1.49
1,000	0.93	0.90	0.93	0.84
2,500	0.54	0.51	0.54	0.45
5,000	0.46	0.43	0.46	0.37
10,000	0.42	0.39	0.42	0.33
25,000	0.41	0.38	0.41	0.31
50,000	0.39	0.36	0.39	0.30
100,000	0.386	0.356	0.386	0.297
250,000	0.385	0.356	0.385	0.296
500,000	0.384	0.355	0.384	0.295
1,000,000	0.384	0.354	0.384	0.294

The increase in transportation or mobilization cost, or the decrease in productivity from the anticipated annual production rate will increase costs. A decrease in transportation or mobilization cost will result in a decreased cost.

A comparable table could be structured for evaluation purposes so that local, regional and state governments can determine whether or not their charges for recovery follow the model.

GRAPH 5.2

MOBILE VOLUME REDUCTION



Comparison of mobile processing and whole tire transporting costs

Objective: To compare the clean up cost of a tire stockpile using different methods of handling tires. The comparison is based on factors of transportation, labor, production, and associated costs. (Table 5.3, p.197, illustrates the cost differences.)

Assumptions:

1. Trucking costs are $250 per trip for a 200 mile backhaul trip.
2. Truck hauling net legal weight is 48,000 lbs.
3. 45' vans hold 1,500 whole auto tires or 30,000 lbs.
4. Bales contain 100 auto tires weighing 2,000 lbs.
5. Truckload of bales consist of 24 bales or 2,400 tires/48,000 lbs.
6. Truckload of shredded material contains 2,400 tires/48,000 lbs.
7. Tire pile size of 150,000 tires.
8. 2 people can load a 45 foot van with 1500 tires in 8 hrs.
9. 2 people can bale 2400 tires in 8 hrs. (does include loading time).
10. 3 people can shred 4,000 tires in 8 hrs.(doesn't include 2 hr. loading time for product).

Table 5.3

Tire Transportation Evaluation

	Trailer	Baler	Shredder
Transportation Cost of Tires to Processing Facility	$25,000	$15,750	$15,750
Labor Cost Includes Compensation and Benefit Factor of 1.3	$10,400	$10,413	$ 9,173
Mobilization Cost	$ 250	$ 6,824	$ 6,869
Processing Cost	0	$18,000	$34,500
Total Cost	$35,650	$50,987	$66,292
Cost per Tire	$ 0.24	$ 0.33	$ 0.44

Cost Justification

Trailer

Transportation Cost

150,000 tires ÷ 1500 tires/load	= 100 trips
100 trips x $250	= $ 25,000
Total Transportation Cost	= $ 25,000

Labor Cost

100 days x 16 man hrs	= 1600 man/hrs
1600 man hrs x $5.00/hr	= $ 8,000
Benefit multiplier	1.3
Total Labor Cost	= $ 10,400

Mobilization Cost

+ uses local help	
+ possible transportation of loader	
+ training cost	$ 250
Total Mobilization Cost	$ 250

Total Cost	$ 35,650
	$ 0.24/tire

Baler

Transportation Cost

150,000 ÷ 2400	= 62.5 trips
63 trips x $250	= $ 15,750
Total Transportation Cost	$ 15,750

Labor Cost

63 days x 8 hrs	= 504 man/hrs
504 man hrs. x $10/hr	= $ 5,040
504 man hrs. x $5.50	= $ 2,772
Labor Cost	= $ 8,010
Benefit Multiplier	1.3
Total Labor Cost	= $ 10,413

Mobilization Cost

One day lost production	= $ 124
Accomodations:	
$50/day/person	= $ 6,300
System mobilization	400
Total Mobilization Cost	= $ 6,824

Processing cost

150,000 x .12	= $ 18,000

Total Cost	= $ 50,987
Cost per Tire	= $ 0.33/tire

Shredder

Transportation Cost

150,000 ÷ 2400	= 62.5 trips
63 trips x 250	= $ 15,750
Total Transportation Cost	= $ 15,750

Labor Cost		
63 ÷ 1.5	=	42 day
42 x 8	=	336 man hrs
336 man hrs x $10	=	$ 3,360
672 man hrs x $5.50	=	$ 3,696
Labor Cost	=	$ 7,056
Benefit Multiplier		1.3
Total Labor Cost	=	$ 9,173
Mobilization Cost		
Set up; one day lost production		$ 168
Accomodations: $50/day/person		$ 6,300
System Mobilization		$ 400
Total Cost		$ 6,869
Processing Cost		
150,000 x .23	=	$ 34,500
Total Production Cost	=	$ 21,000
Total Cost	=	$ 52,792
Cost Per Tire	=	$ 0.35/tire

This analysis demonstrates that the movement of tires by trailer is the most cost-effective method. Volume reduction systems allow for less time on the job. If a situation exists where time becomes a factor in cleanup, mobile systems may become more desirable.

Recommendations for mobile processing in Minnesota:

(1) Assume that the unit will not be in operation for the anticipated 260 available days due to weather conditions and breakdowns.

(2) Stockpiles are limited in numbers and may contain small quantities, making it difficult to justify cost.

(3) Where possible, use the local labor force in order to reduce mobilization cost.

(4) Equipment should be mechanically simple and have low maintenance cost.

(5) Schedule maintenance of machinery when product is loaded into trucks or other pre-determined downtime.

(6) When weather does not permit operation for long periods of time, move the system to a region with milder climates to maintain a cash flow for debt service payments.

(7) As transportation costs increase mobile processing becomes more feasible due to the ability to reduce tire transportation costs.

(8) Compared to the loading of trailers by hand, mobilization is not competitive. This is true when transportation costs are low, pile size is small, and the local labor force is not used for the work.

(9) If a loader is used to assist the hand loading of vans, volume reduction methods become more competitive.

(10) If counties identify volume reduction as a recovery method, they can develop a recovery charge model for an appropriate flow of tires. The model will allow them to establish their recovery charges related to anticipated recovery costs.

OBJECTIVE F

RECYCLING OPTIONS FOR ALTERNATIVE MARKETS

OBJECTIVE F

RECYCLING OPTIONS FOR ALTERNATIVE MARKETS

The spectrum of applications for products derived from scrap tires is almost as broad as man's imagination itself. These applications have been created by the large quantities of scrap tires generated annually in the United States. Industry statistics indicate that 144 million replacement passenger tires and 30.9 million replacement truck tires were shipped in 1984.[1] Since these figures do not include original equipment or retreaded tire sales, the quantity of non-retreadable scrap tires should closely approximate these totals. For perspective, the State of Minnesota generates less than 2% of the total scrap tire volume produced annually in the United States.

Some of the approaches to scrap tire utilization have been, many have not yet proven to be technically, economically, or practically viable. Five desirable characteristics of an ideal scrap tire disposal process or application include:[2]

1) No adverse effect on the environment
2) Conserve natural resources by recovery or replacement of non-renewable resources
3) Minimum adverse effect on established industries consistent with reliable and ethical disposal objectives
4) Adaptable to widespread use with products having commercial value in existing markets
5) Competitive economics permitting minimum disposal fees and little or no continuing public support.

Many of the unsuccessful approaches have ignored one or more of these criteria, leading to their ultimate failure. The objective was to define the recycling options for alternative markets of scrap tires.

The following sections provide identification of major applications and their anticipated impact on tire disposal option available to the State of Minnesota. This information has been obtained from review of available published literature and discussions with knowledgeable industry sources. Efforts have been made to quantify the economics and market potential for processes or applications appearing to represent possible options for Minnesota.

WHOLE TIRE APPLICATIONS

Many of the highest value uses for scrap tires utilize whole tires in their original form.[3] Unfortunately, the percentage of available tires used in most of these applications is either declining or limited. However, the following brief discussion of major uses at least illustrates the creativity which has been applied to scrap tire utilization.

Used Tires

All four tires on an automobile rarely wear out uniformly. However, all four tires are often replaced at the same time, even though one or two of them may still have useable life. If the set were carefully screened, the good tires could be used by another party for the remainder of their safe tread life.

Although there are no reliable industry statistics on resold tires, this use is believed to be relatively small and declining for the following reasons:

1) Increased complexity of tire sizes and sidewall styling complicate used tire inventory and storage costs

2) Improved safety consciousness increases concern about the dangers of improperly screened used tires

3) The advent of low cost domestic and imported new tires has decreased the economic incentive associated with screening and/or purchasing used tires.

Retreading

Retreading is an efficient use of suitable tire carcasses, reportedly requiring only 30% of the energy needed for new tire production.[4] However, consumer acceptance of retreads has been declining for years, probably due to the same factors which have affected used tire sales.[5] According to industry statistics, passenger car retread sales were 21.5 million in 1984, representing 13% of replacement passenger tire sales. By comparison, 36 million passenger car tires were retreaded in 1976, equalling about 18% of total sales.[6]

A higher percentage of truck tires are retreaded. In 1984, 37.4% of total replacement sales were retreads, indicating that it is feasible to have high reutilization of tires under

carefully controlled usage and economic conditions. It is probable that truck tire retreading will continue to be a major use for suitable tire casings under current economic conditions.

It would be possible for a higher percentage of automobile tire carcasses to be retreaded if there were an adequate market for the product. However, a realistic view of this market must recognize that the use of car retreads will probably continue to decline unless there is a significant escalation in new tire pricing. As a result, it is likely that this application will use fewer, not more, worn tire casings in the future.

Artificial Reefs

Artificial reefs may be constructed by compressing bundles of whole tires, bonding them together, then anchoring the bundles in coastal waters. The tires rapidly become encrusted with marine life, providing protected breeding grounds for many small fish species. The small fish attract larger species that feed on smaller ones, enhancing the populations of species popular with sport fisherman. Primary applications have been along the Florida and Gulf Coasts, with one reef near Fort Lauderdale reportedly containing over two million tires.[7]

This use requires careful analysis of local conditions and reef design to be successful. Currents, storm conditions, water depth, ocean bottom characteristics, bundle design and anchoring methods are among the factors which should be considered. Algae conditions must be added to the list for fresh water applications. Most of the existing reef projects have been organized by sports fishing groups or civic organizations, with some economic support from local communities. Although one source estimates that 1.5 billion tires could be used in artificial reefs, actual usage has been relatively small and is believed to be declining.[8] Peak use may have approached 0.5 to 1 million tires per year in the 1970's, but has been estimated to be less than 100,000 tires per year recently.[9]

Economics may be partially responsible for this decline. Mr. Woodhal, a retired Goodyear employee who has participated in reef projects for many years, estimated that the cost of compressing, bonding, weighting and placing tire reefs could rang from $1.50 to $3.25 per tire, depending on local conditions. This assumes minimum-wage labor and no tire accumulation cost. High unit cost and tight local budgets may contribute to low use in this application. It is unlikely

that reefs could provide a cost-effective use for a significant portion of Minnesota's scrap tires since annual costs would run $5-10 million per year plus collection and transportation charges. Small projects may deserve consideration if aquatic conditions and local economic benefits are appropriate.

Miscellaneous Application

Whole scrap tires have been used in many other beneficial ways. A decorative border may be provided by painting and partially submerging tires along a driveway. Tires may be banded and partially submerged on top of high erosion areas to hold soil in place until vegetation becomes established. Horizontally assembled stacks of tires have been tested as impact cushioning devices along highways.[10] Floating breakwaters have been constructed from scrap tires to protect small marinas. All of these applications exemplify the creativity which has been applied to scrap tires. However, due to their lack of aesthetic popularity, these applications will not realistically consume a significant share of Minnesota's annual tire generation.

MECHANICALLY PROCESSED TIRE APPLICATIONS

Tires may be mechanically processed to achieve size reduction or form changes required for some applications. The following sections describe significant uses for mechanically processed products derived from scrap tires, with emphasis on applications deserving, or under, consideration within Minnesota.

Fabricated Products

Tires may be split, then punched or stamped, to yield shapes suitable for fabrication into useful articles. Examples include floor mats, gaskets, sandals, dock bumpers and fences. The diversity of this market makes volume estimation difficult, but some sources have reported that total national usage has been 3-5 million tires per year.[11,12] This industry is relatively mature (since 1915), but will probably continue to grow as new uses are created. Minnesota has one operation in Eveleth, Minnesota that produces fencing for horse stables, but usage is relatively small.

It is unlikely that a new use or new manufacturer in Minnesota would be able to dramatically increase this mature, competitive market enough to use a significant portion of Minnesota's tires. If a manufacturer proposes to solve the State's tire disposal problem through this method, the State would be wise to request and verify large volume contracts.

Sludge Composting

Shredded tires have been used experimentally in Windsor, Ontario as a composting aid in wastewater treatment plant slude processing, displacing wood chips. Tire chips (about 2" squares) are mixed with the sludge to minimize air channeling during composting, then separated from the compost prior to its sale and recycled. The tire chips must have a long life to justify their cost compared to wood. Market potential would be limited to the sale of an initial chip inventory to publicly owned treatment works using this composting process for sludge disposal.

This application is considered purely experimental at this time with inadequate performance data for market analysis or acceptance projections. The Iron Range Resource and Rehabilitation Board (IRRRB) is assisting Grand Rapids in evaluations of sludge composting versus incineration. A rubber chip trial may be performed and could provide useful data for market projections.

Crumb Rubber

Scrap tires can be reduced to fine granules called crumb rubber by cryogenic or mechanical processing. The resulting product retains many of the properties of rubber and can be combined with binders for use in a variety of applications. Examples range from molded rubber products like railroad ties and crossings to asphalt products for highway seal coats and athletic surfaces. The diversity of this market and absence of published data make volume estimates difficult. However, discussions with people directly and indirectly involved with this industry have resulted in an approximate definition of major market segments and critical business parameters. The cited usage ranges should at least provide a perspective for the State of Minnesota.[13,14,15,16,17]

Market Volumes/Capacities

Volume estimates for 1984 as based on the composited comments of contacted parties:

Table 6.1

MARKET DEMAND

Market Use	Annual Volume (mm lbs)
Asphalt Rubber, including crack sealers and roofing materials	17-22
Athletic Surfaces	8-13
Pneumatic Tires	10-15
Friction Brake Materials	5-8
Molded Rubber Products	8-12
Miscellaneous	3-5
Total	51-75

The total market is between 60 and 65 million pounds per year. The industry's existing production capacity is estimated to be between 100 and 144 million pounds per year indicating capacity utilization of roughly 50-60% due to limited market demand. Severe capacity under-utilization is confirmed by the National Association of Recycling Industries (NARI) 1984 Census Report on recycling industries.[18]

A survey of 234 potential buyers for crumb rubber was conducted to further define potential markets for crumb rubber. This list was developed from Rubbicana 1984, a directory of North American Rubber Product Manufacturers as published by Rubber and Plastics News. Of the 234 companies, 200 were either not requiring crumb rubber or were out of business. The survey further verified that supply exceeds demand.

For a close evaluation of the crumb rubber market near the Twin Cities, refer to Table 6.1A (p.208). The information presented in this table was developed from the market survey

TABLE 6.1A

MARKET DEMAND WITHIN 800 MILES OF THE TWIN CITIES

WITHIN RADIUS OF-	NAME/ LOCATION		PRINCIPAL SIZE USED (MESH)	QUANITY/YR (IN 1000's of LBS.)	CURRENT AVERAGE PRICE ($/lb. DELIVERED)	TOTAL MARKET VALUE (x 1000)
400 miles	Anchor Rub. Mfg.	Chicago,IL	30	1	$0.18	$0.18
	Henry Eng.	Moline,IL	--	--	--	--
	Sponge Cushion	Morris,IL	100	--	--	--
800 miles	Moore Rub. Co.	Shawnee,KS	60	13	--	--
	Acro	Fort Wayne,IN	40	480	0.13	62.4
	Cupples	St. Louis,MO	Bales	80	0.40	32.0
	Barr	Sandusky,OH	Dust	460	0.21	96.6
	Studebaker	Avon,OH	30	50	0.18	9.0
	Cooper Tire	Findlay,OH	--	2800	--	--
	Bauman-Harnish	Garrett,IN	30	30	0.23	6.9
	Excel	Goshen,IN	--	4	0.29	1.16
	IMCO	Huntington,IN	Buffings	5	0.135	.68
	Syracuse	Syracuse,IN	100	10	0.22	2.2
	Western Pub. Co.	Goshen,IN	100	16	0.2475	3.96
	Rauh	Akron,OH	14	50	0.13	6.5
	Goodyear	Akron,OH	10	10400	0.13	1352.0
	Garrett	Garrett,IN	Bales	-1	--	--
	Mogul	Goshen,IN	Bales	-1	--	--
	Nazar	Toledo,OH	30&40	--	--	--
	Firestone	Akron,OH	50	--	0.15	--
	Newport Ind.	Newport,TN	30	100	0.18	18.0
	Boston Ind.	Brentwood,TN	40	30	0.19	5.7

NOTE: -Asphalt rubber contractors were not identified.
-When figuring transportation costs from the Twin Cities to market add $0.01/lb. within the 400 mile radius and $0.02/lb. within the 800 mile radius.

and was intended to be a comprehensive list. However, some markets may have been missed within the specified distances from the Twin Cities. Regardless, the table gives an adequate representation of market conditions. All markets are adequately being serviced by existing suppliers.

Pricing

The overcapacity in the industry has led to extremely competitive pricing. Current prices vary from $0.11 to $0.15 per pound (FOB production plant) for standard products in the 10 to 30 mesh size range. Some specialized fine mesh products (200-300 mesh) command prices approaching $0.22 to $0.23 per pound, but are required for less than 10% of the non-captive commercial market.

Existing manufacturers service crumb rubber markets from strategically located plants around to country to minimize transportation costs. Transportation can cost about $0.01/lb per 300-400 mile travel distance, so any manufacturing margin can rapidly disappear if the production facility is not properly located geographically. A facility located in Northern or Western Minnesota would have a $0.02-0.04/lb competitive freight disadvantage in most major midwestern markets compared to existing high volume production plants in Chicago(Genstar) and South Bend, Indiana(Baker). This disadvantage is believed to be equal to or greater than the gross margins of existing manufacturers, making it extremely difficult for such a facility to survive economically.

Specific Markets

Many applications for crumb rubber have historically been heralded as massive markets capable of consuming all of the scrap tires in the United States. However, these markets have failed to develop at projected growth rates contributing to industry's current overcapacity. Of the existing major markets for crumb rubber, the only one appearing to offer dramatic expansion potential is its use in asphalt rubber.

A report prepared in 1980 for Genstar Conservation Systems by Consulting and Research Services projected that crumb rubber applications could use basically all of the scrap tires in the country.[19] However, actual usage and growth have fallen considerable short of this objective. The Asphalt Rubber Producers Group currently estimates that total asphalt rubber usage by its members in 1985 will be 30,000 to 35,000 tons, up slightly from 29-30,000 tons in 1984.[20] Since these compounds

generally contain less than 20% crumb rubber, this represents a crumb rubber market of 12-14 million pounds. This total market was estimated at 17-22 million pounds due to inclusion of non-member usage and smaller asphalt rubber applications in roofing materials. Over 70% of this will be in Texas, Arizona and California, markets not practically serviceable from Minnesota. Minnesota itself used only 90 tons of asphalt rubber for test tracts in 1984 and does not anticipate significant usage in 1985.

The ARPG objective is to double usage in the next five years, but the low historical growth rate indicates that this objective may be difficult to achieve. The following is a brief discussion of the two major asphalt rubber applications where this growth may occur.

Rubberized Sealcoating

Rubberized sealcoating has been in use for several years. Its testing began in the mid 1960's. Sealcoating is used as an interface seal between a base and top layer. A parallel product to rubberized sealcoating is rubber-asphalt crack sealer that is used for filling and sealing cracks in pavements. Both applications, which use asphalt and finely ground crumb rubber have shown favorable results. Rubberized sealcoating benefits, as reported by the City of Pheonix in October 1981 are:[21]

1. Prevents crack reflection, i.e. interrupts reflection of cracks from a base layer to new overlays of asphalt concrete.
2. Prevents spalling (chipping) at pot hole edges
3. Provides a flexible surface to absorb traffic stresses.
4. Eliminates or reduces the need for maintenance for at least eight full years.
5. Adds to the life of the pavement by as mush as two years.
6. Delays need for reconstruction.

The City of Pheonix cost comparison (1981) for asphalt rubber chip seals vs. conventional chip seals is $1.40/sq. yard vs. $.72/sq. yard respectively, or a factor of 1.9 times that of conventional seals. However, normal life expectancies of conventional chip seals are six to eight years compared to 10

to 12 years for asphalt-rubber, so annual costs are roughly equal. In Phoenix, the rubber-chip seals normally required only routine maintenance while conventional chip seals required more extensive maintenance such as crack filling and pot hole repair.

The National Seminar on Asphalt Rubber Report" (U.S. DOT 1981) provided further information relative to these products. At this seminar, the following conclusions and recommendations were made regarding asphalt-rubber binders (rubberized sealcoating and crack sealants):[22]

1. Asphalt-rubber is a viable material that provides an attractive economic alternative for construction, rehabilitation and maintenance of our nation's roadway network. Economic advantages stem from increased life and reduced thicknesses of pavement sections. In addition, the material is attractive from an energy and resource recovery point of view.

2. Asphalt-rubber is a new binder system and does not respond to analysis by conventional tests associated with asphalt technology. Furthermore, the binder and the binder-aggregate system are both chemically and mechanically complex and far from being fully understood.

3. A nationally recognized group of users, producers and researchers needs to help formulate research and development programs, monitor research, sponsor conferences, workshops, etc. It is recommended that the Transportation Research Board create a Task Force on Asphalt-Rubber Binder Systems and that ASTM Subcommittee D04.37 actively pursue the standardization of test methods, quality control techniques and definitions. User-producer workshops should be continued to provide an open forum for discussion of the problems associated with the new and emerging binder systems.

4. Additional research, development and implementation efforts need to be undertaken to improve the economy and predictability of performance of the asphalt-rubber binder for specific applications.

Rubber-Asphalt Concrete

Rubber-asphalt concrete is another road building material which uses crumb rubber. The specifications for rubber used in this application are less stringent than those for sealants

since the material is being used as an aggregate replacement rather than asphalt additive. When used, the amount of asphalt binder must be increased. Manufacturers of Plus Ride (TM), a rubber additive to the asphalt concrete, claim:[23]

1. At least twice the durability of conventional pavement.

2. Absence of hot weather flushing (i.e. when asphalt is hot, the oil will come to the top). Rubber will stop or reduce this activity.

3. Tenfold increase in fatigue life over conventional mix.

4. Reduced damage from moisture.

5. Up to 50% reduction in traffic noise.

6. Reduced glare.

7. Improved resistance to damage by studded tires and chains.

8. Thinner overlays may be used than with conventional pavement.

Some cost estimates put the price of rubberized asphalt concrete at 72% higher than that of traditional mix. Nonetheless, the true long-term benefits to justify the increased cost have yet to be adequately documented or demonstrated. A federal study managed by Scott Schuller of Texas A&M University was unable to establish definite conclusions.[24] The true cost benefit may take several years to document due to the inconsistency of data developed in the report. At best, one might preliminarily conclude that rubberized asphalt concrete has worked well in some applications, but not in others.

Minnesota Experience

The best indicator of potential local markets for crumb rubber use in sealants or asphalt concrete may be a review of the state of Minnesota's experience. Five test applications have been performed:

1) 1979 - Rochester to Zumbro Falls.

2) 1980 - Detroit Lakes to Hawley.

3) 1983 - Junction Hwy. 68 to Redwood Falls.

4) 1984 - Cosmos to Hwy. 22.

5) 1984 - Hwy. 61 South of Forest Lake & I.94 at St. John's Exit.

The most recent test program used Plus Ride (TM). The objectives of this program were to evaluate the rubber modified, plant mixed, bituminous surface mixture Plus Ride based on its success in reducing the amount of chemicals needed for ice control and its ability to reduce pavement cracking. A summary of the preliminary findings and conclusions for Test 5 are:[25]

1. The mix design procedures for combining asphalt, crumb rubber, and aggregate have not been developed to the point where optimum percent rubber additions to asphalt cement can be determined.

2. The rubber modified asphalt mixture is more susceptible than conventional mixtures to composition problems when adverse weather or equipment problems occur. However, rubber modified asphalt mixture placement is similar to conventional mixture placement if equipment and weather conditions are favorable.

3. Shortly after construction, no difference in tire noise level was observed when compared to conventional asphalt surfaces.

4. The rubber modified asphalt mixture wear course (road surface) has lower friction numbers compared to the conventional asphalt mixture course which would tend to indicate traffic would create less heat and wear on the road surface.

5. Rubber-modified asphalt is slightly rougher.

6. No de-icing benefit has been noted to date; additional observations are necessary. It is thought that rubberized asphalt concrete would create a flexing action in road surface which would break up ice accumulations.

7. When placement problems occur, such as bad weather, there is a high probability of surface raveling, i.e. particles not adhering and traffic breaking them apart.

8. The rubber-modified asphalt mixture does not eliminate transverse reflective cracks, i.e. cracks from the base moving to the new layer. (Special Study 387, Construction Report, 1985, MDOT).

The (MDOT) Office of Research and Development, has not been able to develop conclusive evidence from the test areas demonstrating that the net benefits from using rubberized asphalt applications outweigh the additional costs. In some areas, only time and the wear life of the road will determine the maintenance benefit. The use of crumb rubber for rubberized asphalt concrete in Minnesota, which could use the largest quantities of recycled scrap tires for this industry, is limited at this time (roughly 90 tons for testing in 1984), and will require additional testing and evaluation. Rubber for use in crack sealants and overlays has been used widely, but all current and projected applications would demand only small quantities of crumb rubber.

Legislative Actions

Two related legislative acts had been expected to increase demand for rubberized asphalt. The following is a summary of their intent and impact.

1. The Surface Transportation Act of 1982 - The federal government provides a 5% increase to state highway allocations for use of reclaimed materials in highway construction, to include both recycled asphalt and rubberized asphalt.

   The cost did not increase the total highway budget allocations available for individual states. Only states which do not have adequate matching funds to qualify for their total federal allocation will benefit from this act.

2. The Resource Conservation and Recovery Act reauthorization in 1984 included a revision of federal government procurement guidelines to place a priority on recovered materials.

   This guideline only applied to federal agencies procuring material for federal facilities or projects. It is unclear how this might affect those state projects that are federally funded. The guideline does not require, but rather encourages, recoverable materials use such as rubberized asphalt or recap tires if economic and net benefit analysis has demonstrated the product is the same or better than other materials for a specific use.

Rubber/Asphalt Concrete - Preliminary Conclusions

Several state departments of transportation were surveyed as to the acceptance of rubberized asphalt (other than crack sealant). These states include: Alaska, Alabama, Arizona, Arkansas, Colorado, Connecticut, Florida, Illinois, Iowa, Minnesota, North Carolina, Oregon, Pennsylvania and Washington. General consensus as to the reasons for the lack of acceptance included:

1. Despite years of testing, the economic benefits of using rubberized asphalt have not been clearly established given a higher up-front cost and questionable length of resistance to road wear (especially with the newer and heavier diesel trucks).

2. Authorities agree that the process of laying rubberized asphalt is as important as price in determining effectiveness. Applications are subject to greater influences by weather and method than the conventional mix.

3. Several state authorities indicated there was a lack of sufficient information on rubberized asphalt technology.

4. Several states are still testing and feel that competing products need to be evaluated in terms of a cost/benefit structure.

5. Perceived technical problems in its applications; foaming and high temperature requirements.

Many state officials feel that rubberized asphalt is the product of choice for crack and joint sealing. The states

surveyed forecast that less than 50 miles will be researched in the next five years. Consensus by the states' highway departments include that more testing and standardization must be done to prove the ultimate benefits of rubberized asphalt concrete. Furthermore, some standardization must be done to allow for the ease of application. This standardization is being studied by the American Society of Testing Materials Engineers. The Minnesota DOT has no immediate plan for the use of rubberized asphalt in the future.

Other Markets

The remaining market segment (athletic surfaces, pneumatic tires, friction brake materials, and molded rubber products) are considered to have limited annual growth potential. A major technological or economic change would be required to allow the annual use in these markets to expand by more than 10-15 million pounds within the next 3-5 years.

Market Conclusions

The total market for crumb rubber is 60-70 million pounds per year, and significantly greater production capacity exists. Some of this volume is produced from buffing dust generated in retreading operations, with the remainder obtained from grinding whole scrap tires. If the entire volume came from scrap tires, total national production would require only 3.0 to 3.5 million scrap tires. To consume a substantial portion of Minnesota's annual scrap tire volume, a new crumb rubber facility in the state would be required to:

1) Capture 100% of the existing national market against substantial competition, or

2) Develop new markets equal in volume to all of those previously developed by companies with sizeable resources in a mature industry.

Either scenario must be considered improbable. It is possible that a major technical innovation could accelerate market growth. However, development time and resource requirements would probably prevent this from providing a short term solution to Minnesota's problem. With the industry's current overcapacity, a company may be able to purchase up to 20 million pounds of crumb rubber per year at a cost approximating its own production costs, especially considering its depreciation of new machinery. It should also be noted that technical innovations leading to significant premium pricing provide a strong motivation for competitive development efforts leading to minor variations which can quickly restore competition and dramatically reduce pricing differences. As a result of the limited market, strong

competition and other discussed factors, it appears unlikely that crumb rubber production offers an immediate recovery solution for a major portion of Minnesota's scrap tires.

CHEMICAL/THERMAL TIRE PROCESSING APPLICATIONS

Rubber Reclaiming

Rubber reclaiming involves chemical or thermal devulcanization of the rubber structure, thereby rupturing the carbon-sulfur bonds that cross-link the molecular matrix. The resulting devulcanized rubber may be blended with virgin rubber in the sidewalls of new tires or used in other rubber products. In the early 1940's, up to one-third of total rubber consumption was provided by reclaimed material.[26] Devulcanization of natural rubber was accomplished with heat, yielding a product with characteristics similar to virgin rubber in most applications.

As styrene-butadiene rubber (SBR) replaced natural rubber, devulcanization became more difficult and required a combination of chemical and thermal treatment. A variety of reclaiming processes have been developed and discussed in the literature.[27] These processes require the scrap tire to be ground and screened, then subjected to processes involving digestion, heating, and mechanical processing. The product consists of shortened polymer chains still cross-linked in a three dimensional network and it is not similar in properties to virgin material.

The reclaiming industry has been declining since 1960. Consumption has declined from 32% of new rubber in 1941 to less than an estimated 5% in 1984. The economic advantage of reclaiming continues to decline in comparison to the properties of new rubber and other substitute materials. Most major tire manufacturers have closed their captive reclaiming facilities, and there is still excess capacity in the industry. Unless there is a dramatic increase in the cost of new rubber, which will restore reclaiming demand through economic incentive, it is unlikely that any new reclaiming facility is necessary.

Pyrolysis

Pyrolysis is the thermal decomposition of complex organic compounds into lower molecular weight components, also called destructive distillation. It is not a new process, having

been used in the early 19th century to study the structure of natural rubber. When applied to scrap tires, the products include a gas stream used to fuel the process, a liquid stream which is blended to yield a salable, fuel oil, and a solid or char stream containing a mixture of titanium dioxide (from white sidewalls), zinc oxide, and the multiple types of carbon black present in tires. It represents an "engineer's dream" because it allows recovery of theoretically useful compounds from waste materials.

Pyrolysis has been studied extensively. Over the last 20 years, a number of process, equipment, and operating variations have been developed for scrap tires. Many of these variations have been reviewed in detail in a November, 1983 U.S. Department of Energy publication entitled "Scrap Tires: A Resource and Technology Evaluation of Tire Pyrolysis and Other Selected Alternate Technologies."[28] Cited reactor types have included fluidized beds, rotary kilns, traveling grate chambers, retorts, molten salt and hot oil baths, plasma units, and microwave chambers. Tire pyrolysis has been conducted in reducing atmospheres (absense of oxygen) and oxidizing atmospheres (using air or steam as partial oxidant). Wide variations in operating temperatures have been explored to optimize production and quality of product streams.

Tremendous financial and technical resources have been applied to the development of viable pyrolysis systems. The DOE report alone identified 31 projects involving pyrolysis, and of these, 15 had been abandoned for technical and/or economic reasons as of January, 1983, including extensive projects sponsored by companies such as Firestone, Goodyear/Tosco, Occidental, Uniroyal, and Nippon.[29] The remaining projects that were in design, construction, or operation, failed to identify any commercial scale facilities that are currently operating on a viable basis consistent with probable economic conditions in Minnesota.

The reasons for project failure include:

1) Operating Problems: Utilizing complex equipment at high temperatures in an oxygen starved environment to produce several inter-related (and quality sensitive) products can create many equipment, safety, quality control and maintenance problems. As a result, some plants have been unable to sustain adequate operating rates, encountered high maintenance expense, had product quality variations decreasing product value, or encountered fires or explosions from air infiltration.

2) Feed Availability/Processing: Many commercial scale projects require large quantities (1-10 million) of tires annually. Collection of these quantities at low cost within a service radius may be a problem. In addition, many processes require shredded tire feed material meeting defined size and wire content specifications. Shredding equipment, capital, downtime, maintenance expense, and feedstock variations have increased raw material costs and have a negative impact on operating costs, product quality, on-stream time, and other factors affecting viability.

3) Product Quality/Markets: Pyrolysis attempts to produce three inter-related product streams (gas, oil, char) from a scrap raw material containing mixtures of many components. Changes in operating conditions that improve the quality or yield of one component often have a negative impact on one of the others. Therefore, it is difficult to optimize quality and yield of both major revenue products (oil, char). The oil is suitable only as a low-cost blend stock in low-grade fuel oils. In addition, the char contains multiple grades of carbon black, zinc oxide, titanium dioxide, and other trace components, resulting in low value and limited markets. Physical and chemical processes for char purification have been researched, but have proven uneconomical.

4) Economics: All of the above factors may have a negative impact on a pyrolysis project. The combination of high capital, operating, and maintenance costs, combined with low revenue resulting from downtime and poor product quality/market value, have resulted in the failure of many projects.

Although the history of pyrolysis is negative, there may be positive unidentified current or future developments. Privately financed pyrolysis facilities, meeting appropriate environmental regulations, could be sited in any suitable location. The state of Minnesota, however, should carefully scrutinize any pyrolysis proposal that requests state or local financial assistance. As part of its evaluation process, the state may wish to establish the following criteria:

1) Proven Process: The process and equipment should have operated continuously at a scale representative of a commercial operation to demonstrate projected reliability, safety, and operating economics. This demonstration period should involve months.

2) Product Quality/Markets: Product quality, variability, market, and pricing should be documented. Through products obtained from previous operations, it may be reasonable to request valid contracts with end users for the quality, quantity, and pricing stated in financial projections.

3) Feedstock Quantity/Preparation: Through operation and the evaluation of site-specific Minnesota data, the firm should be able to demonstrate its ability to collect and process required feedstock quantities at projected cost levels.

4) Capital Costs: All plant capital and site preparation costs should be well-defined. Performance of any equipment scaled up from demonstration size should be evaluated carefully.

5) Economics: After verification of the economic components, overall project economics should be viable, with required tipping fees equal to, or lower than, alternative disposal methods (hopefully less than $0.25/tire plus transportation to minimize the incentive for illegal scrap tire disposal). The economic evaluation should include a sensitivity analysis of key capital and operating parameters to assure viability under probable variations.

6) State and Local Impact: The consequences of unsuccessful operation should be considered carefully. Related factors may include minimum tire inventory, irrevocable removal bond, and financial guarantees.

Direct Incineration of Scrap Tires

A refined scrap tire used for direct incineration is called tire derived fuel (TDF). TDF is further defined as a scrap tire that is shredded and processed into a rubber chip with a range in size of one to four inches. TDF may also be processed to remove bead wire and radial wire, and depending on the amount of wire removed, the TDF has an energy content ranging from 14,000 to 15,500 BTU's/lb. The specifications for a TDF product are customer-specific.

Incineration for heat recovery is currently a growing commercial use for large quantities of scrap tires. Its acceptance as an alternative fuel for industries and utilities has been slow but steady. The processingg of whole tires for fuel applications may not achieve the goal of re-use into other products, but does offer recovery for its heat value. Alternative fuel markets may provide the best potential for

immediately solving a scrap tire disposal problem while other markets are developed into viable options.

Industries that have tried and/or are currently using TDF include pulp and paper, cement, and electrical utilities. In all the cases where TDF is being used, it is sold at a price competitive with existing fuels such as coal or wood waste. Competitive pricing offers an incentive to examine TDF as an alternative fuel. A partial list of companies that have either successfully tested TDF or are currently using the material includes:

1) Owens Illinois - Wisconsin

2) Canada Cement Lafarge Ltd. - Montreal, Quebec

3) Louisiana-Pacific - California

4) Willamette Industries - Oregon

The use of TDF presents environmental concerns. The high amount of fixed carbon (27.96%) suggests particulate concerns and ash (4.78%) suggests solid waste concerns. Other elements of concern, include sulfur (1.23%) and zinc (1.52%). (Refer to Appendix IH for analysis). Highly efficient stack controls and specifically designed material metering systems are required to overcome environmental concerns of particulate control (a function of incomplete combustion of carbon and the entrainment of zinc oxide). These systems provide assurance that a constant, consistent, and a precise blend rate with the normal solid fuel will meet stack emission limits. All facilities currently using TDF, as allowed by their air discharge permits, have installed a metering unit to provide direct control of the feed rate.

Sulfur content of TDF meets the legal limits of most states for heavy residual fuel oil (1.5%). If a boiler uses only wood and/or low sulfur coal, then a slight sulfur increase may be a problem. Some Minnesota boilers burn a coal with a lower sulfur content than TDF. Each boiler must be evaluated to determine any sulfur change as a function of fuel mix. (See Incineration Study Task H.)

States have been receptive to the industry's desire to test and use TDF. States and provinces where trials have either been conducted or current users of TDF exist include: Alaska, British Columbia, California, Idaho, Michigan, Minnesota, Oregon, Quebec, Virginia, Washington, and Wisconsin. Two reasons why more industrial sources aren't using TDF consistently or in large quantities are: 1) lack of consistent supply; and 2) lack of quality specific TDF, i.e. material that will feed easily.

The Minnesota Pollution Control Agency contracted with the United Power Association (UPA) of Elk River, Minnesota to do a test burn of TDF with coal in 1979.[30] The results of the test indicated successful TDF-coal blending rates at 6.4%, 10.4%, and as high as 50% by weight. The facility has a bag house for particulate control. UPA did not continue burning TDF because of an insufficient supply, and a poor quality TDF created significant handling problems. (i.e., wire clogging feed systems.)

Problems that must be solved in developing TDF as a viable option for recycling scrap tires (as reported by United Power Association, Cement Lafarge of Canada, and other industrial sources) are:[31]

1) Supply: If capital investments are made to retrofit or construct equipment to use TDF in a boiler, adequate material must be available to achieve a return on the investment.

2) Quality: TDF must be in a form that will allow it to flow along a fuel handling and metering system without creating problems.

3) Environmental Trials must be done to define what parameters a facility using TDF must operate within, i.e., can a facility burn 5%, 10%, 20% etc. TDF by weight and meet the environmental regulations.

4) Cost: The price of TDF must be competitive with existing fuels in order to encourage its use.

5) Processing Capabilities: A processor must have the technology to supply a quality TDF at a cost competitive with existing fuels.

MINNESOTA AND OTHER SCRAP TIRE PROCESSORS

The following discussions focus on operations within the state that have either attempted or are attempting to process tires into TDF and other products. As part of an evaluation process, the state should use the same criteria as outlined for pyrolysis projects.

Amex Tire Company
Savage, MN.
Person Interviewed: Mr. Del Wisehart

Amex Tire Company has operated for eight years in the Minneapolis area as an established tire retailer and scrap tire collector. Del Wischart and Ted Pederson are the proprietors. Their tire processing operation has been in the development stage for several years, and at their Savage location retail sales, collection/grading, and processing are under one roof.

The emphasis of Amex is the collection and grading of tire casings. Their development of a container, drop off system provides for effective collection. Amex claims the ability to deploy up to 80 trailers. This collection process provides its retail outlet and other recap shops with graded casings. Unusable or scrap casings are transported for storage to a demolition landfill near Mankato.

Amex's other desire is to develop a method for processing scrap tires into a marketable product. Amex has provided limited amounts of processed material to primary fuel markets. They processed a limited amount of product for the 1980 test burn at United Power, and are currently negotiating with N.S.P. for a test burn. They have also supplied rubber chips for projects involving sludge composting and nursery use. Amex is not interested in processing tires for a fuel additive. Instead, the company feels that their processing knowledge may allow them to enter the granulated rubber or rubberized asphalt markets. The addition of several crackermills and a screening method would be needed for this process. Mr. Wisehart expressed concern regarding the present machinery's ability to handle a greater number of steel radial tires. Methods for efficiently debeading truck radials, and improvements to machinery, are being sought in order to increase production rates.

Recent improvements on the processing system indicate a commitment to solve their tire processing problems. Their expertise lies in the collection and grading of tires. Amex, however, would like to become a totally integrated collection

and recovery service. To do so the company requires a consistent flow of over one million tires and additional financial backing.

Amex has a demonstrated record in the collection and grading of scrap tires. Their experience with processing, however, has not been successful on a large scale production basis, and the company is making an effort to solve its production problems.

Minnesota Tire Recycling, Inc.
Andover, MN
Persons Interviewed: Mr. Milt Lampanta
Mr. Robert Sayers

Minnesota Tire Reycling, Inc., previously known as North American Tire Tech, was incorporated in December, 1984. The change of name took place when new ownership, represented by Milt Lampanta, purchased the operation. This purchase included the processing facility and rights to the stockpile owned by Mr. Cecil Heidleburger. The operation is managed by Robert Sayers.

Minnesota Tire Recycling (MTR) processes whole tires into two inch minus chips that are sold as a fuel supplement (TDF). Mr. Lampanta anticipates, that as of September, 1985, the operating capacity of the facility will be at 3 million tires per year. When the facility was purchased the previous owner claimed that it was producing 700 tons per month. In June, MTR claimed it could produce 2000 tons per month and that by the end of July it expected a 2500 tons per month capacity. Mr. Lampanta feels that at this anticipated rate, the stockpile located on the property will be gone in 2 to 3 years.

The processing method uses a one stage shredding system. The equipment is that of the previous owners and has been recently upgraded for higher production capacities. Expansion plans will use premanufactured machines presently on the market.

MTR is currently having tires delivered to its site by tire collectors. The company has been working with these collectors in an effort to gain guaranteed delivery of tires. The company is proceeding with the development of its collection system one that uses freight van spotting in major generation areas. Presently, MTR has trailers located throughout the state, with an anticipated 30 trailer fleet by the end of the year. The present spot fee for these vans is $.50/tire. The tipping fees at the facility, in June, 1985, were $16.00/ton or $.16/tire for large quantities.

MTR sees a positive future. The company feels that it is one of the few processors within the industry that has both credibility and has sufficient financial support. The company is too new under its reorganization to a record of operation, and the company's financial resources were not revealed to verify its claims.

The market for MTR's product is as a fuel supplement. It is researching other products and markets. The expansion of the product line is to be followed by the expansion of processing

facilities throughout the United States. MTR may be a viable option for the tire disposal problem in Minnesota.

MTR was concerned about the past practice of hazardous waste accumulation and burial on the MTR property at the tire stockpile location. During a visit to the site in June, 1985, specific areas of the stockpiled tires were noted as mixed with the 55 gallon storage drums and ponds allegedly contaminated with hazardous waste. MTR was concerned about the possible contamination of the site, as well as the clean up requirements.

An investigation should be conducted to identify the following:

1) Have the stockpiled tires been contaminated by the hazardous waste, and if so, what portion?

2) Are contaminated tires currently being processed and sold as fuel to MTR's incineration market?

3) If the tires are contaminated, what is the risk to MTR's employees and what consequences or risks might MTR's market experience in their stack emissions, labor force and transportation networks.

Appropriate action should be taken to prevent the possibility of exposure or contamination, to define the risks, and to provide the necessary site clean up.

Rubber Research Elastomerics, Inc.
Minneapolis, MN.
Person Interviewed: Mr. Fred Stark

Rubber Research Elastomerics, Inc. (RRE), was formed in 1961 as a custom compounder of buytal rubber. This process, developed by Fred Stark, is a chemical modification that increases the bonding properties of reclaimed rubber. The product has been patented and trade marked as Tirecyle.

RRE is located in Southeast Minneapolis. The facility burned in 1984, but limited operations continue on the site. Currently, orders are being supplied through licensed processors, with the chemical compound supplied by the Minneapolis site. Mr. Stark says that current annual demand justifies production of between 6.5-7 million pounds of Tirecycle. This equals the consumption of 350,000 scrap tires per year. Crumb rubber feedstock for Tirecycle is supplied by buffings from the areas recap shops.

RRE has proposed a facility in conjunction with the city of Bovey, and Itasca County. This arrangement is based on RRE providing the process and the other parties providing the capital investment. This facility is billed as the solution to the state's tire problem, with a production capacity of 60 million pounds per year of Tirecycle attainable within five years. This figure represents the estimated generation rate of scrap tires within the state.

The proposed facility involves the processing of tires through a series of cracker mills. This method produces crumb rubber with liberated wire. The fiber is extracted and the rubber is treated to become reclaimed rubber or Tirecycle. Tirecycle is used in a variety of molded rubber products. Research areas for the product are new tires, industrial products, and polypropelene products.

RRE sees a bright future with a proper amount of local and state funding. The move to northern Minnesota will provide jobs in an economically depressed area, diminish a stockpile located in that part of the state, and provide the pilot project for RRE's future work. Mr. Stark suggests that the economics of such a facility could support a plant every 400 miles. The location of the facility generation areas is not important. According to Mr. Stark, the value of the product is great enough to support the operation and provide the ability to bid or purchase scrap tires. Mr. Stark suggests that the product has such great potential and is so vast that the problems associated with its current marketability will be overcome once production begins on a consistant basis.

RRE makes many claims but provides little documentation for those claims. RRE must provide more substantial evidence regarding its proposal before an evaluation of it is possible.

Pilquist Recycling, Inc.
Stillwater, MN
Person Interviewed: Mr. Wally Pilquist

Pilquist Recycling, Inc. is owned by Wally Pilquist. Mr. Pilquist has been in the auto salvage business for most his life and is now semi retired. In 1981, he ventured into tire recycling, with a private investment funding this project. He has collected and stockpiled 200,000 tires at his location south of Bayport.

Pilquist Recycling, Inc., is experimenting with pyrolysis for the recycling of tires into marketable products. The company is using a facility built to Mr. Pilquist's specifications by a custom fabrication shop. The pyrolysis plant, he suggests, will process 1000 pounds of tires per load. The products of this process are oil, gasses, and carbon char. The facility has adequate storage for these products. The plant is currently not in operation because of a fire at the facility and lack of funding for a restart.

Mr. Pilquist views pyrolysis as the answer to the tire problem in Minnesota. His experience in processing tires with a hammermill and shredder produced poor results due to machinery failure. He sees the shredding process as unsuccessful because of high maintenance costs associated with contaminated tires. He also feels that the market for a shredded product has little potential for development and that pyrolosis doesn't have these problems. The product also contains a higher value than raw reclaimed rubber, according to Mr. Pilquist.

Wally Pilquist wants to restart his pyrolysis plant in the near future. He also has the option to purchase the rights to a pyrolysis plant that is currently under development. This purchase will occur only if the prospective plant proves its claimed capabilities. Mr. Pilquist's past knowledge of his process may assist in the verification of the manufacturer's claims.

Pilquist Recycling has recognized the need for large scale tire recovery within the state. It has financed and produced a limited product. The future poses a challenge if it's funding problems are met.

Bradley Manufacturing
Eveleth, MN
Person Interviewed: Mr. Lee Bradley

Bradley Manufacturing, previously known as Reclaimed Rubber Products, is a family owned and operated business that has operated for four years. It's sales and production requirements to date have only created part-time employment for family members. It is Lee Bradley's desire to develop the markets for his products so that the operation could provide full-time employment for him and a small staff.

Bradley Manufacturing processed approximately 1500 fabric passenger tires in 1984. The process involves the splitting, cutting, punching, and assembly of rubber pieces in a labor intensive, low capital manufacturing environment. The whole tire is used in the process, except for the bead wire and a small outer area of thick rubber.

The major product line is currently in the livestock industry. These products include fencing, lead/lunge lines, feeders, haynets and other specialty items. The horse industry is the major target for these products, and they have received the praise of veterinarians. Several other product lines exist, and of those, matting and erosion control devices are significant production groups. The matting product line encompasses both commercial and consumer markets, and includes products such as entrance, non-skid surface, and fatigue matts. The erosion control product line has been developed with some success.

Bradley Manufacturing is optimistic about its future. The development of the product line has been accomplished and proven through consumer and commercial use. Lee Bradley has placed his current emphasis on marketing because the company must overcome the skepticism attached to products that are made from recycled tires. Mr. Bradley requires professional assistance for the research and development of his markets. The current operation cannot support this effort.

Bradley Manufacturing may be viewed as having the potential to handle the fabric cased tires generated within a small region of the state. Its long term viability depends upon its ability to develop sufficient markets. The process, labor intensive and with a low technical and capital investment, may provide a stable workplace for several employees.

A&D Tire Recycling
Minneapolis, MN
Person Interviewed: Mr. Ronald E. Kladt

A&D Tire Recycling, a division of Doc's Auto Parts, is owned and operated by Ronald E. Kladt. The tire recycling division began operation in 1980. The operation stopped production after several months because of production problems.

Ronald Kladt extensively researched shredding machinery to find the machine that he felt could process tires. The company purchased two shredding machines to process tires into a fine product of 2 inch size at an acceptable rate.

A & D Tire Recycling received a contract with United Power Association in Elk River to supply TDF during 1980. A&D met the contract specifications until a piece of steel, inadvertantely fed into the machines, caused extensive damage to both the knives and mechanical parts. Mr. Kladt decided not to continue operation because of the high repair, maintenance and shipping costs further compounded by a low price for the product. The city of Minneapolis also had questions about his operation and location.

The A&D Tire Recycling story describes some of the problems involved in the tire processing business. Mr. Kladt suggests that tire processing or shredding in Minnesota has several major drawbacks that include:

1) The price companies are willing to pay for the product is low.

2) Transportation costs are high.

3) Capital investment and maintenance costs are high resulting in little or no return on investment.

4) Location and zoning are important.

5) Weather conditions affect operation.

6) Equipment for shredding is not reliable or proven.

Mr. Kladt feels that tire processing has so many negatives, that the average person should not become involved with it. Since stopping operation, Ronald Kladt has sold his equipment and has stated that he will not enter the market again.

Collier Tire Pyrolysis System
Pontiac, Michigan
Representative: Jack Price, Domestic and Overseas Marketing
Chrystal, MN

A group of interested persons from the state of Minnesota visited the Collier Tire Pyrolysis System in Pontiac, MI on August 5, 1985. The system was not in operation due to a gas explosion which had dislodged the pyrolysis chamber door during start-up that morning. The description and operating economics discussed below are based upon operation observation of the non-operational equipment and data/projections supplied by Domestic and Overseas Marketing.

The pyrolysis system itself is comparatively simple in concept. Whole tires are placed on mobile racks, then moved into one of two parallel pyrolysis chambers. The chambers are rectangular, insulated, box-like structures with ducting systems for removal of gas and oil generated during a reaction. Chamber heating is provided by natural gas during initial start-up, then by combustion of pyrolysis gas and/or oil once the decomposition reactions have been initiated. Vaporized oil is recovered from the gaseous stream in a venturi-scrubber, which also provides some particulate control. Exhaust gases pass through a demister and thermal oxidizer prior to discharge to the atmosphere. Emissions data was not available so no judgement can be made on regulatory compliance for this control scheme. Char containing carbon black, titanium dioxide, zinc oxide, and other ash is recovered from the mobile racks at the end of the processing cycle.

Economic projections provided by Collier indicate a 10-15% return on the $3.5 million in capital required for future two-chamber systems capable of processing 1.25 million tires per year. Collier's projections assume yields of 1 million gallons of blendable oil per year at $0.56 per gallon, 8 million lbs. of carbon black ash per year at $0.55 per pound, and tire tipping fees of $0.52 per tire. Limited quantities of oil and char have been sold to intermediaries at these prices. Collier's sales contract for the char is with a marketing representative, not a major direct user of the material. The inability of viable markets to absorb large quantities of low-grade char has led to failure of many other pyrolysis projects. The projected tipping fees are significantly higher than those required for profitable operation of similarly sized crumb rubber or tire derived fuel processing centers. Projected economics are particularly vulnerable to capital and maintenance cost overruns, decreased revenue from limited char markets, and lower tipping fees required by comparative tire disposal market conditions.

Minnesota Experience Summary

The information provided in Tables 6.2-6.2B (p. 234), was provided by company officials. No written documentation verifying the facts was provided.

The companies reported on are those that were identified as possible processing facilities. Conclusions as to the viability of the individuals listed in Table 6-2 can only be made based on the factors listed. Because of the poor records of most scrap tire processors, both in Minnesota and nationally, processors must be further scrutinized to determine and assure viability.

TABLE 6.2

OPERATING PROCESSORS INTERESTED IN MINNESOTA

COMPANY NAME	FACILITY LOCATION	DESIGN FACTORS		TRACK RECORD		FINANCIAL FACTORS			CONFIRMED MARKETS	PRESENT OPERATING STATUS	LAND FILL
		TECHNOLOGY	DESIGN CAPACITY	OWNERSHIP	YRS OF OPERATION	CAPITOL COSTS	FINANCING	PRODUCTS			
J. Hall Marketing	Pontiac Mich	Pyrolysis whole tire, batch	3000 auto tires per 24 hr period	private	<1 yr.	$1.25 million	private	•oil •char	•below market oden ended	operating	No
						$100,000 operation agreement	private financial institut-ions	•oil •char •gas •metals	•not •confirmed •consol. oil takes all products	under investi-gation by State & Federal authorities	No
Consoli-dated Petroleum & Refining Co.	proto-type in Calif. Full scale proposed Minn.	Pyrolysis split tire, batch	6,782 tires per 24 hr. period	private	<1 yr.						
						3 million	Private	•TDF •Rubber-ized ashpalt •roof material	•No long term markets	•1 plant operating •proposed plant Cleveland Ohio	No presently baling steel
						20 million	IDB	•Electric	•Utilities	•Building plant near Modesto,CA	Yes
R. H. Leslie	Sommerset Wisc.	Pyrolysis Molten Salts whole tire	500 tires per hour	private	10 months	$1 million	Private	•heat •electricity	•not confirmed	proto-type	Yes /sh
Waste Recovery Inc.	Portland Oregon	Schredding multiple stage	3 million per yr.	private	15 yrs.	$1.2 million	Private	•2 inch minus T.D.F.	•confirmed	•1 plant fulltime operation •Presently building new facility in Houston Texas	Yes Steel
Energy Recovery Systems	Baltimore Maryland	schredding granular	2000 tires per hr	Public	6 yrs.						
Oxford Energy Company	Modesto Calif.	Incinerat-ion	4 mill. tires per year		0						

TABLE 6.2A

PAST TIRE PROCESSING OPERATIONS

COMPANY NAME	FACILITY LOCATION	DESIGN FACTORS: TECHNOLOGY	DESIGN FACTORS: DESIGN CAPACITY	TRACK RECORD: OWNERSHIP	TRACK RECORD: OPERATION	FINANCIAL FACTORS: CAPITAL COSTS	FINANCIAL FACTORS: FINANCING	PRODUCTS	CONFIRMED MARKETS	PRESENT OPERATING STATUS	LAND FILL
Kato Sanitation	Mankato Minn.	Schredder	NA	Private	Testing Machine Late 70's several months	NA	Joint, manufacture and private funds	•TDF	•Confirmed utility test burn	•Suspended operation •not economically feasible	Yes
A & D Tire Recycling	Minneapolis Minn.	Two stage schredding	Max. 2,500 ton	Private	1980 several months period	NA	Private	•TDF	•Confirmed utility test burn	•Suspended operation •mechanical breakdown	No
North American Tire Tech	Andover Minn.	Schredder	840,000 tire per yr.	Private	1½ yr. 83 - 84	NA	Private	•TDF	•Confirmed outstate	•Sold operation •intermittent operation	No
Pilquist Recycle	Stillwater Minn.	Schredding	800 tire hr	Private	2,000 ton in 1981	Leased	Private	•TDF	•Confirmed Utility test burn	•Suspended •not economial •poor markets	No
Bellaire Sanitation	Stillwater Minn.	Schredding		Private	Unknown			•TDF	•Unconfirmed	•Suspended operation •not economical	

TABLE 6.2B

PRESENTLY OPERATING TIRE PROCESSORS

COMPANY NAME	FACILITY LOCATION	DESIGN FACTORS: TECHNOLOGY	DESIGN FACTORS: DESIGN CAPACITY	TRACK RECORD: WHOLE TIRE PROC.	TRACK RECORD: OWNERSHIP	TRACK RECORD: WHOLE TIRE OPERATION	FINANCIAL FACTORS: CAPITAL COSTS	FINANCIAL FACTORS: FINANCING	PRODUCTS	CONFIRMED MARKETS	PRESENT OPERATING STATUS	LAND FILL
Rubber Research Elastomerics Inc.	SE Minneapolis Minn.	Custom Rubber Compounds	Proposed 3,000,000 tires/yr.	No	Private	0	Proposed facility $2.3 mill	•GO Bonds- •Itasca Co. •IRRB •Waste Management Board •Deed •Financial Institution	•Tirecycle	Limited	Limited production (facility burned)	Yes
Bradley Manufacturing	Evelith, Minn.	Splitting and assembly	Not specified	Yes	Private	4 yrs.	Minimal	•Personally financed	•Matting •Agricultural related products •fencing	Confirmed	Operating part-time employment	No
Minnesota Tire Recycling Inc.	Andover, Minn.	Schredding	Claimed 3 mill. tires per year	Yes	Private	6 mo.	1.1 mill	•Private Investment	•TDF 2 in/minus	Confirmed Outstate TDF	Operating	No
Pilquist Recycle Inc.	Stillwater Minn.	Pyrolysis	1000 lbs tires pr load	Yes	Private	-0- Infrequent trials	$100,000	•Private	•Oil Char •gas	Unconfirmed private use	Suspended Operation (fire)	Yes
Amex Tire Company	Savage, Minn.	Schredding cracker-mill	Proposed 1 million tires per year	Yes	Private	-0- Infrequent trials	Not available	•Private	•TDF possible	None present past confirmed markets for test burns	Suspended operation	Yes

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OBJECTIVE G

SCRAP TIRE SUPPLY ASSURANCE

OBJECTIVE G

SCRAP TIRE SUPPLY ASSURANCE

This objective was to study methods for providing a reliable quantity of tires for processing facilities if such facilities required raw material guarantees to assure economic viability. Raw material guarantees in the solid waste industry are not popular in Minnesota, specifically in the area of solid waste recovery. This resistance may be due either because of the newness of the concept or a lack of experience with a flow control system. Flow control arguments include limits on competition and personal choice. Alternatives to flow control include free disposal, bounties, deposits, and the enforcement of franchise ordinances. All have positive benefits and also present definite tax or regulatory liabilities.

Flow Assurances

Flow assurance is a method to assure the movement of waste from its origin to a specified destination. Methods available range from regulations such as flow designation, to cost incentives that influence waste movement.[1] Methods such as franchising the waste removal are done through public control to gain economic and environmental benefits for the common good. Economic conditions dictate to what extent movement must be controlled and the extent to which movement must be controlled determines the proper method for flow assurance.

Flow assurance is necessary to meet the financial requirements of resource recovery projects. Large scale recovery facilities require significant capital investments and operate in a low return-on-investment marketplace. Revenues are guaranteed from the tipping fees and sales of final products over the amoritized life of the facility by assuring delivery of a definite quantity of waste to a facility. These revenues provide a source of income used to meet operational and debt service expenses. Investment commitments are linked to the strengths of waste supply commitments.

Discussions of Flow Assurance Methods

Flow Control/Flow Designation

The use of government ordinances to direct the movement of waste to a specific destination is referred to as waste flow designation or flow control. It is the most definitive method of waste assurance.

State limits have been placed on flow control by the Waste Management Act of 1980. Regional or local governments can establish, by ordinance, the legal authority to direct the solid waste collected within their boundaries to waste recovery facilities, if it has been determined necessary for economic viability. A recent court case in Akron, OH, (Hybud Equipment Co., vs. City of Akron), supported the government authority to enact flow control for "the greater good." The sale of bonds to finance a waste recovery facility requires a type of flow control to assure an adequate supply of raw materials for long term viability through the life of the bond.

The Metropolitan Council (seven county metro area) has provided flow control as a method to support waste recovery facilities within its jurisdiction.[2] The development of specific guidelines for flow control has been used in the recent enactment of flow control on municipal solid waste in Ramsey and Washington counties, pertaining to the Northern States Power R.D.F. facility. This policy, though well-conceived and backed by legal opinion solicited by the Waste Management Board, has yet to withstand legal challenge.

Within the Waste Management Act there are provisions for the exemption of items from flow control. These were implemented so that control would not impede recovery for reuse, interstate commerce, or current flow-designated operations. These provisions allow for the removal of tires from the waste stream if they fit one of the categories. Thus, present solid waste flow control offers no barriers to the removal of recoverable waste.

Flow control for tires follows the same procedures outlined by the Waste Management Act for flow control of solid waste. The difference is the designation of a segregated waste (tires) to a specific processor instead of a mixed waste facility. The Waste Management Board may include in their advisory role the review of ordinances that provide a statewide supervision of flow control.

The Metropolitan Council has written requirements that may provide the base for the evaluation of a tire designation program. The specific criteria used in present solid waste evaluations are:

1) Whether the designation will result in the recovery of resources or energy from materials that would otherwise be wasted.

2) Whether the designation will lessen the demand for the use of land disposal.

3) Whether the designation is necessary for the financial support of the facility.

4) Whether less restrictive methods for ensuring an adequate solid waste supply are available.

5) What other feasible and prudent waste processing alternatives are available for accomplishing the purpose of the designation and their cost and effects on the cost to waste generators.

If these requirements are adequately addressed, an approval is granted that allows the submitting region to draft a designation ordinance. Government involvement is extensive in drafting and regulating the initial controls. After the checks and balances have been established, flow control offers an orderly method of supplying the raw materials necessary to insure the long term viability of the recovery method.

The possibility exists, with scrap tires, to develop a less restrictive ordinance that determines the type of waste and the proper recovery method, but does not make a strict designation for a recovery method. An example of this is scrap tires that must be deposited at a state approved recovery facility or collection site. This method would not restrict competition or freedom of choice, but allows for designated control that is enforceable and is accomplished via a permitting program.

The beneficiary of a designation program for tires is the public. Dumping and tire piles could be eliminated by preventing tire disposal at undesignated sites. On a long term basis, legitimate recovery sites provided by processors would be able to maintain their viability because of greater tire volumes. The collection operations would not be hindered unless the recovery site is a greater distance than the previous legal disposal site. The need for collection/transfer facilities in rural areas is essential for providing adequate service throughout the state. The public also gains from decreased tax-supported liability for the

clean up of tire piles.

Bounty System

A bounty system pays a direct sum to those who collect, scavage, and dispose of the waste. This provides the incentive to recover a waste and correctly dispose of it. Implementation would parallel aluminum can collection, where the economic incentive to the collector is great enough to encourage the return of the can to a collection site for proper recovery.

The initial interest in a tire bounty system would be significant because economic gain could be made from the easily accessible stockpiles. Once these stockpiles and those scrap tires easily collected were depleted, the collection may become labor intensive and provide smaller profit margin. The economic incentive for a bounty system must be provided by either private firms that need the materials or through government support. In the case of tires, based upon the value of the processed scrap, the economics of "common good" does not possess a strong enough incentive for private participation. A government incentive program could justify funding on the basis that it is providing a social benefit to the community.

The government's role in such a system could be to provide a mechanism for the collection and distribution of funds. A tax base could be used to provide funds for a program. It may be assumed this tax would be tied to the sale or use of the tires. However, it could be funded from any taxbase. The bounty value will be difficult to establish. The past economic value for the recovery of tires at a processor has been negative (a cost to the scrap tire generator). This fee often provides for the economic viability of the processor, and in a bounty system, not only must the generator have an economic incentive, but the replacement of the tipping fee to the processor must be funded. Thus, the true cost of a bounty system is the combined cost of the historical tipping fees and the bounty. The question thus becomes: what value should the processor be granted?

> (Explanation: If the tire recovery fee was $.40/tire, and a bounty system provided a $.10/tire incentive to collect, the realized cost of tire recovery would be $0.50.)

Additional questions are: at what bounty value will people be willing to scavange tires and at what cost are the tax-payers willing to support such an incentive?

Another problem with a bounty system is that it reduces the tipping fee paid to the processor. Tire processors have relied on tipping fees for a revenue source to partially support operating expenses and assure viability. With the loss of these revenues, many companies will be forced to discontinue operation. A bounty system may involve a subsidy program for the processors to replace tipping fees. An alternative may be that the bounty paid to the collectors may be used to pay the tipping fee to the processors.

There are two potential benefits in a the bounty system. First, those who collect and scavange stockpiles that are abandoned or illegally dumped will reap both economic gain and social gratification. Second, the person owning a stockpile will see economic gain. A bounty system creates a mechanism that allows the stockpiler to collect another fee for the tires that he has already collected for a disposal fee.

Free Recovery

The free recovery option is based on the premise that there is no tipping fee for recovery of the scrap tire. (Tipping refers to the point at which the collector or homeowner drops off a scrap tire.) Tires will find the recovery locations since there is no economic incentive to assume the risk of illegal disposal. Economic benefit exists because there is no tipping fee at the processor. A tipping fee would not be passed back to the generator and a collector would still maintain his profit margin. All collectors would realize the same competitive edge. If disposal fees exist, then competitive collectors increase their profit margins by illegal disposal. A legitimate, free recovery option is an incentive to stay within the law. The enforcement of ordinances preventing illegal tire dumping would be required because those having to transport tires long distances may try to avoid additional costs. The circumstances that would allow this option to be implemented are:

1) The processor has developed a market for the final product that is strong enough to provide benefits which make tipping fees unnecessary.

2) If the markets are not strong enough, a form of subsidy will be fed to the operation to keep the front-end tipping fee low.

3) In the short term, a greater flow of materials is needed, and the free recovery provides the greatest incentive to deposit tires at the facility.

The effect of free recovery on the flow of scrap tires may be significant because the present recovery operations within Minnesota require a front end tipping fee. These fees exist to cover operational expenses and provide a profit. However, these recovery operations have failed to attract many of the scrap tires accumulating in stockpiles.

The free recovery option may also exist in a marketplace where the state is willing to subsidize the tipping fee. This method could be used if the tipping fees were determined to be a negative factor to proper recovery, and if all the processors required the fee to remain viable. Such a subsidy program would be difficult to enact since companies operate at different levels of efficiency.

The tire collectors and generators are the key beneficiaries of a free recovery system. The economic benefits provided will enhance competition and create incentives for efficiencies of collection. The collection service fee would be a function of transportation, labor, and profit. The cost of recovery would be eliminated and thus justify the decreasing of the collection fee. It may also encourage increased service or add to a profit margin.

The government's role in a free recovery system would be the permitting of collectors and processors within a free market structure. The government's role becomes a fund provider and distributor to subsidize the tipping fee. This would involve extensive record keeping, administrative costs, and a tax base. However, the title transfer tax currently collected for the tire program may be the tax base for subsidizing tipping fees.

Tipping Fees

Tipping fees are implemented to cover a portion or all of the recovery costs involved with a material. User fees, such as tipping fees, may be more equitable than other broad-based tax systems, since the user pays directly for the service at the time of recovery.

This is the basis for the present tipping fee system for tires. The system is complicated because the tire collector/disposer is not the person who used the product. The consumer does not pay directly for the recovery of the tire.

If a fee is charged by the retailer, it is usually a hidden cost that may include the collector's fee and a holding fee for the tire.

(Example: The consumer pays $1.00 per tire at the retailer for recovery of the tire (hidden or up front cost). The retailer realizes $.50 and pays $.50 for the collection service to take the tire. The collector realizes $.30 and pays the processor $.20 for proper recovery.)

Several parties benefit by the exchange of funds in this process. The consumer pays for recovery in the proper manner and assumes that it takes place. Whether the process is equitable to the consumer may be argued since his choice is limited and the true recovery fee is inflated. A problem may exist if an involved party sidesteps the proper recovery method for economic reasons and chooses to illegally dispose of the waste tire.

Tipping fees tend to be a disincentive of the proper recovery of waste. Tire disposal fees have existed, and these fees have contributed to the illegal dumping of tires. The government's role in a tipping fee system would require strong ordinances and enforcement mechanisms against improper disposal. The monitoring of tipping fees would be necessary in order to keep them from becoming prohibitive.

Product Deposits/Product Charges

Product deposits use a system in which the payment for recovery is collected from the consumer at the time of purchase, with a portion returned when the tire is returned to the retailer at the time of replacement purchase. The unreturned portion of the deposit is applied to the proper recovery of the tire and any cost associated with administering the system. A parallel may be drawn to the system used for bottled soft drinks. Such a system was proposed for legislation in the state of New Jersey in March, 1985.

In a scrap tire deposit system, problems exist in the labeling of tires, administrative functions, and addressing previously accumulated tires. The labeling of tires covered by the deposit would have to take place in the state. It cannot be assumed that a manufacturer will provide the service. The implementation would be difficult and costly, providing the incentive for gray market activities.

The collection, holding, and distribution of funds may involve extensive administrative and accounting functions due to the long product life and turnover time of new tires (approximately 2-3 years). How to incorporate tires already in the system (on vehicles, stockpiles, auto salvage, new

tires), and those entering the state is a difficult issue.

The benefit of this system is that the recovery of the tire is paid for at the time of purchase. The deposit fee would cover administrative labeling expenses and provide an incentive for the return of the tire. With this system, the consumer could pay more for the program than for the recovery of his scrap tire(s).

A product charge differs slightly because the fee, collected at the time of purchase, is directed to the recovery service only, with nothing returned to the consumer. This results in a lower fee and it provides less incentive for the consumer to return his tires for proper recovery. This is not a significant factor because the consumer is rarely given his scrap tire. The same problems exist with this system as with the deposit system.

Product deposits and charges create incentives for the consumer to perform in a specific manner. With tires, the consumer is not the person requiring the incentive for proper recovery. The retailer and tire collector require the incentive to properly recover their waste. Beverage container deposits were conceived as anti-litter strategies because the consumer was illegally disposing of the container by throwing it along the roadside.

Enforcement

The enforcement of legal measures is the most effective factor in the movement of scrap tires to the proper facilities. The awareness of strict and prudent action on violations will replace most assurance programs. A legal structure must determine the proper procedures to follow in order to enact a program. It should incorporate both civil and criminal action in order to provide a significant penalty for non-compliance.

Enforcement may reduce the need for other programs that subsidize the processor or provides incentives for collection if implemented properly. If used within a permitting and licensing framework, the monitoring of the industry will be more effective and require less enforcement personnel.

Enforcement requires a high degree of government involvement. If enforcement is the only method to ensure the flow of tires, the involvement should include the two functions of 1) policing/monitoring, and 2) legal prosecution/enforcement. This method of assurance requires funding directly from a tax base. The availability of financial assurances, such as a bond from the processor, may provide recoverable funds to

cover part of the expenses for clean up or illegal actions.

Franchise

The government's enactment of a franchise for the recovery of waste grants a company the exclusive privilege to provide the selected services. This arrangement assures the public of performance and the service provider of a guaranteed service area with limited or no competition. This method is specifically used when the service desired by the governing body has marginal economics and is not being offered successfully. The enactment of a franchise enhances the economics by limiting competition and guaranteeing a service base.

The franchise agreement specifies a frequency of service, a contract period, rates and fees, assignment capabilities, and a method of negotiating differences. The service supplier guarantees the necessary trucks, equipment, and personnel to perform satisfactorily. The governing body provides the agreement for the service area.

The application of a franchise in the collection and processing of scrap tires guarantees the raw material base necessary to secure the financing of processing or collection services.

A franchise agreement may best serve the counties that have a marginal number of tires for collection. This establishes a legitimate disposal method at a fixed cost. Enforcement of disposal rules for stockpiling, landfilling, and dumping would still be required to prevent individuals from operating outside of the franchise system.

The franchising of a processing facility is more reasonable than the franchising of collection because of the capital necessary to build a tire processing facility. Furthermore, the need to secure a minimum flow of tires to ensure long term viability may be critical. A facility operating under such an agreement could provide a guaranteed recovery method at a set fee.

For an exclusive franchise agreement to be implemented, the state legislature would have to create the authority for its use.[3] This authority has been granted, for other purposes, to county and local jurisdictions. This may not be applicable, however, for the collection of waste tires. It may apply to processing, if it is determined that the flow of scrap tires can support only one or two facilities. Investment, processing capabilities, tire generation rates, and product

markets within the state will determine the franchise area.

The use of a franchise system provides a method in which the guarantee of a service is made in exchange for the guarantee of a service base. This method restricts competition but ensures viability by assuring a raw material base. The service base receives a desired service, at a determined rate, with public accountability, in return for raw material and economic impact.

Proposed Assurance Method

To determine a method of assurance that will guarantee the consistent movement of tires and ensure a low cost, viable processing facility. The tire waste flow must be used. As indicated in Objectives D & I, (State Collection Method), the flow of tires can be organized and should involve regulations and enforcement to prevent illegal disposal.

The processing of scrap tires, however, requires intervention to ensure that an adequate number of tires are available for the processor(s). This may involve a method that limits the number of facilities, thus providing a steady flow of tires to one or two processors. Based on processing costs, marketing, and tipping fee projections, as well as the significant risks confronted by the processors, the state should evaluate the systems to ensure a viable system with the lowest possible cost.

Historically, the collection of scrap tires has involved only those tires that are easily accessable. The proposed assurance method relies on a competitive marketplace to collect the tires. This marketplace is reinforced by a permit and enforcement mechanism. The present stance of MPCA is to permit or license stockpiles and processors with stockpiles. This stance should include collection sites, collectors, and all processors, thus encompassing the largest segment of the scrap flow. This will require local and county authorities to participate in the permitting process. The generator who hauls his own scrap tires will be difficult to regulate. It will be assumed that he will dispose of his tires at a collection site or processor.

The function of permitting collectors and collection sites should be to determine acceptable site operations. The permit application should include the service district, recovery method, anticipated fees, equipment, and a performance bond. (See Appendix IB, p. 111 for model form.) This will serve two purposes: 1) allow for an analysis of the collection system within the state and; 2) provide a bond requirement large

enough to ensure proper recovery and operation. The correlation of the permit to the bond is that only viable operations will be able to secure the bond, and the threat of permit or bond loss will ensure compliance.

The assurance method required to ensure the viability of the processor will be more restrictive for several reasons. First, funding for a scrap tire processing facility is tied to the ability to ensure a stable raw material base. Second, the estimated capabilities of proposed processing facilities, in relation to the estimated generation rate, may indicate that there are significant economic advantages in large scale operations that are lost with a series of smaller facilities. Third, assuming that the only market large enough to consume Minnesota's tires is in fuel (TDF), the potential users will only make the required investment if there is a guaranteed fuel supply. Fourth, in order to keep the recovery charges at a minimum, it will be necessary to guarantee the processor a minimum number of tires to offset a processing cost. For these reasons, it is proposed that an exclusive franchise be developed for the method of assuring a low cost, viable processing option. This ensures a disposal method and allows for public accountability.

The exclusive franchise method requires the state to request bids for the recovery of scrap tires. Firms that bid will be reviewed for technical and financial feasibility, as well as a proven record of processing tires. The proposed franchise provides exclusive rights to the processing of tires within Minnesota. As a result, only one processor may exist. However, if no single processor submitting a bid has the ability to process the anticipated collected amount of tires, then the possibility exists that several smaller operations, with a combined processing capability for the anticipated collection rate, will be franchised. The tire flow is more difficult with the second situation.

It may be concluded that the satisfactory movement of scrap tires will occur if a proper recovery option exists. The franchising of a processor will ensure a low cost recovery option for the public, viability for the processor, and the assurance for the product's after markets of a consistent flow of the product. Unrestricted licensing without performance evaluations and financial assurances may result in development of a number of small volume, financially weak operators, who may compete for the same tires. The result could be high direct subsidies/recovery costs, plant closures due to poor economics or competing forces, and high public liability associated with stockpile removal for operator failure.

TABLE 7.1

METHODS OF ASSURING RELIABLE SOURCES OF SCRAP TIRES

	Flow Control	User Fees: Deposits	User Fees: Product Charges	No Tipping Fees	Franchise	Distribution of Funds: Bounty	Distribution of Funds: Enforcement
DISADVANTAGES	*Effective enforcement needed *opposition to effects on competion may make flow control difficult to establish *creates a public monoly may increase cost and decrease service to unprofitable areas	*Extensive Administration cost due to long turnover time of tires *doesn't address tires outside system or old tires *difficult to label tires *difficult to appropriate seed funding *inflates initial cost to consumer	*Extensive Administration cost due to long turnover period *doesn't address old or tire outside system *difficult to mark tires *difficult to appropriate seed funding *disincentive to proper recovery	*May involve public subsidies in order to cover operating cost *difficult to determine number of tires processed *those not convenient to recovery sites have incurred cost	*Administration function needed *Seasonality fluxuation could cause problems if areas are small *creates low key monopolistic system	*tax base needed for support *puts positive value on previously negitive valve product thus allowing for speculators to take advantage	*expensive *labor intensive *possibility of not being effective
ADVANTAGES	*Can effectively secure a waste supply *may eliminate need for financial assistance by placing burden on generators *Allows for competition among haulers to continue, maintains need for efficient service	*provides incentive to return unused portion of tire *those who produce waste pay for disposal	*recovery cost paid at time of purchase *provides funding to recovery service *those who produce waste pay for recovery *keeps tipping fees lower than deposits	*provides no cost to collector *tires will naturally gravitate to designated facility offering greatest benefit. *limited administrative or record keeping *reduces economic incentive for stock piling	*provides assuances to type of services rendered *provide mechanism for reviewing rates and service requirements *allow for competition between haulers because legitimate recovery fees are fixed. *provides mechanism for closure *benifical to haulers in providing specific means of pick up.	*creates incentive to clean up old tires *puts value on tires	*provides meaning to permits and regulations *provides incentive for proper recovery *basic need for all forms of waste control

References - Objective G

1. "Survey and Analysis of Waste Stream Control Mechanisms," Legislative Commission on Waste Management, Pope, Reid and Associates, 1/25/82.

2. "Solid Waste Management Development Guide/Policy Plan (Draft)," Metropolitan Council, Publication #12-84-160, pg. 110.

3. Phone interview with Penny Troolin, Minnesota Attorney General's Office, 8/85.

OBJECTIVE H

INCINERATION REPORT

TIRE DERIVED FUEL MARKET ANALYSIS

OBJECTIVE H

INCINERATION REPORT

TIRE DERIVED FUEL MARKET ANALYSIS

The objective of this section was to define critical market factors affecting the potential use of tire derived fuel (TDF) in the following components: 1) the types of facilities in the state that could utilize scrap tires as a fuel source; 2) cost of equipment needed to modify existing facilities; 3) feasibility of operating each type of facility with tire derived fuel; and 4) locations of potential facilities.

Potential Users of Waste Tire Fuel

A list of solid fuel boilers within Minnesota was acquired from the Minnesota Pollution Control Agency. Forty-nine facilities from this list were identified as potential tire derived fuel (TDF) users. Thirteen facilities from the list were excluded because of either a lack of sufficient information or a low annual fuel consumption requirement.

Facility Descriptions

Four categories were developed to describe the types of facilities, all of which are steam generating boilers. These categories are:

Category	# of Facilities
Public Utility	10
Private Utility	16
Industrial	18
Public or private institution	5
Total	49

A description of the categories follows:

Public Utility - Electrical Generation

A public utility is a smaller power plant operated to supply a local constituency with electrical power. Coal is fed into a boiler to produce steam to run electrical turbines. As a public entity, it is responsible to the public for management and operation costs. Its service area and capacity is

small because the utility serves a local constituency.

Private Utility - Electrical Generation

A private utility is larger, has a greater service area, (possibly more than one state), and is responsible to stockholders rather than the public. Its goal is to make a profit while providing electrical power. A private utility buys coal in larger quantities, thus receiving greater quantity discounts. In many instances a larger utility may purchase coal at 20-30% less than a private utility because of its buying power. Furthermore, due to the larger boilers and steam loading requirements, a higher percentage of private utilities burn in suspension only, thereby eliminating TDF as an alternative fuel.

Industrial - Internal Heating & Power Requirements

An industrial boiler uses a bituminous, high energy content coal, compared to the subbituminous, lower energy content coal used by a utility. An industrial boiler may co-fire other fuels such as wood waste in addition to coal. Although its coal consumption appears high (in many cases, in excess of 100,000 tons/year), the total demand is still less than that of the private utilities. Competitive market forces have encouraged industries to examine alternative fuels.

Institutional

An institutional boiler is similar to an industrial user. It uses a higher quality bituminous coal and does not burn sufficient quantities to obtain the quantity discounts of a private utility. Fuel values are similar to an industrial boiler. Facilities within this category include universities and one state-owned corrections center.

A fifth category of potential users of TDF for fuel would be municipal waste to energy facilities. Because most of these facilities are in the planning, design or construction phase, TDF issues associated with these facilities will be discussed as a separate issue.

Preliminary Data Relative To Potential Users

Several parameters were established to evaluate potential users. The first was to define the type of fuels currently used, (i.e. coal, wood, coal/wood combinations, etc). In order to use TDF in existing boilers, the boiler must have been designed to burn solid fuels such as coal or wood on the grate. Test studies have shown that TDF also works well in fluidized bed systems and gasifiers, but insufficient experience exists in this area to evaluate its long-term success.

Table 8.1 identifies the energy content of fuel types (including TDF) currently used either singularly or in some combination.

Table 8.1
Energy Content[1]

Type	Energy Content
Tire Derived Fuel (TDF)	29 - 31mm Btu/ton
Bituminous Coal	18 - 27mm Btu/ton
Subbituminous Coal	17 - 23mm Btu/ton
Lignite Coal	12 - 14mm Btu/ton
Petroleum Coke	18 - 19mm Btu/ton
Wood - Bark	8 - 17mm Btu/ton

Energy demand is the second parameter for measuring the potential economic benefit of TDF use, as well as the potential market size, as illustrated in the return on investment example (Appendix IH).[2] The evaluated facilities have annual energy demands from 5,000 tons to over 60,000 tons. One facility burning over 60,000 tons annually with a 50% TDF replacement capability by weight could burn the majority of TDF produced in Minnesota. However, a 50% continuing blend may be optimistic. A blend of 10-20% by weight is more realistic, given highly efficient emission controls.

Emission control systems were also evaluated because their efficiencies can allow for predictions of TDF blending percentages. TDF testing has shown blend ranges of 3% - 50% by weight to be successful. The lower percentages represent facilities with either no emission control equipment or inefficient control systems. The higher percentage can be achieved in facilities with control systems that are 99.9%

efficient. A range of control efficiencies from 50 - 99.9% was found in those facilities evaluated.[3] Anything below 55% was considered inadequate and was not evaluated further.

The fourth parameter, operational schedules, is an indicator of a customer's seasonal demand for TDF. Energy demand may be seasonal because of production schedules and ambient weather consideration. A TDF processing facility should try to minimize seasonal fluctuations to control TDF inventory requirements and cash flow. Other than normal production schedules, TDF demand can also be influenced by economic downturns, ambient weather conditions, labor negotiations, routine maintenance and breakdowns. The range of "typical" operating schedules for potential TDF customers, as reported to MPCA, was from less than 24% to greater than 97% of the time.[4]

The fifth parameter, current fuel prices, is important because the competitive pricing of TDF is critical to its sale. Once a competitive price is established, it is easier to evaluate the savings incentive associated with TDF use, TDF market pricing, and the viability of TDF processors. The economics of a scrap tire to energy recovery system are based on the evaluation of existing fuel prices to establish a value for the product (TDF), and how this relates to the economics of tire recovery charges. A range of current fuel prices from $1.21/mm Btu to $2.30/mm Btu were identified within the four potential fuel user categories. Prices were either determined or estimated on a site specific basis. Actual fuel prices for all sources have been deleted for reporting purposes because of the proprietary nature of fuel costs for private industry.

Model Success Potential for Using TDF

The 49 facilities targeted for study were evaluated and rated. Data items listed as priority 2 on the source evaluation forms were only collected on those facilities with an initial rating high enough to warrant further study. The top 12 rated facilities were then selected for further analysis. Further analysis allowed for completion of the study relative to real rather than model potentials for conducting a successful TDF trial burn.

The following rating parameters were developed to model TDF's potential for success at a solid fuel boiler facility. (The higher the total score, the greater success potential for using TDF, see Example 8.1, p. 259).

EXAMPLE 8.1

INCINERATION STUDY
SOURCE EVALUATION

NAME: University of Minnesota

LOCATION: 319 15th Avenue S.E.
Minneapolis, MN 55455 Hennepin County

TYPE OF BUSINESS: University - Public Institution

BOILER DATA:

Priority #1

1. Max Design Firing Rate: 1,2,3,4,5,7
   528,000 lbs. steam/hr.
2. Type of Fuel Used: Subbituminous
3. Sulfur Content of Fuel: 1.0
4. Fuel Energy Content: 17mm Btu/ton or
   8,500 Btu/lb.
5. Particulate Control System: CC & BH 99.8%
6. Annual Operation Schedule: 100%
7. Annual Fuel Requirement: 87,943 tons

Priority #2

8. Fuel Feed System: Riley Stokers
9. Grate Design: Traveling Grate
10. Waste Water Treatment: Not required

CURRENT FUEL COST (Est. or Actual): $____/MMBTU and/or
$____/Ton

TDF POTENTIAL RATING:

PARAMETER	RATING SCORE
- Annual Fuel Requirement	100
- Fuel Cost ($/MMBTU)	60
- Annual Operating Schedule	40
- Particulate Control	30
- Sulfur Content	4
- Energy Content of Existing Fuel	1
OVERALL SCORE	235

COMMENTS:

* Same feed set up as at St. Paul campus.
* Storage space for TDF deliveries is extremely limited if not non-existent.

Parameters and Scores

The parameters and how they were scored follows:

Parameter	Rating Score Range
Fuel cost ($/mm Btu)	10-20-30-40-50-60-70-80-90-100
Annual Operating Schedule	10-20-30-40
Particulate Control (Efficiency)	0-5-10-15-20-25-30
Sulfur Content (% by weight)	0-2-4-6-8-10
Energy Content of Existing Fuel	1-2-3-4-5
Annual Fuel Requirement	10-20-30-40-50-60-70-80-90-100

Fuel Cost

A major factor in using TDF as an alternative fuel is its cost compared to competitive fuels. The greater the difference between the current fuel and TDF, the greater the incentive for TDF use. Those facilities paying a higher price for current fuel requirements were assigned a higher score in the ranking system.

A major assumption is that the greatest incentive for TDF is energy cost savings. As a result, this parameter is assigned one of the highest weightings.

Annual Operating Schedule

The scoring for this parameter represents the degree of seasonal variation of the potential TDF user. If market demand fluctuates dramatically from season to season, the logistics of balancing raw material supply against product demand introduce stockpiling and cash flow problems.

A higher score in this category represents an operating schedule that fits within the raw material supply and product demand equilibrium for a tire processing facility. The facilities with a high score represent boiler operations with steady demand throughout most of the year.

Table 8.2
Annual Operating Schedule Scores

Annual Operating Schedule - % of the time	Score
75-100%	40
50-74%	30
25-49%	20
0-24%	10

Particulate Control

The burning of TDF may create a heavier loading on the particulate control system for the following reasons:

1) Large amounts of fixed carbon.

2) Combustion temperatures in the boiler may not be high enough to completely burn the fixed carbon prior to its exit from the fire box.

3) Residence time of particulates in the boiler may not be long enough to complete combustion of the fixed carbon.

4) Zinc Oxide: Tire rubber contains 1-1.5% zinc. When TDF is burned, some submicron size zinc oxide particles may become entrapped in the air flow.

All of the boilers evaluated were designed to burn coal and have appropriate control systems for coal's particulate emission characteristics. The control systems varied from plant to plant, as did their efficiencies for removing particulates. The differences are either mainly a function of boiler usage or the date the emission control systems were either installed or upgraded.

The higher the efficiency of the particulate control system, the greater the potential for a successful blending of TDF

without violating opacity and grain loading standards. The control equipment manufacturers and environmental control agencies have assigned efficiencies to each of the boilers control systems.[5] A rating system was developed for their reported efficiencies. (See Table 8.3)

Table 8.3

Scores For Particulate Control Efficiencies

Particulate Control Efficiency	Score
0-69%	0
70-80%	5
81-90%	10
91-95%	15
96-98%	20
99-99.5%	25
99.6% or greater	30

This parameter was not weighted as heavily as the others because even a low efficiency control system may burn some quantity of TDF without exceeding existing emission conditions although it may be only 1-2% versus 10% or more by weight for a higher efficiency control system.

Assumption: Once energy savings are calculated by replacing existing fuel with a percentage of TDF the affect on air emissions becomes a primary concern.

Sulfur Content

The sulfur content of TDF is approximately 1.24%.[6] This is within the limit of several states for heavy residual fuel oil sulfur content of 1.5%. Minnesota's emission limitations are based on pounds of sulfur per million Btu's consumed. However, if boilers have already established a lower emission rate than the maximum allowed by the standard, it may be difficult to increase SOx emissions due to state and national efforts to reduce all SOx emissions.

If a boiler currently uses only wood and/or low sulfur coal, an increase in SOx emissions might occur with TDF depending on the addition rates. Each boiler must be evaluated to determine any SOx change. However, by examining current fuel sulfur content and energy content, some preliminary calculations may be made on how the TDF might affect SOx emissions.

To assign a value to the sulfur content of existing fuels allows an analysis of the potential differences between current SOx emission levels with those of TDF. A fuel (coal) with a sulfur content of 2.2% is important as compared to TDF with a sulfur content of 1.2% when isolating only SOx emissions as an element of concern. It is important to note that although the sulfur content of TDF may be higher than some existing fuels, the energy content of TDF is higher as well.

The rating system has been designed to place a higher value (benefit) on the probability of replacing a fuel with a high sulfur content. This scoring represents a better opportunity for long term replacement of an existing fuel by TDF while maintaining environmental performance requirements. (See Table 8.4)

Table 8.4

Sulfur Content Scores

Sulfur Content	Score
0	0
0.01 - 0.50	2
.51 - 1.00	4
1.01 - 1.50	6
1.51 - 2.00	8
2.01 or greater	10

The weighting for this parameter was not higher because:

1) SOx emission control systems can be added.

2) If SOx increases are of concern it is likely that a small blending rate of TDF and current fuel could be accomplished without significantly affecting SOx emissions.

Energy Content of Existing Fuel

The evaluated boilers used as a fuel either wood, coal, petroleum coke, or a combination of the three. Where fuels are blended in a boiler, the higher energy content fuel was singled out for ranking because TDF competes with that fuel.

Existing fuel type was important to evaluate because:

1) The type of fuel used may indicate the design of the fuel feed systems.

2) A boiler using a low Btu fuel will realize a greater gain in boiler efficiency when fed with a higher energy content fuel such as TDF.

3) A boiler currently using a high Btu fuel was given a lower rating because the gain in efficiency tends to be less because the margin of difference in heat value is less. There is some difference in the efficiencies of combustion, i.e. moisture, ash and combustion temp. TDF initially will be competing against overall fuel cost and against efficiency gain.

The energy content rating scores are the lowest of the model. Emphasis was not placed on this criteria because it may have little effect on whether a potential customer uses TDF. When evaluating gains in energy efficiency this benefit is worth noting. Energy cost savings will occur but must be weighed against other considerations such as a separate product delivery system, pollution control and new feed, and metering systems that may have a greater financial impact than the 2-6% efficiency increase in the boiler. The greater the cost to retrofit for TDF, the less impact an increase in efficiency will have on use considerations.

Table 8.5
Fuel Energy Content Scores

Energy Content of Existing Fuels	Scores
25-27 million Btu/ton	1
20-24	2
15-19	3
10-14	4
0-9	5

Annual Fuel Requirement

Facilities with a total fuel demand of less than 5,000 tons annually were excluded from the study. The cost savings achieved by switching to a lower cost fuel would not provide sufficient return on investment (ROI) for TDF use. An example of (ROI) calculations are presented in Appendix IH, (p. 278).

The annual fuel requirement scores are weighted heavily. A high annual fuel requirement would indicate a large potential fuel customer. Table 8.6 (page 265), assigns scores to annual demand as a function of quantity.

TABLE 8.6

ANNUAL FUEL REQUIREMENT SCORES

Annual Demand Short Tons/Year	Score
5,000	10
5,001 - 10,000	20
10,001 - 15,000	30
15,001 - 20,000	40
20,001 - 25,000	50
25,001 - 30,000	60
30,001 - 35,000	70
35,001 - 40,000	80
40,001 - 45,000	90
45,001 or greater	100

Completed Scores

Table 8.7 illustrates by category the total score for each facility as well as a relative ranking among all facilities.

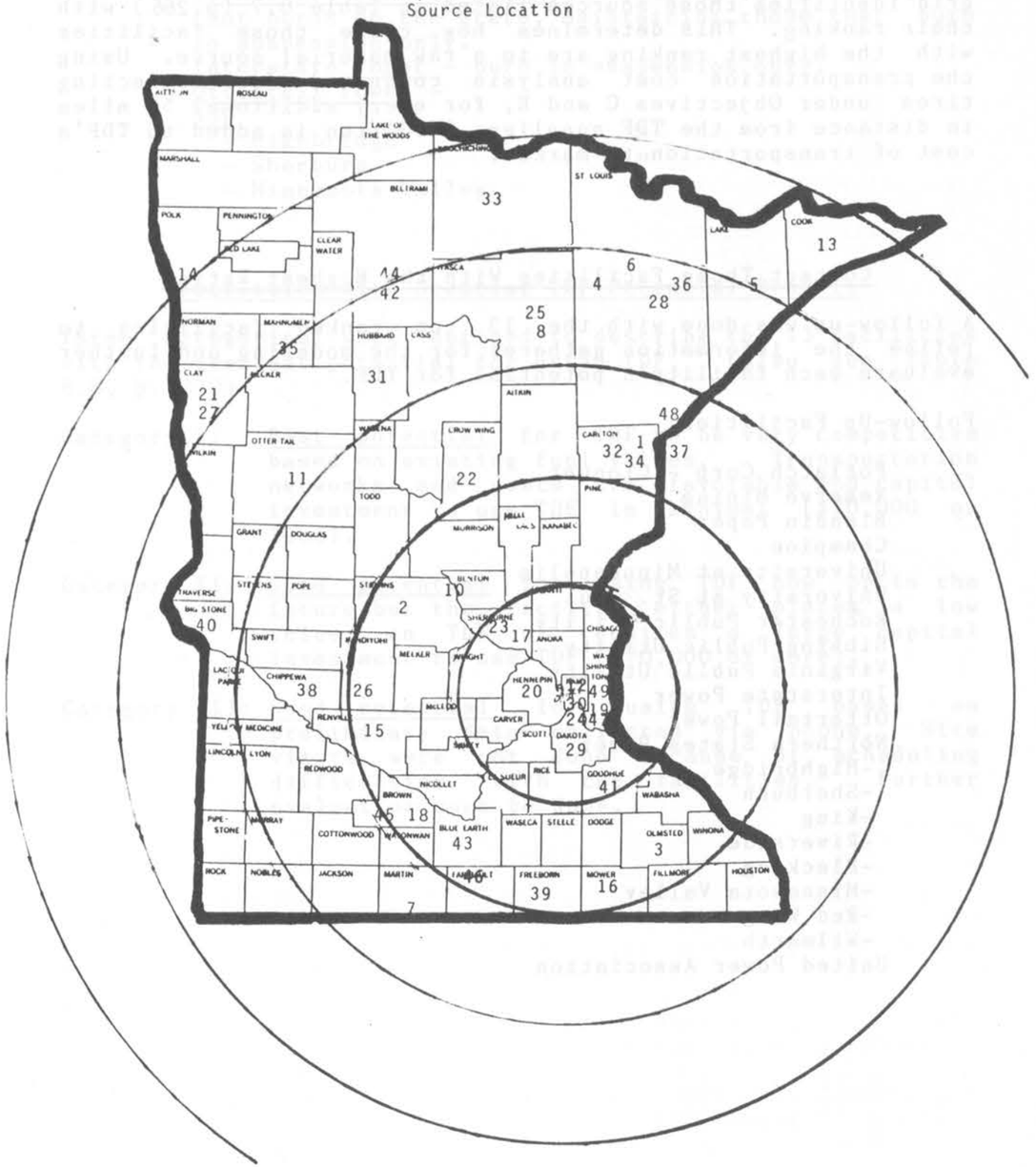
Table 8.7
SOURCE EVALUATION SCORES

Relative Ranking #'s	Overall Score Totals
Public Utilities	
3. Rochester Public Utility	249
4. Hibbing Public Utility	247
6. Virginia Public Utility	242
16. Austin Utilities	217
18. New Ulm Public Utility	215
26. Willmar Municipal Utility	206
27. Moorhead	205
35. Public Utility Commission	164
45. Sleepy Eye Public Utility	122
46. Blue Earth Light	116
Private Utilities	
7. Interstate Power, Dubuque	242
11. Ottertail Power, Hoot Lake	228
12. NSP, Highbride	224
17. NSP, Sherburn	217
19. NSP, A.S. King	214
20. NSP, Riverside	214
23. United Power, Elk River	212
25. Minnesota Power, Cohasset	207
28. Minnesota Power, Aurora	199
29. NSP, Blackdog	194
30. District Heating, St. Paul	188
37. Duluth Steam Coop	161
38. NSP, Minnesota Valley	159
40. Ottertail Power, Big Stone	148
41. NSP, Red Wing	144
43. NSP, Wilmarth	139
Industrial	
1. Potlatch Corp, Cloquet	257
5. Reserve Mining, Silver Bay	245
8. Blandin Paper	237
10. Champion Corporation	234
13. Erie Mining Co., Cook County	219
14. American Crystal, Polk County	218
15. S. Minnesota Beets	218
21. American Crystal, Clay County	213
22. Potlatch, Brainerd	212
31. Potlatch, Bemidji	187
32. Diamond International	177
33. Boise Cascade	167
34. Conweb Corporation	167
36. Erie Mining	162
39. Wilson Foods	156
44. Superwood Corp., Bemidji	124
48. Superwood Corp., Duluth	110
49. Anderson Corp.	93
Institutions	
2. St. John's Collegeville	255
9. U of M, Minneapolis	235
24. U of M, St. Paul	210
42. Bemidji State University	141
47. Minnesota Corrections	115

Figure 8.1

INCINERATION STUDY

Map of Minnesota
Source Location



Transportation costs play a key role in whether TDF can be delivered at a competitive cost. Figure 8.1 (p.267) is a transportation grid that shows distances in 50 mile increments from the Twin Cities. The greatest source for raw material is the Twin Cities area. As a result, it was selected as prime location to produce TDF. The number on the transportation grid identifies those sources listed in Table 8.7 (p.266) with their ranking. This determines how close those facilities with the highest ranking are to a raw material source. Using the transportation cost analysis conducted for collecting tires under Objectives C and E, for every additional 50 miles in distance from the TDF supplier, $4.34/ton is added to TDF's cost of transportation to market.

Contact Those Facilities With the Highest Rating

A follow-up was done with the 13 top ranked facilities to refine the information gathered for the modeling and further evaluate each facility's potential for TDF.

Follow-Up Facilities:

Potlatch Corp - Cloquet
Reserve Mining
Blandin Paper
Champion
University at Minneapolis
University at St. Paul
Rochester Public Utility
Hibbing Public Utility
Virginia Public Utility
Interstate Power
Ottertail Power
Northern States Power
 -Highbridge
 -Sherburn
 -King
 -Riverside
 -Blackdog
 -Minnesota Valley
 -Red Wing
 -Wilmarth
United Power Association

The following facilities were eliminated from further consideration as TDF users because they burn coal in suspension only. The cost to retrofit these boilers burning in suspension was thought to be prohibitive.

Rochester Public Utility - phasing out power boiler that burns on the grate, maintaining those that burn in suspension only.
Interstate Power - burn in suspension only.
Ottertail Power - "
NSP
- Highbridge "
- Sherburn "
- Minnesota Valley "

Facilities with Greatest TDF Potential Benefit

Three categories were defined to describe the 13 facilities with the greatest potential for using TDF. (Also see Table 8.8, p. 270).

Category I: Best potential for TDF to be very competitive based on existing fuel values. Transportation networks and costs are favorable and capital investment to use TDF is minimal ($70,000 or less).

Category II: Good potential for using TDF now or in the future but the facility either places a low value on TDF or requires a large capital investment to use TDF ($70,000 or more).

Category III: Good potential for using TDF based on preliminary data collected via phone. Site visits were not done because of scheduling difficulties with the facilities. Further evaluation must be done.

TABLE 8.8
TDF's GREATEST POTENTIAL

CATEGORY	FACILITY	2" TDF COMPETITIVE WITH CURRENT ENERGY COSTS	TDF CAN EASILY BE METERED INTO EXISTING FUEL FEED SYSTEMS	ON SITE VISIT	60 MINUTES OR LESS FROM MAJOR TIRE SUPPLY
I. Best Potential	Blandin Grand Rapids MN	Yes	Yes	Yes	No
	U at St. Paul	Yes	No, special feed for direct firing of TDF required	Yes	Yes
II. Good Potential	Hibbing Public Utility	Yes	No, special feed for blending of TDF required	Yes	No
	Virginia Public Utility	Yes	No, special feed for blending of TDF storage problems	Yes	No
NSP					
	King	No	No, smaller TDF required	No	Yes
	Riverside	No	No, smaller TDF required	No	Yes
	Blackdog	No	possibly, redesign the system	No	Yes
	Red Wing	No	Yes, w/RDF modifications	No	Yes
	Willmarth	No	Yes, w/RDF modifications	No	Yes
III. Good Potential	Champion Sartell, MN	Yes	Yes, based on verbal discussion	No	Yes
	Potlatch Cloquet, MN	Yes	Yes, based on verbal discussion	No	No

Other Incineration Possibilities

Municipal waste to energy facilities are currently being planned throughout Minnesota. (see Table 8.9, p. 272) If all these plants were operational their total capacity would be 3,820 tons/day of municipal refuse. These facilities could use 41,975 tons of tires per year at an overall tire addition rate of 3% by weight. This demand may be more scrap tires than the state generates within a year.

Kevin Sticknay of Signal Co., a manufacturer of waste to energy facilities with 5 facilities operating around the U.S., states that tires do not pose a significant problem if they are not delivered or processed in large batches. Two of Signal's plants that were contacted, one in Westchester, New York and one in Baltimore,Maryland, restrict tires.

It is important to consider these facilities for scrap tire disposal because:

1) Scrap tires are or can be considered a part of the solid waste stream.

2) Higher value markets for TDF may not exist to preclude tire inclusion with the municipal waste stream.

3) TDF or whole tires have a high energy content that is a beneficial supplement (fuel sweetner) to the low energy content of municipal solid waste.

Questions to be addressed before the operators of incinerators or RDF facilities may use tires as a fuel are:

1. What specifications must a tire fuel product meet? i.e. can it burn whole tires, or do the tires have to be processed?

2. Will the feed conveyor systems of the waste to energy facility be able to handle tires?

3. Can ash handling systems deal with tire residue?

4. Is the combustion time adequate to burn TDF and/or whole tire forms?

5. Are air emission control systems adequate to satisfy pollution control requirements when burning rubber?

6. Does one need to evenly blend TDF with municipal waste for mass incinerators or RDF combustion units?

TABLE 8.9

MINNESOTA SOLID WASTE-TO-ENERGY PLANTS

12

Plant Location	Operational Yes-Date	No	Status	Estimated Capacity in tons/day
Red Wing	Oct.82		Steam produced for tannery	72-100
St. John's Univ.	Nov.81		Steam for heating, cooling,elec.	64
Savage	Dec.82			36
Western Lake Superior Sanitary Dist. (Duluth)	July85	?	RDF system - start-up difficulties	400 tons/8 hr shift
Pennington		X	Construction began May 1985	4-6 tons/hr
Perham		X	Propose construction Fall 1985	75
Ramsey/Wash.		X	NSP Owner - Construction to begin Fall 1985	1000
Hennepin County		X	Conceptual - Bids Submitted	1000
Pope/Douglas		X	Proposed construction summer '86	75
Olmsted		X	Proposed construction spring '86	?
Winona County		X	Preliminary investigation	100
Mower County		X	Preliminary investigation	100
Martin County		X	Proposal being developed	75-100
Elk River		X	Conceptual Stage	600
Grand Rapids		X	Preliminary investigation	100
Fergus Falls		X	Preliminary investigation	75

Examples

Red Wing, Minnesota reports burning approximately 90 tons/day of municipal solid waste in a modular incinerator (mass burn). The plant manager, Warren Synder, suggests that its maximum capability for burning whole tires is six tires per hour or 120 tires/day?[7] The limiting factor to burning tires is emission/combustion control. Tires in large quantities will burn too hot, thus increasing the lower burn chamber combustion temperature above 1400 degrees F. This system has a secondary combustion chamber for gases and smoke. To maintain compliance with their stack emission limits, the lower chamber must be 300 degrees less than the upper. In summary, the tires burn too hot, thus throwing off the temperature relationship between the lower and upper chambers and thus creating visible smoke from the stack. The facility has plans to install a electrostatic precipitator. How this might affect the number of tires burned will be tested upon installation.

Occidental has a Resource Recovery Plant at Niagra Falls, New York that burns refuse derived fuel (RDF).[8] The plant was specifically designed for burning RDF. Large quantities of tires are not accepted at the facility, and are turned away if necessary. The plant requires a 2" minus tire chip. It does not currently burn rubber chips, although their air permit allows up to 10% by weight addition. It does have an electrostatic precipitator for particulate control. Occidental could burn TDF if it was short on garbage and needed additional fuel, and TDF was competitively priced. The plant did try to shred tires with its large hammermill but was unsuccessful. The hammermill did not work well because of slow production, irregular particle size, and a tendency to overheat the rubber.

Hillsborough County, Florida is constructing a 1200 tons per day mass incinerator facility. The county does not know how tires will work in the facility. However, it plans to study the issue once the facility is built and on line.[9]

Westchester County, New York currently operates three (3) - 750 tons/day mass incinerator boilers for a total municipal solid waste capacity of 2,250 tons/day.[10] They do not take commercially delivered tires, i.e. those not mixed in with the normal household garbage. The reasons are:

1. Its SOx limit is very restrictive because of the plants geographical location in the Hudson Valley. Tires have a high sulfur content 1.2% and in large commercial quantities the sulfur concentrations would cause the plant to exceed SOx limitations.

2. Too many tires in the boiler at one time would destroy the boiler. Tires have a very high Btu content and burn at high temperatures. Westchester feels that controlled blending by the operators is critical to ensure the life of the boiler. If the plant did overcome the SOx issue, it is unlikely that the operators would want to special handle the tires.

Northern States Power (NSP) has finalized plans to build and operate a resource recovery plant to serve Washington and Ramsey Counties in Minnesota. Their Red Wing and Wilmarth power plants will be retrofitted within the next two years to feed a 4" minus RDF into the power boilers for fuel. The output for the RDF plant is sized for approximately 1,000 tons per day. Ed Schentzel of NSP has stated that their RDF processing facility is not designed to accept large quantities of tires, but should be able to handle an occasional tire that comes to the facility via the garbage collector or public. Both Red Wing and Wilmarth will have the ability to burn large quantities of 2" minus TDF. However, NSP places a low value on TDF because it competes with RDF. The size requirement of the TDF is a function of the feed and stoker design specifications. [11]

Hennepin County is in the planning phase of a mass incinerator to be located in Minneapolis. The size of this facility is estimated at 1,000 tons/day. Whether or not this facility can burn significant quantities of TDF or whole tires can only be determined once the facility is built.

General Overview

With 2,000 tons/day of municipal waste to energy recovery capacity in Minnesota, it may be possible to burn TDF or whole tires at 10% by weight assuming the same rate as Occidental in Niagra Falls, NY. This consumption rate equals 200 tons/day of tires or TDF, and would consume all the scrap tires generated in Minnesota within 200 days or less. This is a figure of 40,000 tons.

Municipal waste to energy facilities may play a role in the recovery of scrap tires. It is probable that a recovery/tipping fee will dictate whether a significant quantity of tires come to either a waste to energy facility, or scrap tire processor supplying other markets. As an example, if a waste to energy facility were to charge $32/ton for disposal of waste, and a tire processor were to charge $15/ton to accept tires, the economic advantage would favor the tire processor, and most of the tires would flow to him. Current projections show tipping fees at $32-40/ton for municipal solid waste in the Twin Cities once the plants are built.

Summary

The incineration study has demonstrated that a minimum of six boiler facilities within Minnesota could realize a substantial economic benefit by using TDF (see Table 8.8, p. 270). Furthermore, the competitive pricing for these customers may not place the TDF supplier at such a disadvantage that large front end disposal fees would be required. It is important to note that these six facilities, excluding NSP, could retro-fit or add to their solid fuel handling and feed systems at a cost estimated at less than $100,000. This cost to retro-fit is based on actual handling and feed system retrofits for similar boilers in Oregon, Washington, and Alaska.

Coal, the predominant fuel of power boilers that TDF competes with, is sold in a normal range of from $1.30/mm Btu to $2.20/mm Btu. The factors that determine a facility's coal cost are quantity and quality. Facilities that use large quantities of coal, such as the utilities, have significant price breaks in their purchase price agreements because of quantity discounts and transportation efficiencies. The optimum market for TDF is one that burns a significant quantity of coal. (The importance of how much TDF a particular market buys was outlined in the return on investment model, Appendix IH. p.278)

To establish a competitive pricing structure for TDF all the strong potential markets were asked the cost savings that TDF must achieve in order to be considered as a replacement fuel. An average of 20% savings was indicated as necessary before considering the use of TDF. (Based on the current price range for coal, a comparison of coal price to TDF with a 20% price break is found in Table 8.10, below.)

TABLE 8.10

FUEL PRICE COMPARISONS

TYPE/BTU PER TON	COAL PRICE $/mBtu	COAL PRICE $/ton	w/20% Savings TDF PRICE(31mil.Btu/ton) $/mBtu	TDF PRICE(31mil.Btu/ton) $/ton
Subbituminous/18 million Btu/ton	1.30	23.40	1.04	32.24
"	1.40	25.20	1.12	34.72
"	1.50	27.00	1.20	37.20
"	1.60	28.80	1.28	39.68
Bituminous/26 million Btu/ton	1.70	44.20	1.36	42.16
"	1.80	46.80	1.44	32.44
"	1.90	49.40	1.52	47.12
"	2.00	52.00	1.60	49.60
"	2.10	54.60	1.68	52.08
"	2.20	57.20	1.76	54.56

The six best potential customers identified in Table 8.8 (p 270), excluding NSP, have a total annual demand of approximately 550,000 tons of coal per year. The total annual demand for TDF would be 33,000 tons and the annual demand for tires as a raw material would be 3.5 million if TDF were to replace only 6% of the coal demand.

These markets described the criteria necessary to seriously consider a TDF test burn, and its use under contractual agreement. The criteria are:

1. Assurance of a stable supply of TDF to allow a return on investment.

2. A consistent material that maintains the original specifications of the materials used in the trial. All markets specified a 2" minus material with most of the wire removed as being best to blend and use in their boilers.

3. A TDF handling and feed system must be developed to provide for the unique characteristics of TDF. (i.e. flow, metering and Btu/energy control.)

4. TDF's price must be competitive. (i.e. 20% energy cost savings to attract their considerations.)

Substantial interest exists in Minnesota for tire derived fuel (TDF). Based upon fuel demand requirements, more than one user may be required to recover all of the scrap tires generated within the state. How the waste to energy plants might affect the tire flow to tire processors is not known. It has been concluded, however, that these facilities will not affect tire flow if the tipping fees are lower. It is important to note that the value of the incineration market may directly affect the cost of tire recovery.

APPENDIX IH

RETURN ON INVESTMENT CALCULATIONS

"APPENDIX IH"
ANNUAL FUEL REQUIREMENT
RETURN ON INVESTMENT BASED ON FUEL REPLACEMENT ONLY

Company A's fuel demand: [x1] = 4,800 tons/year

Fuel Type : Coal - bituminous

Energy Content of Existing Fuel : 27 million Btu's/ton or 13,500 Btu's/lb.

Current Fuel Cost : [y1] = $59.40/ton or $2.20/million Btu

Emission Control System : Bag House - 99.8% efficient

Replacement Fuel - Tire Derived Fuel

Energy Content of Replacement Fuel : 31 million Btu's/ton or 15,500 Btu's/lb

Replacement Fuel Cost (30% less) : [y2] = $47.74/ton or $1.54/million Btu's

Annual Energy Demand : 1.296 x 10" Btu's

Assumptions:

1. A 50-50 blend rate by Btu's of TDF-coal can be accomplished within environmental limits
2. Given a 50-50 blend then annual fuel demand would be
   [x2] = 2,710 tons of coal
   [x3] = 1,820 tons of TDF
3. [a] = $50,000 for a permanent metering system to use TDF
4. [b] = $30,000 initial trial cost

Z = Annual Fuel Savings in $'s

(x1 yz) - [(x2 y1) + (x3 y2)] = Z
(4,800 59.40) - [(2,710 59.40) + (1,820 47.74)] = Z
285,120 - (160,974 + 86,886.8) = Z
285,120 - 247,860 = Z
$37,260 = Z

Return on Investment (ROI) = (a + b) - Z
ROI = (50,000 + 30,000) - 37,260
ROI = 80,000 - 37,260
ROI = 2.15 years

TDF will be used in greater quantities at those facilities with a larger annual fuel demand. A greater $ savings would then be realized. Metering unit and trial investment costs tend to be the same whether a large or small fuel demand.

Given a $80,000 investment to use TDF, prior assumptions and prior conditions as presented in the example, then ROI as a function of annual fuel demand is:

TOTAL ANNUAL FUEL DEMAND IN COAL TONS	ROI AT 50-50 BLEND RATE
4,800 tons	2.15 years
9,600 tons	1.075 years
14,400 tons	8.6 months
19,200 tons	6.45 months
24,000 tons	5 months
48,000 tons	2.58 months

REFERENCES - OBJECTIVE H

1. "Emission Inventory Systems/Point Source Subsystem," Minnesota Pollution Control Agency, Air Quality Division, 1983.

2. Ibid, report.

3. Ibid, report.

4. Ibid, report.

5. Ibid, report.

6. "Proximate and Ultimate Analysis of Tire Derived Fuel," Waste Recovery, Inc., 1982.

7. Phone interview with Warren Snyder, Plant Manager, City of Red Wing Garbage Burner, Red Wing, MN, 6/13/85.

8. Phone interview with Bob Trome, Niagra Recovery Plant Operations, Occidental Inc., Niagra Falls, New York, 6/12/85.

9. Phone interview with Patty Berny, Department of Solid Waste, Hillsborough County, Florida, 7/12/85.

10. Phone interview with Charles Miles, Director of Solid Waste, Westchester County, New York (7/15/85).

11. Interview with Ed Schentzel, Environmental and Regulatory Activities Department, Northern States Power, Minneapolis, MN (6/85).

12. Interview with Debbie Porter, Minnesota Solid Waste Management Board, Minneapolis, MN (6/85).

VI REFERENCES

REFERENCES - COMPREHENSIVE

1. Phone interview with Bob Bull, Hoyt Lakes, MN (7/85) - Plans to build a mining tire cutter.

2. Interview with Roger Olson, Minnesota Department of Transportation (4/24/85). Rubberized asphalt utilization in Minnesota.

3. Phone interview with Tom Rayburn, Baltimore RESCO, Baltimore, Maryland (7/16/85) - Whole tires and mass incinerators.

4. Phone interview with Bill Brielmier, Mankato, Agline, Mankato, MN (7/15/85) - Potential tire processor.

5. Phone interview with Block Sanitation, local garbage collector, Minneapolis, MN (7/15/85) Residential and commercial collection of scrap tires.

6. Interview with Ed Crowley, Minnesota Pollution Control Agency, Roseville, MN (6/18/85) - Air quality concerns when burning TDF.

7. Phone interview with Jim Smith, Modern Tire Dealer, Akron, Ohio (7/12/85) - Tire generation.

8. Phone interview with Earl Angell, Asphalt Institute, Golden Valley, MN (5/2/85) - Rubberized asphalt.

9. Interview with Dan Quillin, Minnesota Department of Energy and Economic Development, St. Paul, MN (4/24/85) - Projections for energy costs.

10. Interview with Dave Miller, Energy Recovery Systems, New York (6/23/85) - Potential processor.

11. Interview with Larry Zernach, Owens Illinois, Tomahawk, WI (4/10/85 - Tire derived fuel market.

12. Phone interview with Ron Stelzig, Northern States Tire Dealers Association, St. Paul, MN (7/85) - Tire demographics.

13. Phone interview with Jery Scharf, National Association of Recycling Industries, New York, New York, (4/29/85) - Rubber recycling.

14. Phone interview with Rick Costohryz, Minnesota Department of Labor and Industries, St. Paul, MN (4/29/85) - Labor cost in Minnesota.

15. Phone interview with Julie Dodge, U.S. Department of Energy, Coau d'Alene, ID. (4/29/85) - Tire recycling.

16. Interview with Mike Maher of Southeastern Minnesota Citizen's Action Com. (SEMCAC), Rockford, MN (5/20/85) - SE Minnesota tire issues.

17. Interview with Hap Scharmota, Hiawatha Tire Co., Winona, MN (5/20/85) - Tire collection in SE Minnesota.

18. Phone interview with Steve Anderson, AST Corporation, Eden Prairie, MN (5/21/85) - representative for O&E tire shredders.

19. Phone interview with Manson Trucking, Duluth, MN (5/20/85) - rates and other information concerning the trucking industry.

20. Phone interview with Walter Harle, EAC Engineering, Glendale, NY (5/24/85) - information regarding tire shredder.

21. Phone interview with Paul Smith, Metropolitan Council, St. Paul, MN (6/3/85) - flow control.

22. Interview with Wally Pilquist, Pilquist Recycle, Inc. Stillwater, MN (5/29/85) - tour of pyrolysis plant.

23. Phone interview with Ronald E. Kladt, A&D Recycling, Minneapolis, MN (5/29/85) - past efforts to shred tires.

24. Interview with Jim McMahan, Consolidated Oil, Minneapolis, MN (5/30/85) - pyrolysis plant.

25. Phone interview with Leo Satow, California Waste Management Board, Sacramento, CA (5/30/85) - pyrolysis plants operating in California.

26. Phone interview with Dan Cambell, Uniroyal Tire Company, Eau Claire, WI (6/30/85) - crumb rubber issue.

27. Phone interview with Ben Schultz, Standard Handling, Inc., St. Paul, MN (5/31/85) - conveyor equipment prices.

28. Interview with Debbie Porter, Waste Management Board, Minneapolis, MN (6/4/85) - Rubber Research Elastomerics investigation.

29. Interview with Lee Bradley, Bradley Manufacturing, Eveleth, MN (6/6/85) - variety of scrap tire reclaim products.

30. Phone interview with Eldon Keehr, Motor Carriers Safety and Compliance, St. Paul, MN (6/10/85) - track, rail and barge weights.

31. Interview with Minnesota Tire Recycling Co., Andover, MN (6/7/85) - viability of tire recycling.

32. Phone interview with Marge Yoder, Baker Rubber, Inc., South Bend, Indiana (6/11/85) - crumb rubber market price.

33. Phone interview with George Martichianco, used tire purchasing agent, Midwest Rubber Reclaimers, East St. Louis, IL (6/11/85) cost of reclaimed rubber.

34. Phone interview with Frank P. Lederer, International Baler Corp., Jacksonville, Florida (6/18/85) - baler for whole tires.

35. Phone interview with Don Hole, Mayor of Babbit, MN (6/25/85) - confirm tire dump site.

36. Phone interview with Norm Craig, Solid Waste Officer for Fillmore County, MN (7/1/85) - confirmation of a stockpile.

37. Phone interview with Fred Issachs, American Iron & Steel, Minneapolis, MN (7/1/85) - the use of a hammermill for tire shredding.

38. Interview with Jack Price, Domestic and Overseas Marketing, Crystal, MN (7/9/85) - promote pyrolysis plant.

39. Phone interview with Ralph T. Keyes, Plus Ride - Rubberized Asphalt Markets, Minneapolis, MN (7/15/85) - rubberized asphalt.

40. Interview with Del Wisehart, Amex Tire, Savage, MN (7/15/85) - potential tire processor.

41. Interview with Monti Niemi, PTL Tire Warehouse, Ham Lake, MN (7/22/85) - tire collection and pyrolysis.

42. Phone interview with Kato Sanitation, Mankato, MN (7/22/85) - tire shredding and NSP test burn.

43. Phone interview with Kutrieb Corporation, Cheteck, WI (7/22/85) - manufacturers of a tire pyrolysis plant.

44. Phone interview with Robert Leslie, R.H. Leslie Co., Minneapolis, MN (7/24/85) - demonstration of pyrolysis plant.

45. Interview with Craig Fullerton, City of Everett, Everett, WA (7/30/85) - Tire fire issues.

46. Phone interview with Dianne Fluggie, Burlington Northern Railroad, Overland Pork, Kansas (8/8/85) - rail rates within Minnesota.

47. Interview with Dennis Miller, Jet Edge Corporation, Minneapolis, MN (8/14/85) - manufacturers of specialized equipment to cut tires.

48. Phone interview with Mary Richardson, Ramsey County Solid Waste Issue, Ramsey County, St. Paul, MN (5/17/85) - flow control issues.

49. Court case dealing with illegal tire storage, Judge John W. Borg, Hennepin County Court, Minneapolis, MN (7/24/85) - file #1-1126258.

50. Phone interview with Bob Delevega, Citizen League, Minneapolis, MN (7/24/85) - opposition to flow control.

51. Phone interview with Charlie Johnson, Bellaire Sanitation, Stillwater, MN (7/24/85) - tire shredding operation.

52. Interview with Fred Stark, Rubber Research Elastomerics, Minneapolis, MN (6/13/85) - potential scrap tire processors.

53. Phone interview with Bob Stoffell, Energy Recovery Systems, Inc., Great Neck, NY (7/25/85) - potential tire processor.

54. Literature review of Garbalizer, printed by Garbalizer Machinery Corporation, Salt Lake City, UT 84111.

55. Phone interview and literature review with David Webster, Recovery Systems Co., factory representative for Mitts and Merril, Hopkins, MN (5/85).

56. County supplied ordinances for review;

    Scott County
    Ramsey County
    Hennepin County
    St. Croix County
    Dakota County
    Washington County

57. City supplied ordinances for review:

    City of Mankato

58. Phone interview with Joe LaRue, Oxford Energy Co., New York, NY (7/85) - whole tire incineration, energy recovery.

59. Franchise agreement for waste hauler supplied by Scott Larson, City of Cambridge, MN (5/6/85)

60. Tire collection and processing permit program ordinances supplied by Metropolitan Service District, Portland, Oregon.

61. Phone interview with Colleen Halpine, Ramsey County, MN (5/6/85) - financial assurance for waste haulers.

62. Phone interview with Bob Hutchison, Anoka County, MN (5/6/85) - financial assurance for tire processors.

63. Phone interview with Don Kyser, MPCA Solid and Hazardous Waste Division, Roseville, MN (4/30/85) - why landfill assurance mechanisms do not apply to tire facilities.

64. Metropolitan Service District, "Recommendations for Developing a Comprehensive Management Program to Adminster a Solid Waste Facility Franchise and Disposal Rate Control System," October 17, 1980, Price, Waterhouse & Co., Portland, OR.

65. Interview with Merle Irvine, ex-Director of Solid Waste Management, Metropolitan Service District, Portland, Oregon (5/15/85) - Metro tire program, implementation and successes.

66. Interview with Wayne Coppel, Systems Shredders, Inc., Wilsonville, Oregon (5/10/85) - Manufacturer of shredders.

67. "Emission Inventory System/Point Source Subsystem," Minnesota Pollution Control Agency, Air Quality Division, 1983.

DOCUMENT O - REPORT ON DOCUMENTING THE NEED FOR GRANT ASSISTANCE

Factor 3 is the most pertinent to this situation. This operation consists of a fairly high fixed investment cost which is required for efficient production. We believe that we have a system for disposing of all the tires presently stored and those to be discarded in the future. There is essentially one line of equipment required for our operations regardless of whether 10 million or 50 million pounds per year are to be utilized in the TIRECYCLE process. The loss of productivity from smaller scale units is substantial due to decreased throughput and increased maintenance. The large investment is required because significant economies of scale are required for profitable production.

High investment outlay and limited short term returns are major obstacles in attracting sufficient capital. The long term viability is well documented, but long range uncertainties about interest rates make investment of this nature a risky venture. Nevertheless, we feel the accelerating problems associated with society's inability to effectively control the growing numbers of hazardous tire piles make a long term committment imperative.

We believe we have demonstrated a project which has a great deal of long term potential as well as short term flexibility. The combination of these two attributes provides for a comprehensive program which can benefit both the public and private sectors.

The project could not be undertaken without the grant of $300,000 and the loan of $700,000, for the equipment required far exceeds the applicant's (RRE, Inc.) capacity to either directly finance or borrow money. As much assistance as possible is requested. Additional financial assistance over the $300,000 grant and $700,000 loan is needed for building and land. If the Waste Management Board provides a grant of $300,000 the additional financing will be much easier to obtain. Specifically, the grant of $300,000 would not only make the equipment procurement possible but it would be an expression of faith in the proposed system and a show of determination to do something about the scrap tire hazard. No efforts have been made to solicit financing for building and land prior to having the grant and loan from the Waste Management Board.

Minnesota Pollution Control Agency

RECEIVED
OCT 12 1984
MINN. POLLUTION CONTROL AGENCY

Notice of Intent to Solicit Outside Opinions Concerning Proposed Rules Relating to the Permitting of Waste Tire Collectors and Waste Tire Processors by the Minnesota Pollution Control Agency

Notice is hereby given that the Minnesota Pollution Control Agency (MPCA) is seeking information or opinions from sources outside the MPCA in preparing rules pursuant to Minnesota Laws 1984, Chapter 654, Article II, Section 93 which requires a tire collector or tire processor with a determined amount of waste tires to obtain a permit from the MPCA unless exempted.

The permitting rules will address waste tire collectors and processors who will be required to obtain permits, permit application requirements and procedures, standards or guidelines for operation of waste tire collection and processing facilities, permit fees, public participation, and permit issuance or denial procedures.

The MPCA requests information and comments concerning the subject of these rules.

Written or oral information or comments may be submitted to Karen Ryss at the address listed below or at 612/297-1793 during regular business hours.

Karen Ryss
Minnesota Pollution Control Agency
Solid and Hazardous Waste Division
1935 West County Road B2
Roseville, Minnesota 55113

Information or comments will be accepted until October 31, 1984. Any written material received by the MPCA shall become part of the background record regarding these permitting rules.

Dated: SEP 28 1984

Thomas J. Kalitowski
Executive Director

Phone:
1935 West County Road B2, Roseville, Minnesota 55113-2785
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Ziegler Tire

P.R. Spotlight: Washington Tire Service, Los Angeles

Customer Service: The Key To Growth For One Store In Major Metro Market

How does a one-store tire dealership in downtown Los Angeles, Cal., survive and prosper with virtually no advertising? For Bill Fuqua, owner of Washington Tire Service, and his employees, the answer is caring about the customer and showing it, plus a follow-up system that builds repeat business and referrals.

"The basic problem for a small business like ours, operating in a large metropolitan market, is that we just can't afford the rates the newspapers, radio and t.v. stations charge for advertising," said Fuqua, who is also president of California TDRA-South.

"So we devised another system to attract and keep customers. It's based on what I learned about 30 years ago while working at McDowell Tire Company in Kansas City, Mo."

Since the majority of Washington Tire's sales are directly to individual consumers rather than to commercial accounts, care for the customer starts right in the salesroom, he told *Dealer News*. We put a lot of emphasis on effective telephone manners and proper dress and appearance of our employess — salesmen are required to wear a suit and tie.

Equally important is the appearance of the store, Fuqua explained. We keep it neat and clean and have attractive point-of-purchase displays.

As each sale is made, we begin our system of follow-up postcards to customers. The invoice is used to record information, and cards are sent out every six months to all customers, reminding them of the need to maintain wheel balance and rotation for maximum wear of the tires. The number of postcards average from 250 to 300 per month.

Fuqua noted that the full price is charged for initial tire service work when tires are sold. The reminder cards offer free balancing and tire rotation every 5,000 miles.

"It has turned out to be a good way to keep our name in front of the customers," he said. "When people come back for the free service, that often gives us a chance to sell them other under-car services they need. Sometimes people who have moved out of town come back and tell us they returned because 'you're the only tire store that ever sent us anything.'"

At the time of sale, customers are given store "calling cards," and sales people encourage them to "tell your friends and neighbors about us."

We use the same system of encouraging referrals and the follow-up postcards for commercial accounts, Fuqua noted.

And it does work. The store owner said that with this system, annual sales volume has increased to more than $1 million over the past several years.

Washington Tire has five service bays, and auto service business makes up about 25 percent of total volume per month.

The company's only advertising is in the Yellow Pages. "The Yellow Page ad attracts customers, too," Fuqua commented. "We find that a lot of people are doing comparison shopping by phone, and that's another reason we put so much emphasis on employees giving a courteous, friendly and knwledgeable presentation when taking phone calls."

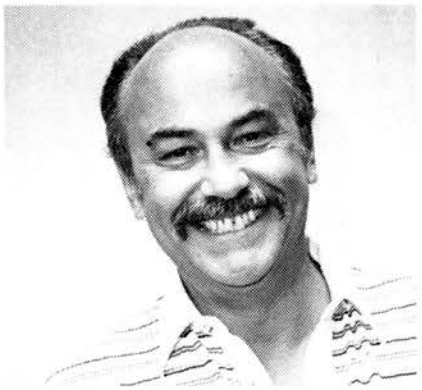
Fuqua said another thing that helps to build sales is community involvement. "It's especially important for the smaller dealer to be active in his community and become known. Besides being a way to do some good, it give the business good exposure." He is active in the Chamber of Commerce, YMCA and Boy Scouts, and said that "through these activities, I meet a lot of people. Some of them will ask me about tires, and then later we find some of these same people coming into the store to buy."

In explaining the customer follow-up and sales methods, Fuqua stressed the importance of a properly prepared invoice.

"You don't necessarily have to have more employees than normal for a store this size, but it is essential for the procedures and paperwork to be well organized and understood by all.



Outside view of Washington Tire Service, Los Angeles, showing several service bays.



Ed Cohn



Wayne Hesselbarth



Jay Goldberg

tire for $30, the public still believes the new tire is the best buy.

Kahn agrees with Hesselbarth. "People still have it in their mind they can get a new tire for a few dollars more," said Kahn.

Two dealers also expressed regional concerns that were affecting their business. Ed Cohn said the Olympics had scared some customers away from going into the downtown Los Angeles area, bringing his service sales down. Bob Kahn said an over supply of both wine and rasins in his agricultural area could lead to a downturn in business.

Gladman said he has noticed smaller dealers in southern California getting taken over by larger chains, and others going bankrupt, which he attributes to the low profitability of new tires. Lerch said some smaller dealers in northern California have been taken over by larger dealers, but said the situation seems to have stabilized in the last year.

CUSTOMER SERVICE STRESSED AS KEY TO SUCCESS

"Our success," stated Wayne Hesselbarth, "has been due to treating the customer as number one, being competitive in prices, and in wage and benefits to employees."

"I insist on 100 percent customer satisfaction," said Paul Bobzin, adding his company's "tremendous" repeat business is due to "Treating the customer like we liked to be treated."

THE BEST ADVERTISING IS?

"The best advertising of all is a satisfied customer," said Paul Bobzin. Bobzin said he has found coupon booklets that advertise service specials to have been successful. "The phone rings, people line up to get work done," Bobzin said.

Jim Donnelson said he uses radio and newspaper ads, along with a little direct mail. Ed Cohn said he uses tire co-op ads in the *Los Angeles* Times, adding it would be very expensive if he went it alone.

Wayne Hesselbarth splits his advertising between newspaper and radio, pointing out that advertising consistently has worked for him.

But Bob Kahn has found another medium that he said has worked for him. "Frankly, I don't do any advertising," Kahn said, adding that word of mouth referrals by satisfied customers has served him well.

EMPLOYEE TURNOVER NOT A PROBLEM

Most of the dealers interviewed agreed that employee turnover was not a problem. Hesselbarth said turnover at his four retail locations is a little worse than it use to be, noting that while many of his employees had been with him for over 10 years, it was the new employees entering the field that were hard to keep.

STAYING ON TOP

Perhaps Jim Donnelson summed up the attitude of many of the dealers concerning the current heavily competitive market when he said, "You've got to stay on top of everything every single moment."

Scrap Tires

(continued from page 50)

Carl is convinced that the solution to the scrap tire problem has to begin with the dealer facing a basic fact — disposing of scrap must be part of the cost of doing business.

"However irritating or disconcerting it may be, you have to accept that you probably will have to use a landfill and pay a fee, but also pass that cost on to the customer."

"We sometimes tend to forget that the tire dealer doesn't really generate the scrap tire problem" he continued. "The dealer is actually a middleman in a chain of waste from the consumer."

He explained that once the cost is passed on, the dealers as a group can then begin working with the municipality to get a shredder installed at the landfill. "Tire shredding equipment can and should be a part of every landfill operation. The shredded tire material then can be stored more compactly with overlays of earth and be kept separated from other refuse."

"It's up to an organized group of dealers in a locality to convince them of that need," he said.

"There's an advantage to the landfill of shredding and keeping tire material this way. They would have a supply of crumb rubber available for use by any recycling outfit that wanted it, and then perhaps could sell it rather than giving it away, since it would be in more nearly usable form."

Carl's final comment was, "I see the role of Virginia TDRA in the scrap tire disposal problem as one of helping dealers and retreaders to work with local governments to achieve a solution."

(continued from previous page)

$125,200 in funding for this fiscal year, beginning July 1. "That's a good increase over last year and the funding has built up steadily over the years," he said. "We started with $50,000."

Meier explained that for each funding year, a quota for the number of tires is set by the state Secretary of Commerce & Resources. For the current funding period, the Marine Resources Commission has a quota of 100,000 tires. Meier said the type of reefs to be built will be basically the same as the past years and will use mostly auto tires, with some truck tires included.

"We now have two reef sites in the ocean and hope to get a third one in the Chesapeake Bay," he said. The tire reefs are built by laborers from a minimum security prison in Chesapeake, directed by Meier and another person in his agency.

"In the past we have obtained our scrap tires from the Norfolk landfill," Meier said. "But we're now in the process of redoing the operation and are considering taking tires directly from dealers. If this is done, we would initially start with a no-charge to the dealers situation. But if we had to set up a fee at some future time, we'd try to make it less than what they'd pay for landfill disposal of tires. If we set it up this way, I think the dealers are likely to go for it, based on discussions I've had with them."

This recycling project and the two others described offer the possibility of helping Tidewater area dealers get rid of some of their scrap tires.

Lipscomb noted that, based on new tire sales for Norfolk, Portsmouth, Chesapeake and Virginia Beach, this market is now generating about 400,000 scrap tires per year.

The Virginia TDRA president believes that the two fuel-generating recycling plans are likely to have a significant positive impact on the scrap tire problem for local dealers.

"The Housing Authority's program can consume about 75 percent of the area's scrap tire output," he said. "We don't know for sure about the Navy Shipyard project, but the huge size of it indicates that in the future they may need more scrap tires than they would get from the landfills. The reef building project also offers the same prospect."

But for now, these recycling programs are a partial solution for a problem that is growing in Norfolk and not getting any better in the rest of the state.

Lipscomb explained that the Norfolk landfill is still overloaded with scrap tires and, this landfill and others are still charging a 75-cent per tire fee for disposal. This means that most area dealers are continuing to make arrangements with privately-owned scrap tire collectors as they have done in the past, he said.

A similar situation exists in other parts of the state, said Donald Carl, executive director of Virginia TDRA. About two years ago, Carl explained, I took a survey of dealers across the state, mostly by phone, on what they were doing with scrap tires. I found that most of the smaller dealers use a municipal landfill, often paying a fee, while many of the larger dealers have found private scrap and casing collectors.

"The problem with private collectors is that while you may get a lower disposal fee than a landfill would have, you're taking a risk that the collection operation may go out of business or become the subject of environmental and/or public nuisance complaints. We've seen this happen many times, not just in Virginia, but all over the country."

(continued on page 53)

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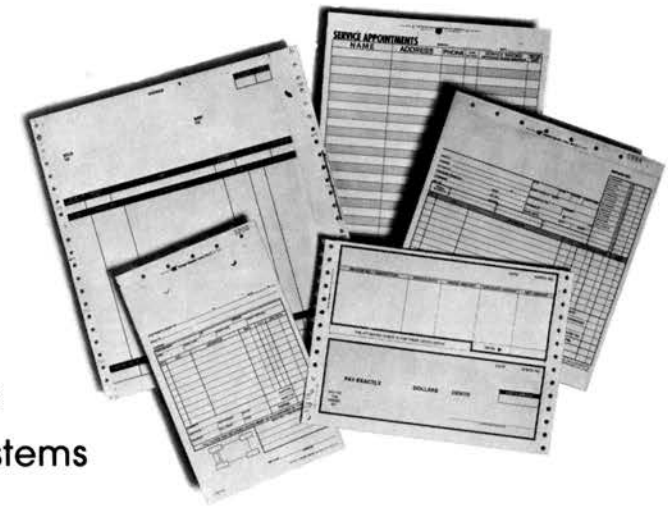

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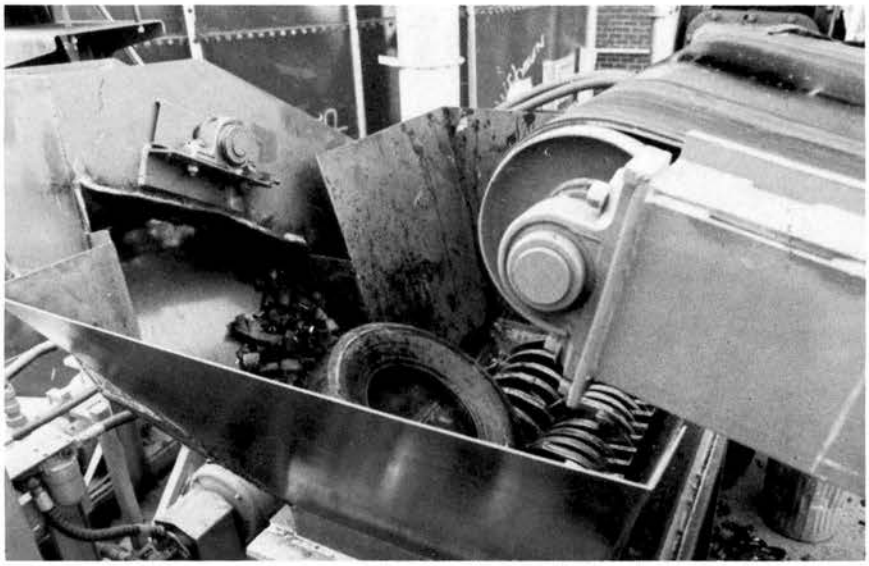
operation, the boiler could consume 795 lbs. of ground rubber per hour. Figuring the average weight of a tire at 17 lbs, minus steel belting, gives a figure for scrap tire use close to Kreshin's estimate.

Kreshin indicated that before the system can go into operation, there are also problems to be worked out in running steel belted radials through the shredder and in separating the steel belt material and bead wire from the tires.

"I'd estimate it could be as much as six months before the system is up and running."

He explained that so far, no formal arrangements have been made with local dealers for scrap tire collection. "We've had some preliminary discussions with Julian Lipscomb and others in the tire business here, indicating they are most willing to work with us on this. I think it would be premature to set up a collection system before the rest of it is in operation, but we do plan to make collection arrangements with dealers once we're closer to start-up time."





(Above) Closeup of whole tire ready to go into shredder blades. (Below) Shredding machine operator checks size of rubber chunks as they come out onto a conveyor that will feed into a granulator.

Bowman noted that Lipscomb had been most helpful in planning and test stages of the project and had provided scrap tires for test operation of the shredding equipment and boiler.

A second recycling project being developed in the Tidewater region is a considerably larger refuse-fueled power generating plant for the 1346-acre Norfolk Naval Shipyard in Portsmouth.

Federal funding is available—a $160 million appropriation to the Navy through the Defense Department for construction of the power plant, said Joe Law of the Naval Shipyard public information office.

He noted that the power plant is being designed to burn more than 1,500 tons of trash daily, and would have a generating capacity of 720,000 lbs. of steam per hour.

The tire collection and processing part of this project is being administered by Southeastern Public Service Authority (SPSA), a regional agency that has organized a cooperative effort by 8 municipalities for additional funding and supply of solid waste for fuel. SPSA has begun construction of a processing plant for mixed municipal refuse, including scrap tires, and expects this operation to be completed by next year, said Durwood Curling, the agency's executive director. He explained that the process would include two separate shredding, granulating and conveyor systems—one for mixed refuse and one for scrap tires—which would then be combined to feed into a refuse-derived fuel boiler in such a way as to prevent power surges.

Curling told *Dealer News* that the boiler also is under construction and that they anticipate the entire system could be in operation by early 1987. According to an SPSA brochure, the agency has obtained permits from the U.S. EPA and state and local environmental control agencies, and an Environmental Impact Assessment has been completed.

Curling added that SPSA would obtain trash for fuel from landfills in Norfolk, Portsmouth, Chesapeake, Suffolk, Virginia Beach, Franklin and the counties of Southampton and Isle of Wight. These local governments would pay the regional agency a per-ton fee for taking their trash.

"Eventually the municipal landfills would be phased out and the refuse would be taken directly into the SPSA facility," explained John Hadfield, engineer for the regional agency. "When that happens, we may be able to take scrap tires directly from dealers and could possibly set a lower disposal fee than they are now paying.

"We're really not sure how many discarded tires would be needed, because of the mixed refuse situation, and because many of the scrap tires are being taken out of the area by private collectors," he said. He noted that additional funding is being obtained from the participating cities and counties through sale to them of $92 million in municipal bonds.

A third Norfolk area recycling program, use of split scrap tires to build offshore fishing reefs, has been in operation for about 9 years. This reef building program is run by the Virginia Marine Resources Commission, which gets state money from unrefunded fuel taxes for fuel used in boats

Mike Meier, the Commission's director for the reef building, told *Dealer News* the program has received about

Norfolk Recycling Projects: A Partial Solution

Dealers In Tidewater Virginia Help Local Governments With Scrap Tire Problem

by Alice M. Starcke
News Editor

Scrap tire recycling programs now being developed in the Tidewater area of Virginia provide a good example of what can happen when a group of dealers works with local governments on a solution to the scrap tire disposal problem.

In Norfolk, both tire dealers and the city have been plagued by a "mountain" of scrap tires for many years, said Julian Lipscomb of Kramer Tire Co., Norfolk, who is also president of Virginia TDRA. A 1980 proposal by the state group and efforts of Norfolk dealers stirred up interest by local and regional agencies that helped two of the current recycling projects to get going and keep moving.

The 1980 plan was prepared jointly by Virginia TDRA and the Southeastern Public Service Authority of Virginia, (SPSA). It called for a tire shredder to be installed at the Norfolk landfill to help eliminate the potential hazard of growing piles of discarded tires there and elsewhere in the city, Lipscomb explained. Dealers contributed to the proposal by supplying data on numbers of tires they discard and how much they were paying for disposal.

"The total cost of installing shredding equipment at the Norfolk landfill would have been paid out in less than five years from the waste disposal fee agreed to by the dealers," Lipscomb said. The city was not willing to take on such a venture at that time, he added. But shortly afterward, the Norfolk Redevelopment and Housing Authority recognized the budget-cutting possibilities and contracted with an engineering firm to design a tire shredding an incineration program.

The recycling operation they have designed is "exactly the kind of facility the association proposed in 1980," Lipscomb noted.

This program, using a fluidized bed boiler, would provide heat for 752 apartments in a downtown public housing project, said Larry Kreshin of the Housing Authority.

Funding is from federal Housing and Urban Development Grant of $950,000 under that agency's alternate fuels experimental program, Kreshin told *Dealer News*. He noted that there is the possibility of getting additional HUD funding for a similar system at another Norfolk housing project, "but we have no commitment yet."

Meanwhile, the program for converting scrap tires to steam heat is well underway, according to Kreshin and Ernie Bowman, Jr. of Bowman & Associates, consulting engineers.

"A tire shredding and granulating operation is under construction on a 15-acre site on the Elizabeth River, and we hope to be processing scrap tires into crumb rubber in 60 days, Bowman said. The second part of the operation, a fluidized bed boiler at the apartment complex, will most likely take longer to put into operation. "The boiler has been purchased from a British firm, but there are still problems to be worked out — making sure the emissions will meet environmental regulations."

Bowman said representatives of the manufacturer will be visiting in mid-August to assist with the emissions control, and provide advice on efficient operation.

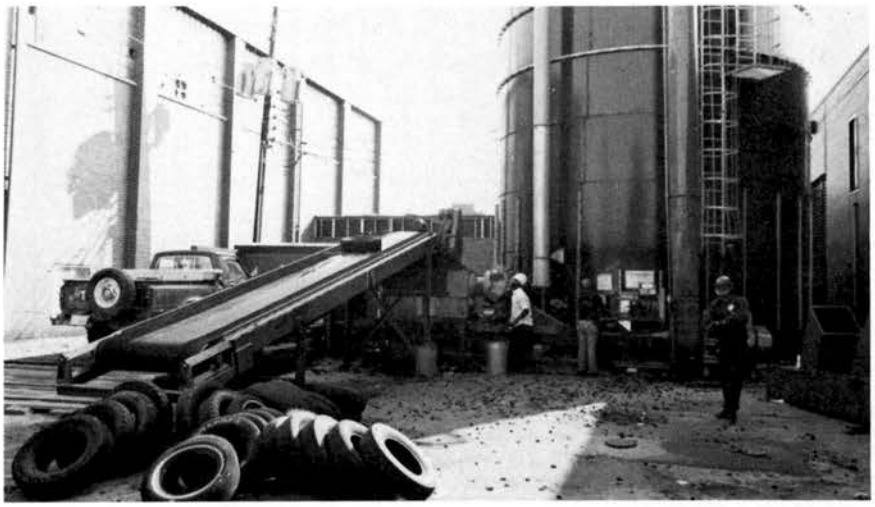
The engineer noted that fluidized bed boilers have the capability to burn different fuels and fuel mixtures, "but with this one, we're concentrating on just tires."

Kreshin explained that the decision to use tires in the operation was made because "we knew scrap tires were a nuisance to the tire industry and also a valuable and concentrated source of Btu's.

"We also found tires were less costly to obtain. In early stages of planning, we talked to dealers, and they indicated they would be willing to deliver to the processing site and pay a fee for dumping. Sawdust, the other fuel we've looked at, proved to be more costly to obtain.

"I'd estimate this operation can use up about 281,000 tires a year once it's in operation," Kreshin said.

Bowman explained that in full-fire



Scrap Tires go up the conveyor to be shredded for incineration during a test of the Norfolk Redevelopment and Housing Authority's recycling facility. Storage silo is in background at right.

be able to discuss the Association's new services — the national credit card, equipment and vehicle leasing programs, labor and personnel consulting services.

Experts from the following firms will also be available to answer questions — the Bank administering the Association's credit card, New York Life on NTDRA's life, health and dental insurance programs, Kayser Leasing (NTDRA vehicle leasing program), CAP-CO (NTDRA equipment leasing program), SESCO (NTDRA membership labor and personnel consulting), members of the NTDRA National Retreading Consultant Service, Automotive Service Excellence (ASE) mechanic certification program, the NTDRA Profit Center Services catalog, and NTDRA Financial Consultant Dr. Robert Cox.

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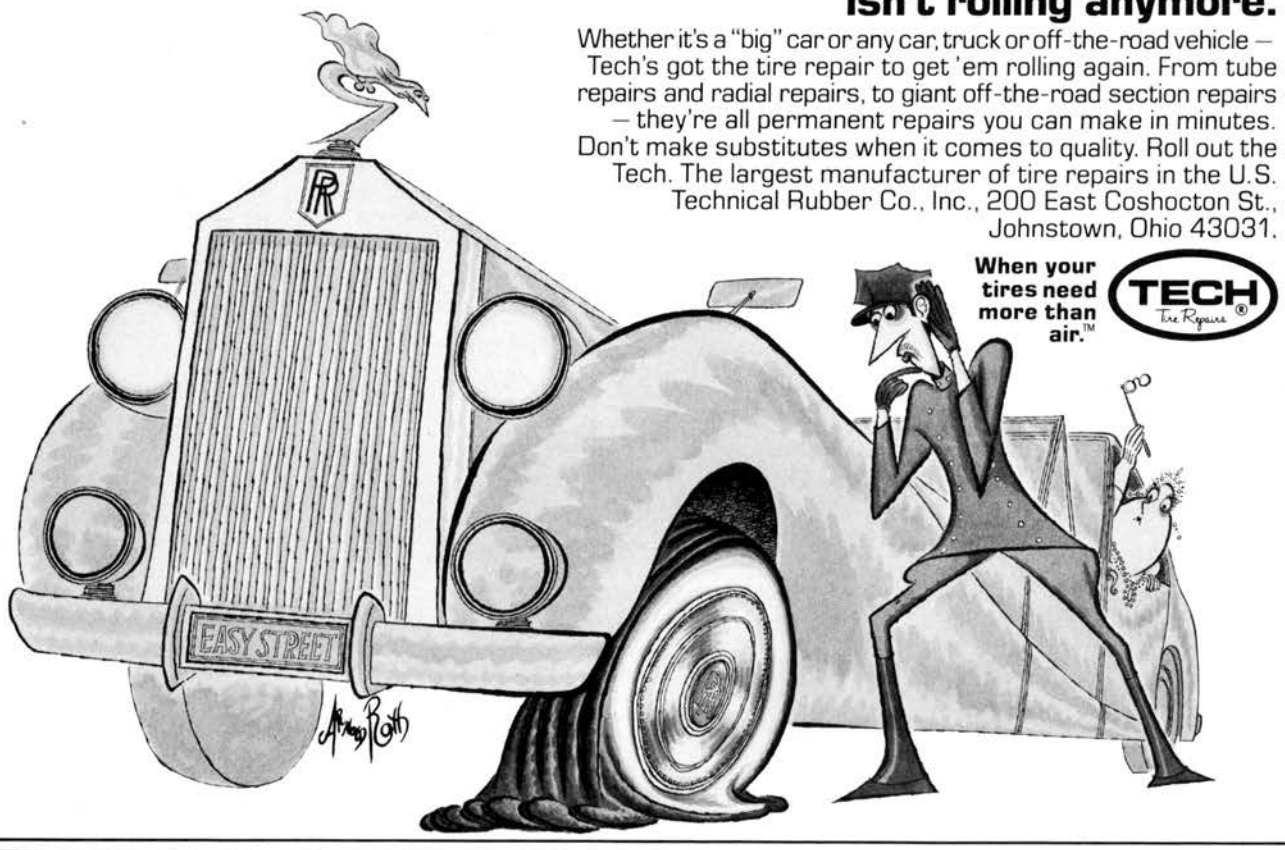

East Mesaba Sanitary Disposal Authority

Virginia City Hall

VIRGINIA, MINNESOTA 55792

October 18, 1984

RECEIVED
OCT 19 1984
MINN. POLLUTION CONTROL AGENCY

Karen Ryss
Minnesota Pollution Control Agency
Solid and Hazardous Waste Division
1935 West County Road B2
Roseville, Minnesota 55113

Dear Ms. Ryss

This letter is written in regard to the proposed rules relating to the permitting of waste tire collectors and waste tire processors by the MPCA.

The East Mesaba Sanitary Disposal Authority (EMSDA) Board,at a recent meeting, discussed this notice. The EMSDA operates a landfill and accepts waste tires. The EMSDA digs trenches for the deposition of tires (all sizes), scrap rubber belting and scraps from recapping. When the trench is filled it is covered with earth. The EMSDA has had a number of fires at the tire trenches when they are partially filled.

The EMSDA prefers not to accept tires at the landfill.

A number of questions were raised at the meeting.

1. Will Landfills be classified as waste tire collectors and then be subjected to another permit with accompanying rules?
2. If tires cannot be buried, how does the MPCA recommend that they be stored until economically feasible methods of utilization are developed?

Sincerely,

Sheldon J. Johnson

Sheldon J. Johnson, Sec.-Treas.

STATE OF MINNESOTA
POLLUTION CONTROL AGENCY

In the Matter of the Proposed Rules Governing the Management of Waste Tires and the Permitting of Waste Tire Facilities, Minn. Rules Pts. 7001.0020, 7001.0040, 7001.0050, 7001.0190, 7001.4000 to 7001.4150, and 7035.8200 to 7035.8710.

AFFIDAVIT REGARDING COMMENTS RECEIVED PURSUANT TO NOTICE OF INTENT TO SOLICIT OUTSIDE OPINION

STATE OF MINNESOTA)
)ss.
COUNTY OF RAMSEY)

Karen A. Ryss, being duly sworn on oath deposes and says:

1. That he/she is the person named in the Notice of Intent to Solicit Outside Opinion (9 S.R. 698, October 1, 1984) as the person to receive comments on the Agency's intent to adopt rules concerning the above-entitled subject.

2. That the comment period set forth in the notice terminated at 4:30 p.m. on October 31, 1984.

3. That during the public comment period seven comments were received by the Agency.

Karen A. Ryss

Subscribed and sworn to before me
this 24th day of June, 1987.

Cynthia B. Gillingham
Notary Public

CYNTHIA B. GILLINGHAM
NOTARY PUBLIC - MINNESOTA
HENNEPIN COUNTY
My commission expires 10-3-91

STATE OF MINNESOTA
MINNESOTA POLLUTION CONTROL AGENCY

In the Matter of Proposed Rules
Governing the Management of
Waste Tires and the Permitting of
Waste Tire Facilities, Minn. Rules
Pts. 7001.0020, 7001.0040, 7001.0050,
7001.0190, 7001.4000 to 7001.4150,
and 7035.8200 to 7035.8710

FINDINGS OF FACT,
CONCLUSIONS, AND
ORDER ADOPTING RULES

The above-entitled matter came on for decision before the Minnesota Pollution Control Agency (MPCA) on the 23rd day of June, 1987. After affording all interested persons the opportunity to present written and oral data, statements, and arguments to the MPCA, in accordance with statutory requirements regarding the adoption of rules, after considering the Statement of Need and Reasonableness, after considering all of the evidence adduced upon the records, files, and proceedings herein, the MPCA, being fully advised in the premises, hereby adopts the following Findings of Fact, Conclusions, and Order:

FINDINGS OF FACT

1. Two notices regarding the MPCA's intent to adopt the above-entitled permanent rules, together with the proposed permanent rules, were published in the State Register on April 20, 1987, (11 S.R. 1918). One notice was a Notice of Intent to Adopt Rules Without a Public Hearing and Notice of Intent to Adopt Rules with a Public Hearing if 25 or More Persons Request a Hearing. The second notice was a Notice of Hearing and Notice of Intent to Cancel Hearing if Fewer than 25 Persons Request a Hearing in Response to Notice of Intent to Adopt Rules Without a Public Hearing.

2. The MPCA sent by United States mail the same notices to all persons on the list maintained by the MPCA pursuant to Minn. Stat. §§ 14.14, Subd. 1a and 14.22 (1986) on April 16, 1987.

3. The Statement of Need and Reasonableness was prepared prior to mailing and publication of the notices and was made available to the public.

4. All persons were given the opportunity to submit comments on the proposed rules for 30 days after notice of proposed rulemaking. The 30-day comment period, as sent out in the notices, expired on May 20, 1987.

5. No requests for public hearing were received during the comment period.

6. One request for notice of submission to the Attorney General was received by the MPCA during the comment period. This request was from Alan Mitchell who is the County Attorney in St. Louis County.

7. During the comment period, the MPCA received two verbal comments, one from Ray Geffre of the State Fire Marshal's Office, and one from Gary Anderson of Northern States Power Company. Each of these comments is addressed below.

A. Comment from State Fire Marshal.

The Fire Marshal's comment addressed Minn. Rules pt. 7035.8240, subp. 3, item E. This item incorporates by reference The Standard for Storage of Rubber Tires, NFPA 231D-1980 edition. At the time the proposed rules were published in the State Register, the MPCA was not aware of a more recent copy of this publication. Since that time, the State Fire Marshal's Office informed

MPCA staff that The Standard for Storage of Rubber Tires was revised during 1985. However, in further exploration of this comment, it was discovered that the 1985 edition of The Standard for Storage of Rubber Tires is not effective in Minnesota. Therefore, no change in the proposed rules is needed at this time.

B. Comment from Northern States Power Company.

Northern States Power Company's comment addressed Minn. Rules pt. 7001.4020 which sets out who is required to obtain and who is exempt from obtaining a waste tire facility permit. Mr. Gary Anderson requested a clarification on the permit requirements for facilities which process refuse-derived fuel (RDF). Mr. Anderson commented that these types of facilities should be exempt from the waste tire facility permit requirement on the grounds that these facilities are already required to obtain a solid waste permit from the MPCA.

Minn. Stat. § 115A.902, Subd. 1 (1986) requires that tire collectors or tire processors with more than 500 waste tires obtain a permit from the MPCA, unless exempt under Subdivision 2 of that section. Because RDF facilities are not exempt under Subdivision 2, it is not within the MPCA's statutory authority to exempt RDF facilities from the requirement to obtain a permit. Therefore, the MPCA cannot make the change in the proposed rules suggested by Mr. Anderson.

However, the MPCA believes the burden of obtaining two MPCA permits will not apply to owners and operators of facilities that store "no more than 500 waste tires at any one time if the owner or operator at least once per year, removes

all waste tires, and the facility is in compliance with the locational requirements of part 7035.8240, subpart 2." These types of facilities are eligible for a permit by rule as provided in Minn. Rules pt. 7001.4030. This could include RDF facilities as well as other facilities that receive waste tires incidental to receiving or processing municipal solid waste.

For a facility other than a permitted landfill which receives and stores more than 500 waste tires at any one time incidental to receiving or processing municipal solid waste, the MPCA could issue an MPCA permit to cover all activities conducted at the facility. Also, the permittee of the facility would be responsible for maintaining compliance with the rules governing the management of waste tires and the permitting of waste tire facilities, Minn. Rules pts. 7001.0020, 7001.0040, 7001.0050, 7001.0190, 7001.4000 to 7001.4150, and 7035.8200 to 7035.8710. This would lessen the burden of the owner or operator to obtain two permits from the MPCA while ensuring that proper waste tire management activities are conducted at the facility. For example, the owner and operator of a municipal solid waste incinerator would be required to obtain a solid waste and an air quality permit from the MPCA because of the activities that are conducted at the facility ensuring compliance with all applicable solid waste and air quality regulations.

The proposed rules reduce the level of burden to the regulated community by providing for a permit by rule for storage of less than 500 waste tires. For facilities which store more than 500 waste tires and are required to obtain a solid waste permit from the MPCA, the burden of obtaining two permits can be

lessened by the issuance of a MPCA permit which covers all of the facility activities. No change in the proposed rules is needed in order for the MPCA to issue such a permit. The MPCA believes that these options provide a sufficient means to reduce the level of burden and makes no change to the proposed rules to address this concern.

8. The MPCA received one written comment in the form of a memorandum from staff to the file, dated May 20, 1987. The MPCA makes the following modifications based on suggestions received from the staff to update a reference that is incorporated into the proposed rules, to correct a typographical error, and to make the language of the rules consistent:

A. Modification of Minn. Rules pt. 7035.8490, subp. 3 is needed in order to correct an erroneous cross reference. Because the new language does not alter the effect of the rule as proposed, the change is not a substantial change. Minn. Rules pt. 7035.8490, subp. 3 is modified to read:

> Wording of the letter of credit. The wording of the letter of credit must be identical to the wording in part ~~7035.8490~~ 7035.8580.

B. Modification of Minn. Rules pt. 7035.8240, subp. 3, item H is needed in order to clarify that other mosquito control operations are acceptable and may be performed at the waste tire facility. Because the new language does not alter the effect of the rule as proposed, the change is not a substantial change. Minn. Rules pt. 7035.8240, subp. 3, item H is modified to read:

> All tire piles shall be maintained free of mosquitoes, through the use of mosquito control methods such as briquettes, spraying, or removal of water ponded in the waste tires.

C. Modification of Minn. Rules pt. 7035.8480, subp. 2 is needed to make the language of the rule consistent with language used in other MPCA rules. Because the new language in the last sentence of the subpart does not alter the effect of the rule as proposed, the change is not a substantial change. The last sentence of Minn. Rules pt. 7035.8480, subp. 2 is modified to read:

> ~~An~~ The owner or operator of the waste tire facility shall submit the bond to the director ~~with~~ the facility permit application or ~~under~~ in accordance with part 7035.8450.

D. Modification of Minn. Rules pt. 7035.8490, subp. 2 is needed to make the language of the rule consistent with language used in other MPCA rules. Because the new language in the last sentence of the subpart does not alter the effect of the rule as proposed, the change is not a substantial change. The last sentence of Minn. Rules pt. 7035.8490, subp. 2 is modified to read:

> ~~An~~ The owner or operator of ~~a~~ the waste tire facility shall submit the letter of credit to the director with the facility permit application or ~~under~~ in accordance with part 7035.8450.

E. Modification of Minn. Rules pt. 7035.8500, subp. 2 is needed to make the language of the rule consistent with language used in other MPCA rules. Because the new language in the last sentence of the subpart does not alter the effect of the rule as proposed, the change is not a substantial change. The last sentence of Minn. Rules pt. 7035.8500, subp. 2 is modified to read:

> ~~An~~ The owner or operator of ~~a~~ the waste tire facility shall submit the bond to the director with ~~the~~ facility permit application or in accordance with part 7035.8450.

F. Modification of Minn. Rules pt. 7035.8205, subp. 25 is needed to make the language of the rule consistent with language used in other MPCA rules.

Because the new language does not alter the effect of the rule as proposed, the change is not a substantial change. Minn. Rules pt. 7035.8205, subp. 25 is modified to read:

> Waste tire processing facility. "Waste tire processing facility" means any area where waste tires or tire-derived products are processed. A waste tire processing facility must meet the qualifications in part 7035.8270.

G. Modification of Minn. Rules pt. 7035.8500, subp. 4 is needed to make the language of the rule consistent with language used in other MPCA rules. Because the new language does not alter the effect of the rule as proposed, the change is not a substantial change. Minn. Rules pt. 7035.8500, subp. 4 is modified to read:

> Establishment of standby trust fund. The owner or operator who uses a surety bond to satisfy the requirements of part 7035.8420 shall also establish a standby trust fund. The bond shall require the surety to deposit all payments made under the bond directly into the standby trust fund in accordance with instructions from the director. An originally-signed duplicate of the standby trust fund agreement must be submitted to the director with the surety bond. The standby trust fund must meet the requirements of part 7035.8470, except that compliance with the requirements in items A to D is not required until the standby trust fund is funded under this part . . . .

H. Modification of Minn. Rules pt. 7001.4070, subp. 3, item B is needed to make the language of the rule consistent with language used in other MPCA rules. Because the new language does not alter the effect of the rule as proposed, the change is not a substantial change. Minn. Rules pt. 7001.4070, subp. 3, item B is modified to read:

> the maximum quantity and type of waste tires to be stored ~~on the site~~ at the facility at any time, specifying the quantity and type of waste tires to be stored ~~on the site~~ at the facility currently and the storage capacity of the facility . . . .

I. Modification of Minn. Rules pt. 7001.4070, subp. 3, item E is needed to make the language of the rule consistent with language used in other MPCA rules. It is also needed to clarify that the facility is being referred to in this item. Because the new language does not alter the effect of the rule as proposed, the change is not a substantial change. Minn. Rules pt. 7001.4070, subp. 3, item E is modified to read:

> the access to the site of the facility by roads, including weight or other use restrictions . . . .

9. Based on the information provided by the MPCA staff memorandum commenting on the proposed rules, the MPCA finds the nine modifications to the proposed rules are justified and reasonable.

10. The MPCA adopts the Statement of Need and Reasonableness, in its entirety, as the factual basis for the proposed rules. The MPCA hereby incorporates the Statement of Need and Reasonableness into these findings.

11. The above-captioned rules, together with the modifications made by the MPCA in the above-findings to respond to comments received during the comment period, are needed and reasonable.

CONCLUSIONS

1. The MPCA duly acquired and has jurisdiction over this proceeding.

2. The MPCA published and served due, timely and adequate notice of the intent to adopt the proposed permanent rules without a public hearing.

3. All relevant legal and procedural requirements of statute and rule have been complied with.

4. The modifications to the proposed permanent rules are supported by the record and do not result in a substantial change to the proposed rules.

ORDER

NOW, THEREFORE, IT IS ORDERED, that the attached Minn. Rules pts. 7001.0020, 7001.0040, 7001.0050, 7001.0190, 7001.4000 to 7001.4150, and 7035.8200 to 7035.8710 governing the management of waste tires and the permitting of waste tire facilities are adopted pursuant to the authority vested in the MPCA by Minn. Stat. § 115A.914, Subd. 1 (1986).

MINNESOTA POLLUTION CONTROL AGENCY

Dated: June 23, 1987

Barbara Lyndsey Sims

for Thomas J. Kalitowski

Executive Director

STATE OF MINNESOTA
MINNESOTA POLLUTION CONTROL AGENCY

In the Matter of Proposed Rules
Governing the Management of
Waste Tires and the Permitting of
Waste Tire Facilities, Minn. Rules
Pts. 7001.0020, 7001.0040, 7001.0050,
7001.0190, 7001.4000 to 7001.4150,
and 7035.8200 to 7035.8710

FINDINGS OF FACT,
CONCLUSIONS, AND
ORDER ADOPTING RULES

The above-entitled matter came on for decision before the Minnesota Pollution Control Agency (MPCA) on the 23rd day of June, 1987. After affording all interested persons the opportunity to present written and oral data, statements, and arguments to the MPCA, in accordance with statutory requirements regarding the adoption of rules, after considering the Statement of Need and Reasonableness, after considering all of the evidence adduced upon the records, files, and proceedings herein, the MPCA, being fully advised in the premises, hereby adopts the following Findings of Fact, Conclusions, and Order:

FINDINGS OF FACT

1. Two notices regarding the MPCA's intent to adopt the above-entitled permanent rules, together with the proposed permanent rules, were published in the State Register on April 20, 1987, (11 S.R. 1918). One notice was a Notice of Intent to Adopt Rules Without a Public Hearing and Notice of Intent to Adopt Rules with a Public Hearing if 25 or More Persons Request a Hearing. The second notice was a Notice of Hearing and Notice of Intent to Cancel Hearing if Fewer than 25 Persons Request a Hearing in Response to Notice of Intent to Adopt Rules Without a Public Hearing.

2. The MPCA sent by United States mail the same notices to all persons on the list maintained by the MPCA pursuant to Minn. Stat. §§ 14.14, Subd. 1a and 14.22 (1986) on April 16, 1987.

3. The Statement of Need and Reasonableness was prepared prior to mailing and publication of the notices and was made available to the public.

4. All persons were given the opportunity to submit comments on the proposed rules for 30 days after notice of proposed rulemaking. The 30-day comment period, as sent out in the notices, expired on May 20, 1987.

5. No requests for public hearing were received during the comment period.

6. One request for notice of submission to the Attorney General was received by the MPCA during the comment period. This request was from Alan Mitchell who is the County Attorney in St. Louis County.

7. During the comment period, the MPCA received two verbal comments, one from Ray Geffre of the State Fire Marshal's Office, and one from Gary Anderson of Northern States Power Company. Each of these comments is addressed below.

A. Comment from State Fire Marshal.

The Fire Marshal's comment addressed Minn. Rules pt. 7035.8240, subp. 3, item E. This item incorporates by reference The Standard for Storage of Rubber Tires, NFPA 231D-1980 edition. At the time the proposed rules were published in the State Register, the MPCA was not aware of a more recent copy of this publication. Since that time, the State Fire Marshal's Office informed

MPCA staff that The Standard for Storage of Rubber Tires was revised during 1985. However, in further exploration of this comment, it was discovered that the 1985 edition of The Standard for Storage of Rubber Tires is not effective in Minnesota. Therefore, no change in the proposed rules is needed at this time.

B. Comment from Northern States Power Company.

Northern States Power Company's comment addressed Minn. Rules pt. 7001.4020 which sets out who is required to obtain and who is exempt from obtaining a waste tire facility permit. Mr. Gary Anderson requested a clarification on the permit requirements for facilities which process refuse-derived fuel (RDF). Mr. Anderson commented that these types of facilities should be exempt from the waste tire facility permit requirement on the grounds that these facilities are already required to obtain a solid waste permit from the MPCA.

Minn. Stat. § 115A.902, Subd. 1 (1986) requires that tire collectors or tire processors with more than 500 waste tires obtain a permit from the MPCA, unless exempt under Subdivision 2 of that section. Because RDF facilities are not exempt under Subdivision 2, it is not within the MPCA's statutory authority to exempt RDF facilities from the requirement to obtain a permit. Therefore, the MPCA cannot make the change in the proposed rules suggested by Mr. Anderson.

However, the MPCA believes the burden of obtaining two MPCA permits will not apply to owners and operators of facilities that store "no more than 500 waste tires at any one time if the owner or operator at least once per year, removes

all waste tires, and the facility is in compliance with the locational requirements of part 7035.8240, subpart 2." These types of facilities are eligible for a permit by rule as provided in Minn. Rules pt. 7001.4030. This could include RDF facilities as well as other facilities that receive waste tires incidental to receiving or processing municipal solid waste.

For a facility other than a permitted landfill which receives and stores more than 500 waste tires at any one time incidental to receiving or processing municipal solid waste, the MPCA could issue an MPCA permit to cover all activities conducted at the facility. Also, the permittee of the facility would be responsible for maintaining compliance with the rules governing the management of waste tires and the permitting of waste tire facilities, Minn. Rules pts. 7001.0020, 7001.0040, 7001.0050, 7001.0190, 7001.4000 to 7001.4150, and 7035.8200 to 7035.8710. This would lessen the burden of the owner or operator to obtain two permits from the MPCA while ensuring that proper waste tire management activities are conducted at the facility. For example, the owner and operator of a municipal solid waste incinerator would be required to obtain a solid waste and an air quality permit from the MPCA because of the activities that are conducted at the facility ensuring compliance with all applicable solid waste and air quality regulations.

The proposed rules reduce the level of burden to the regulated community by providing for a permit by rule for storage of less than 500 waste tires. For facilities which store more than 500 waste tires and are required to obtain a solid waste permit from the MPCA, the burden of obtaining two permits can be

lessened by the issuance of a MPCA permit which covers all of the facility activities. No change in the proposed rules is needed in order for the MPCA to issue such a permit. The MPCA believes that these options provide a sufficient means to reduce the level of burden and makes no change to the proposed rules to address this concern.

8. The MPCA received one written comment in the form of a memorandum from staff to the file, dated May 20, 1987. The MPCA makes the following modifications based on suggestions received from the staff to update a reference that is incorporated into the proposed rules, to correct a typographical error, and to make the language of the rules consistent:

A. Modification of Minn. Rules pt. 7035.8490, subp. 3 is needed in order to correct an erroneous cross reference. Because the new language does not alter the effect of the rule as proposed, the change is not a substantial change. Minn. Rules pt. 7035.8490, subp. 3 is modified to read:

> Wording of the letter of credit. The wording of the letter of credit must be identical to the wording in part ~~7035.8490~~ 7035.8580.

B. Modification of Minn. Rules pt. 7035.8240, subp. 3, item H is needed in order to clarify that other mosquito control operations are acceptable and may be performed at the waste tire facility. Because the new language does not alter the effect of the rule as proposed, the change is not a substantial change. Minn. Rules pt. 7035.8240, subp. 3, item H is modified to read:

> All tire piles shall be maintained free of mosquitoes, through the use of mosquito control methods such as briquettes, spraying, or removal of water ponded in the waste tires.

C. Modification of Minn. Rules pt. 7035.8480, subp. 2 is needed to make the language of the rule consistent with language used in other MPCA rules. Because the new language in the last sentence of the subpart does not alter the effect of the rule as proposed, the change is not a substantial change. The last sentence of Minn. Rules pt. 7035.8480, subp. 2 is modified to read:

~~An~~ The owner or operator of the waste tire facility shall submit the bond to the director with the facility permit application or ~~under~~ in accordance with part 7035.8450.

D. Modification of Minn. Rules pt. 7035.8490, subp. 2 is needed to make the language of the rule consistent with language used in other MPCA rules. Because the new language in the last sentence of the subpart does not alter the effect of the rule as proposed, the change is not a substantial change. The last sentence of Minn. Rules pt. 7035.8490, subp. 2 is modified to read:

~~An~~ The owner or operator of ~~a~~ the waste tire facility shall submit the letter of credit to the director with the facility permit application or ~~under~~ in accordance with part 7035.8450.

E. Modification of Minn. Rules pt. 7035.8500, subp. 2 is needed to make the language of the rule consistent with language used in other MPCA rules. Because the new language in the last sentence of the subpart does not alter the effect of the rule as proposed, the change is not a substantial change. The last sentence of Minn. Rules pt. 7035.8500, subp. 2 is modified to read:

~~An~~ The owner or operator of ~~a~~ the waste tire facility shall submit the bond to the director with the facility permit application or in accordance with part 7035.8450.

F. Modification of Minn. Rules pt. 7035.8205, subp. 25 is needed to make the language of the rule consistent with language used in other MPCA rules.

Because the new language does not alter the effect of the rule as proposed, the change is not a substantial change. Minn. Rules pt. 7035.8205, subp. 25 is modified to read:

> Waste tire processing facility. "Waste tire processing facility" means any area where waste tires or tire-derived products are processed. A waste tire processing facility must meet the qualifications in part 7035.8270.

G. Modification of Minn. Rules pt. 7035.8500, subp. 4 is needed to make the language of the rule consistent with language used in other MPCA rules. Because the new language does not alter the effect of the rule as proposed, the change is not a substantial change. Minn. Rules pt. 7035.8500, subp. 4 is modified to read:

> Establishment of standby trust fund. The owner or operator who uses a surety bond to satisfy the requirements of part 7035.8420 shall also establish a standby trust fund. The bond shall require the surety to deposit all payments made under the bond directly into the standby trust fund in accordance with instructions from the director. An originally-signed duplicate of the standby trust fund agreement must be submitted to the director with the surety bond. The standby trust fund must meet the requirements of part 7035.8470, except that compliance with the requirements in items A to D is not required until the standby trust fund is funded under this part . . . .

H. Modification of Minn. Rules pt. 7001.4070, subp. 3, item B is needed to make the language of the rule consistent with language used in other MPCA rules. Because the new language does not alter the effect of the rule as proposed, the change is not a substantial change. Minn. Rules pt. 7001.4070, subp. 3, item B is modified to read:

> the maximum quantity and type of waste tires to be stored ~~on the site~~ at the facility at any time, specifying the quantity and type of waste tires to be stored ~~on the site~~ at the facility currently and the storage capacity of the facility . . . .

I. Modification of Minn. Rules pt. 7001.4070, subp. 3, item E is needed to make the language of the rule consistent with language used in other MPCA rules. It is also needed to clarify that the facility is being referred to in this item. Because the new language does not alter the effect of the rule as proposed, the change is not a substantial change. Minn. Rules pt. 7001.4070, subp. 3, item E is modified to read:

> the access to the site of the facility by roads, including weight or other use restrictions . . . .

9. Based on the information provided by the MPCA staff memorandum commenting on the proposed rules, the MPCA finds the nine modifications to the proposed rules are justified and reasonable.

10. The MPCA adopts the Statement of Need and Reasonableness, in its entirety, as the factual basis for the proposed rules. The MPCA hereby incorporates the Statement of Need and Reasonableness into these findings.

11. The above-captioned rules, together with the modifications made by the MPCA in the above-findings to respond to comments received during the comment period, are needed and reasonable.

CONCLUSIONS

1. The MPCA duly acquired and has jurisdiction over this proceeding.

2. The MPCA published and served due, timely and adequate notice of the intent to adopt the proposed permanent rules without a public hearing.

3. All relevant legal and procedural requirements of statute and rule have been complied with.

4. The modifications to the proposed permanent rules are supported by the record and do not result in a substantial change to the proposed rules.

ORDER

NOW, THEREFORE, IT IS ORDERED, that the attached Minn. Rules pts. 7001.0020, 7001.0040, 7001.0050, 7001.0190, 7001.4000 to 7001.4150, and 7035.8200 to 7035.8710 governing the management of waste tires and the permitting of waste tire facilities are adopted pursuant to the authority vested in the MPCA by Minn. Stat. § 115A.914, Subd. 1 (1986).

MINNESOTA POLLUTION CONTROL AGENCY

Dated: June 23, 1987

Barbara Lindsey Sims

for Thomas J. Kalitowski

Executive Director

STATE OF MINNESOTA
POLLUTION CONTROL AGENCY

In the Matter of the Proposed Rules Governing the Management of Waste Tires and the Permitting of Waste Tire Facilities, Minn. Rules Pts. 7001.0020, 7001.0040, 7001.0050, 7001.0190, 7001.4000 to 7001.4150, and 7035.8200 to 7035.8710

DECLARATION OF COUNSEL

I, Dwight S. Wagenius, Special Assistant Attorney General, do hereby declare that I have examined the above-captioned rules and the supporting rulemaking record, and that, based on my examination, the Administrative Procedure Act and Minnesota Rules ch. 2010 have been followed. For Attorney General billing purposes, the four-digit docket client code is 0696.

Date: 24 June 1987

Dwight S. Wagenius

DWIGHT S. WAGENIUS
Special Assistant
Attorney General

STATE OF MINNESOTA
POLLUTION CONTROL AGENCY

In the Matter of the Proposed Rules Governing the Management of Waste Tires and the Permitting of Waste Tire Facilities, Minn. Rules Pts. 7001.0020, 7001.0040, 7001.0050, 7001.0190, 7001.4000 to 7001.4150, and 7035.8200 to 7035.8710.

NOTICE OF SUBMISSION OF RULE ADOPTED WITHOUT PUBLIC HEARING TO THE ATTORNEY GENERAL

Pursuant to your request and in accordance with Minn. Stat. § 14.26 (1986):

PLEASE TAKE NOTICE that the above-captioned rules as adopted have been submitted to the Office of the Attorney General on this date, June 24, 1987, for review as to legality and form to the extent form relates to legality. The proposed rules, the rules as adopted, all the notices, the Statement of Need and Reasonableness, the written comment, and other required documents also have been submitted to the Attorney General.

The proposed rules which were published in the State Register and made available to the public on April 20, 1987, have been modified. A copy of the rules as modified is enclosed with this notice.

The rules must be approved or disapproved by the Attorney General within 14 calendar days of the date of submission to the Attorney General. You may submit written comments to the Attorney General on the legality of the rules. Any written comments must be submitted within eight calendar days of the date of the submission of the rules to the Attorney General. Your comments must address only the issue of legality of the rules or the legality of the specific parts or subparts of the rules. The Attorney General standards for review are set forth in Minnesota Rules pt. 2010.1000. You may receive a copy of the Attorney General's decision upon written request to the Attorney General. Your comments or requests for the decision must be directed to:

The Office of the Attorney General
204 Administration Building
50 Sherburne Avenue
St. Paul, Minnesota 55155
Telephone: 612/296-1288

Any written comments submitted to the Attorney General must be submitted simultaneously to Karen A. Ryss at the address stated below.

Karen A. Ryss
Minnesota Pollution Control Agency
Solid and Hazardous Waste Division
520 Lafayette Road North
St. Paul, Minnesota 55155

Dated: June 24, 1987

Dwight S. Wagenius
Special Assistant
Attorney General

STATE OF MINNESOTA
POLLUTION CONTROL AGENCY

In the Matter of the Proposed Rules Governing the Management of Waste Tires and the Permitting of Waste Tire Facilities, Minn. Rules Pts. 7001.0020, 7001.0040, 7001.0050, 7001.0190, 7001.4000 to 7001.4150, and 7035.8200 to 7035.8710

AFFIDAVIT OF MAILING NOTICE OF SUBMISSION OF RULE ADOPTED WITHOUT PUBLIC HEARING TO THE ATTORNEY GENERAL

STATE OF MINNESOTA)
) ss.
COUNTY OF RAMSEY)

RONALD LINN, being duly sworn says:

That on the 24th day of June, 1987, in the City of St. Paul, County of Ramsey, State of Minnesota, I mailed the attached Notice of Submission to the Attorney General by depositing in the State of Minnesota Central Mail System for United States Mailing or in the United States Mail a copy thereof, with postage prepaid, to all persons and associations who requested notice that the rules in the above-entitled matter have been submitted to the Attorney General.

Ronald Linn

Subscribed and sworn to before
me this 24th day of June, 1987.

Cynthia B. Gillingham
Notary Public

CYNTHIA B. GILLINGHAM
NOTARY PUBLIC - MINNESOTA
HENNEPIN COUNTY
My commission expires 10-3-91

CERTIFICATE OF RESOLUTION ADOPTING RULES

I, Thomas J. Kalitowski, do hereby certify that I am the Executive Director of the Minnesota Pollution Control Agency, an agency duly authorized under the laws of the State of Minnesota, and that the following is a true, complete, and correct copy of a resolution adopted at a meeting of the Minnesota Pollution Control Agency duly and properly called and held on the 23rd day of June, 1987, that a quorum was present at said meeting, that a majority of those present voted for the resolution and that said resolution will be set forth in the minutes of said meeting and has not been rescinded or modified:

BE IT RESOLVED, that the Minnesota Pollution Control Agency hereby approves and adopts Minn. Rules pts. 7001.0020, 7001.0040, 7001.0050, 7001.0190, 7001.4000 to 7001.4150, and 7035.8200 to 7035.8710, rules governing the management of waste tires and the permitting of waste tire facilities as attached, pursuant to the authority vested in the Minnesota Pollution Control Agency by Minn. Stat. § 115A.914, Subd. 1 (1986).

BE IT FURTHER RESOLVED, that prior to publishing the rules as adopted in the State Register, the Executive Director is authorized to make any form changes in the permanent rules that the Revisor of Statutes requires the Minnesota Pollution Control Agency to make in order to obtain the Revisor's Certification as required by Minn. Stat. § 14.28 (1986).

BE IT FURTHER RESOLVED, that the Minnesota Pollution Control Agency adopts the attached Findings of Fact and Conclusions and Order Adopting Rules and that the Executive Director is hereby authorized to sign the above-mentioned document on behalf of the Minnesota Pollution Control Agency and to perform the necessary acts to provide that the rules shall have the force and effect of law.

IN WITNESS WHEREOF, I have hereunto subscribed my name this 23rd day of June, 1987.



THOMAS J. KALITOWSKI
Executive Director

SF-00006-05 (4/86)

DEPARTMENT : POLLUTION CONTROL AGENCY

STATE OF MINNESOTA

Office Memorandum

DATE : May 20, 1987

TO : Waste Tire Permit and Technical Rules Rulemaking Documents

FROM : Shelly Sporer, Hazardous and Special Waste Unit
Program Development Section
Solid and Hazardous Waste Division

PHONE : 296-7712

SUBJECT : IDENTIFICATION OF 11 COMMENTS AND SUGGESTED CHANGES IN THE PROPOSED RULES GOVERNING THE MANAGEMENT OF WASTE TIRES AND THE PERMITTING OF WASTE TIRE FACILITIES AS PUBLISHED IN THE APRIL 20, 1987 STATE REGISTER

This memorandum is written to document 11 comments and suggested changes in the version of the proposed rules governing the management of waste tires and the permitting of waste tire facilities published in the April 20, 1987 State Register (11 SR 1918-1950). It is my view that these comments and suggested changes are simple and do not constitute a substantial change.

Among the rule parts proposed is Minn. Rules pt. 7035.8490. This part contains a method for providing adequate financial assurance for closure of a waste tire facility through a letter of credit. The wording of the letter of credit is cross-referenced under subpart 3 of this part. However, the citation referenced under subpart 3 is incorrect. See Minn. Rules pt. 7035.8490, subp. 3.

Minn. Rules pt. 7035.8490, subp. 3 authorized by the Minnesota Pollution Control Agency (MPCA) for publication in the State Register contained a typographical error which erroneously identified the cross-reference as Minn. Rules pt. 7035.8490. This typographical error went unnoticed by staff prior to publication in the State Register. The reason the citation is incorrect is because Minn. Rules pt. 7035.8490 is identified as the cross-reference for the wording of the letter of credit. Minn. Rules pt. 7035.8490 is the part which contains the method for providing adequate financial assurance for closure of a waste tire facility. It does not contain the wording for the letter of credit. Therefore, in order to ensure that persons affected by the proposed rules can locate the correct cross-reference, staff recommend that the typographical error be corrected. The correct cross-reference is to Minn. Rules pt. 7035.8580.

The second suggested change in the proposed rules is to Minn. Rules pt. 7035.8240, subp. 3, item H. Subpart 3 of this part contains a list of operation standards with which the facility must comply. Item H of this subpart applies to mosquito control operations. Minn. Rules pt. 7035.8240, subp. 3, item H as published in the State Register is accurate. However, it has been brought to staff's attention that the language could be interpreted to limit the type of

mosquito control operations that may be performed at the facility. However, staff did not intend to limit such operations. To clarify that other operations, such as the use of briquettes, to control mosquitoes are acceptable, staff believes the language should be changed. Therefore, staff recommends that Minn. Rules pt. 7035.8240, subp. 3, item H should be changed to read "All tire piles shall be maintained free of mosquitoes, through the use of mosquito control methods such as briquettes, spraying, or removal of water ponded in the waste tires."

The third, fourth, and fifth suggested changes in the proposed rules are to Minn. Rules pt. 7035.8480, subp. 2; Minn. Rules pt. 7035.8490, subp. 2; and Minn. Rules pt. 7035.8500, subp. 2. These parts contain methods for providing adequate financial assurance for closure of a waste tire facility. Minn. Rules pt. 7035.8480, subp. 2; Minn. Rules pt. 7035.8490, subp. 2; and Minn. Rules pt. 7035.8500, subp. 2 as published in the State Register contain accurate language. However, staff believes that the language in these three parts as well as the language in Minn. Rules pt. 7035.8470, subp. 2 should be consistent in order to provide uniform reading of the proposed rules. Since Minn. Rules pt. 7035.8470, subp. 2 as published in the State Register is correct, staff proposes to use this part as a model for Minn. Rules pt. 7035.8480, subp. 2; Minn. Rules pt. 7035.8490, subp. 2; and Minn. Rules pt. 7035.8500, subp. 2. Therefore, staff recommends that the language of Minn. Rules pt. 7035.8480, subp. 2; Minn. Rules pt. 7035.8490, subp. 2; and Minn. Rules pt. 7035.8500, subp. 2 should be changed to read "The owner or operator of the waste tire facility shall submit the ( ) to the director with the facility permit application or in accordance with part 7035.8450." In the bracketed text, the appropriate name of the financial assurance mechanism should be inserted.

The sixth suggested change in the proposed rules is to Minn. Rules pt. 7035.8205, subp. 25. This part contains a list of the terms and their definitions as used in the proposed rules. Under the definition of the term in subpart 25 of this part, the word "waste" was inadvertently excluded. The word "waste" is needed in the definition in order to provide consistency between Minn. Rules pt. 7035.8205, subps. 24, 25, 26, and 27. These subparts of Minn. Rules pt. 7035.8205 all contain the terms and definitions that apply to waste tire facilities. Therefore, MPCA staff believes that the language in these subparts should be consistent in order to provide uniform reading of the proposed rules. Staff recommends that Minn. Rules pt. 7035.8205, subp. 25 should be changed to read "Waste tire processing facility means any area where waste tires or tire-derived products are processed."

The seventh suggested change in the proposed rules is to Minn. Rules pt. 7035.8240, subp. 3, item E. This item incorporates by reference The Standard for Storage of Rubber Tires, NFPA 231D-1980 edition. At the time the proposed

rules were published in the State Register, MPCA staff was not aware of a more recent copy of this publication. Since that time, MPCA staff has been informed by the State Fire Marshal's Office that The Standard for Storage of Rubber Tires was revised during 1986. Because of this information, MPCA staff recommends changing the language of Minn. Rules pt. 7035.8240, subp. 3, item E to read "The Standard for Storage of Rubber Tires, NFPA 231D-1986 edition."

The eigth suggested change in the proposed rules is to Minn. Rules. pt. 7035.8500, subp. 4. This part contains a method for providing adequate financial assurance for closure of a waste tire facility. Under subpart 4 of this part, the word "fund" was inadvertently excluded. The term "fund" is needed in this subpart in order to clarify the requirements of this subpart. Also, by inserting the term "fund," all sentences within the subpart will be consistent, and this will provide for uniform reading of the proposed rules. Therefore, staff recommends that Minn. Rules pt. 7035.8500, subp. 4 should be changed to read "The standby trust fund must meet the requirements of part 7035.8470, except that compliance with the requirements in items A to D is not required until the standby trust fund is funded under this part."

The ninth and tenth suggested changes in the proposed rules are to Minn. Rules pt. 7001.4070, subp. 3. This part contains the general information that is required for a permit application. Minn. Rules pt. 7001.4070, subp. 3, items B and E are accurate as published in the State Register. However, MPCA staff believes that the information in these items should be consistent with the other items contained in this subpart. Therefore, MPCA staff believes that the term "site" should be replaced with the phrase "at the facility" for item B. Therefore, staff recommends that Minn. Rules pt. 7001.4070, subp. 3, item B should be changed to read "the maximum quantity and type of waste tires to be stored at the facility at any time, specifying the quantity and type of waste tires stored at the facility currently and the storage capacity of the facility." For item E of this subpart, the phrase "of the facility" should follow the term "site" in order to clarify that the facility is being referred to in this item. Therefore, staff recommends that Minn. Rules pt. 7001.4070, subp. 3, item E should be changed to read "the access to the site of the facility by roads, including weight or other use restrictions." Clarifying that all items in Minn. Rules pt. 7001.4070, subp. 3 refer to "facility" will make all items consistent and will provide for uniform reading of the proposed rules.

The eleventh suggested change in the proposed rules is a clarification of Minn. Rules pt. 7001.4030, subp. 1. Following publication of the proposed rules governing the management of waste tires and the permitting of waste tire facilities, the staff received an oral comment from Mr. Gary Anderson of Northern States Power Company concerning the permit for facilities which process refuse-derived fuel (RDF). Mr. Anderson commented that these types of

facilities should be exempt from the permit requirement on the grounds that these facilities are already required to obtain a solid waste permit from the MPCA.

The MPCA staff agrees that its solid waste permit covers processing of waste tires at an RDF facility and that it would be burdensome for the owner and operator of an RDF facility to make application for two permits from the MPCA which both relate to the solid waste aspects of the facility. However, Minn. Stat. § 115A.902, subd. 1 (1986) requires that tire collectors or tire processors with more than 500 waste tires obtain a permit from the MPCA, unless exempt under subdivision 2 of that statute. Because RDF facilities are not exempt under subdivision 2, it is not within the MPCA's statutory authority to exempt RDF facilities from the requirement to obtain a permit. Therefore, the staff cannot make the change in the proposed rules suggested by Mr. Anderson.

However, MPCA staff believes the burden of obtaining two Agency permits will not apply to owners and operators of facilities that store "no more than 500 waste tires at any one time if the owner or operator, at least once per year, removes all the waste tires, and the facility is in compliance with the locational requirements of part 7035.8240, subpart 2." These types of facilities are eligible for a permit by rule as provided in Minn. Rules pt. 7001.4030. This could include RDF facilities as well as other facilities that receive waste tires incidental to receiving or processing municipal solid waste.

For a facility other than a permitted landfill which receives and stores more than 500 waste tires at any one time incidental to receiving or processing municipal solid waste, the MPCA could issue an Agency permit to cover all activities conducted at the facility. Also, the permittee of the facility would be responsible for maintaining compliance with the rules governing the management of waste tires and the permitting of waste tires facilities, Minn. Rules pt. 7001.0020, 7001.0040, 7001.0050, 7001.0190, 7001.4000 to 7001.4150, and 7035.8200 to 7035.8710. This would lessen the burden of the owner or operator to obtain two permits from the MPCA while ensuring that proper waste tire management activities are conducted at the facility. For example, the owner and operator of a municipal solid waste incinerator would be required to obtain a solid waste and an air quality permit from the MPCA because of the activities that are conducted at the facility. However, in this instance, an Agency permit could be issued for the facility that governs all the activities conducted at the facility ensuring that all applicable solid waste and air quality regulations are complied with.

The proposed rules reduce the level of burden to the regulated community by providing for a permit by rule for storage of less than 500 waste tires. For facilities which store more than 500 waste tires and are required to obtain a

solid waste permit from the MPCA, the burden of obtaining two permits can be lessened by the issuance of a MPCA permit which covers all of the facility activities. No change in the proposed rules is needed in order for the MPCA to issue such a permit. Staff believes that these options provide a sufficient means to reduce the level of burden and recommend that no changes to the proposed rules be made to address this concern.

SS:rw

STATE OF MINNESOTA
POLLUTION CONTROL AGENCY

In the Matter of the Proposed Rules Governing the Management of Waste Tires and the Permitting of Waste Tire Facilities, Minn. Rules Pts. 7001.0020, 7001.0040, 7001.0050, 7001.0190, 7001.4000 to 7001.4150, and 7035.8200 to 7035.8710.

AFFIDAVIT REGARDING COMMENTS RECEIVED PURSUANT TO RULEMAKING NOTICES

STATE OF MINNESOTA)
) ss.
COUNTY OF RAMSEY)

Shelly A. Sporer, being duly sworn on oath deposes and says:

1. That he/she is the person named in (a) the Notice of Hearing and Notice of Intent to Cancel Hearing if Fewer than 25 Persons Request a Hearing in Response to Notice of Intent to Adopt Rules Without a Public Hearing (11 S.R. 1918, April 20, 1987), and (b) the Notice of Intent to Adopt Rules Without a Public Hearing and Notice of Intent to Adopt Rules with a Public Hearing if 25 or More Persons Request a Hearing (11 S.R. 1920, April 20, 1987) as the person to receive comments on the Agency's intent to adopt rules concerning the above-entitled subject.

2. That the comment period set forth in the notice terminated at 4:30 p.m. on May 20, 1987.

3. That during the public comment period two verbal comments and one written comment were received by the Agency.

4. That during the public comment period no requests for public hearing were received by the Agency.

5. That the public hearing was cancelled because no requests for public hearing were received by the Agency.

Shelly A. Sporer

Subscribed and sworn to before me
this 24th day of June, 1987

Cynthia B. Gillingham
Notary Public

CYNTHIA B. GILLINGHAM
NOTARY PUBLIC - MINNESOTA
HENNEPIN COUNTY
My commission expires 10-3-91

Exhibit 1

October 1, 1984

Questionnaire

Date: _____
Contacted by: _____

State: _____
Person Contacted: _____
Telephone: _____
Title/Responsibility: _____

1. Does your state have any programs regarding the total management of waste tire disposal (i.e., transport, processing, collection centers)?

2. Were the programs developed by the state?

3. Are any other levels of government involved?

4. How were the programs organized?

5. Why were the programs developed?

6. Do you have any waste tire programs currently in operation? How long have they been in operation? How extensive is the research into these programs?

7. Specifically, do any of these programs involve burning tires for fuel, or utilizing waste tires in asphalt? Any other uses for waste tires?

8. Have any test-burns been conducted? If yes, what has been found? What pollution control devices are needed?

9. How are the waste tires programs funded (i.e., Minnesota transfer tax)?

10. Does your state have a permitting program for tire collectors or tire processors?

    a. Who is required to have permits?

    b. How are the permits issued?

    c. What is the charge for the permit?

    d. Do you have a fee schedule for payments?

e. How are the permit programs monitored?

f. What are the reporting requirements?

g. How large a role does the public play in the issuance of permits?

h. How are standards for permits developed and defended?

i. Do you have any technical criteria for permits (i.e., how high the tire piles should be)?

j. What criteria did you use for locating "tire piles?"

k. How are the permits enforced (i.e., local or state responsibility)?

l. Do you have any sample permits we can have?

11. Has your state ever began abatement proceedings against a tire collector or tire processor?

12. If yes, how was the abatement criteria developed and defended?

13. How were the abatement proceedings administered (i.e., legal versus administrative)?

14. Do you have any program literature available, including statutes and rules?

15. Who else could we talk to concerning the management of waste tire disposal?

16. Could we be put on your mailing list?

17. Would you like to be put on our mailing list?

Exhibit 2

November 19, 1984

Report on Other State Activities

Regarding Waste Tire Management

Alabama:

Jack Honeycutt: Chief, Municipal Solid Waste Section

Alabama does not have any programs regarding the managment of waste tires, nor do they have plans to implement any programs in the future.

Arizona:

Doug Forester: Arizona Department of Transportation

Currently the state of Arizona does not have any programs regarding waste tires. However, there are two private companies located in Arizona who process crumb rubber. The companies are: Arizona Refining Company and Genstar U.S. Rubber Reclaiming.

Chuck Graves: Genstar, U.S. Rubber Reclaiming

Genstar is interested in what Minnesota is doing with waste tires. They recommended that Minnesota not allow whole tires to be stockpiled because too many piles will accumulate.

Genstar will also be hiring a person soon to investigate and research what markets lie in the rubber industry.

Arkansas:

J. B. Jones: Field Inspector Supervisor

Arkansas does not have any programs operating regarding the management of waste tires. They do feel a need to implement programs though because of problems the state has had when issuing removal orders against tire piles. Whenever the state issues a removal order, the tire pile "mysteriously" starts on fire.

Carlifornia:

Leo Satow: Waste Management Engineer

The state of California has been involved in a number of waste tire projects. A few years ago, the state funded a tire shredding operation. The project was never fully developed because the market did not develop as quickly as predicted.

Currently, California is investigating burning tires in cement kilns. This idea is the aftermath of a conference held in Chicago on October 2. The state is also experimenting with utilizing crumb rubber in asphalt, and Japan has expressed an interest in exporting small amounts of tires.

Two private companies are using tires as a fuel supplement. One company uses a mixture of 20 percent tires (-2 inch size), and the other company which is a lumber company uses 15 percent tires with hog fuel to improve combustion in wet

weather. The pollution control device that works the best to control emissions is an electrostatic precipitator.

California is also in the process of developing guidelines for tire storage facilities. As soon as the draft of rules is released to the public, a copy will be sent to Minnesota.

The various tire piles in the state were located by telephoning the appropriate county people. Counties can also utilize land-use regulations or local fire ordinances to order removal of tire piles.

Colorado:

Mark Bell: Geologist

The primary method of tire disposal in Colorado is burial in a landfill. Some landfills levy a $.25 - $.75 charge per tire before they will accept them.

Any permitted landfill is allowed to stockpile tires. There are no guidelines to govern how the tires are stockpiled, but it is preferred that they are covered. Exposed tire stockpiles can cause problems because they attract rattlesnakes.

Connecticut:

Tom Pregman: Solid Waste Management Unit

Connecticut is in the process of developing recycling and permit programs, but until the programs are initiated, tires are usually landfilled or stored in a clay pit.

County surveys helped the state determine the location of the tire piles, and because of the information received, the state concluded there were no large tire piles. However, because fire control is a concern of the state, fire lanes are used to separate the tire piles.

Paul Perlsweig: Solid Waste Management Unit

Connecticut has a unique approach to landfilling tires. The inside of the "doughnut" is filled with garbage, thus preventing the tire from "floating" to the surface. This procedure requires a lot of manpower, but it works.

Connecticut also has proposed legislation that there be $1.00 tax on new tires. The legislation also creates approximately five redemption centers located throughout the state. If the used tire is returned to a redemption center, $.50 will be refunded. The other $.50 will be used to cover processing costs. There will not be a strong lobby effort this year for the legislation because of more important items on the agenda.

The state does have a permitting program for tire collectors and tire processors. Currently, the state has issued one permit to a tire collector and one permit to a tire processing facility. The state is also reviewing an application for another processing facility.

The technical criteria for the permits states that tire piles cannot be greater than 100 feet by 100 feet. The tires can be stacked as high as possible, and a 50 foot fire lane must separate the piles. According to research done by the state, a fire lane less than 50 feet wide would not contain a fire to one pile; the heat generated would be so great that the fire would spread.

Because of a low manpower situation, permits are not monitored well. Basically, it is up to the individual facility to monitor itself. Inspectors are only sent out before the facility opens and on a quarterly basis.

Connecticut will be sending permit guidelines and examples to Minnesota as soon as possible.

Delaware:

James Rohrbach

Waste tires in Delaware are basically dealt with like solid waste. An attempt at shredding tires before landfilling was experimented with, but the practice was not cost-effective, so it was discontinued. If more than ten tires are received at a landfill at one time, the tires are all buried in a separate cell.

Within the next two years or so, an incinerator will be built to burn refuse-derived-fuel (RDF), to produce steam for electricity. If tires become a problem within that time, the incinerator will be modified so that tires can also be burned with the refuse.

Rick Watson: Solid Waste Authority

The shredders were discontinued at the landfills because they were not reliable and required a lot of maintenance. Ideally, shredding tires before burial is a practical idea, but the labor-intensive operation makes the project very expensive.

The state may eventually transport waste tires to New Jersey to be used in a pyrolysis plant.

Florida:

Jan Rae Clark: Solid and Hazardous Waste Division

Florida has done quite a bit of research into possible uses for waste tires. These uses include: asphalt strips, artificial reefs, a bulking agent for

composting sewage sludge, erosion control devices, and crumb rubber products such as floor tiles, bumpers, and gaskets. As an erosion control device, the tires do provide stability, but they looked so unattractive along the hillsides that complaints were being made. Thus, Florida was forced to give up this program.

The landfills are having a big problem with tires lately. Currently, there are three options the landfill operators are exercising: charging outrageous prices to discourage tires being brought in, not accepting tires at all, or burying tires in alternate cells. If the tires are buried in alternate cells, the landfill operators can uncover them if a favorable use ever develops. As a last resort, tires are cut in half before they are buried. Florida does not have a shredder in the state.

The county governments are active in mosquito programs. The people from mosquito control can order the removal of a pile if it is causing health problems. However, what they generaly do is require tire stockpiles to be covered or sprayed. How often the piles are sprayed is determined on a county-by-county basis, but the average is approximately once a week.

Georgia:

Jim Dunbar: Municipal Solid Waste Control

Waste tires in Georgia are currently being landfilled, and the state has no plans to implement programs regarding waste tire management.

The state does, however, have two illegal disposal sites for waste tires that have been issued removal orders. At this time, cleanup of the disposal sites has not yet begun.

Idaho:

Jerome Jankowski: Manager, Solid Waste Section

Because Idaho does not have any regulations governing tire disposal, tires are generally buried in landfills as close to the bottom of the cell as possible.

Private companies have utilized crumb rubber in asphalt strips, and private individuals often use tires as dock attachments.

Individual tire collectors may also be shipping tires to the Portland area for eventual uses in athletic tracks and as a fuel supplement.

Illinois:

Jim Moore: Environmental Protection Engineer

The primary method of tire disposal in Illinois is by burial in landfills. The state does not have a program regarding waste tire management because hazardous waste is the top priority.

A private corporation is investigating the use of waste tires as a fuel supplement with coal.

Indiana:

Steve Poe: Chief, Facilities Inspection Section

Currently in Indiana, it is up to the discretion of the landfill operators if they will accept used tires or not. If the tires are accepted for disposal, the landfill operator will usually levy a charge. This means the burden of disposal is on the owner.

Tire problems are treated on a complaint basis. If tire burning is the problem, the air pollution department will handle it. However, the state cannot effectively enforce complaints because there are no rules governing tire management.

The state does not have any plans to implement programs in the area of waste tire management; however, they do want the state Supreme Court to declare tires a solid waste because the tires will be easier to dispose of. The courts have not yet rendered a decision.

In addition to the court case, the state is also in the process of encouraging the private sector to become involved in the tire chipping process. At this point, the state has had no success.

Iowa:

Joe Chandler: Environmental Engineer

Tires are primarily buried in landfills or stockpiled. The only regulation the state has governing tires is that open dumping is not allowed. The state has received a few complaints, but waste tires are not a priority.

Kansas:

Bob Kinder: Environmental Technician

Kansas has been attempting to develop programs regarding waste tire management, but the Legislature and the public do not support any programs. Last year, the state environmental division proposed legislation that would require all tires to be shredded before they are landfilled. The legislation was not passed, but this year, it will be re-introduced.

The state encourages burial of waste tires in landfills, but there are stockpiles developing around the state.

Kentucky:

Charlie Peters: Manager, Resource Recovery Branch

The primary method of tire disposal in Kentucky is by burial in landfills. Some landfills will not even accept them, and the ones that do levy a charge of $.50 to $6.00 per tire. In some cases, it is the owner's responsibility to split the tire before he brings it is for disposal. There are no shredders located in the state.

Louisiana:

Paul Miller: Solid Waste Management Division

Because of difficulty in communication there is not a complete report from the state.

Maine:

Cliff Eliason: Recycling Coordinator

Currently, Maine does not have any regulations governing waste tire management, but they are interested in developing programs for tire storage areas.

The state is also interested in investigating burning tires in cement kilns. The individuals from a private corporation attended the October 2 conference in Chicago concerning cement kilns, and they will be reporting their findings back to the state.

Maryland:

Ed Carlson: Waste Management Administration Programs

Waste tires in Maryland are shredded before burial into landfills. The private facilities or counties are responsible for the shredding costs.

Massachusetts:

Debbie Quinn: Assistant to Branch Chief

In Massachusetts, whole tires are not supposed to be landfilled; therefore, they are currently being stockpiled, mainly at landfill sites. Landfills have to submit plans to the state on how the shredded tires will be stored, but the state does not have delegated power to enforce storage regulations. If the tires are shredded at the landfill site, the landfills or the municipalities bear the costs of the shredding operation.

This summer, Massachusetts began an abatement of two million tires. The abatement process has four steps. One, the state must establish that tires are a solid waste. Two, tires must then be declared a nuisance which is determined on a case-specific basis. Third, an administrative order is issued to the tire collector which states that the collector must develop a plan by which he (the collector) will clean up the proclaimed nuisance within a specified time period.

In the last step, if the collector does not develop an acceptable abatement plan within the specified time period, the case is referred to the Attorney General which is where the Massachusetts case is now.

The key to the abatement process is negotiation. If you do not develop a compromise, there is a risk of not obtaining any participation by the collector and possibly causing problems like the tire pile "mysteriously" starting on fire or the collector filing bankruptcy.

Michigan:

Rick Schramm: Resource Specialist

Tires in Michigan are currently being landfilled, stockpiled at landfill sites, or stockpiled at privately owned sites by individual tire collectors who levy a charge for disposal.

The state is currently in the process of developing markets for used tires and is researching various alternatives including asphalt strips and retreading operations.

In the near future, a test burn is planned for the Saginaw incinerator. Michigan will keep Minnesota informed of the test burn study.

Mississippi:

John Biggert: Coordinator, Nonhazardous Waste Division

Tires in Mississippi are currently being buried in landfills. The state is researching various uses for waste tires including reef development projects,

recycling programs, and shredding operations, but the state has no plans to implement programs in the near future.

Missouri:

Jim Belcher: Planner II

The primary method of tire disposal is landfilling. Tires are governed by solid waste laws, even though many landfills will not accept them.

Montana:

Duane Robertson: Chief, Solid Waste Management Bureau

Tires are currently being landfilled in Montana. The state is researching potential markets for used tires, and if a viable market is discovered, programs regarding waste tire management will be developed.

The use of waste tires in asphalt is one area the state is researching. The experimental crumb rubber was used on a strip of road along a mountain pass to help break-up ice buildup. The experiment was successful; however, when tires with chains "spun out" on it, the crumb rubber would break-up. Montana also used a mixture of waste tires and asphalt for sealing cracks on highways.

Nebraska:

Dee Howard: Litter Reduction and Recycling Program Administrator

About three years ago, the state of Nebraska issued a grant through the Office of Litter Reduction and Recycling to conduct a feasibility study to determine if there was a supply and a market for waste tires. The feasibility study discovered that there was a market and a supply for waste tires, so a corporation was formed.

The corporation consists of six men, each with other full-time jobs, who run the now independent operation.

At the present time, the state of Nebraska is conducting two recycling experiments. The Nebraska Department of Transportation has purchased crumb rubber from the corporation for uses on roads, and the state is experimenting with waste tires as playground equipment.

The state is also waiting for the Legislature to act on a proposed amendment to tax tires. The money collected from the tire tax would go to subsidize recycling programs.

Steve Burdic: Nebraska Small Farm Action Group

The state of Nebraska issued a grant through the Office of Litter Reduction and Recycling to conduct a feasibility study to determine if there was a market and a supply of waste tires. The study determined that there was a market and a supply, so a corporation was formed called the Nebraska Small Farm Action Group (NSFAG).

The corporation uses ambient grinding on buffings, usually one inch long and one-eighth inch wide, to produce crumb rubber. However, the supply of buffings is running low, so NSFAG is experimenting with tire chips, one-half inch in size, and whole tires. If they use whole tires, they have to cut up the tires before they can be inserted into the hammer mill.

NSFAG recommended that Minnesota slit tires before the tires are stockpiled. A slitter costs between 5 and 10 thousand dollars and is labor-intensive. But, it does help with storage space and transportation costs. On the other hand, a good shredder would cost between 40 and 50 thousand dollars.

NSFAG is also in the process of submitting a proposal to develop a cryogenic plant.

NSFAG is interested in helping Minnesota set up a grinding system and develop a market for waste tires.

Nevada:

Alan Biaggi: Environmental Management Specialist

Nevada is currently landfilling waste tires with only one requirement stipulated: tires cannot be buried in the upper four feet of the landfill. The landfills are trench operations, and it is a state law that tires are supposed to be buried as soon as possible.

The state is basically only concerned with stockpiles accumulating in the two metropolitan areas, and to their knowledge, there are not any stockpiles in the state that are causing problems.

New Hampshire:

Scott Eaton: Waste Management Engineer

In New Hampshire, waste tires are currently being landfilled. There is one incinerator in the state that burns municipal waste, and if a tire gets mixed in with the garbage, the tire is burned too.

There is also a rumor circulating that Africa is interested in exporting waste tires.

Two years ago, New Hampshire attempted an abatement. Administrative action was taken first; the owner was issued an order of removal. When action on the removal order was not taken by the tire collector, the abatement was turned over to the Attorney General.

Because the state has storage site authority, the state had the fire department develop criteria for the break-up of the tire storage site. A court order was then issued to divide the site into piles of 100 feet by 100 feet and tires could not be stacked higher than 25 feet. To date, the tire collector has not attempted compliance action with the above criteria, and he is accumulating a fine of $100,000 per day.

The basic problem in the abatement has been the land issue. The person who collected the tires lost all but a small portion of the property back to the original owners. A third person was going to purchase the land and tires, but he backed out of the deal because there were more tires on the property than he had thought.

The state is suing both the original tire collector and the third party who was interested in buying the land. The people who own the land want no part of the abatement, so they are letting the state handle the case.

New Jersey:

John Castner: Department of Environmental Protection

The primary method of waste tire disposal in New Jersey is landfiling. Tires are only accepted at certain landfills, and operators are specifically licensed/permitted to accept them. If the landfills accept tires, a charge is usually levied by the owner of the landfill. There is only one county in the state that shreds tires before they bury them.

The state, itself, has not developed any recycling programs; however, an artificial reef was constructed by the Fish and Wildlife Department. The state has recycling plans "on the drawing board" (i.e., burning tire chips for fuel), but little or no action is being take at this time.

New Mexico:

Phillip Westen: Environmental Scientist

Currently, waste tires are being buried in landfills. With only a one-man office, tires are not a priority. The only requirement the state has regarding waste tires is that vermin are kept away from stockpiles. This is accomplished by the use of spray or poison bait.

At this time, there are not any tire shredders located in the state. New Mexico officials have been in contact with some shredding operations, but it is only on

an inquiry basis. Realistically, a waste tire management program could not be developed because of low manpower and because there is no market.

New Mexico uses a unique disposal method to dispose of one quarter ton one-third of their waste tire supply. Every so often, people from Mexico come across the border looking for waste tires to make sandals and other items out of. They load the tires themselves and transport them back to Mexico.

New York:

Bob Henderson/Bob Phaneus: Recycling Director/Landfill Operations Engineer

In New York, private firms such as Schrip-tek and Garb Oil are working independently of the government researching and developing programs to discover uses for recycled waste tires. Currently, Schrip-tek has one portable shredder in the state, and they hope to have up to seven shredders in operation within the next couple of years. Garb Oil has a proto-type plant to turn tires into oil.

The state does not have a permitting program that deals specifically with tire collectors or processors, but anybody who stores tires is required to obtain a landfill-type permit. Anybody who transports waste is also required to have a waste transporter's permit. The only requirement the state has regarding waste tire stockpiles is that piles cannot be stacked higher than 10 feet; however, the requirement is usually done on a case specific basis.

Permits are also issued on a case specific basis by regional offices. Annually, permittees are required to report to the regional office listing the traffic and amounts of tires going in and out of the dump site or landfill. Monitoring and enforcement are also done by the regional offices; however, the state oversees the enforcement action of the regional office on a technical assistance basis.

The public is allowed a large role in the permitting process. According to the state Environmental Quality Review Act, the Bureau of Municipal Waste must make public their intentions and actions. Also, the public is kept informed through the Environmental News Bulletin which allows for hearings for projects.

New York has never completed an abatement attempt. Everytime an order of removal is issued to a tire collector, a fire "mysteriously" occurs during the probation/cleanup period.

North Carolina:

Bill Meyer: Environmental Engineer

The state of North Carolina allows waste tires to be landfilled as long as they are buried in a sanitary manner. From there, it is up to the individual counties to regulate waste tire disposal if they feel it is necessary.

Some county ordinances do regulate how waste tires will be landfilled. Some landfills accept tires, but the tires are buried in separate cells. If the counties require the tire to be sliced or chopped before landfilling, the counties hire portable shredding operations. Then, the landfill owners will levy a charge of about $.20 - $.25 per tire to cover maintenance costs and a minimum wage salary.

The state has researched using waste tires in road surfacing and as a mineral filler, but no programs are being developed.

If tire stockpiles get to be a problem in North Carolina, the stockpile can be deemed a nuisance, and the state can issue a removal order. The state can also force an individual who is only "collecting" tires to develop a stockpile site; this is also conducted under the nuisance issue. The state can also require the stockpile owner to spray for mosquitoes.

The state has never finished an abatement proceeding because if a removal order is issued, the tire pile "mysteriously" starts on fire. These cases are impossible to prosecute.

North Dakota:

Neil Knotterud: Superfund

The primary method of waste tires disposal in North Dakota is landfilling. Landfills are supposed to bury tires immediately and as close to the bottom of the cell as possible.

Before a landfill is given a permit, landfill owners must submit a plan describing how waste will be stored, including tires. The plans are then reviewed and suggestions made.

There are no tire shredders in the state, nor are there any resource recovery facilities.

The health department can order removal of a tire nuisance, but because no regulations govern it, they have never abated a tire stockpile.

Ohio:

Tina Redman: Community Technical Assistance Coordinator

Waste tires in Ohio are currently being landfilled or stockpiled. The state does not have any guidelines governing tire stockpiles, but local health department officials do have some say in how waste tires will be stored.

The state would like to develop a permitting program, and they are currently in the process of locating tire stockpiles by telephoning county officials.

Ideally, the state would like to see legislation passed that would regulate tire stockpiles.

A panel has also been set up including state agencies, the U.S. Environmental Protection Agency and the U.S. Department of Natural Resources to meet and discuss possible solutions to the waste tire problem. The panel is currently investigating pyrolysis plants and cement kilns.

Oklahoma:

Harriet Muzljakovich: Environmental Specialist

The primary waste tire disposal method in Oklahoma is landfilling. The state does not have any guidelines regulating tire storage areas, and tire stockpiles are beginning to accumulate.

There is an incinerator in the city of Miami which burns tires, along with other waste, for steam. The tires are sliced in half before they are put into the incinerator. The pollution control device used on the incinerator is an afterburner.

A tire stockpile was declared a nuisance in Tulsa County, and the state is attempting cleanup actions. The tire pile only contains about 500 tires, so it is not a priority.

Oregon:

Bill Dana: Landfill Permits and Special Waste

The state of Oregon provides tax incentives to businesses who become involved in waste tire management systems including processing, transporting, and utilizing.

Any individual who will be stockpiling tires for more than six months must be permitted. The individual must first meet local and county land ordinances, then submit a storage plan to the state. Permits are enforced locally for the most part. At this time, there is only one tire collector permitted in the state.

The only new program the state is considering is to charge $1.00 tax on new tires.

An abatement was conducted against a waste tire collector, but it was done by the water pollution control department. The tire stockpile was located on the edge of a river bank, and it slid into the water. The tire collector was forced to get the tires out of the water.

Waste Recovery, Incorporated located in Portland has done all the research and development in the area of waste tire management.

Pennsylvania:

Ron Hassinger: Solid Waste Specialist

The disposal of waste tires is considered a very low priority in the state of Pennsylvania. If counties or local governments have problems with tire stockpiles, they may take action against them; however, there are not any specific standards regulating tire stockpiles.

The state believed that private businesses may be conducting research and studies into the area of waste tire management.

Rhode Island:

John Quinn: Supervisor, Division of Air and Hazardous Materials

Landfills in Rhode Island are illegal, so waste tires are all accumulating in one pile. A permit is not required for segregated solid waste; thus there are no guidelines for tire storage areas.

South Carolina:

Lee Rewl: Supervisor of Landfills

In South Carolina, waste tires are being landfilled as close to the bottom of the cell as possible. There are a few shredders in the state, but they are not used on waste tires.

South Dakota:

Robin Livermore: Natural Resources Analyst

The primary method of waste tire disposal in South Dakota is landfilling. Because of this, most landfills end up with tire stockpiles. There are no guidelines governing tire storage or disposal, except that the open burning of tires is illegal. Tires are a problem for the state, but they are not a priority.

Tennessee:

James Spices/Larry Ledford: Environmental Engineers

The state of Tennessee is not in the process of developing any programs regarding waste tire management, so they are currently landfilling waste tires even though they prefer not to.

Texas:

Glendon D. Eppler: Chief, Plans Branch Bureau of Solid Waste

Texas is currently landfilling tires. The state does not have guidelines for landfilling or storage, nor do they have immediate plans to develop a program.

The state believed that Texas Institute was doing an on-going study regarding uses for waste tires in asphalt.

Utah:

Kent Montaque: Chief Sanitation

The state does not have any programs regarding the total management of waste tire disposal.

Vermont:

John Malter: Chief, Solid Waste Management Section

Waste tires in Vermont are primarily disposed of in landfills, mainly in separate cells. There are a few shredding operations located in the state, but they are not shredding tires on a wide scale.

In about two years, the state plans to have an incinerator operating that will take care of some of their solid waste problem.

Virginia:

K. T. Chestnut: Compliance Director

In the state of Virginia, it is up to the individual landfill operator to determine how disposal of waste tires will occur at their site. Some tires are landfilled whole, while others are split in half before they are landfilled.

The counties are responsible for developing tire storage areas, but people do not have an incentive to bring them in. Tires are frequently dumped in undesirable locations.

Because of the "tire fire," a form letter was sent out to all tire storage facilities offering suggestions for storage; however, the state does not have the authority to force guidelines or an abatement of a tire stockpile. All the state can do is to make facilities aware of the responsibility of storing tires, and what can happen if tires are stored improperly. The storage facilities have not taken action on the suggestions.

The state is basically waiting to see what will develop in the next legislative session. The "tire fire" alerted a lot of people to the dangers of stockpiling waste tires.

Washington:

Brad Everson: Solid Waste Regulation Specialist

Washington is in the process of developing guidelines for tire storage facilities, so waste tires are currently being stockpiled. The state has one recycling program regarding waste tires and that is concerning reef development. One reef is already operational, and a second one is being constructed.

The state is also in the process of developing guidelines for tire storage facilities which will hopefully be passed in the next legislative session. The technical criteria states that waste tire piles will not be more than one-half acre in size with fire lanes proportionate to the height. The state basically wants tire stockpiles to be controllable.

Abatement is done on a county level, and Thurston County is attempting one now. The county was in the process of deciding who owns the land the tires are stockpiled on, along with developing guidelines and stipulations for future stockpiles. During the proceedings, however, the stockpile caught on fire and has been burning for about two months now.

West Virginia:

Robert Seip: Staff Engineer

In West Virginia, landfill operators do not want to bury waste tires, so they are stockpiling them at the landfill site. Occasionally, when staff visit landfill sites, they make storage recommendations, but there are no regulations governing tire storage areas. There is not enough staff to realistically develop programs on waste tire management; thus, tires are a problem, not a priority.

Wisconsin:

John Reindl: Recycling Coordinator

Wisconsin is currently landfilling their waste tires because the state has discovered that there is no interest in developing waste tire management programs. In fact, the state is in the process of sending out surveys to the counties to find out if counties think tires are even a problem. The state is also watching Minnesota to see what is discovered.

Once, a city attempted an abatement of a tire stockpile. The city sued the owners of the stockpile, but the owners did not have the money to pay for the removal of the pile. In this case, the city payed for the tires to be hauled to a landfill.

Wyoming:

Tim Link: Analyst

Waste tires in Wyoming are being landfilled. The landfill operators try to work the tires in with the other waste and put them as close to the bottom of the cell as possible.

Report on U.S. Environmental Protection Agency (EPA) Regulatory Activities Regarding Waste Tire Management

EPA, Region V:

Currently, in Region V, there are no federal programs developed or research being conducted regarding waste tire management.

Periodically, however, the tire manufacturers are contacted to see if there are any new developments or if any new information is being published concerning waste tires.

Any information received from the tire manufacturers is assembled and available to interested parties.

EPA Region IX:

Because hazardous waste is such a high priority, EPA Region IX does not currently have any programs regarding waste tire management.

In 1981, however, Region IX researched and wrote a report entitled "Options for Resource Recovery and Disposal of Scrap Tires." The report is available from the Ohio office.

EPA, Region X:

Currently, Region X does not have any program regarding waste tire management. What EPA does is to keep in contact with the state governments to find out if programs are developing and to be kept informed of the overall situation.

Exhibit 3

Pollution Control Agency
Solid and Hazardous Waste Division

Outside Opinions Sought Concerning Proposed Rules Relating to the Permitting of Waste Tire Collectors and Waste Tire Processors by the Minnesota Pollution Control Agency

Notice is hereby given that the Minnesota Pollution Control Agency (MPCA) is seeking information or opinions from sources outside the MPCA in preparing rules pursuant to Minnesota Laws 1984, Chapter 654, Article II, Section 93 which requires a tire collector or tire processor with a determined amount of waste tires to obtain a permit from the MPCA unless exempted.

The permitting rules will address waste tire collectors and processors who will be required to obtain permits, permit application requirements and procedures, standards or guidelines for operation of waste tire collection and processing facilities, permit fees, public participation, and permit issuance or denial procedures.

The MPCA requests information and comments concerning the subject of these rules.

Written or oral information or comments may be submitted to Karen Ryss at the address listed below or at 612/297-1793 during regular business hours.

Karen Ryss
Minnesota Pollution Control Agency
Solid and Hazardous Waste Division
1935 West County Road B2
Roseville, Minnesota 55113

Information or comments will be accepted until October 31, 1984. Any written material received by the MPCA shall become part of the background record regarding these permitting rules.

September 21, 1984

Thomas J. Kalitowski
Executive Director

Office of the Secretary of State

Notice of Vacancies in Multi-Member State Agencies

Notice is hereby given to the public that vacancies have occurred in multi-member state agencies, pursuant to Minn. Stat. § 15.0597, subd. 4. Application forms may be obtained at the Office of the Secretary of State, 180 State Office Building, St. Paul 55155-1299; (612) 296-2805. Application deadline is October 23, 1984.

BOARD ON AGING has 2 vacancies open for members. The board develops, coordinates, evaluates, and administers federal and state funds for programs for the aging of approximately 15 million; makes grants to 13 area agencies on aging and non-profit agencies; serves as an advocate for older persons, programs and legislation for older persons in Minnesota. Members are appointed by the Governor. Monthly meetings, Metro Square Bldg., St. Paul; members receive $35 per diem plus expenses. For specific information contact the Board on Aging, Suite 240, Metro Square Bldg., St. Paul 55101; (612) 296-2770.

ADVISORY TASK FORCE ON AMERICAN INDIAN LANGUAGE AND CULTURE EDUCATION PROGRAMS has 1 vacancy open for an urban representative. Members include representatives of community groups, parents of children eligible to be served by the programs, American Indian Administrators and teachers, and persons knowledgeable in the field of American Indian language and culture education. The task force advises the Board of Education on the administration of the American Indian Language and Culture Education Act; reviews proposals and makes recommendations to the board on approval and funding of bicultural programs in Minnesota schools. Between 3 and 5 meetings per year at various sites statewide; members are reimbursed for expenses. Members are appointed by the Board of Education. For specific information contact the Advisory Task Force on American Indian Language and Culture Education Programs, 303 Capitol Square Bldg., St. Paul 55101; (612) 296-6458.

Exhibit 4

Minnesota Pollution Control Agency

Notice of Intent to Solicit Outside Opinions Concerning Proposed Rules Relating to the Permitting of Waste Tire Collectors and Waste Tire Processors by the Minnesota Pollution Control Agency

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Karen Ryss
Minnesota Pollution Control Agency
Solid and Hazardous Waste Division
1935 West County Road B2
Roseville, Minnesota 55113

Information or comments will be accepted until October 31, 1984. Any written material received by the MPCA shall become part of the background record regarding these permitting rules.

Dated: September 28, 1984

Thomas J. Kalitowski
Executive Director

Phone:_____
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Two Harbors, MN 55616

Alan D. Goodman
Solid Waste Officer
Phone: (218) 834-5581

October 5, 1984

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OCT 09 1984
MINN. POLLUTION
CONTROL AGENCY

Ms. Karen Ryss
Minnesota Pollution Control Agency
Solid and Hazardous Waste Division
1935 West County Road B2
Roseville, Minnesota 55113

RE: Proposed Rates for Permitting of Waste
Tire Collectors and Waste Tire Processors

Dear Karen,

First of all, I would ask that the rulemaking be done in a timely fashion. Apparently, it is law that we begin removing tires from the waste stream. No doubt this will result in a pile of tires at our Castle Danger Sanitary Landfill.

Secondly, please explain to the lawmakers that we do not want to be left with a pile of tires. Provisions must be made to remove these tires at a reasonable cost. Common sense rulemaking is needed here. Hopefully, the new tax on tires will be of some help here.

Yours truly

Alan D. Goodman

Alan D. Goodman
Lake County Solid Waste Officer

ADG/RKM

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Oct. 5, 1984

Karen Ryss
MPCA

In response to your request for some input for ground rules of tire collection and disposal.

We are convinced that existing tire piles can not be made into chips economically. The reason is that there is to much dirt. We believe that the pyrolisis system will have to be used to salvage the oil from these tires. Fresh tires are no problem, even at the low prices in this area. Fresh tires can be made into chips or oil through pyrolisis.

We feel that the rules for operating a tire dump should be, first of all only those that are set-up for processing the tires. There could be no argument in the business if only those that are set-up for tire processing are able to take in tires. If the state has a market for the products made from these tires it will make a good deal of difference in cost and the amount of return possible in tire processing.

Other rules we feel would be good are as follows:

Whole tire storage should be limited to what can be processed in thirty days.

Processed sheddings should not be stock piled more than 60 days.

Legal tire piles or shedded piles should not exceed 500 ton in one pile.

These piles should be separated by at least 50 feet of clear space.

Any amount of tires should be at least 1000 feet from any housing.

Cleaning out of tire piles should be bid on by the job. Each pile will be different and should be treated as such.

Sincerely,

Walfred Pilquist

IRON RANGE TOWNSHIP

Taconite, Minnesota 55786

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OCT 1 : 1984
MINN. POLLUTION
CONTROL AGENCY

Oct. 6,1984

MS Karen Ryss
MPCA
Roseville, Mn.

In reply to your letter of Sept.28 regarding requirement of permits for tire collectors or processors. I am writting in the capcity of a township official, supervisor of our local landfill, and a member of the solid waste advisory committee to the Itasca County Board. I agree that permits should be required.

From the tone of your letter I get the impression that there are quite a number. I wonder what that may do to the availibility of tires. Itasca County and the village of Bovey are enterested in a process called Tirecycle and the sucess of that venture hangs on the availabilty of a great number of tires. That process is also a part of our solid waste plan for the county. Perhaps this may be of some use to you.

Yours Truly
W.E.Gardinier

WASECA COUNTY HIGHWAY DEPARTMENT

3rd Street 9th Avenue N.E.

WASECA, MINNESOTA 56093

ROBERT J. McPARTLIN
Highway Engineer

507-835-1250

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OCT 1 1984

MINN. POLLUTION CONTROL AGENCY

October 8, 1984

Karen Ryss
Minnesota Pollution Control Agency
Solid and Hazardous Waste Division
1935 W. CR B2
Roseville, MN 55113

RE: Proposed Rules Relating to Waste Tire Collectors

Dear Ms. Ryss,

The Waseca County Board of Commissioners requested me to comment to the MPCA regarding their and my views of the proposed rules.

Due to the fact that we own and operate the Waseca County Sanitary Landfill SW-100. We are very concerned about the type and amount of material that is received at our gates. We have accepted car and some truck tires from individuals (and small, local garages). We are not burying them at our Landfill site, but stockpiling them. This pile is away from other disposal sites and we feel it is small and managable. We do not believe we are "Waste Tire Collectors" and do not wish to be forced into the permit, fee and rules process.

Therefore, we request that Landfill operators be exempt from any Waste Tire Collector results. Please contact me if additional information is needed.

Yours truly,

Robert J McPartlin

Robert J. McPartlin
Waseca County Solid Waste Officer

RJM/cs

Minnesota Pollution Control Agency

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OCT 12 1984
MINN. POLLUTION CONTROL AGENCY

4/10

Notice of Intent to Solicit Outside Opinions Concerning Proposed Rules Relating to the Permitting of Waste Tire Collectors and Waste Tire Processors by the Minnesota Pollution Control Agency

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Karen Ryss
Minnesota Pollution Control Agency
Solid and Hazardous Waste Division
1935 West County Road B2
Roseville, Minnesota 55113

Information or comments will be accepted until October 31, 1984. Any written material received by the MPCA shall become part of the background record regarding these permitting rules.

Dated: SEP 28 1984

Thomas J. Kalitowski
Executive Director

be able to discuss the Association's new services — the national credit card, equipment and vehicle leasing programs, labor and personnel consulting services.

Experts from the following firms will also be available to answer questions — the Bank administering the Association's credit card, New York Life on NTDRA's life, health and dental insurance programs, Kayser Leasing (NTDRA vehicle leasing program), CAP-CO (NTDRA equipment leasing program), SESCO (NTDRA membership labor and personnel consulting), members of the NTDRA National Retreading Consultant Service, Automotive Service Excellence (ASE) mechanic certification program, the NTDRA Profit Center Services catalog, and NTDRA Financial Consultant Dr. Robert Cox.

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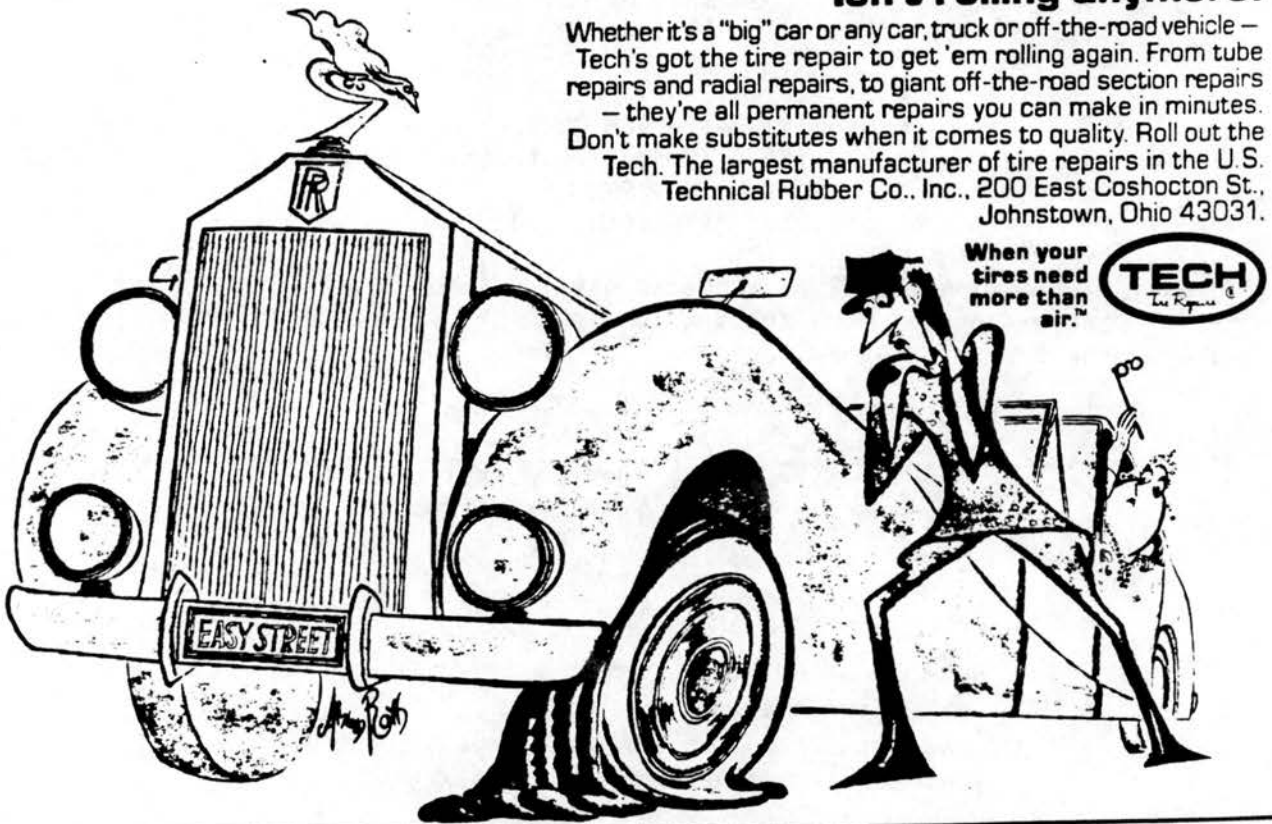

Norfolk Recycling Projects: A Partial Solution

Dealers In Tidewater Virginia Help Local Governments With Scrap Tire Problem

by Alice M. Starcke
News Editor

Scrap tire recycling programs now being developed in the Tidewater area of Virginia provide a good example of what can happen when a group of dealers works with local governments on a solution to the scrap tire disposal problem.

In Norfolk, both tire dealers and the city have been plagued by a "mountain" of scrap tires for many years, said Julian Lipscomb of Kramer Tire Co., Norfolk, who is also president of Virginia TDRA. A 1980 proposal by the state group and efforts of Norfolk dealers stirred up interest by local and regional agencies that helped two of the current recycling projects to get going and keep moving.

The 1980 plan was prepared jointly by Virginia TDRA and the Southeastern Public Service Authority of Virginia, (SPSA). It called for a tire shredder to be installed at the Norfolk landfill to help eliminate the potential hazard of growing piles of discarded tires there and elsewhere in the city, Lipscomb explained. Dealers contributed to the proposal by supplying data on numbers of tires they discard and how much they were paying for disposal.

"The total cost of installing shredding equipment at the Norfolk landfill would have been paid out in less than five years from the waste disposal fee agreed to by the dealers," Lipscomb said. The city was not willing to take on such a venture at that time, he added. But shortly afterward, the Norfolk Redevelopment and Housing Authority recognized the budget-cutting possibilities and contracted with an engineering firm to design a tire shredding an incineration program.

The recycling operation they have designed is "exactly the kind of facility the association proposed in 1980," Lipscomb noted.

This program, using a fluidized bed boiler, would provide heat for 752 apartments in a downtown public housing project, said Larry Kreshin of the Housing Authority.

Funding is from federal Housing and Urban Development Grant of $950,000 under that agency's alternate fuels experimental program, Kreshin told *Dealer News*. He noted that there is the possibility of getting additional HUD funding for a similar system at another Norfolk housing project, "but we have no commitment yet."

Meanwhile, the program for converting scrap tires to steam heat is well underway, according to Kreshin and Ernie Bowman, Jr. of Bowman & Associates, consulting engineers.

"A tire shredding and granulating operation is under construction on a 15-acre site on the Elizabeth River, and we hope to be processing scrap tires into crumb rubber in 60 days, Bowman said. The second part of the operation, a fluidized bed boiler at the apartment complex, will most likely take longer to put into operation. "The boiler has been purchased from a British firm, but there are still problems to be worked out — making sure the emissions will meet environmental regulations."

Bowman said representatives of the manufacturer will be visiting in mid-August to assist with the emissions control, and provide advice on efficient operation.

The engineer noted that fluidized bed boilers have the capability to burn different fuels and fuel mixtures, "but with this one, we're concentrating on just tires."

Kreshin explained that the decision to use tires in the operation was made because "we knew scrap tires were a nuisance to the tire industry and also a valuable and concentrated source of Btu's.

"We also found tires were less costly to obtain. In early stages of planning, we talked to dealers, and they indicated they would be willing to deliver to the processing site and pay a fee for dumping. Sawdust, the other fuel we've looked at, proved to be more costly to obtain.

"I'd estimate this operation can use up about 281,000 tires a year once it's in operation," Kreshin said.

Bowman explained that in full-fire



Scrap Tires go up the conveyor to be shredded for incineration during a test of the Norfolk Redevelopment and Housing Authority's recycling facility. Storage silo is in background at right.

operation, the boiler could consume 795 lbs. of ground rubber per hour. Figuring the average weight of a tire at 17 lbs, minus steel belting, gives a figure for scrap tire use close to Kreshin's estimate.

Kreshin indicated that before the system can go into operation, there are also problems to be worked out in running steel belted radials through the shredder and in separating the steel belt material and bead wire from the tires.

"I'd estimate it could be as much as six months before the system is up and running."

He explained that so far, no formal arrangements have been made with local dealers for scrap tire collection. "We've had some preliminary discussions with Julian Lipscomb and others in the tire business here, indicating they are most willing to work with us on this. I think it would be premature to set up a collection system before the rest of it is in operation, but we do plan to make collection arrangements with dealers once we're closer to start-up time."





(Above) Closeup of whole tire ready to go into shredder blades. (Below) Shredding machine operator checks size of rubber chunks as they come out onto a conveyor that will feed into a granulator.

Bowman noted that Lipscomb had been most helpful in planning and test stages of the project and had provided scrap tires for test operation of the shredding equipment and boiler.

A second recycling project being developed in the Tidewater region is a considerably larger refuse-fueled power generating plant for the 1346-acre Norfolk Naval Shipyard in Portsmouth.

Federal funding is available—a $160 million appropriation to the Navy through the Defense Department for construction of the power plant, said Joe Law of the Naval Shipyard public information office.

He noted that the power plant is being designed to burn more than 1,500 tons of trash daily, and would have a generating capacity of 720,000 lbs. of steam per hour.

The tire collection and processing part of this project is being administered by Southeastern Public Service Authority (SPSA), a regional agency that has organized a cooperative effort by 8 municipalities for additional funding and supply of solid waste for fuel. SPSA has begun construction of a processing plant for mixed municipal refuse, including scrap tires, and expects this operation to be completed by next year, said Durwood Curling, the agency's executive director. He explained that the process would include two separate shredding, granulating and conveyor systems—one for mixed refuse and one for scrap tires—which would then be combined to feed into a refuse-derived fuel boiler in such a way as to prevent power surges.

Curling told *Dealer News* that the boiler also is under construction and that they anticipate the entire system could be in operation by early 1987. According to an SPSA brochure, the agency has obtained permits from the U.S. EPA and state and local environmental control agencies, and an Environmental Impact Assessment has been completed.

Curling added that SPSA would obtain trash for fuel from landfills in Norfolk, Portsmouth, Chesapeake, Suffolk, Virginia Beach, Franklin and the counties of Southampton and Isle of Wight. These local governments would pay the regional agency a per-ton fee for taking their trash.

"Eventually the municipal landfills would be phased out and the refuse would be taken directly into the SPSA facility," explained John Hadfield, engineer for the regional agency. "When that happens, we may be able to take scrap tires directly from dealers and could possibly set a lower disposal fee than they are now paying.

"We're really not sure how many discarded tires would be needed, because of the mixed refuse situation, and because many of the scrap tires are being taken out of the area by private collectors," he said. He noted that additional funding is being obtained from the participating cities and counties through sale to them of $92 million in municipal bonds.

A third Norfolk area recycling program, use of split scrap tires to build offshore fishing reefs, has been in operation for about 9 years. This reef building program is run by the Virginia Marine Resources Commission, which gets state money from unrefunded fuel taxes for fuel used in boats

Mike Meier, the Commission's director for the reef building, told *Dealer News* the program has received about

(continued from previous page)

$125,200 in funding for this fiscal year, beginning July 1. "That's a good increase over last year and the funding has built up steadily over the years," he said. "We started with $50,000."

Meier explained that for each funding year, a quota for the number of tires is set by the state Secretary of Commerce & Resources. For the current funding period, the Marine Resources Commission has a quota of 100,000 tires. Meier said the type of reefs to be built will be basically the same as the past years and will use mostly auto tires, with some truck tires included.

"We now have two reef sites in the ocean and hope to get a third one in the Chesapeake Bay," he said. The tire reefs are built by laborers from a minimum security prison in Chesapeake, directed by Meier and another person in his agency.

"In the past we have obtained our scrap tires from the Norfolk landfill," Meier said. "But we're now in the process of redoing the operation and are considering taking tires directly from dealers. If this is done, we would initially start with a no-charge to the dealers situation. But if we had to set up a fee at some future time, we'd try to make it less than what they'd pay for landfill disposal of tires. If we set it up this way, I think the dealers are likely to go for it, based on discussions I've had with them."

This recycling project and the two others described offer the possibility of helping Tidewater area dealers get rid of some of their scrap tires.

Lipscomb noted that, based on new tire sales for Norfolk, Portsmouth, Chesapeake and Virginia Beach, this market is now generating about 400,000 scrap tires per year.

The Virginia TDRA president believes that the two fuel-generating recycling plans are likely to have a significant positive impact on the scrap tire problem for local dealers.

"The Housing Authority's program can consume about 75 percent of the area's scrap tire output," he said. "We don't know for sure about the Navy Shipyard project, but the huge size of it indicates that in the future they may need more scrap tires than they would get from the landfills. The reef building project also offers the same prospect."

But for now, these recycling programs are a partial solution for a problem that is growing in Norfolk and not getting any better in the rest of the state.

Lipscomb explained that the Norfolk landfill is still overloaded with scrap tires and, this landfill and others are still charging a 75-cent per tire fee for disposal. This means that most area dealers are continuing to make arrangements with privately-owned scrap tire collectors as they have done in the past, he said.

A similar situation exists in other parts of the state, said Donald Carl, executive director of Virginia TDRA. About two years ago, Carl explained, I took a survey of dealers across the state, mostly by phone, on what they were doing with scrap tires. I found that most of the smaller dealers use a municipal landfill, often paying a fee, while many of the larger dealers have found private scrap and casing collectors.

"The problem with private collectors is that while you may get a lower disposal fee than a landfill would have, you're taking a risk that the collection operation may go out of business or become the subject of environmental and/or public nuisance complaints. We've seen this happen many times, not just in Virginia, but all over the country."

(continued on page 53)

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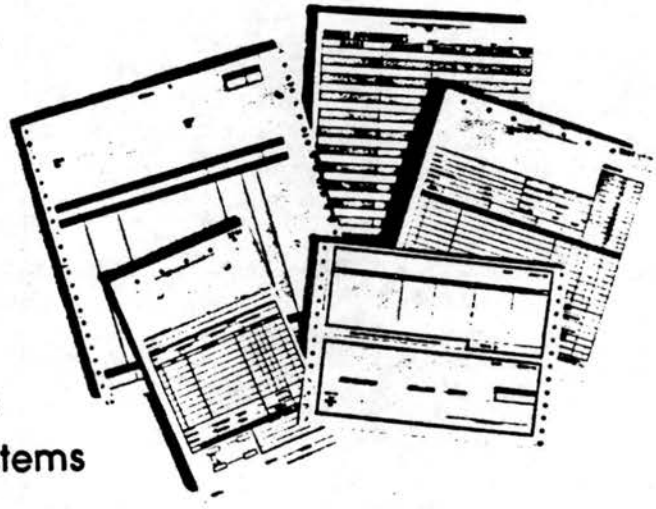

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Ed Cohn



Wayne Hesselbarth



Jay Goldberg

tire for $30, the public still believes the new tire is the best buy.

Kahn agrees with Hesselbarth. "People still have it in their mind they can get a new tire for a few dollars more," said Kahn.

Two dealers also expressed regional concerns that were affecting their business. Ed Cohn said the Olympics had scared some customers away from going into the downtown Los Angeles area, bringing his service sales down. Bob Kahn said an over supply of both wine and rasins in his agricultural area could lead to a downturn in business.

Gladman said he has noticed smaller dealers in southern California getting taken over by larger chains, and others going bankrupt, which he attributes to the low profitability of new tires. Lerch said some smaller dealers in northern California have been taken over by larger dealers, but said the situation seems to have stabilized in the last year.

CUSTOMER SERVICE STRESSED AS KEY TO SUCCESS

"Our success," stated Wayne Hesselbarth, "has been due to treating the customer as number one, being competitive in prices, and in wage and benefits to employees."

"I insist on 100 percent customer satisfaction," said Paul Bobzin, adding his company's "tremendous" repeat business is due to "Treating the customer like we liked to be treated."

THE BEST ADVERTISING IS?

"The best advertising of all is a satisfied customer," said Paul Bobzin. Bobzin said he has found coupon booklets that advertise service specials to have been successful. "The phone rings, people line up to get work done," Bobzin said.

Jim Donnelson said he uses radio and newspaper ads, along with a little direct mail. Ed Cohn said he uses tire co-op ads in the *Los Angeles* Times, adding it would be very expensive if he went it alone.

Wayne Hesselbarth splits his advertising between newspaper and radio, pointing out that advertising consistently has worked for him.

But Bob Kahn has found another medium that he said has worked for him. "Frankly, I don't do any advertising," Kahn said, adding that word of mouth referrals by satisfied customers has served him well.

EMPLOYEE TURNOVER NOT A PROBLEM

Most of the dealers interviewed agreed that employee turnover was not a problem. Hesselbarth said turnover at his four retail locations is a little worse than it use to be, noting that while many of his employees had been with him for over 10 years, it was the new employees entering the field that were hard to keep.

STAYING ON TOP

Perhaps Jim Donnelson summed up the attitude of many of the dealers concerning the current heavily competitive market when he said, "You've got to stay on top of everything every single moment."

Scrap Tires

(continued from page 50)

Carl is convinced that the solution to the scrap tire problem has to begin with the dealer facing a basic fact — disposing of scrap must be part of the cost of doing business.

"However irritating or disconcerting it may be, you have to accept that you probably will have to use a landfill and pay a fee, but also pass that cost on to the customer."

"We sometimes tend to forget that the tire dealer doesn't really generate the scrap tire problem" he continued. "The dealer is actually a middleman in a chain of waste from the consumer."

He explained that once the cost is passed on, the dealers as a group can then begin working with the municipality to get a shredder installed at the landfill. "Tire shredding equipment can and should be a part of every landfill operation. The shredded tire material then can be stored more compactly with overlays of earth and be kept separated from other refuse."

"It's up to an organized group of dealers in a locality to convince them of that need," he said.

"There's an advantage to the landfill of shredding and keeping tire material this way. They would have a supply of crumb rubber available for use by any recycling outfit that wanted it, and then perhaps could sell it rather than giving it away, since it would be in more nearly usable form."

Carl's final comment was, "I see the role of Virginia TDRA in the scrap tire disposal problem as one of helping dealers and retreaders to work with local governments to achieve a solution."

P.R. Spotlight: Washington Tire Service, Los Angeles

Customer Service: The Key To Growth For One Store In Major Metro Market

How does a one-store tire dealership in downtown Los Angeles, Cal., survive and prosper with virtually no advertising? For Bill Fuqua, owner of Washington Tire Service, and his employees, the answer is caring about the customer and showing it, plus a follow-up system that builds repeat business and referrals.

"The basic problem for a small business like ours, operating in a large metropolitan market, is that we just can't afford the rates the newspapers, radio and t.v. stations charge for advertising," said Fuqua, who is also president of California TDRA-South.

"So we devised another system to attract and keep customers. It's based on what I learned about 30 years ago while working at McDowell Tire Company in Kansas City, Mo."

Since the majority of Washington Tire's sales are directly to individual consumers rather than to commercial accounts, care for the customer starts right in the salesroom, he told *Dealer News*. We put a lot of emphasis on effective telephone manners and proper dress and appearance of our employess — salesmen are required to wear a suit and tie.

Equally important is the appearance of the store, Fuqua explained. We keep it neat and clean and have attractive point-of-purchase displays.

As each sale is made, we begin our system of follow-up postcards to customers. The invoice is used to record information, and cards are sent out every six months to all customers, reminding them of the need to maintain wheel balance and rotation for maximum wear of the tires. The number of postcards average from 250 to 300 per month.

Fuqua noted that the full price is charged for initial tire service work when tires are sold. The reminder cards offer free balancing and tire rotation every 5,000 miles.

"It has turned out to be a good way to keep our name in front of the customers," he said. "When people come back for the free service, that often gives us a chance to sell them other under-car services they need. Sometimes people who have moved out of town come back and tell us they returned because 'you're the only tire store that ever sent us anything.'"

At the time of sale, customers are given store "calling cards," and sales people encourage them to "tell your friends and neighbors about us."

We use the same system of encouraging referrals and the follow-up postcards for commercial accounts, Fuqua noted.

And it does work. The store owner said that with this system, annual sales volume has increased to more than $1 million over the past several years.

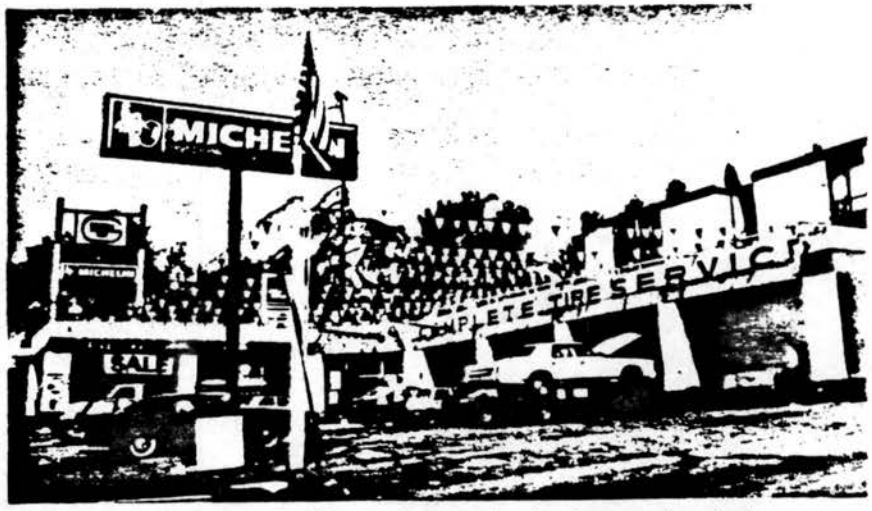
Washington Tire has five service bays, and auto service business makes up about 25 percent of total volume per month.

The company's only advertising is in the Yellow Pages. "The Yellow Page ad attracts customers, too," Fuqua commented. "We find that a lot of people are doing comparison shopping by phone, and that's another reason we put so much emphasis on employees giving a courteous, friendly and knwledgeable presentation when taking phone calls."

Fuqua said another thing that helps to build sales is community involvement. "It's especially important for the smaller dealer to be active in his community and become known. Besides being a way to do some good, it give the business good exposure." He is active in the Chamber of Commerce, YMCA and Boy Scouts, and said that "through these activities, I meet a lot of people. Some of them will ask me about tires, and then later we find some of these same people coming into the store to buy."

In explaining the customer follow-up and sales methods, Fuqua stressed the importance of a properly prepared invoice.

"You don't necessarily have to have more employees than normal for a store this size, but it is essential for the procedures and paperwork to be well organized and understood by all.



Outside view of Washington Tire Service, Los Angeles, showing several service bays.

RUBBER RESEARCH ELASTOMERICS, INC.
824 ninth ave. s. e. • minneapolis, minnesota 55414-1392 • (612) 378-9647

October 12, 1984

RECEIVED
OCT 15 1984
MINN. POLLUTION
CONTROL AGENCY

Ms Karen Ryss
Minnesota Pollution Control Agency
1935 West County Rd B2
Roseville Minnesota 55113

Dear Ms Ryss,

In regard to your solicitation of September 28th for comments on proposed rules, we have a number of comments, because of our background in utilizing scrap tires. The recent legislation requiring disposal of tires to be controlled creates an even larger problem. The present ultimate disposal of tires is a highly fragmented operation. The large number of tire collectors presently in business to mill retreadable tires, are basically disseminating the scrap tires throughout the countryside. Many of the tires are placed in the historical piles, but new piles of large magnitude must be created. In short, the tires have nowhere to go but to be piled somewhere.

There are those who are trying to dismantle tire piles. The enclosed article best explains the circumstances that prevail. The charge for accepting and piling tires is what subsidizes any processing of the scrap tires.

An ultimate disposition of the scrap tires is necessary to validate the legislation. Imposing rules on the present tire collectors borders on being useless. Imposing rules on tire processors will essentially nullify innovation. The present rules for pollution control are adequate for governing tire processors in terms of effluent production.

Our motivation is our interest in processing scrap tires by means of our TIRECYCLE® process. To provide an initial explanation, we have enclosed a copy of a proposal we made for funding by the Waste Management Board. In this proposal a general methodology for the collection of tires is detailed. If there is an available means of disposal, rules can be meaningful for disposal of tires. Simply requiring tires to be delivered to a disposal facility would be an adequate regulation.







For example, if a simple manufacturing process like TIRECYCLE® is to be regulated because scrap tires are a raw material, there will be a general dampening of the innovative aspects, and obtaining the necessary financing will be precluded.

If you have any questions please do not hesitate to call on us. The background information of the Appendix is readily available to you.

Sincerely,

Fred J. Stark, Jr.

FJS:ap
Enc

Minneapolis Star and Tribune

Wednesday
July 25/1984

6B.

"We need revenue from the acceptance of more tires. Until we get the volume of tires coming in built up, we need to reduce the number of tires we're required to shred," Chapman said.

Chapman said the city-permit change will provide financial relief until a state waste-tire law takes effect in 1985 and makes recycling more profitable.

The law's provisions will prohibit landfills from accepting waste tires, which should bring more tires, and fees, to North American, Chapman said. "It's hard for us to compete in the collection of tires now with people who don't have recycling costs," he said.

The law also establishes a loan and grant program for firms that use recycled tires for fuel, which "will definitely open up the market for shredded tires," Chapman said.

Andover Mayor Gerald Windschitl said city officials were willing to relax permit requirements, but only temporarily, and in exchange for a guarantee that North American will leave town when Heidelberger's tires are gone.

"This change is for an interim period of time. What we're not willing to do is drop this ratio of old tires shredded to new ones accepted permanently.... We have no desire to become the tire capital of the Twin Cities," he said.

Chapman said North American has shredded about 1.5 million tires "without really putting a dent" in Heidelberger's tire mountain.

Andover gives relief to troubled firm in tire recycling

By Paul Gustafson
Staff Writer

Andover officials have agreed to allow a firm that's having financial trouble recycling a mountain of 12 million to 15 million tires to accept as many additional waste tires as it shreds for six months.

In return, North American Tire Tech, Inc., has agreed to dismantle its tire-shredding operation when it has recycled the 15-acre pile of tires collected over 30 years by Cecil Heidelberger, Anoka County's self-proclaimed "tire king."

Heidelberger agreed last year to sell his tires to Schriptek Recovery Systems International, which was later bought by North American.

Under its city operating permit, North American has been required to shred and dispose of three tires from Heidelberger's tire mountain for every additional waste tire it accepts.

The company is making money through fees charged for accepting additional waste tires, but not enough to offset losses from its tire-shredding operation, said North American official Darrel Chapman.

The company is selling about 1,500 tons of shredded tires a month to an Owens-Illinois paper mill in Tomahawk, Wis., which is burning them as fuel, but it has no other customers, and is "basically losing" money on its recycling operation, Chapman said.

OVERVIEW

This application requests a grant/loan of $1 million for equipment to process waste tires under the Special Waste Stream Facilities category. Whole tires of all sizes will be reduced to a series of ground rubber particle sizes which are then surface treated to produce a series of unique products for rubber compounding. The rubber and the fiber of the tires are utilized with only the metal to be discarded or sold as scrap. The process produces no effluent and only uses electrical energy. The product is called TIRECYCLE. Although the TIRECYCLE product is unique, the intermediate products are commercially viable and can compete in existing markets. This production facility will have a capacity of 60 million pounds annually which equals the approximate annual discard rate for Minnesota. The primary market for the product produced is the rubber industry; however, equally significant opportunities exist in plastics, asphalt and fuel applications.

The refinement of scrap tires to mitigate the significant health and fire hazards posed by disposal of whole tires has always been faced with the significant problems associated with an inability to find markets with profitable economic returns. Reasonable operating costs are achievable and are guaranteed with our process while viable markets are already a reality despite poor economies of scale at present.

The equipment required can be divided into four main categories: shredding, grinding, polymer processing and particulate processing. At the present time only the latter two are operational, in a semi-works capacity. The product has been marketed under the name of TIRECYCLE for two years. In 1983 approximately four million pounds of TIRECYCLE were processed, and we have agreements to process over seven million pounds this year (Appendix A). None of this particulate rubber originates in Minnesota, but all of it would, if suitable equipment for shredding and grinding were in place.

The technical feasibility of this operation can be divided into two parts. The first entails the mechanics involved in refining the scrap tire to a form suitable for sale as a TIRECYCLE product or variant. The manufacturer of the shredding equipment has provided a guarantee for maintenance costs. The grinding equipment is commonly used throughout the rubber industry in various arrangements and thus historical operating costs are well known. Rubber Research Elastomerics, Inc. (RRE, Inc.) has been in the business of polymer modification for over 20 years and thus has specific knowledge of the costs of this operation. The TIRECYCLE treatment process has been operating two years, and appropriate equipment and operating costs have been well documented.

The second facet of technical feasibility is an authentication of the claims of chemical transformation. Numerous papers have been presented at American Chemical Society - Rubber Division technical meetings and published in rubber journals (Appendix B). The process is the object of a patent application which will be granted during 1984. All told the technical merit of this process has been exhaustively documented.

The financial feasibility of this project is very competitive with all other solid waste processing facilities. This is true for other waste tire processing projects as well as other attempts aimed at extracting value or reducing costs from solid waste management procedures. TIRECYCLE products have established a market price between 20 and 35 cents per pound (Appendix C). In most instances the price paid represents a 25-50% savings for the rubber compounder who utilizes TIRECYCLE. Despite RRE, Inc. lack of vertical production integration resulting in significant production and transportation costs, TIRECYCLE operations are profitable at this price level. It will be demonstrated that an orderly payback of principle and interest on the loan can be achieved through current or increased operation revenues and reduced costs.

Besides the rubber industry, the application of TIRECYCLE for plastics possesses the greatest potential in terms of quantity demanded and price received. Asphalt and fuel applications provide fewer economic incentives, but their potential volume is attractive to insure stability and diversification of demand.

At present management of scrap tire disposal is of limited effectiveness. In recognition of this the Minnesota Legislature has proposed a bill (S.F. 697) to more closely control the disposal of scrap tires and provide money to clean up existing hazardous tire storage piles. As part of this latter effort, it is expected that shredding will be utilized as an interim measure, awaiting final utilization of the tires' constituent parts. With guaranteed lowest operating costs, RRE, Inc. could shred tires for mutual benefit, providing the state with reduced health and fire hazards at tire dumps and RRE, Inc. with guaranteed production volume and low cost raw material supply.

It is expected that the existence of highly reliable operating and maintenance costs combined with an initial market of high volume (shredding for the state) and reliability will yield financial projections which are both conservative and profitable. With the prospect for greatly improved market demand and price enhancement through product refinement, significant improvement upon these calculations can be expected. This will expedite the process of comprehensive waste tire management and reduce the need for continued state intervention to insure compliance with present or proposed statutes. This demonstration project can be an important example of how cooperation between public and private forces yields effective and efficient management of significant waste disposal problems.

RRE, Inc. has been in the process of developing background for this application for over two years. In the course of that time the exact circumstances of scrap tire disposal have been in a state of flux. Initially there was a flurry of activity that produced three tire choppers working in the state. Each used a different technique and equipment. All three only produced various sizes of first stage chop. The smallest piece produced was a two inch X two inch. We believe that all three systems are basically not reliable for chopping tires for assorted reasons, but the common thread is that the operating expenses are so high that the chopped tire in whatever its final size is not able to meet any of the market cost requirements (Appendix D-6). The only market known to us

that they attempted to service was the fuel. Rather than discuss the arguments put forth by the three separate tire choppers we submit the position of Northern States Power Co. regarding the burning of tires. This information was submitted to Governor Perpich's commission on tire disposal (Appendix D-7). The salient points are that they can burn tires if the pieces are one inch x one inch and the price is one cent per pound delivered. There are other negative aspects of burning tires due to SO_2 and SO_3 generation and the fouling of boiler tubes with zinc from the zinc oxide in the tire. ZnO is a constituent of the vulcanization process of the rubber and this will remain constant along with the sulfur. It is reasonable to assume that there is a market as fuel for chopped tire if the price and size requirements are met.

When RRE, Inc. first assayed the situation of scrap tires, the main source of tires was those currently discarded. There was the question of how many tires there were. A better phrasing of the question is how many pounds of tires are discarded each year in Minnesota? Testimony before the Governor's committee revealed that the MPCA (Don Kyser) estimates there are between two million to three and a half million tires per year. The average weight is 60 pounds because of the higher weight of truck tires. There are estimated to be four times as many passenger tires as truck tires. The main point is that we do not know exactly the number of tires being discarded per year. It is a large amount in any case.

In addition to the current accumulations there are numerous piles which must hold over fifty years worth of discarded tires. The complete analysis of the tonnage of rubber tires is basically beyond specific calculation at this time. Though this figure is an eventual necessity the means to solve the problem can be devised at this time on the basis that this proposal is meant to be a demonstration for a process. The key to this more narrow problem is that the equipment needed for twenty million pounds is essentially the same as for 60 million pounds. Since it is impossible to immediately leap into a 60 million pound per year market for TIRECYCLE, the capacity can be directed to other uses for the intermediate forms of refined scrap tire prior to becoming TIRECYCLE. It essentially costs as much to chop tires for burning or landfilling as it does to chop tires for a sophisticated usage.

The original circumstances under which we began our work with was to develop a plan to just process TIRECYCLE. The pressures of attending to the environmental problems of storing tires has oriented our treatment of the whole subject somewhat. TIRECYCLE has to be coordinated with the statewide problem of tire disposal.

DOCUMENT A - CONCEPTUAL AND TECHNICAL FEASIBILITY REPORT

Current management of the waste tire stream is a piecemeal effort without any comprehensive organization which has resulted in the haphazard and often dangerous disposal of tires. Presently the most significant use for discarded whole tires is in the area of retreading which accounts for about 9% of total supply (Department of Energy, Rubber Industry Report, 1979). The only other significant usage discovered by this report was by the rubber industry as a compound extender, when the tire was ground into a particulate form; this uses 5% of the total available supply. While the former percentage may be valid for Minnesota, it is doubtful that even 1% is being ground as a rubber compound extender because of the freight costs involved with shipping whole tires to potential grinders.

Most sanitary landfills will no longer accept whole tires for disposal. This has exacerbated the problem of inappropriate storage whether it occurs on highway shoulders or on private land. This latter disposal method is potentially the most catastrophic. There are piles in Minnesota that meet or exceed the size of a pile in Virginia of 10 million tires which was set on fire on October 31, 1983 and is still burning. Not only does the indiscriminate storage of tires increase the risk of fire but also the incidence of multiplying insect populations, especially of mosquitos (Appendix D-5).

The state legislature is in the process of passing a bill aimed at improving control over the disposal of scrap tires (S.F. 697). Although the final disposition of the bill is still in doubt, there appears to be a consensus for utilizing public policy to accelerate the implementation of a private sector solution to the problem. At this time we are the only company with the realistic potential for effectively managing the tire waste stream.

As we envision a comprehensive waste management plan, a facility capable of processing 60 million pounds annually would have to be constructed; this would equal the average annual discard rate for tires. Effective storage of tires dictates that they be shredded to relieve health and fire hazards but also to reduce space requirements; a shredded tire will take up one tenth of the volume of a whole tire. Once the tires are shredded they can be kept underground or underwater for safest storage (See Appendix D-10) or above ground but sprayed with fire retardant as an alternative. It should be recognized that tire storage is viewed as an interim step before utilization in TIRECYCLE or another process rather than as an end in and of itself; therefore, the chosen storage method should insure effective retrieval.

We have included plans for the shredding equipment in Appendix E. As has been stated this equipment will have an annual processing capability of 60 million pounds per year. It is our desire to shred this amount regardless of its final utilization (i.e., storage or grinding). We think this is a prudent insurance method given potential hazards. Nevertheless it should be understood that complete utilization is viewed within a five to ten year time frame.

$15/TON; 15¢ TO 18.75¢/TIRE

With our guarantee of operating costs we would be able to shred tires for 3/4 cents per pound. Any rubber to be utilized for TIRECYCLE would be shredded at our cost; tires to be stored or burned would be shredded at the public's expense, paid by the $1 per tire tax if S.F. 697 is passed. As the utilization of tire rubber for TIRECYCLE increases, the tax could be reduced or eliminated. Again the tire bill has the express intent of encouraging and accelerating the implementation of solutions to this problem from private industry rather than providing for a permanent public clean-up. The proposed 60 million pounds per year capacity is based on three shifts working 250 days per year. One of the many advantages of RRE, Inc's. integrated system, which is designed to increase productivity, is that predicted or unpredicted maintenance requirements will not significantly impede production.

Since segregated storage is the norm for most scrap tires, waste flow can be highly refined before introduction into the processing equipment. Part of the shredding procedure is to clean the tire of any impurities which may denigrate the performance of the final product (Appendix E). The characteristics of a scrap tire which make it an undesirable constituent of the waste stream provide for easy collection and reduce problems of contamination. In addition, rubber itself is impervious to most impurities or degredation (Appendix D-10). This results in a highly predictable waste flow and allows generalized procedures to process the vast majority of tires.

Performance is a highly critical factor in the operation of a tire shredding facility. We have been investigating shredding equipment for over three years. Virtually all of them are incapable of operating reliably on a continuous basis (Appendix D-6). This has caused us to realize that it is imperative that some performance guarantee be contracted to insure reliability or remuneration in lieu thereof. This is the salient difference between our proposed shredding operation and all other proposed or operating systems. We can guarantee a price of 3/4 cents per pound while others claim this to be an unreasonable price.

Although it is to the state's advantage to pay as little as possible for any required shredding of tires, it should be recognized that this procedure reduces rather than eliminates the hazards posed by the disposal of tires. RRE, Inc. is the only company doing business in Minnesota which has demonstrated a viable and extensive market for processed tires. A determination of product quality is best made in terms of technical acceptance. Included with this proposal are four papers presented to the American Chemical Socity - Rubber Division, and two articles published in rubber journals over the past two years (Appendix B). All of these document the exhaustive research into the potential and reproducibility of products containing TIRECYCLE treated ground rubber from scrap tires.

In addition to our development of the basic technology and product development (TIRECYCLE) the market has been defined and market acceptance achieved. The objective is now expansion in the identified markets as opposed to proposing a market. TIRECYCLE is a unique product and its market potential is based on several factors. TIRECYCLE has application in both the present rubber compounding technology but also in the development of totally new items. TIRECYCLE is an engineering tool in that it provides

a base from which new products can be designed and built. Many items can be made of 100% TIRECYCLE. When used as a component in rubber compounding the concentration is usually 40 to 50% of the total compound weight. This factor elevates TIRECYCLE to the potential of a major constituent in the vast majority of mechanical goods. In addition, TIRECYCLE is used as a process aid to improve quality control in many instances at 20 to 25%. In all the applications TIRECYCLE has high poundage potential.

The total number of potential customers is quite large in number and quite diverse. There are approximately 1414 companies and 2239 manufacturing plants. The market is well defined in terms of the potential customers being identified and categorized. A copy of the Rubber Red Book is submitted as background information.

A market assessment of product desirability can be made from sales price and volume over a historical period. Sales volume has been growing dramatically, albeit constrained by semi-works capacity, since production commenced in May of 1982. TIRECYCLE sales for that year totalled some two million pounds; in 1983 this amount increased to almost four million pounds. Production in 1984 is proceeding at an annualized rate exceeding seven million pounds. Prices have been well established for TIRECYCLE and have not suffered erosion due to utilization of substitutive products. Although productivity gains have allowed stability and some reduction in prices, unusual inflationary increases in raw materials prices have been passed on to customers with little diminution of demand. The Financial Feasibility Report will present projections on production of TIRECYCLE solely for rubber, asphalt and plastics markets as well as projections including shredding of tires for the state for safe storage or burning. This latter calculation represents a more predictable and orderly payback of principle and interest on the loan; however, production solely for existing or impending TIRECYCLE markets can provide for a reasonable payback schedule even with a reduction of market price to expand markets.

Hennepin County will be the political subdivision under whose auspices the tire recycling operation will proceed. It is anticipated however that the scope of this demonstration project will easily lend itself to statewide implementation. Again the exact disposition of the tire disposal bill makes final pronouncements somewhat premature at this time. A coordinated effort has been seen as highly desirable and easy to effect.

Organization of the infrastructure necessary to supply RRE, Inc. with tires the state is desirous of shredding is seen as a governmental concern whereby it will choose the most effective means of delivering tires to the shredding site and removing those which will not be utilized by RRE, Inc. It should be pointed out that collection of tires on RRE, Inc's. part for TIRECYCLE production would be relatively easy to accomplish given the negative value accorded tires. The mechanics of efficient tire collection are more problematical than identification of sources for tires.

The concept of recycling tires through utilization of the TIRECYCLE process is not experimental but realistic. The conceptual and technical feasibility of the project is amply documented. The need for a demonstration program in Minnesota is to allow comprehensive and efficient management of the waste tire stream.

We think our proposal offers the best means to achieve this goal. State assistance can ameliorate the problems inherent in current tire disposal practices and create an economic benefit to the state for both the public and private sectors.

DOCUMENT C - FINANCIAL FEASIBILITY REPORT

Our proposal encompasses several economic situations simultaneously. The basic premise is that one particular product of waste tires can provide sufficient economic return to provide an adequate payback and generate profit if the facilities were only used for producing TIRECYCLE. An economic projection is provided for only producing TIRECYCLE from the facilities as well as a combination of TIRECYCLE and shredding. Projections based on TIRECYCLE offshoots in various phases of market development (e.g., RRECYCLE, FIBRECYCLE) are not included.

It is typical to the market development of almost any product that the growth be gradual. A system to produce TIRECYCLE for its uses in rubber, plastic, asphalt, etc. will have excess capacity initially which will be diminished as TIRECYCLE demand increases. It is possible to utilize this excess capacity to serve the needs of pure tire disposal by the first stage of chopping for use as fuel or as landfill to minimize the hazards of fire and all the other factors of scrap tire storage.

The following provides an analysis of the financial feasibility under varying conditions. The four million pounds per year at 25 cents per pound calculation is based on immediately attainable customers given this lower than market price. Our market analyses have led to the conclusion that reducing our average prices by five cents would allow our sales to increase more than 20% due to high elasticity of demand; it also shows that a reduction in the price of TIRECYCLE does not significantly impinge upon revenues covering costs. Calculations for revenues generated by shredding and TIRECYCLE processing demonstrate even greater profitability. Again this merely increases the reliability of financial projections; it is not a watershed of profitability but rather another factor in determining potential for expansion of the revenue base.

ESTIMATED OPERATING COSTS - 2 SCENARIOS

A1. Assumptions

4 million pounds of TIRECYCLE at $0.25/lb

Labor Requirements: 1 shift operation

5 low skilled men @ $12,000/yr

1 foreman @ $20,000/yr

1 lab technician @ $20,000/yr

Maintenance @ 5% of fixed costs

Power @ $0.025/KWH - usage charge

$5.05/KW - demand charge

Packaging @ $0.01/lb

Raw Materials @ $0.035/lb

Interest @ 12%

Depreciation 10 year straight line

B. Fixed Costs

Chopping Equipment	$ 350,000
Grinding Equipment	250,000
Polymer Equipment	280,000
Operations Equipment	60,000
Quality Control Equipment	100,000
	1,040,000
Buildings and Land	800,000
Total	1,840,000

C. Annual Operating and Maintenance Costs for 4 million pounds of TIRECYCLE

1. Salaries

Operating Personnel - 7	100,000
Administrative - 2	60,000
Sales Personnel - 2	40,000
	200,000

2.	Employee Benefits	
	FICA	14,000
	Health Insurance	16,200
		30,200
3.	Fuel	12,000
4.	Electricity	30,000
5.	Water	280
6.	Maintenance (includes labor and replacement eqpt)	52,000
7.	Residue Removal	2,000
8.	Overhead, Packaging and Raw Materials	200,000
9.	Insurance	25,000
10.	Professional Services	15,000
		566,480
D.	Capital Costs	
	Interest @ 12%	184,800
	Machinery (10 years amortization)	104,000
	Building (20 years amortization)	40,000
		328,800
	Total	895,280
E.	Revenue	1,000,000
F.	Profit	104,720

A2. Assumptions

50 million pounds of shredded tire @ $0.0075/lb and 4 million pounds of TIRECYCLE @ $0.25/lb

Labor Requirements: 3 shift operation

12 low skilled men @ $12,000/yr

3 foremen @ $20,000/yr

1 lab technician @ $20,000/yr

Maintenance (Shredder Manufacturer Guarantee + Other @ 5%)

Power @ $0.025/KWH - usage charge

$5.05/KW - demand charge

Packaging @ $0.01/lb

Raw Materials @ $0.035/lb

Interest @ 12%

Depreciation: 10 year straight line

B.	Fixed Costs	$ 1,840,000
C.	Annual Operating and Maintenance Costs for 50 million pounds of shredded tire and 4 million pounds of TIRECYCLE	
1.	Salaries	
	Operating Personnel - 16	224,000
	Administrative - 2	60,000
	Sales Personnel - 2	40,000
		324,000
2.	Employee Benefits	
	FICA	22,680
	Health Insurance	31,400
		54,080
3.	Fuel	24,000
4.	Electricity	45,000
5.	Water	280
6.	Maintenance (includes maintenance and replacement eqpt)	133,500
7.	Residue Removal	4,000
8.	Overhead, Packaging and Raw Materials	200,000
9.	Insurance	25,000
10.	Professional Services	15,000
		824,860

D.	Capital Costs	
	Interest @ 12%	184,800
	Machinery (10 years amortization)	104,000
	Building (20 years amortization)	40,000
		328,800
	Total	1,153,660
E.	Revenue	
	TIRECYCLE	1,000,000
	Shredding	375,000
		1,375,000
F.	Profit	221,340

As has been pointed out earlier there is presently no waste management plan for scrap tires or scrap rubber from rubber product manufacturers or retreaders. The retreaders have fairly large amounts of tire buffings which are essentially landfilled. The material is a particulate and causes no problems. The rubber is inert and will last for a very long time in the land fill. The situation is the same for the scrap from rubber product molders. The present situation for tires is simply that there are a number of tire haulers who provide the service of picking up scrap tires from tire dealers of all sorts. These tire haulers are typically paid 50 cents per tire. There are instances where one dollar per truck tire is paid for removal. This relatively small payment is enough to motivate the tire hauler; nevertheless the tire hauler exercises limited options. The scrap tires can be culled for carcasses that can be retreaded. These bring something like 8 dollars from a retreader. The remainder of the scrap tires are then disposed of by either whole tire storage or the tires are chopped for landfill or burning. The cost of chopping has proved to be too much for the tire haulers, and most tires are stored in large piles. A few tire haulers has attempted to chop tires for fuel, but this has not proven to be economically feasible. There are those who have made a business out of storing tires for a fee even though they do not provide the service of pick up.

There are some tire haulers who have culled the scrap tires for the bias constructed tires that do not have steel belting. There has been a limited market for these tires in St Louis where a reclaim company is located. This is not considered a profitable situation, but about two trailer loads of tires (35,000 pounds per trailer) are shipped out each week. At least there is some removal of the tires. The number of bias ply or all fabric tires has decreased dramatically in recent years with the emergence of the steel belted radial tire and shipping from Minneapolis to St Louis is efficacious only because of the supply situation. If the reclaimer (Midwest Rubber Reclaiming Co) begins to handle steel belted radials the need for all fabric tires from Minneapolis decreases.

The salient point is that there is now a network of tire haulers in operation, and the system is self-sustaining except for the answer to the final resting place of the scrap tires. If there was a facility to which tires could be taken for consumption the tire haulers would profit for they would be getting rid of a negative value.

If the facility for consumption of tires was in the Hennepin County area it could easily serve the whole metropolitan area of seven counties. Scrap tires originating in the out state areas could be brought to the facility with freight cost being the only problem.

The proposed legislation (Senate File 697) calls for an organization for tire collection and authorizes money from the tire tax. If this legislation is enacted and implemented the transportation costs would be paid. If the legislation is not enacted or implemented the resolution of finding someone to pay the freight costs goes back to the tire haulers who have already been paid. If the county governments without state legislation restrict tire dumps, hauling tires to a Hennepin County facility would be a reasonable course.

The problem of recycling of any items from low population density is always present - even with aluminum cans which are the most ubiquitious item of society. A portable tire chopper or shredder has been suggested to service rural areas and this is effective, but it only answers one portion of the problem. Portable tire choppers require organization and have their own operational expenses. The portable tire choppers do not answer scrap tire consumption even for fuel for most portable equipment cannot easily reach the 1 inch x 1 inch requirement of size.

In regard to estimating the scrap tire situation through the year 2000 it is probably best to admit that not enough is presently known about the total tonnage of scrap tires being generated. There will be an increase in scrap tires which could be as much as 50%. With the poundage of passenger tires decreasing the actual tonnage of scrap tires might only increase by 35%.

A comprehensive waste management plan for scrap tires can be effectively put in place with the establishment of a facility for consumption that can address the usually suggested paths of disposal (fuel, landfill, mulch, etc) and the more sophisticated paths of utilization, such as TIRECYCLE. In short, the proposed legislation (S.F. 697) will be a great help but if it is not enacted a currently generated scrap tire management plan will still be in force if a TIRECYCLE facility is available.

With all the above factors considered a comprehensive scrap tire plan would embody the following elements:

The establishment of a TIRECYCLE facility that could demonstrate the chopping of currently generated scrap tires and the transformation of this scrap rubber into a series of products.

A free tire dump for the tire haulers would be automatically established with a TIRECYCLE facility that could handle the currently generated scrap tires. Anyone wishing to dispose of scrap tires would gravitate to the free dump to relieve themselves of negative value material.

The TIRECYCLE facility would produce a full range of products to not only demonstrate the effectiveness of operation but to demonstrate the profit factor.

If the state implemented the proposed legislation the easy integration of the state's efforts could be demonstrated for regulation and clean up of present tire dumps.

DOCUMENT D - PRELIMINARY DESIGN AND ENGINEERING SPECIFICATIONS

The preliminary plans for equipment are included in Appendix E. Land and facility requirements are of a general nature. The building housing the equipment will total approximately 40,000 square feet. Land requirements are four to five acres, including the building. The floor plan is general to heavy industrial operations. 10,000 square feet of building space requires 25 foot ceilings while 16 foot ceilings are sufficient elsewhere. Six inch cement flooring is adequate, and a sprinkler system is mandatory. It is anticipated that these requirements can be met from existing stocks of industrial construction.

In all the instances or stages of processing whole tire to TIRECYCLE there are essentially standard pieces of equipment used; however, the way in which they are used may be unusual. To our knowledge no particular preconstruction permits are required. No effluent is given off in any of the processes. Only electrical energy is used for processing (electric motors). Each segment of operation is a unit operation. That is, there is no continuous flow which is the controlling output factor. Each unit operation is closely tied into the next for a non broken chain of operations but, yet, product yield can be taken in any quantity from any of the stages.

The stages are whole tire chopping, rubber grinding, polymer processing, and ground rubber treatment. A great deal of the information used in processing is proprietary and certain aspects will be described without exact details. Full disclosure can be made under controlled circumstances. The chopping of tires has been a major problem for most equipment. The proposal is to use a three stage chopping. The first stage takes the whole tire and reduces it to a size classified as a 12 inch. It should be noted at this time that a tire slitter is included in the equipment design to reduce any large truck tires or off the road and other tires to facilitate throughput. A tire slitter is viewed as insurance.

Subsequent to the 12 inch stage another chopping stage is employed without screening for reduction to a size classified as a four inch. After exit from this chopping unit the unscreened flow is divided into three streams for the next stage of chopping which is a size classified as one inch. Three chopping units are used at this poing to reduce maintenance, to handle the additional volume of chopping and obviate the need for screening. Only after the one inch stage is there any screening. The flow may be interrupted at any stage and product taken.

The three streams of one inch stage feed three separate grinding units which are called cracker mills. These are separate grinding units where the one inch stage is reduced and the primary separation of metal and fabric (cord) from the rubber occurs. These three streams are combined for metal removal through magnetic separation. The separation of metal is most effective at this point relative to the problems of additional grinding action on the metal. The metal comes out as small strands of no more than 1 inch in length.

The demetallized stream is then fed to two other cracker mills without screening for further size reduction. The fiber or cord is removed after this grinding pass by screening and suction for the fine fibers. Approximately

30% of a tire is fiber, and the amount of fiber is a considerable impediment to grinders who cannot utilize the fiber. The recovered fiber is a primary raw material for a TIRECYCLE derivative - FIBRECYCLE.

After the fiber separation stage the two streams are fed to two final cracker mill grinders which feed the final screening for each unit. The oversize particles are recycled. The final screen is 30 mesh and the screened product is defined at 100% passing 30 mesh. The particle size is not critical when defined in this way. The screening equipment is standard (Rotex Shaker) and allows screen changes to obtain almost any size. There is no need to develop a higher degree of gradation.

The next state is the treatment of the ground rubber with polymer and curatives. The ground rubber from the final screening state is fed to treating equipment which typically mixes polymer at three parts per 100 parts of ground rubber. For FIBRECYCLE, fiber is added to the ground rubber and usually 50% fiber is used. The typical process conditions are fully explained (Appendix B). Six treating units would be used. Final quality control would be performed on the TIRECYCLE and final product packaging would be performed which is simple bagging or bulk loading of gaylords. An option we have is to prepare a masterbatch of the TIRECYCLE in a rubber compound by Banbury mixer.

TIRECYCLE products made for polyethylene, polypropylene or polystyrene plastic modification are processed in the same treating equipment. TIRECYCLE products made for asphalt modification as well as the other uses are also processed in the same equipment. The variable of all these products or product uses is the polymer treatment that is applied. The polymer treatment is similar to what we have produced for some 20 years. The specifics of the polymers is described in the A.C.S. Rubber Division papers and the other publications (Appendix B). The processing of the polymer is proprietary.

It should be emphasized that up to the point of treating the ground rubber to make TIRECYCLE the ground rubber is completely competitive with the other varieties of ground rubber available from five sources in the U.S. This product can enter the market as ground tire rubber.

DOCUMENT E - WASTE SUPPLY DOCUMENTATION

The quantity of scrap tires has been fairly well documented, but if anything, our research has led us to the conclusion that estimates may be too low (Appendix D-4). As a part of the total waste stream, the MPCA estimates that tires account for 1.5 percent of solid waste. The annual production of waste tires, which is seasonably nonspecific to creation if not disposal, is about 3 million tires, consisting of 80% passenger and 20% truck. Assuming passenger tires to weigh 20 pounds and truck tires to weigh 100 pounds, annual production rates for waste tires are estimated at over 100 million pounds.

As has been documented earlier, no more than 15% of waste tires are currently being recycled. This translates to 85 million pounds of scrap tires which are being disposed in one fashion or another. Prorated on a historical basis this indicates a vast supply of tires many of which have been documented as being stored improperly at various sites throughout the state. As the enclosed letter to Z. A. Valeri's committee indicates, (Appendix D-4) cleaning up one of these tire piles is a tremendous undertaking. Generation rates for scrap tires are closely linked to population density; that is, the metropolitan area produces over half the tires discarded in Minnesota, and Hennepin County produces close to half of these. Population is the main determinant of scrap tire generation rate but the scale of industrialization also plays an important role in determining the size of the waste stream. For example, Northeastern Minnesota has a disproportionate tonnage of tires because of the massive tires used in mining operations. Otherwise outstate areas generate far fewer tires than the metropolitan area. This does not speak to documented and undocumented tire piles but only current waste tire flow.

To guarantee the supply of tires, the current bill before the State Legislature will provide money to license sites for tire disposal. Although compliance should be fairly high, money will be provided to enforce the law as well as investigate and organize historical piles of tires which have not been granted licenses. The supply and quantity of waste can be guaranteed with a high degree of reliability.

If no legislation is passed regulating the disposal of tires the market forces will direct tires to a facility that can process or consume them. In all instances the assumption is made that scrap tire haulers simply need a disposal route for their own purposes.

If there is a question as to whether or not there is an adequate supply of scrap tires for the proposed facility the present "tire haulers" can ensure the supply by continuing their present practice. There is so little use for scrap steel belted radials that many haulers bring back loads of scrap tires from other states for storage in Minnesota. The cartage fee of 50 cents or more per tire makes this a profitable venture. The load of tires pays dead head freight costs, for example.

DOCUMENT F - MARKET ANALYSIS

RRE, Inc. has been marketing custom compounded rubbers and modified polymers for over twenty years. In the course of work the concept of treating ground scrap rubber materialized. The general development was originally meant to solve a problem of quality control in compounding rather than solve the problem of tire disposal. The utilization of scrap tires was obvious because of the very large supply and the immense negative value of scrap tires. The decline of rubber reclaim in terms of manufacturing and use removed the existing potential for utilizing scrap tire rubber to any great degree. There are still four reclaim manufacturers in the U.S. but their capacity has declined greatly. The reclaim process is not new, but it is still valid. There are problems with effluent in the manufacturing process and the process is a high consumer of energy. Most of all, after over 50 years of development, production and sales, the actual utilization level hardly exceeds 15% of a rubber compound's constituents. TIRECYCLE is primarily used at 50% in rubber compounding. In some instances 100% TIRECYCLE is used for direct molding of rubber products.

When analyzing market factors TIRECYCLE must be viewed as a wholly new raw material that will be assimilated in established products, but it will also spawn new product development because of its versatility, supply, and low cost. The major obstacle for TIRECYCLE is the bias that exists against recycled material. TIRECYCLE can be assimilated quickly into an existing compound or process, but this does not usually provide the high tonnage that is preferred. The market is proven, but the usage has not been maximized. When a new product is designed with TIRECYCLE the maximum usage is realized. This simply takes more time but has been the focus of much research and development.

As has been stated, the production of TIRECYCLE is a successful commercial venture given the constraints of high raw material costs (for purchased ground tire rubber) and fixed production capacity. The main focus of RRE, Inc's. marketing effort over the past two years has been the mechanical goods subdivision of the rubber industry. Response has been reasonably positive, although high costs of semi-works production have limited broad appeal to the midwestern region of the United States. This area has provided the bulk of sales of two million and four million for the preceding two years respectively and will absorb most of the projected seven million pounds of sales for the 1984 calendar year.

New product development in the rubber industry using TIRECYCLE as a starting point includes matting for roofs and floors, roof shingles, carpet underlay, athletic cushioning for playing fields and childrens' playgrounds. TIRECYCLE is being worked into tire tread compound as well as industrial wheels, brake linings and shoesoles. The usefulness of TIRECYCLE is as diffuse as the industry. One of the indexes of the rubber industry is the Rubber Red Book which lists almost all of the companies. The primary objective of RRE, Inc. has been to analyze the market, approaching it with a product to sell and prices that can be compared with market conditions under commercial situations to minimize hypothetical assumptions. Only by analyzing sales, loss of sales, product performance, quality control over a period of years can valid information

be collected. We have two years of background in this type of endeavor, and this is the motivation for preparing this proposal. TIRECYCLE will take its place in the spectrum of raw materials used in basic and heavy industry. In Appendix C some additional sales material is presented to illustrate the method of introducing TIRECYCLE by direct mail. A follow up by direct sales calls is usually the procedure. Our general brochure is included.

Besides rubber goods, the three main markets for rubber from scrap tires are fuel, plastics and asphalt. Fuel should be viewed as a last alternative use when suitable storage cannot be arranged; it is probable that this will have short term appeal as a means for reducing historical piles of scrap tires. The enclosed NSP report to the Valeri Tire Commission (Appendix D-7) indicates that burning tires is feasible on a large scale within certain specific constraints. From an economic perspective the burning of tires will incur costs greater than their market value to the large power companies. It may have greater appeal as a substitute to smaller scale users of coal (e.g., the University of Minnesota) but it is a stopgap measure as opposed to a long term solution.

Plastics have high price and volume potential. The market is being explored at the present time. Uses include applications in plastic compounding (polyethylene, polypropylene, polystyrene, etc) polyvinyl chloride compounding, polyester (fiberglass reinforced) as well as a number of other uses. Development in this area is ongoing, but sales projections at this time are somewhat premature. However, plastics offer almost greater sales and profit potential than rubber, and it is a very dynamic market highly receptive to new ideas.

Asphalt modification has great potential in terms of market size, but the market price is not as attractive as that found in the area of rubber or plastics compounding. RRE, Inc. has 20 years of experience in the asphalt modification business, and thus approaches this market with a far greater appreciation of its strengths and limitations than most ventures seeking a niche for ground rubber tires in asphalt.

The TIRECYCLE approach has a tremendous validity in asphalt modification because it is reactive rather than inert like untreated ground rubber. This market will be developed as warranted, but RRE, Inc's. expertise has led to the conclusion that the competition will be far greater in this market, and the product must be highly refined, in terms of price and processing, before it will be widely accepted.

For the 1984 calendar year RRE, Inc. has customer agreements to process over seven million pounds of TIRECYCLE. These agreements have been growing significantly in volume for the past two years, and prospects continue to be promising. The potential for TIRECYCLE is astonishing and well documented, but the sales history demonstrates that this is a viable rather than experimental product. New markets present tremendous opportunities for diversification and sales growth. All in all, TIRECYCLE is a proven product which can only become more competitive as economies of scale improve.

Letters of intent have little effect in this area of commerce. At least in our twenty some years of experience we have not been enamored of

non-binding agreements. Only in the case of the state purchasing chopped tires for resale or landfill is there a truly valid intent to purchase because the state would be committed to deliver tires from the accumulated piles and deliver the chopped tire as fuel. This situation can only be resolved after legislation (S.F. 697) is enacted and provisions negotiated with all the parties.

The final analysis of market potential depends on being able to obtain large quantities of ground rubber from scrap tires of negative value and thereby develop the most competitive market prices to motivate assimilation in all the areas of potential. If RRE, Inc. cannot integrate backward into grinding tire to lower its costs and to stabilize its supply, TIRECYCLE has a low chance of reaching any sort of potential emanating from Minnesota.

In summation, tire utilization has the following areas for development under this proposal:

Fuel - one inch x one inch pieces

Mulch - for sewage treatment - 1/4 inch x 1/4 inch

Ground rubber - 10 mesh to 30 mesh

TIRECYCLE - 10 mesh to 30 mesh

- Rubber Compounding
- Thermoplastic compounding
- PVC compounding
- Polyester compounding
- Asphalt modification

TIRECYCLE is estimated to be a market far in excess of 60 million pounds per year which can be realized in due time. The intermediate products of the integrated processing can provide initial markets - in established uses/markets.

DOCUMENT G - ANNUAL OPERATING AND MAINTENANCE COSTS

G1. Annual Operating and Maintenance Costs for 4 million pounds of TIRECYCLE

1.	Salaries	
	Operating Personnel	$ 100,000
	Administrative	60,000
	Sales Personnel	40,000
		200,000
2.	Employee Benefits	
	FICA	14,000
	Health Benefits	16,200
		30,200
3.	Fuel	12,000
4.	Electricity	30,000
5.	Water	280
6.	Maintenance (including labor - includes repl eqpt)	52,000
7.	Residue Removal	2,000
8.	Overhead, Packaging and Raw Materials	200,000
9.	Insurance	25,000
10.	Professional Services	15,000
		566,480

G2. Annual Operating and Maintenance Costs for 50 million Pounds of Shredded Tire and 4 Million Pounds of TIRECYCLE

1.	Salaries	
	Operating Personnel - 16	224,000
	Administrative - 2	60,000
	Sales Personnel - 2	40,000
		324,000

2.	Employee Benefits	
	FICA	22,680
	Health Insurance	31,400
		54,080
3.	Fuel	24,000
4.	Electricity	45,000
5.	Water	280
6.	Maintenance (includes labor and replacement eqpt)	133,500
7.	Residue Removal	4,000
8.	Overhead, Packaging and Raw Materials	200,000
9.	Insurance	25,000
10.	Professional Services	15,000
		824,860

DOCUMENT H - REPORT ON POTENTIAL FOR STATEWIDE APPLICATION OR SIGNIFICANCE

As described in Document A - Conceptual and Technical Feasibility Report, this waste tire processing facility will have statewide significance; that is, it will have the capability of refining all scrap tires in the state to allow for the diminution of health and fire hazards which accrue to improperly stored waste tires and the greatest potential for providing complete recycling of the constituents of a tire to extract their highest economic value. Not only has this project not been demonstrated in Minnesota before, but the patents pending indicate its world-wide significance.

An important aspect of this project is the coordination between public collection and private processing of waste tires. Although the segregation of waste tires has proven fairly easy because of their inherent incompatability with the majority of the waste stream, the logistics involved in this division of the waste stream has important ramifications for future projects aimed at utilizing other components of the waste stream. The biggest obstacles to efficient recycling are the result of a lack of coordination between the public and private sectors.

Trash has become part of the public domain. Although much of the regulation has been warranted to prevent indiscriminate disposal, it has had a deliterious effect on private efforts to utilize this waste. In a sense, the public's zeal to dispose of trash in a comprehensive fashion has been too successful; resource recovery from landfilled trash is fraught with difficulty because of its inaccessibility. This demonstration project is intended to illustrate the advantages created for waste recycling through the efforts of public organization and private utilization.

DOCUMENT I - REPORT ON STATUS OF REQUIRED PERMITS

To our knowledge no other operating permits are necessary other than what we presently use. These are permits for the following:

1. Store, handle or use flammable liquids. We use mineral spirits in processing and have an underground storage tank.

2. Heating equipment, process kettles, chemical storage, industrial water discharge. We have no industrial water discharge, but we do have heating equipment.

3. Air compressor license.

4. Boiler engineer license.

Building permits would be required.

DOCUMENT J - REPORT ON TIME FRAME OF PROJECT DEVELOPMENT

Project development is conservatively envisioned to consist of three 120 day phases. The first 120 days entail order and delivery of equipment. The second 120 days will be consumed by installation, and the third 120 days are utilized for testing, training and shakedown. These estimates are based on suppliers' guidelines and RRE, Inc's. experience with bringing rubber processing equipment on line.

It is important to point out that the TIRECYCLE process produces no effluent so that environmental compliance demonstration pertains to normal heavy industrial operations rather than to a specific by-product from the recycling procedure.

Site selection and preparation can entail simply modifying an existing building or the choosing of land and building. The former can take as much time as 120 days and the latter can take as much time as 240 days because of weather.

The only geographical and utility requirements for the site are typical - heavy industrial zoning, rail spur, availability of 3000 amps of 480 volt electricity, a water supply for sanitation facilities and sprinkler system and sanitation sewage system.

Training of additional staff is done on the job site under operations. Equipment for chopping tires is to be assembled in working sequence by manufacturer and tested. Then the equipment is to be dismantled and installed by the manufacturer and retested, and personnel trained both at the manufacturer's site and our site.

Grinding and screening equipment is to be operating at manufacturer's site and transferred with operating performance ensured by manufacturer's staff.

Ground rubber treating equipment and polymer preparation equipment is presently being operated so there is in-house experience. The equipment to be acquired can be proven at time of installation or delivery.

DOCUMENT L - REPORT ON GEOCRAPHIC CHARACTERISTICS

The geographic characteristics are that the higher population densities produce more scrap tires and that certain areas can have large numbers of unusual tires (mining areas). Even though the iron mining areas have a disproportionate supply of tires the location of a processing facility is best in the generally high population density. The metropolitan area produces over 50 percent of scrap tires generated in Minnesota.

DOCUMENT K - REQUIRED RESOLUTIONS

Resolutions are to be submitted by Hennepin County.

DOCUMENT M - REPORT ON INSTITUTIONAL ARRANGEMENTS

In the course of preparing this proposal Governor Perpich appointed a Commission on scrap tire disposal chaired by Z. A. Valeri of Hibbing. Our original concerns were in the areas of state subsidization for fuel usage of tires. We submitted a letter to Z. A. Valeri explaining our position (Appendix D-1). Mr. Valeri invited our participation in his committee to the extent of allowing us to submit our views of the topics which his commission reviewed. Our subsequent letters (Appendix D2-4) presented our views. Z. A. Valeri has been the chief advisor for the legislative effort for Senate File 697. Though we have offered views different from those embodied in S.F. 697 and the Valeri Commission recommendations we are in agreement with S.F. 697.

Our letter to Z. A. Valeri of February 9th (Appendix D-4) makes a point of detailing an institutional arrangement in terms of utilizing the revenue from the tire tax to direct the cleanup of tire storage sites and either dispose of the excess amounts of scrap tire as fuel, landfill that which is not recoverable, or store separately that which can be utilized at a later date.

A TIRECYCLE processing facility is critical to the proposed arrangement with the state's efforts to clean up tire storage and regulate disposal of currently generated scrap tires. The intention was to propose an innovative institutional arrangement that could encompass broad cooperation with the state regardless of which way the state decides to move. Again, if the state is unable to coordinate its efforts and if the Pollution Control Agency has no means of controlling the disposal of tires, a comprehensive operating plan will evolve, at least if there is a TIRECYCLE facility. The TIRECYCLE facility provides the means of conversion which is the keystone of any plan.

DOCUMENT N - DOCUMENTATION ON THE LEGISLATIVE PRIORITIES

Documentation of the legislative priorities is best explained by referral to the state's efforts embodied in the Governor's Commission on Tire Disposal chaired by Z. A. Valeri and the proposed legislation (Senate File 697). The Pollution Control Agency has made their contribution to define the problem on a state wide basis. The accumulations of scrap tires of both current generation and historical background are defined on a conservatively low basis at least. The consideration of a use tax on new tires indicates the gravity of the situation and the inability of any existing means to handle the scrap tire situation in a comprehensive fashion.

The fact that whole tires cannot be landfilled effectively regardless of the soil conditions obviates addressing the capacity of solid waste facilities. Above ground outside storage has been and will be the major disposal means in the future unless a facility is constructed for recycling the tires.

Factor 3 is the most pertinent to this situation. This operation consists of a fairly high fixed investment cost which is required for efficient production. We believe that we have a system for disposing of all the tires presently stored and those to be discarded in the future. There is essentially one line of equipment required for our operations regardless of whether 10 million or 50 million pounds per year are to be utilized in the TIRECYCLE process. The loss of productivity from smaller scale units is substantial due to decreased throughput and increased maintenance. The large investment is required because significant economies of scale are required for profitable production.

High investment outlay and limited short term returns are major obstacles in attracting sufficient capital. The long term viability is well documented, but long range uncertainties about interest rates make investment of this nature a risky venture. Nevertheless, we feel the accelerating problems associated with society's inability to effectively control the growing numbers of hazardous tire piles make a long term committment imperative.

We believe we have demonstrated a project which has a great deal of long term potential as well as short term flexibility. The combination of these two attributes provides for a comprehensive program which can benefit both the public and private sectors.

The project could not be undertaken without the grant of $300,000 and the loan of $700,000, for the equipment required far exceeds the applicant's (RRE, Inc.) capacity to either directly finance or borrow money. As much assistance as possible is requested. Additional financial assistance over the $300,000 grant and $700,000 loan is needed for building and land. If the Waste Management Board provides a grant of $300,000 the additional financing will be much easier to obtain. Specifically, the grant of $300,000 would not only make the equipment procurement possible but it would be an expression of faith in the proposed system and a show of determination to do something about the scrap tire hazard. No efforts have been made to solicit financing for building and land prior to having the grant and loan from the Waste Management Board.

East Mesaba Sanitary Disposal Authority

Virginia City Hall

VIRGINIA, MINNESOTA 55792

October 18, 1984

RECEIVED
OCT 19 1984
MINN. POLLUTION
CONTROL AGENCY

Karen Ryss
Minnesota Pollution Control Agency
Solid and Hazardous Waste Division
1935 West County Road B2
Roseville, Minnesota 55113

Dear Ms. Ryss

This letter is written in regard to the proposed rules relating to the permitting of waste tire collectors and waste tire processors by the MPCA.

The East Mesaba Sanitary Disposal Authority (EMSDA) Board,at a recent meeting, discussed this notice. The EMSDA operates a landfill and accepts waste tires. The EMSDA digs trenches for the deposition of tires (all sizes), scrap rubber belting and scraps from recapping. When the trench is filled it is covered with earth. The EMSDA has had a number of fires at the tire trenches when they are partially filled.

The EMSDA prefers not to accept tires at the landfill.

A number of questions were raised at the meeting.

1. Will Landfills be classified as waste tire collectors and then be subjected to another permit with accompanying rules?
2. If tires cannot be buried, how does the MPCA recommend that they be stored until economically feasible methods of utilization are developed?

Sincerely,

Sheldon J. Johnson

Sheldon J. Johnson, Sec.-Treas.

AMEX TIRE
12420 WYOMING AVENUE SOUTH • SAVAGE, MINNESOTA 55378 • 612-890-0011

November 1, 1984

RECEIVED
NOV 13 1984
MINN. POLLUTION CONTROL AGENCY

Ms. Karen Ryss
Minnesota Pollution Control Agency
Solid and Hazardous Waste Division
1935 West County Road B2
Roseville, MN 55113

Re: Permitting of Waste Tire Collectors and Waste Tire Processors by MPCA

Dear Ms. Ryss:

In establishing criteria for issuance of permits for collectors and processors, it should be recognized that waste tires are very bulky and will pile up very quickly if both transportation and recycling facilities are not available.

Therefore, applicants should be required to demonstrate the following criteria:

Collectors:

(1) That they have sufficient transportation equipment (trucks and trailers) to move the tires that they collect.
(2) That they have a destination for the tires. This would be a contract with a processor meeting MPCA requirements for a permit.

Processors:

(1) That they have equipment and facilities adequate for the processing of waste tires.
(2) That they have markets for the reprocessed rubber.

Temporary permits:

It must be recognized that the reprocessing of waste tires is still very much in the development stage. To encourage development, temporary permits could be issued to would-be processors who have a plan for development and the financial capabilities to finance that plan. At the same time, the temporary permit should limit the quantity of unprocessed tires which could be accumulated under such a temporary permit.

Very truly yours,

Vice President

lkr

Office of
Planning and Zoning
NICOLLET COUNTY COURTHOUSE ANNEX
Box 27
St. Peter, Minnesota 56082

COUNTY OF NICOLLET

November 5, 1984

RECEIVED
NOV 06 1984
MINN. POLLUTION
CONTROL AGENCY

Karen A. Ryss
Minnesota Pollution Control Agency
Solid and Hazardous Waste Division
1935 West County Road B2
Roseville, MN 55113

Dear Karen:

Regarding your letters of October 12th and 19th which deal with the upcoming waste tire program for the State of Minnesota, I would like to report that at the present time a waste tire stock piling operation does not exist in the County of Nicollet.

I really cannot make any intelligent comments because I am not that familiar with projects of this type except for the fact I would not allow the burning of tires in any area.

Thank you for contacting us. I am sorry that I cannot be more help.

Very cordially yours,

Phil R. Lutzi, Sr.
Zoning Administrator
County of Nicollet

PRL/lar

Exhibit 5

January 17, 1985
D R A F T - #3

ISSUE STATEMENTS FOR

WASTE TIRE STOCKPILE RULE DEVELOPMENT

1. Establishment of a Permit Rule to Prevent Fires in Tire Storage Areas

ISSUE: The basic fire threat from tires develops when tires are stored in enormous piles and stacked haphazardly. Tires do not start on fire easily, but once a fire begins to burn, it is almost impossible to extinguish. In addition to routinely fighting the fire, combustion reactions within the tire pile generate a run-off containing pyrolitic oil (synthetic crude oil), gas, and carbon black. The fire fighters must also wear special protective clothing, and they must equip themselves with respirators because of the carbon monoxide and sulfur dioxide fumes.

DISCUSSION: Last year in the state of Virginia, a tire pile containing between 7 to 9 million tires caught fire. The tire pile was 80 to 100 feet high in some places and covered land area in excess of 4 acres. The fire burned for over 8 months and cost the federal government 1.8 million dollars to fight the fire and clean up the area. Over 840,000 gallons of liquid were collected at the site. The fire was ruled arson.

Initially, 200 fire fighters were involved with fighting the blaze. Concerns over possible toxicity of smoke and runoff led to requirements for workers to wear anti-contamination clothing and respirators. This increased the difficulty of securing properly trained workers and heavy equipment operators who could and would work full shifts in the clothing and respirators.

The initial fire fighting efforts with water and conventional pumping equipment were inadequate to extinguish the blaze. Such factors as the inadequacy of water supplies and the pollution danger to the tributary further hampered pursuit of extinguishment. Luckily, the fire was in a very rural area, and firebreaks were cut in time to prevent a major forest fire.

Under the superfund allocation, fire fighting problems not directly related to pollution control or safety matters could not be addressed, so no formal process for soliciting extinguishment proposals and evaluation for practicality, environmental and economic feasibility were established. Future course is still uncertain.

Several states have established guidelines to prevent fires in tire storage areas. Because of the fire in Virginia, guidelines are being proposed that tire piles cannot exceed a 100 x 100 foot area and cannot be stacked higher than 40 feet.

Connecticut and New Hampshire also have guidelines that tire stockpiles cannot exceed a 100 x 100 foot area. In addition, Connecticut requires a 50 foot fire lane between the piles, and the tires can only be stacked as high as 20 feet. The stockpile specifications are basically value judgements, but there is at least one "working pile" in the state that naturally evolved into a 100 x 100 x 20 foot pile because that was the size pile the workers could effectively manage without machines. The 100 x 100 foot pile was also determined by the state to be the largest tire fire they would ever want to fight.

After a fire occurred at a tire storage facility, the New Hampshire Court

issued an order to break up the site. The fire department was given the responsibility of determining the storage guidelines with 100 x 100 foot stockpiles considered the minimum requirement the site had to meet. The fire department also determined that the piles should not be greater than 25 feet in height with a 25 foot fire lane between the piles to try and contain a fire to one pile and to allow emergency equipment to enter the facility.

The only other two states who have guidelines for tire stockpiles are New York and Washington. New York deals with tires on a case-specific basis, but they do require that tires cannot be stacked higher than 10 feet. Washington has proposed that individual stockpiles cannot be greater than 1/2 acre in size with fire lanes proportionate to the height.

The basic problem with tires, according to the State Fire Marshall's Office is that once they begin burning, they are almost impossible to extinguish. In effect, as the tires burn, they are fuel for the fire, so the fire just keeps getting hotter and continues to spread. The best way to extinguish a tire fire is by smothering it or by adding something to the water.

Because of the fumes that are emitted from a tire fire, a self-contained breathing apparatus (SBA) would have to be used by the fire fighters. In 45 minutes, one fire fighter will use up two bottles of air and that is using the air sparingly. The fire fighters will normally wear their regular gear; however, protective clothing may have to be worn because of the chemicals generated by the fire.

The State Fire Marshalls' Office suggested the use of both portable and stationary equipment to develop a "water-curtain" between the piles to absorb heat. This might help to contain the fire to one pile. If necessary, a solid stream of water can be sprayed 100 feet, but this does not dissipate much heat. There is also equipment available that can reach 65 to 110 feet both vertically and horizontally.

The Minneapolis Fire Prevention Bureau investigates fire hazards as they become aware of them. After the initial inspection, recommendations are made, or the uniform fire code is followed where it is applicable. The only requirement they insist upon is to have at least a 20 foot fire lane between the piles. A 20 foot fire lane would allow enough space for emergency equipment to enter the area; however, the lane would not be wide enough to prevent the fire from spreading because of the heat generated from the burning tires. It was also suggested that tires not be stockpiled against a building, unless the wall the tires will be stockpiled against is concrete and has no doors or windows.

The height of the tire stockpile is definitely a factor when fighting a fire. If the stockpile is high, the fire will burn like a chimney and spread upward and outward, faster and hotter. According to the Minneapolis Fire Prevention Code, Article 173, Section 27.203, sites larger than 2,500 cubic feet of rubber tires must have a permit. This section, entitled "Storage of Readily Combustible Materials," also states that storage in the open shall not be more

than 20 feet in height, shall be so located, with respect to adjacent buildings, as not to constitute a hazard, and shall be compact and orderly. Tire fires are hard to fight because tires are basically waterproof, but a high stockpile further complicates matters because water cannot reach the tires to cool them down.

Since efforts to extinguish the fire would be pretty useless, the fire fighters would try to separate the tires that were not burning by pulling them off the pile. The hooks used to pull the tires down are 6 to 10 feet which means that the maximum height for a tire stockpile should be 20 feet.

The fire fighters would not wear any special equipment unless the air was heavy enough to require respirators. They can usually get pretty close to a fire, and they can spray water 50 to 60 feet if two people are handling the hose. If you try to spray the water farther than 60 feet, the pressure in the hose makes it difficult to handle. If necessary, a nossle can be hooked up to an aerial ladder, but this is time consuming and not really worth the trouble.

If a fire ever started at the waste tire pile near Andover, the call would be received by the Andover Fire Department and the central office at the same time. Depending upon the size of the fire there are a total of five to six fire departments that could be called in to help from a pre-arranged schedule. The major problem at the site would be water; no matter what, there would never be enough water to extinguish the blaze.

The basic plan for the Andover site is to evacuate people depending upon which way the smoke is blowing. Then the fire department would try and contain the fire. They would separate the tires that are not burning by machinery. There have been no provisions made for collecting run-off.

It is the belief of the Andover Fire Department that tire stockpiles should not be greater than 12 feet in height with 25 to 30 foot fire lanes.

The National Fire Prevention Association (NFPA) has published "Standards for Storage of Rubber Tires." These rules govern indoor storage areas and are considered to be a part of the State of Minnesota's Fire Code under Standard 231 D. There are provisions in the standard that apply to both new and existing facilities and guidelines for converting existing buildings to tire storage occupancy.

Because of the threat of fire, along with the chance of accidents and unauthorized use, MPCA staff feel that access to the waste tire facility should be controlled. An attendant will be on duty when the site is open to the public, and a gate shall be installed at the entrance to the site and kept locked when the attendant is not on duty. Control of the facility may be accomplished through the use of appropriate natural or constructed screening such as fences, gates, and signs.

MPCA staff are concerned with the type of land the waste tire facility will be located on because combustion reactions during a tire fire generate a run-off

containing pyrolitic oil (synthetic crude oil), gas, and carbon black which may contaminate ground water. A waste tire facility which has sand as a top soil would be considered more dangerous than a facility which has clay as a top soil. However, staff feel that all waste tire facilities should be required to have a contingency plan to address run-off in case of fire.

In conclusion, the preceding discussion regarding fire prevention and fire fighting techniques proves the need to control the dimensions of the waste tire stockpiles. If tires are stored in enormous piles and stacked haphazardly, they are a great fire threat. By controlling the dimensions and creating "workable" stockpiles, the threat of fire will be reduced, fire fighting techniques will be less restricted, and storage and processing operations will be manageable with minimal equipment.

RECOMMENDATIONS: Minnesota Pollution Control Agency (MPCA) staff recommend that a permit rule be established which would require a tire collector or processor to submit a map with their permit application describing how the tire piles will be located to prevent fires in the stockpile area. This information will then be incorporated into the individual permit application. MPCA staff further recommend that the stockpiles be no larger than 100 x 100 feet, 20 feet high, and be separated by 50 foot fire lanes. The 50 foot fire lanes would create enough space for emergency equipment to enter the facility, plus make allowance for the fire fighters to set up their equipment and do their jobs. The 100 x 100 x 20 feet would create a "workable" stockpile from the standpoint of fire prevention and fire fighting techniques, and storage and processing operations.

MPCA staff also feel that Standard 231 D which governs the indoor storage of rubber tires should be incorporated into the permit rules.

The applicant may request a variance from the specific storage area requirements. The applicant must demonstrate that the requirements are not reasonable considering the size and location of the tire pile and that alternate requirements are sufficient to prevent fires in the stockpile area.

2. Establishment of a Permit Rule to Inhibit Mosquito Breeding in Waste Tire Stockpiles

ISSUE: Out of 50 different types of mosquitoes, the State of Minnesota has one type which carries and transmits the LaCrosse Encephalitis virus. This mosquito generally colonizes in wooded areas, particularly in tree holes; however, the stagnant water in whole tires also provides an ideal breeding habitat. Currently, there is more of the encephalitis virus transmitted from whole tires than from wooded areas.

DISCUSSION: Because this type of mosquito prefers the cool and shade of the wooded areas, tires stored in small piles in open grassland will be avoided, or the area may be infested only at night. However, if the tires are allowed to accumulate into bigger piles, shaded areas will be created, and the mosquito will breed heavily. Also, if a tire infected with the virus is moved from a wooded area into a pile, the virus will still be in the tire no matter what size the pile is. Thus, if whole tires are allowed to accumulate untreated near urban areas, encephalitis could become a problem.

The encephalitis virus is especially dangerous to children 12 years of age and younger; adults are immune to it. There is little, if any, mortality from the disease.

The virus can also be transmitted to other animals. If the infected mosquito feeds on small animals (e.g., squirrels, dogs, chipmunks), the animal will develop a fever. If a non-infected mosquito then bites the animal, the non-infected mosquito will become infected. The virus can also be transmitted by mating, and an infected female can transmit the virus to her eggs.

Each year, Minnesota has 8 to 15 acute cases of encephalitis reported. If a case is discovered, the breeding site is usually less than 50 yards away. Southeastern Minnesota is the ideal breeding habitat for this type of mosquito; however, the Lake Minnetonka area and Washington County are also considered good breeding sites.

There is enough encephalitis in the State for it to be a concern of the Minnesota Department of Health. There is always a potential risk of it becoming an epidemic because there is such a wide range of symptoms ranging from mild infections to apathy, double vision, and extreme muscular weakness. Because of the stockpiles located throughout the State, tires have evolved into a preferred breeding site.

An option that can be exercised to help eliminate the encephalitis virus would be to treat the pile with residual insecticide. Any new tire added to an existing pile should also be sprayed. How often the tire pile is sprayed would depend on the type of insecticide used.

Staff of the MPCA and Metropolitan Mosquito Control feel it should be the responsibility of the property owners to spray for mosquitoes, or the owner could

hire a private pest control operator to do the job for him. The State should not have to assume responsibility for every tire collector or processor.

Staff of the MPCA feel that a plan to prevent mosquito breeding should be county-specific. Staff is concerned though that if the counties fail to help the tire collector or processor develop a plan to prevent mosquito breeding the MPCA is not technically capable of formulating a plan.

This problem should be alleviated by the Minnesota Department of Health because if the counties do not/will not develop a plan, they will assume the responsibility. Also, in the metropolitan area, Metropolitan Mosquito Control will definitely be available to send out inspectors. If the tire stockpile is outside the metropolitan area, Metropolitan Mosquito Control is not funded to send out inspectors, but they will work with the State or local health departments on an advisory basis.

RECOMMENDATIONS: MPCA staff recommend that a permit rule be established which would require a tire collector or processor to submit a plan with their permit application describing how mosquito breeding in the tire stockpile will be controlled. The information submitted will be incorporated into the permit.

Within the metropolitan area, it is expected that the tire collector or processor will work with Metropolitan Mosquito Control to determine the optimum mosquito prevention technique for their individual tire pile.

If it is not convenient for the tire collector or processor to work with Metropolitan Mosquito Control, it is expected that the owner will consult with the local health department for recommendations concerning their tire storage area.

3. Establishment of a Permit Rule to Prohibit Certain Sites from Becoming Tire Storage Areas

ISSUE: According to Chapter 7035, Minnesota Pollution Control Agency Solid and Hazardous Waste Division Solid Waste Rules, improper waste storage, collection, and transportation endanger the public health, safety, and welfare, create public nuisances, result in scenic blight and adversely affect land values.

DISCUSSION: Tire storage sites should be prohibited within the following areas, as existing at the time of receipt of the permit application by the MPCA: 1,000 feet from the normal high water mark of a lake, pond, or flowage; 300 feet from a stream; wetlands; within 1,000 feet of the nearest edge of the right-of-way of any state, federal, or interstate highway or the boundary of a public park or of an occupied dwelling or property line; and sinkholes. A variance may be granted under this subsection, without distance requirements, if the applicant demonstrates that other factors such as noise, dust, fire hazard, other aesthetic and environmental conditions, and health problems associated with mosquitoes and other vermin are considered.

The "ordinary high water level" is defined in Chapter 105.37, subdivison 16 and means the boundary of public waters and wetlands, and shall be an elevation delineating the highest water level which has been maintained for a sufficient period of time to leave evidence upon the landscape, commonly that point where the natural vegetation changes from predominantly aquatic to predominantly terrestrial. For water courses, the ordinary high water level shall be the elevation of the top of the bank of the channel. For reservoirs and flowages the ordinary high water level shall be the operating elevation of the normal summer pool. The Minnesota Department of Natural Resources office has computer listings of high water marks which were determined by field crews, and if a member of the public needs to know what the high water mark of a lake, pond, or flowage is, they need only call the regional Minnesota Department of Natural Resources office in their area.

Staff of the MPCA feel that at no time should tires be stored in water. If the tires are stored in standing water, it will hamper processing operations, and the tires will be an ideal breeding ground for mosquitoes.

These tire storage standards and rules apply to any waste tire management system located partially or wholly within the State of Minnesota.

RECOMMENDATION: MPCA staff recommend that a permit rule be established to prohibit the previously mentioned sites from becoming tire storage areas, unless the applicant has demonstrated that compliance with the distance requirements is not necessary or reasonable considering the size and location of the tire storage area, and a variance is granted.

4. Establishment of a Permit Rule to Inhibit Vermin Infestation in Tire Stockpiles

ISSUE: Tire stockpiles provide an ideal breeding habitat and living environment for disease-carrying vermin and rodents.

DISCUSSION: According to standards in Chapter 7035, Minnesota Pollution Control Agency Solid and Hazardous Waste Division Solid Waste Rules, effective means shall be taken, if necessary, to control flies, rodents, and other insects or vermin.

The three factors which attract a rodent population are: food, water, and harborage or shelter. The major factor is food. If there is not a food source nearby, the rodent population will not inhabit the tire stockpile. Therefore, the location of the stockpile must be taken into consideration.

Several states require that tire stockpiles be covered, but MPCA staff regard this as an unrealistic proposal.

Instead, MPCA staff recommend the use of sprays or poison bait to prevent infestation of vermin or rodents in stockpiles. In addition, it is recommended that a tire stockpile be located at least 200 feet away from a possible or known food source (i.e., barns, graineries, populated urban areas, and railroad tracks).

Vermin or rodent problems are considered city matters and are usually dealt with like nuisances on a case-by-case basis.

RECOMMENDATION: MPCA staff recommend that a permit rule be established which would require a tire collector or processor to submit a plan with the permit application describing how vermin or rodent infestation of the tire stockpile will be prevented. The information submitted will be incorporated into the permit.

It is expected that the tire collector or processor will work with the local health department in their area to determine the optimum vermin or rodent control technique for their individual tire stockpile.

5. Establishment of a Permit Rule Which Requires Tire Collectors or Processors to Demonstrate an End-Use for Their Tire Stockpiles

ISSUE: Because the disposal of waste tires in the land is prohibited after July 1, 1985, stockpiles of whole tires and tire chips will be accumulating throughout the State of Minnesota as an intermediate phase to final recovery or processing. MPCA staff feel that a rule should be established clarifying that the tire collector or processor, at the time of the permit application, demonstrate a viable end-use for the stockpile.

DISCUSSION: The basic concern of the MPCA staff is that tires will be stockpiled without regard for the future, and the tire pile may continue to accumulate with no end in sight. MPCA staff advise the tire collectors and processors to keep in mind that they have the ultimate responsibility for removal of the stockpile accumulation. Tires can be collected, but provisions also have to be made for total removal and processing of the stockpile.

MPCA staff agree that new waste tire facilities will not be able to obtain a permit without an approved end-use plan. Existing facilities will be put on a compliance schedule. Both new and existing facilities should include a list of all markets to which scrap tires or tire chips will be sold in the permit application materials.

Staff feel it is advisable to limit the size of the tire stockpile depending upon the maximum size stockpile the tire collector or processor can afford to process or clean up. Consideration will also be given to the land area the site is located on. This rule will apply to stockpiles of both whole tires and tire chips, and a financial apportionment will be devised regarding the ratio of whole tires to tire chips located at the facility.

A concern of the staff is what will be done with the very old tires. If tires have been exposed to the weather for long periods of time, their BTU value decreases due to the breakdown of the elements that compose the tire. Also, tires stored for long periods of time become covered with debris and can damage shredders; prior handling may make shredding a possibility. Even if the tire is shredded, about 18 percent of the tire will have to be disposed of in some manner.

Some possible options for proving an end-use plan are contracts or letters of intent with the tire buying markets, or it might be possible to have a permittee's total net worth, including corporate or personal business assets, equal a certain proportion of estimated risk of the waste tire facility. Additionally, a bond may be purchased to assure clean-up operations. The bond would have to be posted prior to the issuance of the permit.

RECOMMENDATION: MPCA staff recommend that a permit rule be established which requires tire collectors or processors to demonstrate an end-use for their tire stockpile at the time of their permit application. The information submitted will be incorporated into the permit.

6. Establishment of a Permit Rule Outlining Monitoring and Reporting Requirements for the Tire Storage Facility

ISSUE: In order that the MPCA be kept aware of the quantity of tires and tire chips accumulating at tire storage facilities and to ensure that the other permit rules are being adhered to, MPCA staff feel that a permit rule be established which outlines monitoring and reporting requirements for tire storage facilities.

DISCUSSION: Two states have developed monitoring and reporting programs for their tire storage facilities. The state of Connecticut sends out inspectors before a storage facility opens, and then inspections are done on a quarterly basis. The facilities are basically self-monitoring because of a low manpower situation. The state of New York requires annual reports to regional offices describing traffic and amounts of tires moving in and out of the dump site or landfill.

Because this is a new program for the state of Minnesota, MPCA staff feel that reports should be submitted to the MPCA quarterly by the tire collector or processor. In this way, the facility will be basically self-monitoring, and the MPCA will be kept informed of the quantity of tires accumulating at the tire storage facilities. The MPCA will also be able to ensure that the other permit rules are being adhered to.

Waste tire facilities in Minnesota will be inspected before the facility opens to ensure compliance with the approved plans and specifications.

The following information will be submitted in the quarterly reports:

1. the approximate amount and type of tires currently in the tire stockpiles;

2. the approximate tonnage of tire chips currently in stockpiles;

3. the approximate amount and type of tires flowing in and out of the facility weekly, and the form they are leaving in. If the tires leaving are tire chips, the number of tons leaving the facility weekly;

4. where the tires or tire chips are destined when they leave the facility;

5. how the tires or tire chips are being transported to their final destination;

6. the results of the testing for larvae being conducted to prevent mosquito breeding in the tire stockpile;

7. the results of the testing being conducted to prevent vermin or rodent infestation of the tire stockpile;

8. the fire prevention techniques that are being administered at the waste tire facility if they are expected to change;

9. a description of tire handling techniques including any equipment used at the facility if they are expected to change; and

10. the security procedures administered at the facility.

It is important for the MPCA to know the types of tires received at waste tire facilities because truck and heavy equipment tires will need more storage space, and the design of the facility will have to be adjusted accordingly. Also shredders are not usually equipped to process tires other than passenger tires. Thus, the tire collector will have to prove in the end-use plan that there is a processing facility with the ability to handle the larger tires.

MPCA staff are concerned with the practicality of tire collectors or processors recording the flow of tires and tire chips in and out of waste tire facilities. The documentation of tires received at a facility is considered essential because a tire collector or processor usually charges a tipping fee before they will accept tires, and if a fee is charged, an accurate record of incoming tires is necessary for tax purposes. Also, in order to make tire shredding profitable, a tire processing operation would need to determine the minimum amount of tires shredded daily in order to make a profit. A tire processor would need a steady flow of tires to maintain a level of production high enough to get a return on his investment and cover his costs. For example, a tire processing operation in Minnesota produces 24,000 tons of tire chips annually. This averages out to about 2,000 tons per month, 6,400 tires per day, and 800 tires per hour. Two scales are used at the facility to weigh the tire chips: one weighs the chips as they come off the conveyor, and the other is a drive-on scale. Therefore, MPCA staff feel it is realistic to know the number of tires entering the facility and the amount of tires or tire chips leaving the facility.

It is also important for the tire collector or processor to inform the MPCA how and where the tires or tire chips are being transported to their final processing or utilization destinations so the MPCA can trace the development and progress of the waste tire management program. By tracing the development of the program, the MPCA will be able to inform the public about who is currently shredding and processing tires. Also, in order for the MPCA to ensure that tires are flowing out of stockpiles to processing operations, this information should be included in the reporting requirements.

MPCA staff are concerned that the use of sprays or poison bait to control the vermin or rodent population in the tire stockpiles may have an adverse effect on dogs, cats, or other small animals. However, if access to the facility is controlled by natural or artificial barriers such as fences or gates, this should control any animals being harmed by the sprays or poison bait.

RECOMMENDATION: MPCA staff recommend that a permit rule be established which outlines monitoring and reporting requirements for the tire storage facility.

The facilities will be inspected before they open to ensure compliance with the approved plans and specifications, and reports will be required to be submitted quarterly to the MPCA.

7. Establishment of a Permit Rule Requiring Tire Collectors or Processors to Specify the Interval Between Storage and Final Recovery or Processing of Either Whole Tires or Tire Chips

ISSUE: After July 1, 1985, the disposal of waste tires in the land is prohibited. Thus, storage piles of both whole tires and tire chips will be accumulating throughout the State of Minnesota. MPCA staff feel that a rule should be established which requires tire collectors or processors to specify the interval between storage and final recovery or processing of either whole tires or tire chips.

DISCUSSION: The basic concern of the MPCA staff is that tires or tire chips will be stockpiled without regard for the future. If tires or tire chips are stored for long periods of time, the eventual recovery or processing phase will be expensive for the tire collector or processor. Also, the longer the storage interval of whole tires, the greater the problems associated with tire stockpiles (i.e., mosquitoes, fire, and vermin infestation) become.

Stockpiles of whole tires must comply with the standards set for fire prevention: 100 x 100 x 20 feet with 50 foot fire lanes. MPCA staff feel it is reasonable to assume that the stockpiles of tire chips will be emanating from a conveyor or other type of equipment, therefore, the height of the piles can be increased to a maximum of 30 feet. The other measurements will remain the same.

Staff agree that the tire collector or processor prove financial assurance for the whole tires in the stockpile, the shredding of the whole tires to tire chips, and the cost for the removal of the processed chips. A financial apportionment will be devised regarding the ratio of whole tires to tire chips located at the facility.

RECOMMENDATION: MPCA staff recommend that a permit rule be established which requires tire collectors or processors to submit a plan with the permit application describing the time interval between storage and final recovery or processing of either whole tires or tire chips. The information submitted will be incorporated into the permit application.

8. Establishment of a Permit Rule to Determine Waste Tire Collectors and Processors who Will be Required to Obtain a Permit

ISSUE: The MPCA will be responsible for permitting tire collectors and tire processors with a determined amount of waste tires unless exempted in the legislation.

DISCUSSION: According to Minnesota Laws 1984, Chapter 115A.902, a tire collector or tire processor with more than 500 waste tires shall be required to obtain a permit from the MPCA unless exempted. The MPCA may by rule require tire collectors or tire processors with less than 500 waste tires to obtain permits unless exempted.

A permit is not required for: a retail tire seller for the retail selling site if no more than 500 waste tires are kept on the business premises; an owner or operator of a tire retreading business for the business site if no more than 3,000 waste tires are kept on the business premises; an owner or operator of a business who, in the ordinary course of business removes tires from motor vehicles if no more than 500 waste tires are kept on the business premises; a permitted landfill operator with less than 10,000 waste tires stored above ground at the permitted site; or a person using waste tire for agricultural purposes if the waste tires are kept on the site of use.

MPCA staff feel that a permit-by-rule subdivision should be established for tire collectors or processors with less than 500 waste tires. The tire collector or processor shall be deemed to have obtained a waste tire facility permit without making application for it unless the director finds that the waste tire facility is located within the following areas:

1. 1,000 feet from the normal high water mark of a lake, pond, or flowage;
2. 300 feet from a stream;
3. wetlands;
4. within 1,000 feet of the nearest edge of the right-of-way of any state, federal, or interstate highway or the boundary of a public park or of an occupied dwelling or property line; and
5. sinkholes and ravines; and
6. within 200 feet of a barn, grainery, populated urban area, or railroad tracks.

RECOMMENDATION: MPCA staff recommend that a permit rule be established to determine waste tire collectors or processors who will be required to obtain a permit. MPCA staff further recommend that tire collectors or processors with more than 500 waste tires be required to obtain a permit unless exempted.

MPCA staff also agree that tire collectors or processors with less than 500 waste tires will not be required to obtain permits at this time if they meet all the requirements of the permit-by-rule subpart.

9. Establishment of a Permit Rule to Outline Necessary Financial Assurance Requirements to Ensure Proper Operation of the Waste Tire Facility

ISSUE: After a facility has used up its money-making potential, there is little incentive for the owner to put large sums of money into cleanup actions connected with the facility. Financial assurance would function to either provide the necessary incentive or to provide the necessary funds.

DISCUSSION: If cleanup action becomes necessary, MPCA staff is concerned that the tire collector or processor will not have the funds available to take action. The owner of a facility that has little remaining storage capacity or is about to close will not have much ability to raise money for cleanup action costs which may be extremely high.

It is easy to make a case for requiring financial assurance for cleanup actions; however, deciding how to determine the monetary amounts and when to require the assurances is not. In order to set an amount for cleanup action, a study will be conducted according to Minnesota Laws 1984, Chapter 654, Article II, Section 13(g), which states that the director of the pollution control agency shall make a study, report, and recommendations of the following:

> (g) Collection and Incineration Study
>
> The director of the pollution control agency shall make a study, report, and recommendations of the following: (1) the number and geographical distribution of waste tires generated and existing tire dumps and collection sites; (2) financial responsibility requirements needed to cover tire collectors and processors; (3) the optimum location of collection sites to facilitate tire processing; (4) alternative methods to collect waste tires in small tire dumps and to collect tires from waste tire generators, including costs; (5) the options for waste tire recycling, their current use, and the feasiblility of future use; (6) methods to establish reliable sources of waste tires for waste tire users; (7) the types of facilities in Minnesota that can utilize waste tires as a fuel source, the cost of equipment needed to modify existing types of facilities, the cost of test burns, the feasibility of operating each type of facility utilizing waste tires as a fuel source, and the location of those facilities; and (8) the establishment of a statewide waste tire collection system.

The Director of the MPCA shall submit an interim report to the Legislature and the governor by April 1, 1985, and a final report by June 30, 1985.

Before a financial institution will issue a loan to a customer, they must have proof of a return on their investment. A way of demonstrating this financial assurance would be to prove a solid market with enough raw material to keep it

operating. In most cases, this will mean a contract between a buyer and a seller (tire collector or processor). The tire collector or processor will have to ensure that he has a buyer who will purchase his product, at a certain price, over a specified period of time. Also, if the tire collector or processor demonstrates that he has several buyers for his product, this will serve to strengthen his financial credibility.

Some other financial responsibility points to consider regarding the functioning of a waste tire facility are: the maximum volume of whole tires and tire chips that can be stored at the facility; operation, maintenance, and equipment costs; transportation costs; the flow of tires into the facility, and market fluctuations.

If it is decided to require financial assurance for cleanup actions, it then seems to make sense to require it as part of the initial permit application.

RECOMMENDATION: MPCA staff recommend that a permit rule be established which outlines necessary financial assurance requirements to ensure proper operation of the waste tire facility.

Exhibit 6

DEPARTMENT : POLLUTION CONTROL AGENCY

PHONE : 296-7305

STATE OF MINNESOTA

Office Memorandum

DATE : January 23, 1986

TO : SOLID AND HAZARDOUS WASTE COMMITTEE MEMBERS/MPCA BOARD

FROM : Barbara L. Sims
Assistant Executive Director

SUBJECT : WASTE TIRE PERMIT RULES

Background:

As you may recall, the 1984 Legislature enacted legislation to specifically address the waste tire problem in Minnesota. The legislation includes these major provisions:

1. The Minnesota Pollution Control Agency (MPCA) director is required to provide the Legislature with a waste tire collection and incineration study. Note: This study was completed in September 1985 and copies of the consultant's report were distributed to you in October 1985. The director's report to the Legislature on this study is being prepared.

2. Waste tire collectors or processors are required to obtain a permit from the MPCA, unless exempted by statute.

3. Land disposal of tires is prohibited after July 1, 1985.

4. The MPCA is directed to carry out waste tire nuisance abatement and collection programs.

5. A $4.00 motor vehicle transfer fee is imposed to fund waste tire abatement activities administered by the MPCA and to promote waste tire recycling through a grant and loan program administered by the Minnesota Department of Energy and Economic Development.

6. The MPCA is required to establish rules for the administration of the waste tire permitting and abatement programs. Note: The emergency rules governing waste tire abatement became effective on November 21, 1985. Permanent rules are in the process of being drafted.

A copy of the legislation is attached for your information.

The purpose of this memorandum is to familiarize the Solid and Hazardous Waste Committee with issues concerning the waste tire permitting program and the development of waste tire permitting rules.

Summary:

The waste tire permitting process outlined by Minn. Stat. § 115A.902 requires a tire collector or tire processor with more than 500 waste tires to obtain a permit from the MPCA unless exempted in subd. 2. Also, the MPCA may by rule require tire collectors or tire processors with less than 500 waste tires to obtain a permit unless exempt by subd. 2.

According to Minn. Stat. § 115A.902, subd. 2, a permit is not required for:

1. a retail tire seller for the retail selling site if no more than 500 waste tires are kept on the business premises;

2. an owner or operator of a tire retreading business for the business site if no more than 3,000 waste tires are kept on the business premises;

3. an owner or operator of a business who, in the ordinary course of business, removes tires from motor vehicles if no more than 500 waste tires are kept on the business premises;

4. an owner or operator of a permitted landfill with fewer than 10,000 waste tires stored above ground at the permitted landfill site; or

5. a person using waste tires for agricultural purposes if the waste tires are kept on the site of use.

Staff envision that the permitting rules being developed for the waste tire permitting system would be modeled after the MPCA's current permitting rules of Minn. Rules ch. 7001. Under this process, an applicant for a permit for a new facility would have 180 days before the planned date of facility construction or the planned activity to submit a permit application to the director. For an existing facility, an applicant would have 90 days after the date of receipt of the director's written request for submission of the permit application to submit the application to the director.

The permit application would include the name and address of owner(s) and operator(s) of the facility, a topographic map, both discussions and descriptions of the activities being conducted at the facility or proposed activities to be conducted, and a description of the materials and how they will be handled, stored, or processed.

After a permit application is submitted, the director reviews it for completeness and makes a preliminary determination as to whether the permit should be issued or denied. A public notice is then prepared based on whether the permit should be issued or denied. The public notice will then be distributed, and written comments may be submitted by any interested parties regarding the draft permit. At this time, interested parties may also request a public informational meeting or a contested case hearing on the draft permit. A public information meeting is held if the director or the MPCA determines that it

would help clarify and resolve issues regarding the director's preliminary determination. The MPCA shall hold a contested case hearing if the person requesting the hearing has raised an issue of fact or of the application of facts to law. If a contested case hearing will be held, the director shall prepare a notice of and order for hearing. If the MPCA determines that holding a contested case hearing is not justified, the MPCA shall hold a public informational meeting if it determines that a public informational meeting would help clarify or resolve issues regarding the permit application. A final determination is then made on the permit application. If the permit is issued, the permittee is required to comply with technical requirements and operating standards. If the application is denied, the tire collector or processor must submit a closure plan and close the facility.

In addition to the permitting rules, technical rules containing facility standards would be developed. Compliance with the technical standards would be required as part of the permit conditions. Also, permit application information requirements would be based on the requirements of the technical rules. This approach is the same as that used for the regulation of solid and hazardous waste facilities.

Options for Discussion:

Since September of 1984, staff have been developing the waste tire permitting rules. During this time, the following options have been investigated for use in the waste tire permitting process:

1. Permit by rule. As was discussed above, the MPCA may by rule require tire collectors or tire processors with less than 500 waste tires to obtain a permit unless exempt by statute. If the MPCA chooses this option, the permitting process would be very lengthy due to the large number of permits that would have to be issued. Instead, facilities with less than 500 waste tires could be granted a permit without making an application for it and going through the permitting process. This is known as a permit by rule. MPCA staff believe that the permit by rule approach should be used to regulate short-term, mobile, processing equipment used at various locations to process waste tires. Staff also believe that the MPCA has an implied responsibility to design and monitor a total waste tire management program. In order to enable staff to monitor this program, it is essential that staff have access to the types of processing facilities that are operating, where they are located, and the variable products that are produced as a result of the processing operation. The permit by rule provisions would include a written notification, and operating and technical requirements.

   However, staff believe that waste tire collectors with under 500 tires stockpiled should not be required to obtain a waste tire permit. Staff believe this approach is reasonable since persons who process waste tires are actively in the waste tire business. Whereas, the stockpiling of small numbers of waste tires is often incidental to other business activities and require a small time interval for storage. Staff also believe that tire stockpile sites containing under 500 tires are not significant because the small quantity of tires does not pose a threat to human health and the environment.

2. Permit issuance procedure/provisional status. This process is similar to that for hazardous waste facilities who have obtained interim status. Under this phased-in approach to permit issuance, a tire collector or tire processor with an existing facility would provide written notification of activities to the director within 60 days from the effective date of the rules. Once the notification has been received by the director, the tire collector or processor would be considered to be in compliance with the requirement to seek a permit. The written notification is only the preliminary step a tire collector or processor must take to seek a permit. This step is followed by the actual permit application that is submitted not more than 90 days after the date of receipt of the written request of the director for submission of the permit application.

   During provisional status, minimum operating standards would be maintained at the facility. Provisional status would also allow time for existing facilities to achieve compliance with the technical rules and begin operating under conditions that protect human health and the environment.

   If a tire collector or processor decides not to seek a permit but will instead close the facility, written notification must still be submitted to the director to obtain provisional status. Once closure has been completed, provisional status would terminate automatically. In any case, if a tire collector or processor does not submit notification to the director within the 60 day time period, the tire collector or processor is in violation of the permit rules and is subject to MPCA enforcement actions.

   In order to be consistent with MPCA permit issuance procedures, the terms tire collector and tire processor would be used synonymously with the terms owner and operator.

3. Types of facilities. Under this option, a tire collector's or tire processor's facility will be classified as a waste tire facility. Waste tire facilities are divided into three different categories: transfer stations, processing facilities, and storage facilities. The most stringent technical requirements and facility operating standards would be imposed on storage facilities because they pose the greatest threat to human health and the environment. The threat derives from the quantity of tires stockpiled at the facility leading to risks of fire and mosquito breeding.

   Transfer stations would have the least stringent requirements imposed upon them because of the small quantity of tires, up to 10,000, that would be stored there and the time interval allowed for storage. These facilities would only be used for concentrating waste tires for subsequent transport to processing facilities.

   Requirements for processing facilities would involve planning for emergency response situations and maintaining fire control standards. These requirements would not be as comprehensive as the requirements for storage facilities, but would involve different facility operating standards.

4. Financial assurance. MPCA staff believe that the issue of financial assurance should be addressed in the rules. Staff recognize that the level of financial assurance needs to provide for adequate closure of the facility without being overly burdensome. Staff recommend the following financial assurance requirements. The tire collector or processor who owns or operates an existing facility would demonstrate financial assurance by submitting a surety bond at the time the written notification for provisional status is submitted to the director. The bond would cover the cost of removal of all the waste tires accepted at the facility since the date the rules became effective and estimated to be accepted at the facility within the upcoming year. Tire collectors who own or operate transfer stations would not be required to demonstrate financial assurance because the amount of the bond would be small and administratively labor-intensive.

   For a new facility, financial assurance would be demonstrated at the time the permit application is submitted. Staff recommend three mechanisms for tire collectors or processors to choose from to demonstrate financial assurance: letters of credit, surety bonds, and trust funds. The mechanisms would be used to ensure that, at closure, money will be available to remove all stockpiles of waste tires either by processing or to a substitute facility that has a permit or provisional status.

   Two years after the effective date of the rules, the owner or operator of an existing facility would be required to demonstrate financial assurance for all the tires located at the facility. Letters of credit, surety bonds, and trust funds would again be the mechanisms available to demonstrate financial assurance.

Issue for Discussion:

In addition to the issues associated with the options discussed above, MPCA staff have identified two more issues for discussion regarding the waste tire permitting rules.

1. The first issue is the close relationship between the permitting process and the abatement process. While drafting the permit rules, MPCA staff must always consider the effect the permit rules will have upon the abatement rules. In most instances, changing the process in one set of rules directly affects the process in the other.

2. The second issue concerns converting a tire dump into a permitted facility. Based on the statutory provisions for abatement, which require that the tires be shredded or chipped or removed, it would appear that the intent is to clean up all of the tires in a tire dump. However, the permitting program would allow stockpiling of tires under specific conditions. Therefore, staff believe that the issue of converting a tire dump into a permitted facility should be addressed in the waste tire permitting rules.

Based on the results of discussions at the committee meeting, staff will develop draft rules and present them for review in February or March.

BLS:rw

Attachment

Laws of Minnesota for 1984
Chapter 654, Article 2
Section 13

(f) Waste Tires 117,000

This appropriation is for establishing rules for waste tire collector and processor permits, waste tire nuisance abatement, and waste tire collection, and for carrying out waste tire nuisance abatement and waste tire collection programs. The three positions paid for from this appropriation are in the unclassified service.

(g) Collection and Incineration Study 100,000

The director of the pollution control agency shall make a study, report, and recommendations of the following: (1) the number and geographical distribution of waste tires generated and existing tire dumps and collection sites; (2) financial responsibility requirements needed to cover tire collectors and processors; (3) the optimum location of collection sites to facilitate tire processing; (4) alternative methods to collect waste tires in small tire dumps and to collect tires from waste tire generators, including costs; (5) the options for waste tire recycling, their current use, and the feasibility of future use; (6) methods to establish reliable sources of waste tires for waste tire users; (7) the types of facilities in Minnesota that can utilize waste tires as a fuel source, the cost of equipment needed to modify existing types of facilities, the cost of test burns, the feasibility of operating each type of facility utilizing waste tires as a fuel source, and the location of those facilities; and (8) the establishment of a statewide waste tire collection system.

The director of the agency shall submit an interim report to the legislature and the governor by December 31, 1984, and a final report by April 1, 1985.

(h) Test Burns Report 35,000

The director of the agency, with the commissioner of administration, shall identify by October 1, 1984, existing public and private facilities most suitable for utilizing waste tires as a fuel source. The director of the agency shall solicit expressions of interest by private industry for utilizing waste tires as a fuel source. The selected facilities shall assist in conducting test burns, making measurements, and preparing a report describing the test results and the feasibility of using waste tires as a long-term fuel source for various types of facilities. The report shall

Section 13 (continued)

identify the collection, transportation, and processing of waste tires needed to use the facilities. The director of the agency shall submit the report to the legislature and the governor by December 31, 1984.

The appropriations and reductions in this section are added to the appropriations made in Laws 1983, chapter 301, section 25.

Minnesota Statutes, Chapter 116M

116M.03

Subd. 1o. **Waste tire recycling loan.** "Waste tire recycling loan" means a loan to a business to finance acquisition of land, buildings, or equipment, installation of equipment, construction of buildings, and capital improvements for waste tire processing.

116M.06

Subd. 5. **Waste tire recycling account.** There is created within the economic development fund a waste tire recycling account for the purpose of making waste tire recycling loans and grants.

116M.07

Subd. 3. **Waste tire recycling loans and grants.** The authority may make waste tire recycling loans to businesses. Applications for the loans are not complete unless the waste tire recycling project for which the loan is to be made is certified to be technically feasible by the director of the pollution control agency. The authority may make grants from the waste tire recycling account for studies necessary to demonstrate the technical and economic feasibility of a proposed waste tire recycling project. A grant must be less than $30,000 and may not exceed 75 percent of the costs of the study. The commissioner shall adopt rules for administration of waste tire recycling grants and loans.

WASTE TIRES

115A.90 DEFINITIONS.

Subdivision 1. **Applicability.** The definitions in this section apply to Laws 1984, chapter 654, article 2, sections 92 to 98.

Subd. 2. **Agency.** "Agency" means the pollution control agency.

Subd. 3. **Collection site.** "Collection site" means a permitted site, or a site exempted from permit, used for the storage of waste tires.

Subd. 4. **Commissioner.** "Commissioner" means the commissioner of energy and economic development.

Subd. 5. **Person.** "Person" has the meaning given in section 116.06, subdivision 8.

Subd. 6. **Processing.** "Processing" means producing or manufacturing usable materials, including fuel, from waste tires including necessary incidental temporary storage activity.

Subd. 7. **Tire.** "Tire" means a pneumatic tire or solid tire for motor vehicles as defined in section 169.01.

Subd. 8. **Tire collector.** "Tire collector" means a person who owns or operates a site used for the storage, collection, or deposit of more than 50 waste tires.

Subd. 9. **Tire dump.** "Tire dump" means an establishment, site, or place of business without a required tire collector or tire processor permit that is maintained, operated, used, or allowed to be used for storing, keeping, or depositing unprocessed waste tires.

Subd. 10. **Tire processor.** "Tire processor" means a person engaged in the processing of waste tires.

Subd. 11. **Waste tire.** "Waste tire" means a tire that is no longer suitable for its original intended purpose because of wear, damage, or defect.

History: *1984 c 654 art 2 s 92*

115A.902 PERMIT; TIRE COLLECTORS, PROCESSORS.

Subdivision 1. **Permit required.** A tire collector or tire processor with more than 500 waste tires shall obtain a permit from the agency unless exempted in subdivision 2. The agency may by rule require tire collectors or tire processors with less than 500 waste tires to obtain permits unless exempted by subdivision 2.

Subd. 2. **Exemptions.** A permit is not required for:

(1) a retail tire seller for the retail selling site if no more than 500 waste tires are kept on the business premises;

(2) an owner or operator of a tire retreading business for the business site if no more than 3,000 waste tires are kept on the business premises;

(3) an owner or operator of a business who, in the ordinary course of business, removes tires from motor vehicles if no more than 500 waste tires are kept on the business premises;

(4) a permitted landfill operator with less than 10,000 waste tires stored above ground at the permitted site; or

(5) a person using waste tires for agricultural purposes if the waste tires are kept on the site of use.

Subd. 3. **Local authority.** The issuance of an agency permit does not replace a permit or license required under section 400.16 or 473.811.

Subd. 4. **Permit fee.** The revenue from permit fees shall be credited to the general fund.

History: *1984 c 654 art 2 s 93*

115A.904 LAND DISPOSAL PROHIBITED.

The disposal of waste tires in the land is prohibited after July 1, 1985. This does not prohibit the storage of unprocessed waste tires at a collection or processing facility.

History: *1984 c 654 art 2 s 94*

115A.906 WASTE TIRE NUISANCE; ABATEMENT.

Subdivision 1. **Nuisance.** A tire dump unreasonably endangers the health, safety, and comfort of individuals and the public and is a nuisance.

Subd. 2. **Abatement.** The agency may abate a nuisance by processing and removing the tires. Before taking any action to abate a nuisance, the agency shall give notice to the tire collector responsible for the nuisance that the tires to be processed and removed constitute a nuisance and demand that the tires be shredded or chipped or removed within a specified period. Failure of the tire collector to take the required action within the specified period shall result in the issuance of an agency order to abate the nuisance. The abatement order may include entering the property where the nuisance is located, taking tires into public custody, and providing for their processing and removal. The agency order may be enforced pursuant to the provisions of section 115.071.

Subd. 3. **Recovery of expenses.** Any reasonable and necessary expenses incurred by the agency for abatement costs, and administrative and legal expenses, may be recovered in a civil action brought by the attorney general against any tire collector responsible for the nuisance. The agency's certification of expenses shall be prima facie evidence that the expenses are reasonable and necessary.

Subd. 4. **Other abatement.** This section does not change the existing authority of a person or political subdivision to abate a tire dump nuisance. The agency may reimburse a person or political subdivision for the costs of abatement.

History: *1984 c 654 art 2 s 95*

115A.908 MOTOR VEHICLE TRANSFER FEE.

Subdivision 1. **Fee charged.** A fee of $4 shall be charged on the initial registration and each subsequent transfer of title within the state, other than transfers for resale purposes, of every motor vehicle weighing more than 1,000 pounds. The fee shall be collected in an appropriate manner by the motor vehicle registrar. Registration plates or certificates may not be issued by the motor vehicle registrar for the ownership or operation of a motor vehicle subject to the transfer fee unless the fee is paid. The fee may not be charged on the transfer of:

(1) previously registered vehicles if the transfer is to the same person;

(2) vehicles subject to the conditions specified in section 297A.25, subdivision 1, clause (j); or

(3) vehicles purchased in another state by a resident of another state if more than 60 days have elapsed after the date of purchase and the purchaser is transferring title to this state and has become a resident of this state after the purchase.

Subd. 2. **Deposit of revenue.** Revenue collected shall be credited to the general fund.

Subd. 3. **Repealer.** This section is repealed on December 31, 1994.

History: *1984 c 654 art 2 s 96*

115A.912 WASTE TIRE COLLECTION.

Subdivision 1. **Purpose.** Money appropriated to the agency for waste tire collection may be spent for elimination of health and safety hazards of tire dumps and collection sites, tire dump abatement, collection, and clean up of waste tires.

Subd. 2. **Priorities for spending.** The agency shall apply the following criteria to establish priorities: (1) tire dumps or collection sites determined by the agency to contain more than 1,000,000 tires; (2) abatement of fire hazard nuisances; (3) abatement of nuisance in densely populated areas; and (4) collection and clean up of waste tires including abatement of tire dumps.

Subd. 3. **Contracts with counties.** The agency may contract with counties for the abatement of waste tire nuisances.

History: *1984 c 654 art 2 s 97*

115A.914 RULES; COUNTY PLANNING; ORDINANCES.

Subdivision 1. **Agency rules.** The agency shall adopt rules for administration of waste tire collector and processor permits, waste tire nuisance abatement, and waste tire collection.

Subd. 2. **County planning; ordinances.** Counties shall include collection and processing of waste tires in the solid waste management plan prepared under sections 115A.42 to 115A.46 and shall adopt ordinances under sections 400.16 and 473.811 for management of waste tires that embody, but may be more restrictive than, agency rules.

History: *1984 c 654 art 2 s 98*

DEPARTMENT : POLLUTION CONTROL AGENCY

PHONE : 296-7305

DATE : February 3, 1986

STATE OF MINNESOTA

Office Memorandum

TO : SOLID AND HAZARDOUS WASTE COMMITTEE MEMBERS/MPCA BOARD

FROM : Barbara L. Sims
Assistant Executive Director

SUBJECT : WASTE TIRE PERMIT RULES

Minn. Stat. § 115A.914, subd. 1 requires that the Minnesota Pollution Control Agency (MPCA) adopt rules for administration of waste tire collector and processor permits. Issues of concern in drafting waste tire permitting rules were discussed at the January 27, 1986 MPCA Solid and Hazardous Waste Committee meeting. A summary of options and issues appears in my January 23, 1986 memorandum to the Solid and Hazardous Waste Committee.

The main discussion at the January 27, 1986 committee meeting centered on whether to permit all waste tire collectors and processors and the level of regulation for transfer facilities. Concern was expressed that permit exemption for the storage of less than 500 waste tires would encourage persons to establish numerous stockpiles of 500 waste tires. Staff agreed to explore the possibility of regulating such storage through permit by rule provisions. Discussion regarding transfer stations indicated concerns that such facilities should be fully regulated in order to discourage persons from leasing land, collecting 10,000 waste tires, then abandoning the site. Staff are willing to look into requiring financial assurance for transfer facilities, however, staff still believe that the level of regulation should reflect the reduced risk posed by such facilities.

Due to time constraints, not all issues presented in my January 23, 1986 memorandum were discussed at the committee meeting. Staff propose to continue discussion on the remaining issues presented in that memorandum, including financial assurance and the relationship between the waste tire permit program and the waste tire dump abatement program. Staff intend to encourage attendees to provide input as to what provisions should be included in the draft permit rules in order to address the issues of concern. Such input is needed so that staff can proceed with developing draft rules. Staff intend to present draft rules to the public at a meeting in March 1986, prior to returning to the committee in March or April 1986.

BLS:rw

Exhibit 7

Minnesota Pollution Control Agency

April 15, 1986

Dear Interested Party:

You had indicated an interest in becoming involved in the rulemaking process for the waste tire permitting rules. Enclosed is a copy of draft rules governing waste tire permits, along with a summary of the financial assurance requirements that Minnesota Pollution Control Agency (MPCA) staff recommend be included in the waste tire permit rules. Please note that these are draft rules and are not in effect.

On May 6, 1986 at 1:00 in the MPCA Board room at 1935 West County Road B2, Roseville, Minnesota, staff will be presenting these draft rules to the public at an informational meeting. This informational meeting will be an opportunity for interested parties to provide input and recommendations as to the content of the draft rules, as well as an opportunity for staff to answer any questions. All interested parties are encouraged to attend this meeting and to provide comments on the draft rules.

As was mentioned before, these proposed waste tire permitting rules are not in effect but are only in draft form at this time. As such, the content of the rules is subject to change based on comments received from interested parties during the rulemaking process. This is an excellent opportunity for interested parties to contribute input to the contents of the draft rules. As an interested party, it is important to become involved early and to continue to provide input and comments throughout the entire rulemaking process.

The enclosed information includes two sets of rules. The first set begins with the number 7001.0020 and contains the permit rule amendments which will be added to the MPCA's current general permitting rules of Minn. Rules ch. 7001. Attached to that set are permit rule amendments with the numbers 7001.XX00 to 7001.X140. They are the permitting rules being developed specifically for the waste tire permitting system. These draft rules outline who is required to obtain a permit, the procedures that must be followed to obtain a permit, and the information that is to be contained in the permit application.

The second set of draft rules contains the numbers 7035.XX00 to 7035.X115 and are the draft technical rules that contain facility standards. It should also be mentioned that the rule numbers from 7035.X140 to 7035.X180 correspond to the financial assurance rules which are still being drafted by MPCA staff.

Phone:_____
1935 West County Road B2, Roseville, Minnesota 55113-2785
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Equal Opportunity Employer

Waste tire facilities are divided into three categories: transfer facilities, processing facilities, and storage facilities. Whether a facility has provisional status or is permitted, there are general requirements that all facilities must comply with as well as requirements that are specific to each facility type. Permit application requirements also are separated into two parts. One part requests general information from all facilities, while the second part requests information that is specific to the type of facility that is the subject of the application.

The draft technical rules contain standards for facilities that have provisional status and standards for permitted facilities. Provisional status provides a time period during which existing facilities have an opportunity to achieve compliance with designated parts of the technical rules. Also, facilities which comply with the requirements of provisional status, are considered to be in compliance with the requirements to obtain a waste tire permit. For a facility with provisional status, there are general technical requirements including notification requirements, that all waste tire facilities must comply with, as well as specific closure standards that apply to each type of facility.

Based on notifications received under provisional status, the MPCA director will request facilities to submit a complete permit application. Staff will review the application and follow the permitting process specified in the draft permit rules. This process includes public participation provisions, and provides for the issuance or denial of a waste tire permit.

More stringent technical requirements become effective once the facility is permitted. The most stringent technical requirements are imposed on storage facilities because staff believe they pose the greatest threat to human health and the environment. The technical requirements for processing facilities are not as comprehensive as the requirements for storage facilities, but they do involve planning for emergency response situations and maintaining fire control standards. Also, if the quantity of tires stored at a processing facility exceeds a specified quantity identified in the technical rules, the facility will be classified as both a processing and a storage facility. As such, the facility must operate according to both sets of facility technical requirements and must be permitted as both a processing and storage facility. Transfer facilities would have the least stringent requirements imposed upon them because of the small quantity of tires (limited to 10,000 waste tires) that would be stored there and the time interval allowed for storage. A facility does not have to be in compliance with the final technical requirements for permitted facilities until after the permitting process has been completed and a permit is issued.

Staff anticipate that the main issues to be discussed at the public meeting will involve the proposed financial assurance requirements, the 75 percent reduction requirement which is a technical requirement for processing facilities, and the storage limitations that have been placed on each type of facility. However, interested parties are encouraged to provide input and ask questions on any provision of the draft rules.

You are also invited to send written comments and suggestions on the draft rules. Please send any written comments on these drafts to Shelly Sporer by May 9, 1986.

If you have any questions, please contact Shelly Sporer at 612/296-7260 or Karen Ryss at 612/296-7317 of my staff.

Sincerely,

Gordon W. Meyer
Chief, Program Development Section
Solid and Hazardous Waste Division

GWM/SAS:km

WASTE RECOVERY, INC.
MAKING WASTE A RESOURCE

8501 N. Borthwick
Portland, Oregon 97217
503/283-2261

May 6, 1986

RECEIVED
MAY 10 1986
MPCA, SOLID & HAZ.
WASTE DIVISION

Mr. Gordon W. Meyer
Chief, Program Development Section
Solid and Hazardous Waste Division
1935 West County Road B2
Roseville, MN 55113-2785

RE: COMMENTS ON DRAFT OF WASTE TIRE PERMIT RULES

Dear Mr. Meyer:

Thank you for sending me the draft rules on waste tire processors and storage facilities. I have specific and general comments to make in regards to these proposed rules.

First, my specific comments are:

1) 7001.XX00 Definitions

Subpart 2 and 4 include "tire derived products" within their definitions. As I understand your intent to regulate scrap tire processors and storage facilities, I do not understand your intent to regulate the finished product or its' markets. The finished product does not pose an environmental risk except in the case of an oil product from pyrolysis which may be then addressed by other state and federal regulations. Please clarify your intent in this regard.

2) 7001.XX20 Permit Requirements

Subpart 1, B and C appear to be redundant. Furthermore, it makes more sense to place permit modification requirements within an "Addendum" format more appropriately located in 7001.X140, "Modification Section".

Subpart 2, D excludes landfill operators with fewer than 10,000 tires. Experience has shown that landfill operators can be some of the biggest offenders with regards to scrap tire storage and disposal. The same rules should apply across the board to encourage operators to participate in and support regular collection programs.

Subpart 2, E to exclude agricultural purposes is too broad. You may wish to include a statement that "if tires are not used within 6 months of deposit, then the site shall be considered a disposal site." Failure to include this stipulation will create tire piles on agriculture land to skirt the law.

Subpart 3, C is too restrictive for mobile processing. Few mobile processing operations will complete their task within 30 days assuming most mobile operations will occur at the larger tire piles. Some special consideration must be given to mobile operations for nuisance abatement only, otherwise the cost and effort by a processor to permit such a short term project is excessive and discouraging unless it can be accomplished via a permit by letter.

3) 7001.XX70 Additional Application Information

Subpart F addresses the requirement of a closure plan. Rather than development of specific regulations for closure, why not simplify matters by stating here that there will be a permit requirement that should a facility close, all tires and tire by-products must be removed. To assure compliance in this regard, a financial assurance mechanism will be required. In contrast to landfill operators, scrap tire operators do not enter the business with the thought of a limited life for their facility, but rather an on-going operation.

4) 7001.XX90 Additional Information

This whole section is redundant with Section 7001.XX70. The two should easily be combined since both types of activities are very similar.

Subpart J sets to high an upper limit on the accumulation of scrap tires. A 500,000 tire stockpile is an extreme liability. To discourage the financial incentive of a dump, collect disposal revenues and run operation, scrap tire accumulation should be a maximum of 100,000 tires. Such a site would generate minimal revenue unless movement of tires for recycling occurred. The viability of the recycling operation would then have to prove itself rather quickly. Furthermore, the cost to clean up such a pile would be small, approximately $50,000 or less.

5) 7035.XX34 Annual Report

Subpart C infringes on the competitive and proprietary nature of marketing efforts within the casing business. It is unlikely that you would receive accurate information since a tire collectors competitive edge is based on the quality of his accounts, i.e. how many gradeable casings they produce. He would not be interested in publicizing the true number for fear of providing valueable information to his competition. The tire grader would probably conduct his grading activities off site of the waste tire facility so the facility operator would have no way of knowing how many tires were actually graded. If you want this information, you should regulate the tire collector. Quantification records are only as good as the information reported.

6) 7035.XX65 Annual Report

Subpart C again asks for information relative to the quantity of tires that have been graded by each tire grader. Unless the facility is directly involved in tire grading, the facility operator will not know what the tire collector grades out of the scrap tire flow before the residual scrap is brought to the site for disposal. If the State seeks this information, the collector should be regulated since it is at this level where the gradeable tires will most likely be generated.

7) 7035.XX90 Waste Tire Processing Facility Standards

Subpart 2(A) is a good idea, but, where is documentation that tires "in" water create an environmental threat? I am aware that water "in" tires creates a mosquito breeding environment. Tires are used for erosion control along rivers and for artificial reefs in lakes and oceans. Without clarification, the State may confuse or discourage other beneficial uses of tires and lead the public to conclude that tires can pollute groundwater or surface water which has not been documented, nor is likely when left in their original state. Clarification needs to be made if you are trying to prevent oil and ash contamination in case of a fire.

Subpart 3(A) again may be proprietary information. This requirement suggests that markets for tires may be using the product inappropriately. B and C of this Subpart adequately addresses market conditions and handling of the waste residues. Market identification may only be necessary for nuisance abatement situations.

In general, your proposed rules are excessive and tend to over regulate. They would also add a significant cost to industry in order to comply. You have a strong emphasis on reporting of proprietary information which can only be justified either within a franchised system or a nuisance abatement situation. Many of the proposed regulations can be streamlined, yet still set performance requirements. As an example, for closure requirement, one may simply state that should a facility close, all scrap tires and scrap tire by-products must be removed from a facility in an appropriate and legitimate manner or one's financial assurance bond, trust fund or whatever will be forfieted to cover the cost of clean-up.

As I read these proposed rules it becomes apparent they are modeled after other solid and hazardous waste rules. However, given the simplicity of the environmental risk, i.e. mosquitoes and/or fire, it appears to many parallels are drawn. A level of regulation should be commensurate with the risk. The State may be hard pressed to document as high a level of risk as the proposed regulations would suggest. How many other recyclers (other than hazardous waste) are regulated to this extent?

The purpose is to assure viable recycling systems which the financial assurance methods should accomplish. Simple restrictions on how many scrap tires one can accumulate and how they are stored will minimize environmental risk and liability.

These comments are intended to provide constructive feedback on what you have proposed. Please keep me informed as to the continuing rulemaking procedures and modifications.

Sincerely,

Mark W. Hope

Mark W. Hope
Marketing Manager

MWH/rlc

Exhibit 8

DEPARTMENT : POLLUTION CONTROL AGENCY

PHONE : 296-7305

STATE OF MINNESOTA

Office Memorandum

DATE : May 15, 1986

TO : SOLID AND HAZARDOUS WASTE COMMITTEE MEMBERS/MPCA BOARD

FROM : Barbara L. Sims
Assistant Executive Director

SUBJECT : WASTE TIRE PERMIT RULES

Background:

Minn. Stat. § 115A.914, subd. 1 requires that the Minnesota Pollution Control Agency (MPCA) adopt rules for administration of waste tire collector and processor permits. Issues of concern in drafting waste tire permitting rules were discussed at the January 27, 1986 Solid and Hazardous Waste Committee meeting (see my memorandum of January 23, 1986). Due to time constraints, not all issues of concern were discussed at the meeting. Therefore, another meeting of the committee was held on February 11, 1986 to continue the discussion regarding the waste tire permitting program (see my memorandum of February 3, 1986).

Based on discussions at these meetings, MPCA staff have developed draft rules for administration of waste tire collector and processor permits. Staff notified approximately 400 persons regarding the draft rules and indicated that an informational meeting would be held on May 6, 1986 to present these draft rules to the public. Staff encouraged all interested parties to attend this meeting and to provide comments on the draft rules. Interested parties were also encouraged to send written comments and suggestions on the draft rules.

A copy of the draft rules, along with a summary of the financial assurance requirements that staff recommend be included in the waste tire permit rules, and the notification letter that was sent to interested parties were included as an attachment to my April 21, 1986 memorandum.

Public Meeting Results:

Staff conducted a public meeting on May 6, 1986 at the MPCA Board room to present the draft rules governing waste tire permits, along with a summary of the financial assurance requirements that MPCA staff recommend be included in the waste tire permit rules. Staff opened the meeting with a brief explanation of the difference between the permitting rules of ch. 7001 and the technical rules of ch. 7035 which will include the financial assurance rules. Throughout the meeting, staff entertained comments made by interested parties relating to the draft permit rules. The following comments were received:

1. The majority of the comments received concerned Minn. Rules pt. 7035.xx05, subps. 1 and 2 regarding the requirements that people who remove tires from a source of generation must notify the MPCA of their activities and must deposit the tires at an acceptable facility as specified in the draft rules. Concern was expressed that these requirements were not enough to encourage delivery of tires to acceptable facilities, and that to discourage open dumping, persons who haul tires must meet certain performance requirements.

   There was definite agreement among the interested parties that in order to effectively establish a waste tire management system, tires must be regulated from the generation point through the processing operation. In support of this viewpoint, interested parties provided suggestions on how they believed persons hauling tires should be regulated. A comment was made that the MPCA could issue a letter of compliance to persons hauling tires who have met the requirements of Minn. Rules pt. 7035.xx05. This letter could then be shown to tire generators. The tire generators would be required to only do business with someone who has been issued a letter of compliance from the MPCA.

   In addition to the letter of compliance, several comments were also made that people who remove tires from a source of generation should also be required to obtain a bond. The bond would cover the total number of tires that are hauled per year. Interested parties believe that if a person who is hauling tires is required to post a bond, the chance of tires being indiscriminantly dumped are small. Also, if tire collectors and processors are expected to provide financial assurance to provide for adequate closure of their facility, it seems justified that persons hauling tires should be responsible for their role in waste tire management. A comment was also made that persons who haul tires should be required to obtain a license as well as a bond.

   Staff believe that interested parties have raised legitimate points. However, staff have identified several concerns with attempting to implement a system that would regulate persons who haul tires. These concerns include: Do we have the statutory authority to regulate persons hauling tires? Would licensing of persons who haul tires be justified considering the high level of administration needed to operate such a program? If so, how would a licensing program be accomplished and to what extent would the Minnesota Department of Transportation need to be involved? Does the MPCA, at this time, want to become involved to a great extent in regulating persons who haul tires? Is this issue better addressed at a county or local level rather than by the State?

   Staff have posed these questions to the Attorney General's Office. Staff would also like to pose these questions to the committee for input and guidance.

2. The definition of tire grader in Minn. Rules pt. 7035.xx10, subp. 21 was discussed. Staff agreed to redraft this definition to address reusable and repairable tires which are sold for use in their original state. Staff also agreed to refer to passenger tire equivalents when limiting the number of waste tires at a site, such as under Minn. Rules pts. 7035.xx10, subp. 28, and 7035.xx95, subp. 2. Considering the substantial differences in size between various types of tires, a standard size should be used in the rules to better address storage site requirements. Since passenger tires constitute the vast majority of waste tires, staff believe that it should be used as the standard, with other size tires being converted to passenger tire equivalents when determining storage limitations.

3. Concern was expressed by several interested parties regarding Minn. Rules pt. 7035.xx32, subp. 2, item B. This part pertains to the requirement that a facility with provisional status be limited to not more than a 25 percent increase in storage capacity relative to the information provided in the provisional status written notification.

   A comment was made that a specific number should be used instead of a percentage because using a percentage allows people with large stockpiles to accumulate more tires. This would not be equitable. Also, the size of the stockpile has no rational relation to what this part is attempting to do. The increase in storage capacity should be relative to the type of facility.

   There was various opposition to this viewpoint. A comment was made that placing a numerical limit on the increase in storage capacity of existing facilities would encourage lots of small size stockpiles. A comment also was made that if a number was used it should be small to encourage movement to processing facilities.

   As possible solutions to this concern, it was suggested that if a person wants to increase storage capacity above the 25 percent limitation, these new tires should be subjected to the technical standards specified for permitted facilities. Finally, a comment was made that financial assurance could dictate the maximum amount of tires that can be accepted at a facility.

   After discussion, staff have some concerns about choosing a number or percentage figure. Staff do not want to encourage the stockpiling of large numbers of tires without some assurance the tires will be processed. Therefore, staff recommend that financial assurance requirements be evaluated as a means to limit the maximum quantity of tires a facility will be allowed to accept. Also, staff will evaluate whether additional storage requirements would be warranted for facilities which intend to be greatly increased in size during provisional status.

4. Concern was expressed regarding Minn. Rules pt. 7035.xx34 pertaining to the annual report. Interested parties questioned why the MPCA was requesting this information and how staff intend to use it. A major concern of interested parties was business confidentiality and public access to these annual reports.

   Staff explained that the information received in the annual report would enable staff to continue to develop a total waste tire management system. This information will enable staff to determine whether markets are developing and where those markets are. Staff will know whether progress is being made on stockpiles and whether tires are moving throughout the system. Staff would also be able to ensure that facilities are staying within the limits established regarding the maximum quantity of tires that may be accepted at a facility. This would include Minn. Rules pt. 7035.xx90, subp. 2, item B that requires the owner or operator of a permitted processing facility to process and utilize at least 75 percent by weight of the waste tires, including tire-derived products, during a calendar year. Finally, staff believe that this is information that should be documented by a business and that submitting a yearly summary of accounts to the MPCA is not unnecessarily burdensome. Staff have also requested the Attorney General's Office to investigate the issue of confidentiality regarding the information that will be submitted in the annual report. Staff recommend that the annual report requirements be retained in the rules.

5. Written notification by facilities covered by a permit by rule under Minn. Rules pt. 7001.xx20, subp. 3 was discussed. Time frames for submission of notifications by new and existing facilities need to be identified in subp. 5. Staff suggest 60 days from the effective date of the rules, for existing facilities. For new facilities, comments ranged from 7 to 30 days prior to commencing the activity. Considering that staff may have to make arrangements to schedule a site inspection to determine whether the facility qualifies for a permit by rule, 7 days may not be sufficient time. However, 30 days does seem to be longer than necessary in most cases. Therefore, staff recommend a 15 day notification period.

6. Regarding the financial assurance requirements for new facilities, a comment was made concerning the surety bond being effective 60 days before the initial receipt of waste tires. The interested party felt that money should not have to be paid on the bond for 60 days before tires could be accepted.

   Staff explained that this 60 day time period is to allow staff to ensure the bond has effective coverage. However, staff have agreed to investigate the possibility of the owner or operator of the facility having the obligation to demonstrate that the bond is effective before the initial receipt of tires, instead of the staff. In this way, the 60 day time period would not have to be used.

7. Several interested parties commented that all transfer facilities should have a predetermined bond amount. In this way, a uniform standard would be implemented; however, a site would also have flexibility regarding the fluctuation of up to a maximum of 10,000 tires. Staff have agreed to investigate this option; however, staff believe that the differences in costs for transportation and processing in the metropolitan area versus out-state regions would not enable staff to predetermine an equitable bond amount.

8. Comments were also discussed regarding the types of mechanisms that staff have recommended be available to demonstrate financial assurance. Several comments stated that trust funds should be eliminated as a financial assurance option because money is not available "up-front." Staff generally agree; however, staff believe that trust funds may be easier to obtain than a bond. Staff also intend to investigate different pay-in period options that would make money available within a reasonable amount of time if a trust fund is used.

   Interested parties did comment that bonds are difficult to obtain because waste tire facilities are a new concept. The bonding companies require liquid assets before they will issue a bond.

   Other commenters responded to this comment by suggesting that if bonds are harder to obtain, "undesirables" will be eliminated from the system. Therefore, to ensure proper management, bonds should be required.

   Staff have agreed to continue talking with bonding companies; however, staff still maintain that there are bonding companies available to issue bonds for waste tire facilities.

   Staff recommend that bonds and letters of credit be considered acceptable financial assurance mechanisms, with the possibility of including trust funds if the trust fund can be structured to ensure sufficient funds will be available when needed.

   These comments constitute the main issues that were discussed at the public informational meeting held May 6, 1986. As you are aware, several of the issues raised require legal investigation and interpretation, as well as MPCA policy questions. MPCA staff are seeking input on the draft rules, as well as guidance on the comments that raised MPCA policy questions, particularly the comments regarding persons who haul tires and to what degree these persons should be regulated.

BLS:rw

Exhibit 9

Minnesota Pollution Control Agency

July 2, 1986

Dear Interested Party:

On July 14, 1986 at 8:00 a.m. in the Minnesota Pollution Control Agency (MPCA) Board room at 1935 West County Road B2, Roseville, Minnesota, MPCA staff will be conducting a public meeting. At the meeting, staff will be presenting the draft rules governing waste tire generators and transporters, along with a summary of the financial assurance requirements that staff recommend be included in the waste tire permit rules. Please note that these are draft rules and are not in effect. The purpose of the meeting is to solicit comments on the draft rules.

The draft rules governing waste tire generators and transporters were developed as a result of the public meeting that was conducted on May 6, 1986. At that time, there was definite agreement among the interested parties that in order to effectively establish a waste tire management system, tires must be regulated from the generation point through the processing operation. Staff believed that interested parties raised a legitimate point and agreed to draft rules governing waste tire generators and transporters.

The enclosed information contains both sets of draft rules. These rules are the draft technical rules that contain operating standards and the definitions that address who is considered a waste tire generator or transporter. Staff are currently drafting rules that will outline the procedures that must be followed for a transporter to obtain a permit, and the information that will be contained in the permit application.

This informational meeting will be an opportunity for interested parties to provide input and recommendations as to the content of the draft rules, as well as an opportunity for staff to answer any questions. All interested parties are encouraged to attend this meeting and to provide comments on the draft rules.

Phone:_____
1935 West County Road B2, Roseville, Minnesota 55113-2785
Regional Offices • Duluth/Brainerd/Detroit Lakes/Marshall/Rochester
Equal Opportunity Employer

In addition to the new set of draft rules that will be presented on July 14, 1986, you may recall that you were sent out two sets of draft rules on April 15, 1986. These were the rules that were discussed at the public meeting on May 6, 1986 and the MPCA Solid and Hazardous Waste Committee on May 19, 1986. At this time, staff have received few comments from interested parties on the content of these draft rules. Due to this fact, staff anticipate making only minor changes to the content of these draft rules before they are presented to the MPCA Board this fall. Therefore, it is important for an interested party to provide input and comments on any provision of the draft rules, especially if there are parts which concern and affect you.

You are also invited to send written comments and suggestions on the draft rules. Please send any written comments on these drafts to Shelly Sporer at the address listed below by August 4, 1986.

Shelly Sporer
Minnesota Pollution Control Agency
Solid and Hazardous Waste Division
1935 West County Road B2
Roseville, Minnesota 55113

If you have any questions, please contact Shelly Sporer at 612/296-7260 of my staff.

Sincerely,

Gordon W. Meyer

Gordon W. Meyer, Chief
Program Development Section
Solid and Hazardous Waste Division

GWM/SS:rw

Enclosures

DRAFT

June 13, 1986
D R A F T

Transporter

A transporter is a person who removes waste tires from a source of generation or a storage facility and transports the waste tires to a waste tire facility.

Standards Applicable to Transporters of Waste Tires

7035.xxx1 APPLICABILITY.

The provisions of parts 7035.xxx1 to 7035.xxx5 establish standards that apply to persons transporting waste tires.

7035.xxx2 DELIVERY AND TRANSPORTATION OF WASTE TIRES.

Subpart 1. Delivery of waste tires. Sixty days from the effective date of parts 7035.xx00 to 7035.x180, any person who collects or removes waste tires from a source of generation or storage facility must deposit, or store the waste tires at a waste tire facility that has a permit, is exempt from obtaining a permit, or has provisional status.

Subp. 2. Transportation of waste tires. Except as provided in part 7035.xxx3, subp. 2, sixty days from the effective date of parts 7035.xx00 to 7035.x180, no person shall remove waste tires from a source of generation or transport waste tires unless that person has submitted written notification to the director containing the information specified in part 7035.xxx3, subpart 1.

DRAFT

7035.xxx3 WRITTEN NOTIFICATION.

Subpart 1. Notification. All persons engaged in transporting waste tires must submit written notification to the director not more than 30 days after the effective date of parts 7035.xx00 to 7035.x180 containing the following information:

A. the name, address, and telephone number of the person who will be transporting waste tires;

B. if the person is a driver for a transporting operation, the name, address, and telephone number of the company;

C. the geographical area that will be served;

D. a description of the vehicle(s) that will be used including the type, license number, and registered vehicle owner;

E. where the waste tires will be collected from and deposited at; and

F. an estimate of the quantity and type of waste tires that will be collected quarterly.

Subp. 2. Exemptions. The requirements of parts 7035.xxx3 to 7035.xxx5 do not apply to:

A. a person transporting no more than five waste tires at any one time;

DRAFT

B. a person transporting waste tires that will be used for agricultural purposes;

C. a person transporting tire-derived products that are being delivered to a market;

D. a person with residential accounts engaged in the solid waste collection system who transports household quantities of waste tires to a permitted landfill; and

E. a waste tire generator who removes waste tires from his/her site and transports the waste tires to a waste tire facility.

7035.xxx4 IDENTIFICATION INFORMATION.

Subpart 1. Temporary permit. Once the written notification as specified in part 7035.xxx3 has been received by the director, a temporary permit and a corresponding identification number will be issued to the transporter. The temporary permit is only valid until a permit is issued or the permit application is denied by the agency.

Subp. 2. Identification card. If more than one transporter is involved in the transporting operation, an identification card with the corresponding permit or temporary permit number will be issued to each transporter.

Subp. 3. Accessibility of identification mechanism. A person who transports waste tires must:

DRAFT

A. have the agency permit or temporary permit in possession when transporting waste tires; or

B. for a transporting operation that involves more than one transporter, each driver must have their identification card in possession when transporting waste tires.

Subp. 4. Vehicle identification. The agency shall issue an identification plate with the corresponding permit or temporary permit number to be attached by the transporter to each vehicle used in the transporting operation in such place and manner as the agency may direct.

7035.xxx5 MONTHLY RECORD AND QUARTERLY REPORT FOR TRANSPORTERS.

Subpart 1. Monthly record. All transporters must monthly record and maintain the following information:

A. the name, address, and telephone number of the transporter;

B. the geographical area served;

C. a list identifying where the waste tires were transported to for resale, and where the waste tires were transported to for recapping;

D. a list identifying the waste tire facilities where the waste tires were deposited at;

E. the quantity and type of waste tires that were collected monthly;

DRAFT

F. the quantity and type of waste tires left in inventory, monthly;

G. the permit or temporary permit number; and

H. the month covered by the record.

Subp. 2. Quarterly report and submittal. All transporters must prepare and submit a quarterly report to the director no later than May 15, September 15, and January 15 containing the four monthly records required in subpart 1.

Waste Tire Generator or Generator

A waste tire generator is any person, including, but not limited to, persons engaged in the sale and mounting of new, used, or re-manufactured automobile, truck, and equipment tires who receive tires in the exchange process associated with this business transaction, and who in the course of normal business activities generates more than 50 waste tires per calendar year.

Standards Applicable to Waste Tire Generators

7035.xxx6 APPLICABILITY.

The provisions of parts 7035.xxx6 to 7035.xx11 establish standards that apply to waste tire generators.

7035.xxx7 GENERATOR VERIFICATION OF TRANSPORTER.

A waste tire generator must not transact business with a transporter unless the transporter has been issued a permit or temporary permit by the agency.

DRAFT

7035.xxx8 WASTE TIRE MANAGEMENT.

A waste tire generator shall not relinquish control of the waste tires if the generator has reason to believe that the waste tires are not being properly managed.

7035.xxx9 TRANSACTION RECORD.

A waste tire generator must record each transaction that is made with a transporter. This record must be kept for three calendar years and must contain the following information:

A. the name, address, telephone number, and permit or temporary permit number of the transporter(s) that has transported tires from the generation point; and

B. the quantity and type of waste tires involved in the transaction.

7035.xx10 INSPECTION OF TRANSACTION RECORD.

When requested by the director, the transaction record of part 7035.xxx9 shall be made available during regular business hours to MPCA staff for inspection.

7035.xx11 INVESTIGATION COOPERATION.

A waste tire generator shall furnish the director with any information relevant to the enforcement of the regulations or provisions of this chapter.

June 30, 1986

FINANCIAL ASSURANCE

Minnesota Pollution Control Agency (MPCA) staff believe that some degree of financial assurance must be demonstrated by owners or operators of waste tire facilities. Staff recognize that the level of financial assurance needs to provide for adequate closure of the facility without causing undue economic impact on the waste tire system. Staff recommend the following financial assurance requirements which are divided into two parts, those which apply within 180 days of the effective date of the rules (Provisional Requirements), and those which apply two years after the effective date of the rules (Final Requirements).

I. Provisional Financial Assurance Requirements.

A tire collector or processor who owns or operates an existing facility would demonstrate financial assurance by submitting a surety bond or letter of credit to the Executive Director (Director) within 180 days after the effective date of the waste tire permitting rules. The bond or letter of credit would cover the cost of closure, including the cost of removal for the maximum number of waste tires to be located at the facility at any one time within two years of the effective date of the rules. This requirement only applies to waste tires received at the facility after the effective date of the rules. The owner or operator of an existing facility has 180 days from the effective date of the rules to either comply with the provisional standards, including financial assurance, or to begin closure in compliance with the applicable closure requirements. However, once the waste tire permitting rules have been effective for 180 days, under no circumstances can any operating facility be without an effective financial assurance mechanism.

For a new facility, the surety bond or letter of credit must be submitted to the Director with the permit application. The bond or letter of credit must be effective before the initial receipt of waste tires and would cover the cost of closure, including the cost of removal for the maximum number of waste tires to be located at the facility within two years of the effective date of the rules.

If at the time the waste tire permitting rules become effective, a waste tire facility already has a county held bond or letter of credit in effect that complies with the financial assurance provisions of the State rules, the owner or operator of the facility may use the mechanism to satisfy the State provisional financial assurance requirements. It may be necessary, however, to upgrade the amount of a county held bond or letter of credit or to specify that the mechanism is to be used to cover closure costs, in order to comply with the financial assurance provisions of the State rules. The owner or operator of the facility must submit a copy of the bond or letter of credit to the Director within 180 days after the effective date of the rules.

II. Final Financial Assurance Requirements.

Staff believe that it is necessary and reasonable to require that waste tires received after the effective date of the rules be covered by financial assurance. However, staff realize that for some facilities it may be difficult

within 180 days to secure financial assurance for closure including all waste tires located at the facility. Therefore, staff recommend that the financial assurance requirements provide a two year period during which time an owner or operator may reduce the number of waste tires located at the facility before having to provide financial assurance for closure, which includes all waste tires at the facility.

Two years after the effective date of the rules, the owner or operator of a waste tire facility, new or existing, would be required to demonstrate financial assurance for closure based on the maximum number of the waste tires located at the facility or proposed to be located at the facility. This requirement applies to all waste tires located at the facility regardless of when they were received. This could include waste tires not previously covered by financial assurance. Staff recommend three mechanisms for tire collectors or processors to choose from to demonstrate financial assurance: letters of credit, surety bonds, and trust funds. Staff believe that surety bonds and letters of credit provide the best method for quickly implementing the provisional financial assurance requirements for all facilities. However, under the final financial requirements, staff believe that any of the three financial mechanisms could be utilized to provide financial assurance. Also, the two year implementation period would provide sufficient time to convert a surety bond or letter of credit to a trust fund if the owner or operator chose to do so. The mechanisms would be used to ensure that money will be available to properly close the facility, including providing for the removal of all waste tires from the facility to a market or to a substitute facility if approved by the Director. The amount of the letter of credit, surety bond, or trust fund must equal or may exceed the costs associated with closure of the facility.

Two years from the effective date of the rules, the owner or operator of a waste tire facility must be in compliance with the State rules for financial assurance by having a State held financial assurance mechanism. If a tire collector or processor chooses, this financial assurance mechanism may be submitted at any time during the two years after the date the rules became effective. However, this mechanism must be submitted within the two year time frame. Also, if during this two year time frame the owner or operator of a waste tire facility has a county held letter of credit or bond, the owner or operator must obtain a State held financial assurance mechanism consistent with the provisions of the State rules. This mechanism must be submitted to the Director within the two year time frame.

In addition to the requirement that financial assurance be demonstrated by owners or operators of waste tire facilities, MPCA staff have received several comments that transporters, or persons who remove tires from a source of generation, should also be required to obtain financial assurance. Interested parties believe that if a person who is hauling tires is required to demonstrate financial assurance, the chance of tires being indiscriminately dumped are small. Also, if tire collectors and processors are expected to provide financial assurance to provide for adequate closure of their facility, it seems justified that persons hauling tires should be responsible for their role in waste tire management. Staff believe that interested parties have raised a

legitimate point, and staff are investigating the possibility of requiring financial assurance of transporters.

Staff anticipate that copies of the financial assurance rule for waste tire facilities will be available for interested parties to review in late July 1986. Even though a copy of the rule is not available at this time, the requirements involved in developing the rule that have been presented in this paper will be discussed at the public meeting on July 14, 1986. In particular, the requirements on which staff are interested in receiving comments include:

1. The provision in the rule that allows waste tire facilities to have either a State held financial mechanism or a county held financial mechanism that complies with the provisional financial assurance provisions of the State rules.

2. The addition of financial assurance requirements for transporters.

3. The time frames associated with the implementation dates of the financial assurance mechanisms.

4. The types of financial mechanisms that are available to demonstrate financial assurance.

WASECA COUNTY HIGHWAY DEPARTMENT

3rd Street & 9th Avenue N.E.
Box 487
WASECA, MINNESOTA 56093

ROBERT J. McPARTLIN, P.E.
Highway Engineer
Solid Waste Officer

507-835-1250

July 9, 1986

RECEIVED
JUL 14 1986
MPCA, SOLID & HAZ
WASTE DIVISION

Sheely Sporer
Minnesota Pollution Control Agency
Solid and Hazardous Waste Division
1935 West County Road B2
Roseville, MN 55113

Dear Ms. Sporer,

These are the comments regarding - Waste Tire Draft Rules.

7035. xxx3 Subpart 1 - E
The provision regarding listing the waste tire collection points should deleted from the notification section and be added to the quarterly reporting section. This would allow the Agency to have an updated list of collection points for each transporter. The collection points will probably change rapidly as transporters expand their service areas and a list on the notification form will quickly become outdated.

7035. xxx5 Subpnart 1 - C and D are redundant and one or the other should be deleted. Generators or collection points should be identified monthly if the Agency wishes to track the waste tire flow.

7035. xxx8
This rule should be deleted. Since a transporter must deposit his tires at a permitted facility, a generator should be allowed to assume that his waste tires are being properly managed if they are released to a certified transporter.

Yours truly,

Robert J. McPartlin

Robert J. McPartlin

RJM/cs

INDIANHEAD
TRUCK LINE INC.

July 11, 1986

RECEIVED
JUL14 1986
MPCA, SOLID & HAZ.
WASTE DIVISION

Mr. Gordon W. Meyer, Chief
Program Development Section
Solid & Hazardous Waste Division
Minnesota Pollution Control Agency
1935 West County Road B2
Roseville, Minnesota 55113

Attention: Shelly Sporer ✓
Patrick Carey

Dear Sir:

This letter is in response to Mr. Meyer's letter, dated July 2, 1986, and another dated July 10, 1986, directing to whom comments regarding the disposition of waste tires should be directed.

As I read through these rules, I think there is over-kill in the idea to require drivers to have identification cards. It would be burdensome, and , in our opinion, of no import to the problem. Truck drivers don't control, companies do.

We are a hazardous waste licensed carrier in the state of Minnesota, as well as federally and in many other states. We would be responsible, whether we were hauling waste tires or other waste products that move from Minnesota to many disposal sites. We don't have special licenses for our waste drivers.

You have our number, we use hazardous waste manifests, and it would seem that's all that's necessary to provide record keeping for what happens to tires. They could be tracked the same as any other waste.

We would not participate in a program where we are going to have to start special licensing for our drivers who already hold chauffeur's licenses and are working for a reputable company who keeps records in a reputable manner. If you are concerned about record keeping of those who may haul tires illegally, then don't be, because they are going to do it anyway.

I note you have comments about a list identifying waste tires transported for resale versus waste tires transported for re-capping. Perhaps your concern is that the junk hauler picks up tires and sells them to somebody who searches for re-capable carcasses and that person then re-transports them to re-capping plants or a dump site. If that be the case, you're going to have a paper trail that will be a mess. I suggest all generators be required to ship on hazardous waste manifests, indicating what they do with their tires, just like anyone else shipping hazardous waste.

Frankly, I wouldn't pick up waste tires unless I had a hazardous waste manifest indicating who the shipper was, how many were to be loaded, where they were going, etc. Maybe rubbish haulers shouldn't be transporting junk tires unless they are willing to comply with hazardous waste shipping rules.

I also note comments about an agency identification plate. I see no need for that when you already require hazardous waste permits and have established regulation in Minnesota. Why create another paper burden? Couldn't you simply provide that a licensed hazardous waste hauler can haul waste tires?

Recording of the geographical area served is of little value. If a manifest is used, area of origination and place of disposal will be shown.

Of what value is a description of the vehicle used to haul waste tires? Do you really want that much paper work? Do you really care?

I note on the financial assurance draft, page 3, item 2, the notation "Financial Assurance Requirements" for transporters.

If we have to post any bond or deposit for the transportation of tires or waste, we will not participate in the program; any more than we would participate in posting a bond for other products we haul. We are an insured common and contract carrier licensed by the federal government and the state of Minnesota, holding all necessary permits and that's all that should be required. There should be no need for concern about a hazardous waste transporter who abides by the hazardous waste regulations. There probably will be those who will chisel and haul illegally but you will have no financial assurance from them.

As to presently existing waste sites where there are thousands of tires, I doubt if you will find anyone who will post a sufficient bond or letter of credit to cover the expense necessary to remove them. I watched the Andover story on the July 9th news. What did they expect when they took the tires in, to resell them to the state of Minnesota? That's what they're asking for. If the state cleans it up, the state should get the land and any value. Those people made a bad bet and lost.

We sent a sales representative to Babbitt, MN to check on that project and he found zero activity. Comment was made that it would be some time before waste tires would be taken there. If the Babbitt program doesn't fly, you may have another Andover, king size. Being in such a remote area, think of the transport costs to haul back to St. Paul, or Duluth for that matter.

If Babbitt, MN is only going to be another dumping ground for junk tires, then I suggest the state establish a site closer to the Twin Cities so the expense of hauling tires in and then hauling them away to some other facility won't be so great.

I hope I have provided some thoughts worthy of consideration.

Sincerely yours,

Lester A. Wilsey, Jr.
President

LAW,JR:amw

SEMCAC, INC.
P.O. Box 549 • Rushford, MN 55971 • (507) 864-7741

July 18, 1986

RECEIVED
JUL 21 1986
MPCA, SOLID & HAZ.
WASTE DIVISION

Ms. Shelly Sporer
Minnesota Pollution Control Agency
1935 West County Road B2
Roseville, MN 55113-2785

Dear Ms. Sporer:

There is an inscription over the Senate Chambers in the state capitol building which reads "The proper function of government is to make it easy for people to do good and difficult for those to do evil." In this spirit, I would recommend that the Minnesota Pollution Control Agency not require tire transporter's to be bonded. Such a requirement will probably increase the cost associated with collecting and disposing of tires. This cost will more than likely be passed on to the consumer who already resents the cost of disposing of the tires as is evidenced by the increased number of tires found in ditches. Furthermore, I fear that the cost of bonding would prohibit small operators from getting started and thus reduce competition. Should problems with tire transportors arise, then the MCPA may wish to consider required bonding.

I would favor the MPCA requiring that a sticker simular to those used on boats be affixed to any vehicle transporting tires.

Sincerely,

Semcac, Inc.

Halvor Lacher
Executive Director

HL/MJM/lj

RAMSEY COUNTY
Public Health Department
Raymond G. Cink, Director

Environmental Health Division
1910 W. County Rd. B. - Room 209
Roseville, Mn. 55113

633-0316 — 298-5972

RECEIVED
AUG13 1986
MPCA, SOLID & HAZ.
WASTE DIVISION

August 11, 1986

Shelly Sporer
Solid Waste Division
Minnesota Pollution Control Agency
1935 West County Road B 2
Roseville, MN 55113

RE: Draft Tire Rules

Dear Ms. Sporer:

I have one comment to make concerning the draft rules for waste tire generators and transporters. In Section 7035.XXX3, Subpart 2.D, an exemption is provided for garbage haulers transporting household quantities to landfills. This exemption should also include transportation to a resource recovery facility, since the Newport RDF plant will begin operating in 1987. Once it's in operation, waste designation ordinances will require solid waste from Ramsey and Washington Counties to be delivered to the Newport plant instead of a landfill. It is anticipated that collection of tires with solid waste will continue to some extent and so significant quantities of tires will be handled by the RDF plant.

Please call me at 633-0316 if this presents a problem or raises any questions.

Sincerely,

Richard J Hlavka

Richard J. Hlavka
Solid Waste Planner

RJH/gt

Exhibit 10

SF-00006-03

STATE OF MINNESOTA

DEPARTMENT POLLUTION CONTROL AGENCY

Office Memorandum

TO: SOLID AND HAZARDOUS WASTE COMMITTEE MEMBERS/ MPCA BOARD

DATE: August 18, 1986

FROM: Barbara L. Sims Assistant Executive Director

PHONE: 296-7305

SUBJECT: WASTE TIRE PERMIT RULES

Background:

Minn. Stat. § 115A.914, subd. 1 requires that the Minnesota Pollution Control Agency (MPCA) adopt rules for administration of waste tire collector and processor permits. MPCA staff have developed draft rules for these purposes. Staff presented these draft rules, along with a summary of the financial assurance requirements that staff recommend be included in the waste tire permit rules to the public at an informational meeting on May 6, 1986. The draft rules governing waste tire permits and the financial assurance summary were also presented to the Solid and Hazardous Waste Committee on May 19, 1986, together with a summary of the issues discussed and the comments received at the May 6, 1986, informational meeting. (See my memorandum of May 15, 1986.)

As you may recall, at the informational meeting on May 6, 1986, a significant number of interested parties were concerned that the MPCA was not proposing to do enough to regulate waste tire generators and transporters. It was suggested that in order to effectively establish a waste tire management system, tires must be regulated from the generation point through the processing operation. Staff believed that interested parties raised a legitimate point and discussed this issue at the May 19, 1986, committee meeting. At this meeting, staff were directed by the committee to draft rules governing waste tire generators and transporters.

Also at the informational meeting on May 6, 1986, and the committee meeting on May 19, 1986, staff presented a summary of the financial assurance requirements that staff recommend be included in the waste tire permit rules. Based on comments received at these meetings, staff developed a new financial assurance summary.

On July 14, 1986, staff conducted a public meeting to present the draft rules governing waste tire generators and transporters, along with the new summary of the financial assurance requirements that MPCA staff recommend be included in the waste tire permit rules. Staff notified approximately 325 persons regarding the meeting. Staff encouraged all interested parties to attend this meeting and to provide comments on the draft rules and the financial assurance summary.

Interested parties were also encouraged to send written comments and suggestions on the draft rules.

Prior to the draft rules for waste tire generators and transporters being released for public review on July 2, 1986, MPCA staff presented these draft rules to representatives of the National Tire Dealers and Retreaders Association and the Minnesota State Service Station Association. Recommendations and comments from representatives of these two associations were incorporated into the draft rules. Copies of the draft rules for waste tire generators and transporters were also sent to the Minnesota Department of Transportation, and to the Minnesota Trucking Association for their review.

In addition to soliciting comments on the draft rules for waste tire generators and transporters, staff encouraged interested parties to comment on the draft waste tire permit rules that were sent out on April 15, 1986. At this time, staff have received few comments from interested parties on the content of these draft rules. Due to this fact, staff anticipate making only minor changes to the content of these draft rules.

Since the public meeting on July 14, 1986, staff have drafted the financial assurance rules. A copy of the draft financial assurance rules and the draft rules for waste tire generators and transporters are attached to this memorandum and will be available for public review at the committee meeting.

Public Meeting Results:

Staff conducted a public meeting on July 14, 1986, at the MPCA Board Room to present the draft rules governing waste tire generators and transporters, along with a summary of the financial assurance requirements that MPCA staff recommend be included in the waste tire permit rules. Throughout the meeting, staff entertained comments made by interested parties relating to the draft rules and the financial assurance summary. The following comments were received:

1. The majority of the comments received concerned an issue not addressed by the draft rules. Several interested parties believe that transporters should be required to demonstrate financial assurance by obtaining a bond. Interested parties believe that if a person who is hauling tires is required to post a bond, the chance of tires being indiscriminantly dumped are small. Also, if tire collectors and processors are required to provide financial assurance to provide for adequate closure of their facilities, it seems justified that persons hauling tires should be responsible for their role in waste tire management.

   Staff believe that interested parties have raised legitimate points. However, staff have identified several concerns with requiring financial

assurance of transporters. The first concern involves the cost to properly dispose of waste tires. Staff believe that if a transporter is required to post a bond, the cost the transporter will charge to dispose of waste tires will increase. This cost will be passed on to the generator. At this time, the generator has not fully accepted the idea that it costs to dispose of waste tires. Staff believe that if the disposal cost should rise, tires will be improperly disposed of.

A second concern staff have is that the collateral requirements associated with financial assurance may force smaller transporters out of business. Staff believe that smaller companies are essential to provide service for household quantities of waste tires. Staff also received a written comment that the cost of requiring financial assurance may prohibit smaller companies from getting started thereby reducing competition. Staff believe this is a legitimate concern.

A third concern staff have is that the objective in requiring financial assurance is site cleanup, not enforcement of littering laws. Also, in order to call in a bond on a transporter, the transporter would have to be caught dumping the tires. This would be very hard to do. However, in all cases, if a transporter is caught dumping tires, the transporter would be subject to MPCA enforcement actions. These could include fines associated with littering or violations of waste tire management rules.

The last concern staff wish to address is the dollar amount of the bond. Because the amount to clean up each tire dump is different, and because the transporter may bring tires to any waste tire facility, it would be impossible to determine a set bond amount. Staff would have to arbitrarily determine a dollar amount for the bond. Therefore, the financial assurance requirement would only serve to exclude certain transporters from the system through cost and pricing of the bond.

For the above-mentioned concerns, staff do not recommend requiring financial assurance for transporters.

2. The requirement that all transporters must seek a permit was discussed. Staff believe that requiring all transporters to obtain a permit would require a high level of administration. Therefore, staff recommend developing a regulatory framework similar to permit by rule that will be granted if the transporter submits a written notification containing information on the transporter's activities. Then, the proper

identification material will be issued to the transporter by the director.

3. Concern was expressed regarding the requirement that a transporter submit a quarterly report to the director. An interested party believed that a quarterly report was too frequent and that submitting a semi-annual report would be less burdensome. However, the majority of interested parties prefer to submit a quarterly report because businesses must report their taxes quarterly and it would be easier to do both reports at the same time. Therefore, staff continue to recommend that transporters submit quarterly reports to the director.

4. Concern was expressed regarding the transporters that are exempt from obtaining a permit. Particularly, an interested party believed that solid waste haulers with commercial accounts who transport household quantities of waste tires should also be exempt from obtaining a permit. Several interested parties also believe that a permit exemption should be added for commercial motor carriers/common carriers. The justification is that these companies are already licensed by the State of Minnesota and that to obtain a permit to transport waste tires would be unnecessary and burdensome. Staff believe that interested parties have raised legitimate points and agreed to add exemptions for these types of transporters.

5. Regarding the financial assurance requirements, an interested party commented that the requirement allowing tire collectors or processors 180 days from the effective date of the rules to obtain financial assurance was too long. After discussing the 180 day time frame with financial assurance companies, staff believe that a 90 day time frame to obtain financial assurance would be more realistic. This change has been incorporated into the financial assurance summary of July 10, 1986.

Issues for Discussion:

1. As you know, staff have been developing the draft financial assurance rules for waste tire facilities. At the July 14, 1986 public meeting, a summary of the financial assurance requirements that MPCA staff recommend be included in the waste tire permit rules was discussed. This summary included one major change. Staff had originally recommended that during phase one, waste tire facilities could have either a State held financial assurance mechanism or a county held financial mechanism that complied with the financial assurance provisions of the State rules. Staff no longer recommend this option. Staff believe that since tire collectors and processors must be in compliance with MPCA rules, the tire collector and processor must have a State held financial assurance mechanism. The

requirements of financial assurance will be divided into two phases. Phase one applies to facilities within 90 days of the effective date of the rules. Phase two applies two years after the effective date of the rules. Each phase provides different time requirements for new and old waste tires regarding the submittal of the financial assurance mechanism and the amount of the mechanism.

The distinction is made in the rules between new and old waste tires because owners or operators of facilities that have old waste tires may be eligible to receive reimbursement costs associated with cleanup of the site. Staff believe that when owners or operators of existing facilities are determining the dollar amount of the financial assurance mechanism under phase two, the amount of financial assurance required would be the difference between the cost associated with closure of the facility and the reimbursement available to clean up the old waste tires as specified in the waste tire abatement rules. The reimbursement is only available to owners or operators of tire dumps who submitted written notification to the MPCA under the (emergency) abatement rules of Minn. Rules pt. 7035.8030. This reimbursement rate will be calculated by MPCA staff and will be available to owners or operators of qualifying, existing facilities within two years of the effective date of the permit rules. The actual reimbursement money will not be available until after the MPCA takes formal action against the site as specified in the abatement rules.

2. MPCA staff are in the process of drafting rules that will outline the procedures that must be followed for a transporter to obtain a permit by rule, and the information that will be contained in the written notification. Staff are interested in receiving comments as to what information should be contained in the notification.

The previous comments constitute the main issues that were discussed at the public informational meeting on July 14, 1986, along with the two issues that MPCA staff are seeking input and guidance on. Staff anticipate presenting the entire packet of draft waste tire permit rules to the committee in September 1986 to request approval to pass the rules onto the Board.

BLS:rw

Attachments

SF-00006-03

Exhibit 11

STATE OF MINNESOTA

DEPARTMENT POLLUTION CONTROL AGENCY

Office Memorandum

TO: SOLID AND HAZARDOUS WASTE COMMITTEE MEMBERS
MPCA BOARD

DATE: October 21, 1986

FROM: Barbara L. Sims
Assistant Executive Director

PHONE: 296-7305

SUBJECT: WASTE TIRE PERMIT RULES (OCTOBER 27, 1986 MEETING)

Background:

Minn. Stat. § 115A.914, subd. 1 requires that the Minnesota Pollution Control Agency (MPCA) adopt rules for administration of waste tire collector and processor permits. MPCA staff have developed draft rules for these purposes. On two occasions, May 6, 1986 and July 14, 1986 MPCA staff conducted informational meetings to present the draft waste tire permit rules to the public. The issues discussed and the comments received at the informational meetings were presented at the May 19, 1986 and August 25, 1986 MPCA Solid and Hazardous Waste Committee meetings. A summary of the comments and issues appears in my May 15, 1986 and August 18, 1986 memorandums to the Solid and Hazardous Waste Committee.

Issues:

Staff believe that all comments and issues discussed at the previous meetings have been addressed and resolved to the satisfaction of all interested parties. Therefore, staff believe the only issues that need to be resolved are contained in this memorandum.

At the August 1986 Solid and Hazardous Waste Committee meeting, staff presented the draft rules governing financial assurance for waste tire facilities, waste tire generators, transporters, and comments made by interested parties at the July 14, 1986 public meeting. The following comments were received at the committee meeting.

1. Interested parties questioned the permit exemption for persons using waste tires for agricultural purposes. Particularly, comments were made that the quantity of tires that may be used for agricultural purposes should be limited. MPCA staff believe that since the permit exemption under Minn. Stat. § 115A.902, subd. 2 does not have a quantity limitation on the tires that may be used for agricultural purposes, the MPCA does not have the authority to limit the quantity of tires that constitute an agricultural use as long as the tires are kept on the site of use. However, if tires are not kept on the site of use, the owner or operator would be required to seek a permit from the MPCA to store waste tires.

2. Interested parties had concerns regarding the transporters who are exempt from obtaining a permit. Particularly, an interested party believed that organizations that receive tires in the process of collecting other recyclable materials should be exempt from obtaining a permit. Staff agree and have added an exemption for persons who haul tires incidental to collecting recyclable materials.

   An interested party also believed that a permit exemption should be added for transporters who are hauling household quantities of waste tires to a resource recovery facility. Staff believe that the permit exemption for persons with commercial or residential accounts who transport household quantities of waste tires to permitted landfills also applies to transporting household quantities of waste tires to resource recovery facilities if the facility will accept them.

3. Concern was expressed regarding the number of waste tires that constitute a household quantity. Following a discussion between the committee and interested parties, staff believe that ten waste tires would be a more realistic number for household quantities. Therefore, staff recommend that ten waste tires be the number designated for household quantities.

4. Concern was expressed regarding the requirement that all transporters obtain a permit-by-rule regardless of whether they work for a company or individually. Interested parties believe that it would be appropriate for a company to obtain the permit-by-rule and specify the number of drivers that will be working for the company. The company would be responsible for a specified number of drivers, and would obtain the identification materials for each driver. The identification materials would identify the company, not the individual, thus eliminating the need to notify the director each time a change of personnel occurs. Staff believe this is a realistic approach and have agreed to re-draft the transporter regulations accordingly.

5. The requirement that an identification plate be attached to each vehicle used to transport tires was discussed. Interested parties felt this would create an administrative burden and wondered what provisions would be made for rental or substitute vehicles. After discussing this issue, staff recommend deleting the requirement that a transporting vehicle have an identification plate attached to it. Staff believe that as long as the transporter carries an identification card there is no need to identify the vehicle.

6. Several interested parties commented on the potential for duplication of State and county financial assurance requirements. This has been a recurring issue, and staff believe a discussion of the options is necessary.

First, staff believe that tire collectors and processors must have financial assurance to provide for proper facility closure. Staff also believe that the MPCA needs to establish a statewide requirement with minimum standards that apply to all applicable facilities. Staff also recognize that counties have the option of requiring financial assurance for waste tire management activities conducted in their county. Thus, both the State and county could require tire collectors and processors to demonstrate financial assurance. Interested parties are concerned with having to demonstrate separate financial assurances for the State and counties and the economic impact of such a requirement. Particular problems arise when one county may impose a financial assurance requirement and another one would not. Economic advantages would be held by the facility located in the county without financial assurance requirements.

Option 1:

One option that could be used if State and county financial assurance requirements are duplicated is the following scenario. An owner or operator of a waste tire facility would establish a trust fund. The trust fund would have to meet the financial assurance provisions of the MPCA's rules. The trust fund would name the county as beneficiary. Then, the owner or operator would post a bond naming the MPCA as the beneficiary. The trust fund would be used as collateral for the bond. The MPCA could only draw on the bond if facility closure was not done in compliance with MPCA rules. Currently, staff are working with the Minnesota Surety Association to see if this approach is feasible.

Option 2:

A second option available to eliminate duplication of State and county financial assurance requirements would be to establish a joint powers agreement. The joint powers agreement would address conducting timely closure action at a site. It would outline specific actions that would need to be conducted by the State and involved county at the time the facility is closing. Under this agreement, both the State and county would have access to the financial assurance mechanism.

One concern staff have identified in using a joint powers agreement is that, in order to enact a joint powers agreement, extensive negotiations would be needed. These negotiations would include agreement by both the State and the county of the specific actions to be conducted at the facility if facility closure was not done in compliance with waste tire management rules. This has the potential to be very resource intensive because it could occur with each of the counties and possibly local units of

government. Also, there would be no guarantee that an agreement could be reached.

A second concern staff have is that the financial assurance requirements are divided into two phases. Phase one applies to facilities within 90 days of the effective date of the rules. Phase two applies two years after the effective date of the rules. Each phase provides different time requirements for new and old waste tires regarding the submittal of the financial assurance mechanism and the amount of the mechanism. Because of this situation, two joint powers agreements could potentially be developed for each county. This system would create an administrative burden.

Option 3:

A third option that could be used to prevent duplication of State and county financial assurance requirements would be for the MPCA by rule to accept a county held financial assurance mechanism that meets or exceeds the financial assurance provisions of the State rules to satisfy the State financial assurance requirements. For an existing facility that already has an effective county held financial mechanism, it may be necessary to upgrade the amount of the financial mechanism or to specify that the mechanism is to be used to cover closure costs, in order to comply with the financial assurance provisions of the State rules. The owner or operator of the facility would have to submit a copy of the mechanism to the director within the time requirements established by rule.

If a county has adopted an ordinance that embodies or is more restrictive than MPCA rules for waste tire management, staff believe that use of a county held financial mechanism is acceptable to satisfy the State's requirements and could be substituted for a State held mechanism. Even though waste tire facilities may provide service regionally or statewide, there may be certain advantages to having the county hold the financial mechanism. For example, the county could include provisions which address local concerns such as providing service or meeting certain performance requirements. Meanwhile, the MPCA could concentrate regulatory activities in counties where there are no waste tire management ordinances.

One concern MPCA staff has with this approach is State access to the financial mechanism in case a county failed to take action. Therefore, staff would propose to have the financial mechanism drafted with language that will allow the MPCA to gain control of the mechanism if the county fails to enforce the ordinance within a specified period of time. The financial mechanism would also be written so that both the county and the State are notified if a change in the status of the mechanism occurs. The

only time the MPCA would not accept a county held financial mechanism that meets or exceeds the financial assurance provisions of the State rules to satisfy the State financial assurance requirements would be if the county is the owner or operator of a waste tire facility. Under these circumstances, the MPCA would be named as the beneficiary of the financial mechanism.

Option 4:

A fourth option available to eliminate duplication of State and county financial assurance requirements would be for the MPCA to issue a variance to its rules when it is assured adequate financial assurance is held by the county. Variances are governed according to Minn. Stat. § 116.07, subd. 5. The burden of proof would be on the tire collector or processor to demonstrate that the MPCA rules cause undue hardship. A variance requires Board action, public notice and opportunity for hearing.

Staff believe option three to be the optimum solution available to prevent duplication of State and county financial assurance requirements. Therefore, staff recommend allowing a county held financial mechanism that meets or exceeds the financial assurance provisions of the State rules to satisfy the State financial assurance requirements.

Staff believe this memorandum addresses the main issues that were discussed at the committee meeting on August 25, 1986. Staff hope to resolve these issues at the committee meeting and present the waste tire permit rules to the MPCA Board in December to request approval to initiate the rulemaking process.

BLS:rw

cc: MPCA Board Members
Ruth Gross, MPCA Board Secretary

Exhibit 12

SF-00006-05 (4/86)

STATE OF MINNESOTA

Office Memorandum

DEPARTMENT : POLLUTION CONTROL AGENCY

DATE : February 17, 1987

TO : SOLID AND HAZARDOUS WASTE COMMITTEE MEMBERS/MPCA BOARD

FROM : Richard A. Svanda
Director
Solid and Hazardous Waste Division

PHONE : 296-7282

SUBJECT : WASTE TIRE PERMIT RULES
FEBRUARY 23, 1987 COMMITTEE MEETING

Background:

Minn. Stat. § 115A.914, subd. 1 requires that the Minnesota Pollution Control Agency (MPCA) adopt rules for administration of waste tire collector and processor permits. MPCA staff has developed final draft rules for these purposes. On October 27, 1986, staff presented to the Solid and Hazardous Waste Committee the comments received from the August 1986 committee meeting. A summary of these comments appears in the October 21, 1986 memorandum to the Solid and Hazardous Waste Committee. Staff believes that all issues raised at the August 1986 Solid and Hazardous Waste Committee meeting and at the previous meetings have been addressed and resolved to the satisfaction of all interested parties.

During the October 27, 1986 Solid and Hazardous Waste Committee meeting, staff presented for discussion the only issue remaining on permit rule development. The issue concerned the potential for duplication of State and county financial assurance requirements. As was discussed at the meeting, staff investigated this issue and discovered there were four options available to use if State and county financial assurance requirements are duplicated. (See the October 21, 1986 memorandum to the Solid and Hazardous Waste Committee.) Staff recommended the following option: the MPCA could by rule accept a county-held financial assurance mechanism that meets or exceeds the financial assurance provisions of the State rules to satisfy the State financial assurance requirements. For an existing waste tire facility that already has an effective county-held financial assurance mechanism, it may be necessary to upgrade the amount of the financial assurance mechanism or to specify that the mechanism is to be used to cover closure costs, in order to comply with the financial assurance provisions of the State rules. The owner or operator of the facility would have to submit an originally-signed duplicate of the mechanism to the director within the time requirements established by rule. This option is only available if the county in question has adopted an ordinance that embodies or is more restrictive than MPCA rules for waste tire management as required by Minn. Stat. § 115A.914, subd. 2.

One concern staff had with this approach was State access to the financial assurance mechanism in the case where a county failed to take action. Therefore, staff proposed to draft the rules to require that the financial assurance mechanism allow the MPCA to gain control of the mechanism if the county fails to gain access to the funds within a specified period of time. The financial assurance mechanism would also be written so that both the county and the State are notified if a change in the status of the mechanism occurs.

The only time the MPCA would not accept a county-held financial mechanism that meets or exceeds the financial assurance provisions of the State rules would be if the county is the owner or operator of a waste tire facility. Under these circumstances, the MPCA would be named as the beneficiary of the financial mechanism.

During the October committee meeting, concern with the staff's recommended financial assurance approach discussed above was expressed. This concern related to the MPCA being named as the beneficiary of a financial mechanism where a county is the owner or operator of a waste tire facility. Particularly, the question was raised if it would be possible for a county to deposit money in a dedicated fund rather than establish a financial assurance mechanism to meet the State financial assurance requirements. Staff expressed that it is necessary for a county who is the owner or operator of a waste tire facility to submit a financial assurance mechanism with the MPCA named as the beneficiary to meet the financial assurance provisions of the State's rules for the following reasons.

First, it is possible for a county board of commissioners to set up a dedicated fund. This fund could contain money to be used for closure of a waste tire facility. However, it is also possible that a formal action by a "future county board" could dissolve this dedicated fund making the money available for other uses that the county board deems appropriate. Legally, comments have been made by several attorneys that they do not believe there is any way that a county board can encumber reserved funds so that a future board is bound by the current decision. Therefore, there is no guarantee that money would be available for closure of the facility. Since financial assurance is required to ensure that funds are available when they are needed, staff expressed that allowing a county to set up a dedicated fund will not ensure that money is reserved for closure.

Second, if a county board set up a dedicated fund, the question was raised what the MPCA could do if the dedicated fund was dissolved.

If a dedicated fund was dissolved, the county would be in violation of State financial assurance requirements, and it would be possible for the MPCA to revoke the permit for the waste tire facility. It would also be possible for MPCA staff to work with the county to set up a new dedicated fund. Either response by the MPCA would create an administrative process when it could have been avoided.

The final question that was raised was how concerned the MPCA should be if a dedicated fund was dissolved. After all, county governments are unlikely to become bankrupt, and they do not have the potential to escape their responsibilities like a private firm. However, this argument considers the issue from an ideal perspective and ignores some troublesome realities. There are many factors that affect a county government's revenue-earning potential, one of these being the political attitude of taxpayers. Therefore, county government's tax powers are limited. Even though the budget and revenue constraints county governments face differ in nature from the private firm's constraints, cost and income concerns still place strong limits on what county governments can do. This means that a county government permittee could also prove unable or unwilling to finance the costs of closure when it is needed. While the MPCA does not presume county negligence, the system that the MPCA is proposing will encourage all parties to meet their responsibilities. In this matter, the costs for proper closure are borne by all users of the facility, and not just county residents if money is needed after a facility closes. When there is a future obligation to pay, as in the county permittee's obligation to pay for closure care, custom and standard business practice require the person undertaking the obligation to provide more than just his potential ability to pay the debt.

For these reasons, staff expressed that it is necessary to require a county who owns or operates a waste tire facility to submit a financial assurance mechanism with the MPCA named as the beneficiary to ensure that money is available, when needed, to close the facility.

The two county solid waste officers (Anoka and Hennepin Counties) attending the meeting then provided input in support of staff's recommended approach. Following the discussion, the committee agreed with the staff recommendation and directed staff to draft financial assurance language governing this approach.

The overall development of the waste tire permit rules was also discussed at the October 1986 meeting. The committee directed staff to redraft the waste tire permit rules to incorporate the changes that have been agreed to during the past year for presentation to the committee.

Discussion:

A copy of the entire set of draft waste tire collector and processor permit rules is attached to this memorandum and will be available for public review at the February 23, 1987 committee meeting. This set of draft rules includes the waste tire facility and transporter permit requirements and the waste tire facility technical standards, which contain the financial assurance requirements. The rules also contain the standards with which a waste tire generator must comply.

While the draft rules reflect all changes that have been agreed to by the committee during rule development, the draft rules also include one major change made by staff as a result of further analysis of the interaction between the waste tire permit and abatement programs. The following is a discussion of the change followed by staff's justification.

The permit rules previously provided the following financial assurance requirements. Financial assurance requirements were divided into two phases. Phase one applied to facilities within 90 days of the effective date of the rules. Phase two applied two years after the effective date of the rules. Each phase provides different time requirements for new and old waste tires regarding the submittal of the financial assurance mechanism and the amount of the mechanism. The distinction was made in the rules between new and old waste tires because owners/operators of facilities that have old waste tires may be eligible to receive reimbursement costs associated with cleanup of the site. The rules stated that when owners/operators of existing facilities are determining the dollar amount of the financial assurance mechanism under phase two, the amount of financial assurance required would be the difference between the cost associated with closure of the facility and the reimbursement amount available to clean up the old waste tires as specified in the waste tire abatement rules. The reimbursement is only available for tires existing in tire dumps before November 21, 1985 for which the owners/operators submitted written notification to the MPCA as required under the abatement rules - Minn. Rules pt. 7035.8030 [Emergency].

Under this financial assurance scenario, the MPCA would be issuing a permit for an entire site which includes the old waste tires eligible for the partial reimbursement. It was thought that once a permitted site became an MPCA priority for cleanup and the MPCA took formal abatement action at the site, the owner/operator would be required to clean up the old waste tires and be partially reimbursed by the MPCA. All of the waste tires remaining at the site which are not eligible for reimbursement would continue to be governed by the terms of the Agency permit.

However, staff has received a legal opinion stating that this type of permit/abatement process conflicts with MPCA authority under Minn. Stat. § 115A.906 (1984). Minn. Stat. § 115A.906 (1984) provides the MPCA with the authority to abate tire dumps. Minn. Stat. § 115A.90, subd. 9 (1984) defines a tire dump as, ". . . an establishment, site, or place of business without a required tire collector or tire processor permit. . . ." (Emphasis added.) Since the permit/abatement scenario stated above provides a permit for an entire site which includes the old waste tires eligible for reimbursement, the MPCA could not take abatement action at these permitted sites, and owners/operators could not receive reimbursement for the cleanup of their old waste tires.

Therefore, staff has amended the rules to provide the following permit and financial assurance requirements. The rules now provide that all waste tires at existing sites are considered tire dumps and will be cleaned up under the terms of the MPCA's abatement program. Therefore, the MPCA would not issue a permit for the old waste tires. Owners/operators would be required to apply for a permit for waste tires accumulated at their sites after November 21, 1985.

The financial assurance requirements are still divided into two phases. Phase one is now required by July 1, 1988. The amount of the financial assurance mechanism is the closure cost for waste tires accumulated at a facility since the effective date of the permit rules and for waste tires expected to be accumulated at the facility between July 1, 1988 and July 1, 1990. Phase two is now required by July 1, 1990. The amount of financial assurance is the closure cost for the maximum number of waste tires expected to be accumulated at a facility since November 21, 1985.

Also, since a permit no longer covers old waste tires, owners/operators do not factor in their eligible reimbursement amount when determining the dollar amount of the financial assurance mechanism under phase two as required previously. The rules now provide that the amount of the financial assurance mechanism will be the cost associated with closure of the permitted facility which covers waste tires received after November 21, 1985. No financial assurance is required for old waste tires.

Staff believes that the change made to the rules provides a more reasonable approach than the previous one for the following reasons. First, the MPCA has statutory authority to implement this type of permit/abatement scenario, whereas the previous scenario conflicted with statutory authority as discussed earlier. Second, this system better meets, what staff believes are, the directives of the waste tire program. Staff believes that the MPCA is mandated to abate existing tire dumps in a timely manner through the waste tire abatement program and to regulate the on-going generation of waste tires through the waste tire permit program. The change provides a clear distinction between the two programs and allows the MPCA to abate tire dumps in a timely manner. The waste tire abatement program is designed to address the cleanup of tire dumps in a timely manner; therefore it is appropriate to require tire dumps be regulated under that program. The waste tire permit program is designed to address the ongoing regulation of operating waste tire facilities. As such, the permit program is not designed to address the cleanup of tire dumps and does not provide procedures for such actions. Therefore, it is reasonable to make a clear distinction between the two programs. Third, the change provides a scenario which is equitable to tire dump owners/operators. The abatement rules provide a partial reimbursement for cleanup of waste tires existing before November 21, 1985 for which a proper notification was submitted. By requiring owners/operators of waste tire facilities to get a permit for the old waste tires eligible for reimbursement, the owners/operators would be forfeiting their right to receive reimbursement funds for cleanup of the old waste tires as required under the terms of a permit. Therefore, this approach is not reasonable. The change, however, provides that the old waste tires will be cleaned up under the terms of the MPCA's abatement program. Under this scenario, owners/operators of tire dumps will not be forfeiting their right to receive reimbursement funds.

Recommendation:

Staff believes the attached draft rules governing waste tire permits are reasonable. Staff has developed the permit rules with considerable input from interested and affected parties, county government, and the MPCA Board Solid and Hazardous Waste Committee. Staff believes all issues of concern have been addressed in the draft rules. Therefore, staff recommends the attached draft waste tire permit rules be presented to the Board at its March 24, 1987 meeting.

RAS:rw

Attachment

cc: MPCA Board Members
Ruth Gross, MPCA Board Secretary

Exhibit 13

THE ASSOCIATION OF ARTIFICIAL CONTAINERS AND LACROSSE ENCEPHALITIS CASES IN MINNESOTA, 1979

C. W. HEDBERG,[1] J. W. WASHBURN AND R. D. SJOGREN[2]

Division of Disease Prevention and Control
Minnesota Department of Health, Minneapolis, MN 55440

Larvae of *Aedes triseriatus* (Say), the vector of LaCrosse (LAC) encephalitis, develop in discarded automobile tires and other containers in addition to tree holes (Thompson et al. 1972, Watts et al. 1974, Balfour et al. 1975). The importance of these containers in the etiology of LAC encephalitis has been documented (Parry et al. 1983).

LaCrosse encephalitis occurs in southeastern Minnesota. The endemic zone includes counties bordering Wisconsin up to the metropolitan area surrounding Minneapolis and St. Paul and includes portions of Hennepin and adjacent counties south and west of Minneapolis (Balfour et al. 1976). This note reports results of investigations of the association of artificial containers and reported cases of LAC encephalitis in MN during 1979.

Physicians and hospitals in southeastern Minnesota were notified and requested to report suspect LAC encephalitis cases to the Minnesota Department of Health (MDH) and to submit acute and convalescent serum specimens for confirmation. Acute sera were screened for antibody to LAC virus by counter immune electrophoresis (CIE) by the University of Minnesota Hospitals Virology Laboratory (Balfour et al. 1973). Paired sera were tested for hemagglutination-inhibition (HI) antibody at MDH (U.S.D.H.E.W. 1969). Positive test results were telephoned to physicians. Permission was then obtained to interview the patient's family. Information was collected on the patient, the patient's residence, and history of travel to wooded areas where exposure to *Ae. triseriatus* may have occurred within 3 wk of onset. Investigators from the Metropolitan Mosquito Control District (MMCD) made follow-up inspection visits to residences in the metropolitan area. Inspections in other areas were performed by MDH staff.

The areas surrounding case residences were examined for the presence of artificial containers. Searches were conducted in the immediate vicinity of the residence, along the fringe of nearby wood lots, and along regularly used pathways and play areas. Mosquito larvae were collected from containers and identified by field personnel. Samples of field-collected specimens were identified at MMCD (Siverly 1972). No attempt was made to isolate virus from any specimens.

Results of the investigations are summarized in Table 1. Interviews and site surveys were completed for 22 cases confirmed by a fourfold or greater rise in HI antibody titer and 12 cases presumed due to LAC virus based on a positive CIE test and an HI titer ≥ 1:80 (8 cases) or a positive CIE test alone (4 cases). Investigations were completed between July 25 and October 2. Investigations were not attempted on four confirmed and seven presumed cases reported after October 2. Some type of artificial container was found near the residence of 32 (94%) cases. *Aedes triseriatus* larvae were collected from tires (15 cases), metal containers (5 cases), plastic containers (4 cases) and a fiberglass water trough (2 cases). *Culex restuans* larvae alone were collected from containers associated with seven (21%) cases.

Table 1. Results of follow-up investigations on 34 cases of LaCrosse encephalitis, by source of exposure, Minnesota, 1979

Presumed source of exposure[1]	No. containers present	No. mosquito larvae present	*Culex restuans* larvae present	*Aedes triseriatus* larvae present	Total cases investigated
Residence	1 (6%)	1 (6%)	2 (12%)	14 (78%)	18
Other	1 (6%)	5 (31%)	5 (31%)	5 (31%)	16
Total	2 (6%)	6 (18%)	7 (21%)	19 (56%)	34

[1] Source of exposure presumed due to residence if patient had no exposure to *Aedes triseriatus* habitats other than around residence within three weeks of onset of symptoms. Other exposures include camping in or visiting wooded areas in Southeastern Minnesota or Wisconsin.

[2] *Culex restuans* larvae present in the absence of *Aedes triseriatus*. *Culex restuans* were also collected from some containers with *Aedes triseriatus* present.

The association between the presence of *Ae. triseriatus* larvae in containers and a history of exposure near the residence is presented in Table 2. *Aedes triseriatus* larvae were collected

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Table 2. Association between residential exposure and presence of *Aedes triseriatus* larvae in containers.

Exposure[1]	Present	Absent	Totals
Residence	14	4	18
Other	5	11	16
Totals	19	15	34

Chi-square with Yates correction for continuity = 5.67, $p < 0.02$

[1] Source of exposure presumed due to residence if patient had no exposure to *Aedes triseriatus* habitats other than around residence within three weeks of onset of symptoms. Other exposures include camping in or visiting wooded areas in Southeastern Minnesota or Wisconsin.

from containers associated with 14 (78%) of 18 cases with no history of travel beyond the neighborhood of the residence. Conversely, *Ae. triseriatus* larvae were collected from containers associated with only 5 (31%) of 16 cases who reported camping in or visiting wooded areas in southeastern Minnesota or Wisconsin within 3 wk of symptoms onset. The increased likelihood of finding artificial containers around the residences of cases who had not traveled beyond the neighborhood of the residence was significant (chi-square with Yates correction for continuity = 5.67, $p < 0.02$) (Bahn 1972). These data suggest that artificial containers may have increased the patient's risk of exposure to LAC encephalitis. These data also support work from LaCrosse, Wisconsin (Parry et al. 1983) which earlier incriminated old tires as *Ae. triseriatus* habitation around case residences in that community.

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A COMPARISON OF FEMALE *CULISETA MELANURA* CAPTURED IN NEW JERSEY AND CDC LIGHT TRAPS IN SOUTHEASTERN MASSACHUSETTS

B. M. MATSUMOTO[1] AND H. K. MAXFIELD[2]

Light traps have been used extensively in conducting surveys and for monitoring mosquito populations. Two traps commonly used are the New Jersey (Mulhern 1942), and the CDC (Sudia and Chamberlain 1962) light traps. Trap attractiveness varies according to the mosquito community and environmental conditions (Service 1976).

This study compares the numbers of female *Culiseta melanura* (Coq.) captured in concurrently set, battery-operated New Jersey and CDC light traps. *Culiseta melanura* was selected because it is the primary vector of Eastern equine encephalitis virus and is the principal species monitored in an ongoing disease surveillance program (Grady et al. 1978). This investigation was conducted because there is currently no literature available utilizing our method of comparative trapping of this species.

Three areas in southeastern Massachusetts were sampled. 1) Pine Swamp, located in the town of Raynham, 2) Hockomock Swamp, town of Easton, and 3) Maxim's Orchard, town of Lakeville. Pine Swamp and Hockomock Swamp are freshwater swamps with dominant trees including red maple, *Acer rubrum* L., and white cedar, *Chamaecyparis thyoides* (L.) B. S. P. Maxim's Orchard is bordered on a river bottom and red maple trees dominated. In each area,

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Here was a virus that spent the winter nestled in mosquito eggs, as safe as in any good lab freezer.

Exhibit 14

SCIENCE 84

The tire trap

Living in a society that discards almost as much as it consumes, Americans take a lot of rubbish for granted —including used tires. Each year they discard about 200 million tires, and there is virtually no way to get rid of them. Burning them produces noxious fumes. Buried in landfills, they eerily rise to the surface. In some cases, they can be frozen with liquid nitrogen, smashed into little pieces, and used to make asphalt. "But that isn't too practical for steel-belted radials," notes researcher Barry Beaty.

Unfortunately for Americans, mosquitoes do not take tires for granted. They take them for homes. Scientists would be hard pressed to design a better breeding chamber for mosquitoes—and disease.

The larvae of *Aedes triseriatus*, the mosquito that infects young children with La Crosse encephalitis virus, thrive in old tires. The tires retain water nicely and fill up with the kind of nutrient-rich debris that larvae voraciously devour. By some estimates, the mosquitoes that hatch in tires are larger, live longer, and emerge as much as four weeks earlier than adults that hatch in tree holes. Some 4,867 larvae—and 12 separate isolates—were harvested from a single tire found outside Chardon, Ohio, near Cleveland.

The danger of such situations is borne out by fieldwork by the Vector-Borne Disease Unit of Ohio's department of health; in Ohio there have been 558 cases of La Crosse encephalitis—and five fatalities—since 1963. Follow-up studies on 69 diagnosed cases in 1981-82 showed that tires were present in 72.5 percent of the cases and were considered the "predominant source" of *A. triseriatus* 54 percent of the time.

Statistics linking old tires to cases of encephalitis are confirmed by haunting personal anecdotes. A 1983 case in Perry County, Ohio, for example, occurred at the rural home of a man who was in the business of recycling tires. Public health investigators found hundreds of tires, and large numbers of *A. triseriatus* mosquitoes, at the site. The victim: the man's two-year-old daughter. A puzzling 1977 case in a suburb of Milwaukee, well outside the endemic area, made sense when it was found that a neighbor of the victim had previously lived in a rural area north of La Crosse—and had hauled old tires along to Milwaukee when he relocated.

Researchers are terrified by the implications of that last case and others like it. "The capacity for spread of this disease is enormous," says George B. Craig Jr. of Notre Dame. "Old tires get shipped all around the country, and the mosquitoes inside the tires get shipped, too." Ohio health officials are concerned that two mosquitoes not normally found in Ohio, *A. aegypti*, vector of both yellow fever and dengue, and *A. atropalpus*, have turned up in the state in the last 10 years—apparently via tires.

In La Crosse, where it all began, an ambitious mosquito control program was initiated in 1978. Health officials systematically eliminated breeding sites—filled in tree holes, removed tires. According to pediatrician Cameron Gundersen of the Gundersen Clinic-La Crosse Lutheran Hospital, no new cases have turned up in La Crosse County in two years.

But as long as surplus tires lie around, the worry remains. "It's been thought that La Crosse is a sylvan disease, where a young boy would go into a woodlot, play in his treehouse, and get bitten by a mosquito," says Craig. "I think that's probably a minority of the cases. It isn't tree holes. It's the tires!"

—S.H.

dismissed as an aberration. This time the scientists duplicated the results to be sure about what they had found. Once it was clear that the virus could get into larvae, the Madison team had to demonstrate how. The task fell to a team led by graduate student Douglas M. Watts, who in 1973 made what many regard to be the landmark discovery in the entire saga. He demonstrated that a laboratory-infected female mosquito could lay virus-carrying eggs that in turn produced infected and infectious offspring. In other words, the mosquitoes could, loosely speaking, *inherit* the virus through a mechanism known as transovarial transmission.

It is difficult to convey just how important this discovery was—not only to the Madison group but to researchers all over the world studying other arboviral diseases. Here was a virus that in effect stowed away in mosquito eggs. The egg was an ingenious vehicle for spreading into the next generation, and it was also a good place to hide during the cold-weather period when mosquitoes are absent. The following year Watts' group went on to suggest that La Crosse virus indeed survived those frigid Wisconsin winters nestled inside *A. triseriatus* eggs, as safe as in the freezer of any good virology lab.

A. triseriatus lays its eggs—black, oblong, tough-skinned—just above the waterline in tree holes and, with increasing and alarming frequency, in abandoned tires and other water collecting refuse (see box). There is a switch inside those eggs—a mechanism called diapause—that automatically induces a period of dormancy at a certain time of the year. "Inside each egg is a clock," says George Craig, head of Notre Dame's Vector Biology Laboratory, "and that clock knows the difference between a 15-hour, 30-minute day and a 16-hour day. Once the days start to get short, the clock turns off until the spring. It's a miraculous mechanism. How in the hell does an egg know what time it is?" That is a question entomologists are still at a loss to explain.

It remained for Wayne Thompson

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Columbus, OH 43224
Attn: Mary Wiard

Ohio Environmental Protection Agency
361 East Broad Street
Columbus, OH 43216
Attn: C. Redman

Ohio International Trade
30 East Broad Street
Columbus, OH 43216
Attn: Jack Johnston

Olmsted County Sanitary
Landfill
Public Works Department
Rochester, MN 55904
Attn: Chuck Michaels

Olson, Russell
Rural Route 5, Box 100A
Montevideo, MN 56265

OMI
900 Rockmend Drive, #140
Kingwood, TX 77339
Attn: D. H. Graham

Oregon DEQ
Post Office Box 1760
Portland, OR 97207
Attn: Robert Brown

Oslo Auto Salvage
Route 2, Box 117
Hayfield, Minnesota 55940
Attn: Kim Ibach

Otis, Henry F.
5100 Minnehaha Avenue
Minneapolis, Minnesota 55417

Ouies, Melvin
Itasca Star Route
Park Rapids, Minnesota 56470

Owens, Illinois
3900 State Highway 101
Shakopee, MN 55379
Attn: Tim Hoover

Pack, Rick
Rural Route 1, Box 92
Walnut Grove, MN 56180

Peabody Processing Systems
201 Merritt
7 Corporate Park
Norwalk, CT 06852
Attn: G. Cranston

Peck, Linda
12299 Sauk River Road
St. Cloud, MN 56301

Pennsylvania Bureau of Waste Mgmt.
3rd and Locust Streets
Fulton Bank Building, 7th floor
Harrisburg, PA 17120
Attn: Ron Hassinger

Peterson's Anoka Tire, Inc.
2280 East Main
Anoka, MN 55303
Attn: Tim

Pickands Mather
200 West Superior Street, #811
Duluth, MN 55802
Attn: Chuck Hoffman

Pilquist, James
2910 Quant Avenue
Stillwater, MN 55082

Pine Bend Sanitary Landfill
2495 East 117th Street
Inver Grove Heights, MN 55075

Pine Lane Landfill
Chisago City
Minnesota 55013

Pine Ridge Service
Highway 2 West
Bemidji, Minnesota 56601

Ponderosa Landfill
Route 1, Box 256B
Mankato, MN 56001
Attn: Mark Weimert

Poor Richards, Inc.
400 Whitall Street
St. Paul, MN 55101
Attn: Dick Wybierala

Poppel, Ed
Rural Route
Wolverton, Minnesota 56594

Possible Recycle Program
66 Windsor Ct.
New Brighton, MN 55112
Attn: Richard Werner

Post, Buckley, Schuh and Jernigan
801 N. Magnolia Ave, #201
Orlando, FL 32803
Attn: Tamir Ilan

Powell, Clifford
Rural Route 2, Box 310
South Haven, Minnesota 55382

PTL Tire Service
15330 N.E. Highway 65
Ham Lake, MN 55304
Attn: Monte Niemi

Quade, Art Jr.
Route 1
Brooten, MN 56316

Quade, Warren
Construction Supply Co.
P.O. Box 67
St. Paul Park, MN 55071

R. W. Beck and Associates
660 Bannock Street
Denver, CO 80204
Attn: Ivan Clark

Radial Retreads, Inc.
Post Office Box 647
West Concord, Minnesota 55985
Attn: Charles Benson

Rasmussen, Doug
Route 1
Hancock, MN 56244

Ray's Service
Highway 56
Randolph, MN 55065
Attn: Raymond Chester

Renville County Sanitary Landfill
Courthouse
Olivia, MN 56277
Attn: K. Halliday/Doug Knutson

Reserve Mining Company
10 Outer Drive
Silver Bay, Minnesota 55614
Attn: D. E. Carlson

Resource Recovery Report
2318 - 18th Street Northwest
Washington, D.C. 20009
Attn: Mary Sikora

Resource Recycling
1615 Northwest 23rd, #1
Portland, OR 97210
Attn: Jerry Powell

Resource Technology Corporation
20480 Pacifica Drive, Suite G
Cupertino, California 95014
Attn: Ron Kinsley

Reuther, Bettie
14041 Crosstown Boulevard, Northwest
Andover, MN 55304

Revier Firestone Store
1104 East Bridge
Redwood Falls, Minnesota 56283
Attn: Gary B. Revier, President

Richmond Sanitary Service
205 41st Street
Richmond, CA 94805
Attn: Larry Burch

Rivard's Service Station and Oil Company
Post Office Box 186
Taylor's Falls, Minnesota 55084
Attn: Ray Rivard

Rock County Sanitary
Landfill
Post Office Box 308
Luverne, MN 56156
Attn: Arnold Johnson

Roller, Inc.
Box 5144
Grand Forks, ND 58206
Attn: Lloyd Lerfald

Romundstad, Tom
23 Shady Lane
Duluth, MN 55811

Royal Tire, Inc.
Rural Route 3
County Road 75
St. Cloud, MN 56301
Attn: Don Dean

Rubber Manufacturers Assoc.
1400 K Street, N.W.
Washington, D.C. 20005
Attn: Frank Ryan

Rubber Research Elastomerics, Inc.
4500 Main Street, Northeast
Minneapolis, MN 55421
Attn: F. John Stark, III

San Antonio - Clean
and Beautiful, Inc.
6802 Culebra
San Antonio, TX 78238
Attn: Bonita C. Turner

Saterbak, Dave
Route 2, Box 267
Princeton, MN 55371

Schuette, Dennis
Route 1
Big Lake, MN 55309

Schultz, Donald R.
57 South Drive
Babbitt, MN 55706

Schwandt Sanitary Landfill
Route 2
Paynesville, MN 56362

Sciota Township Planning Committee
Route 1, Box 61
Northfield, MN 55057
Attn: John Brogger

SCS Engineers
211 Grandview Drive
Covington, KY 41017
Attn: Tony Dipuico

Semcac Inc.
P.O. Box 549
Rushford, MN 55971
Attn: Mike Maher

Senate Counsel
480 Capitol Bldg.
Aurora Avenue
St. Paul, MN 55155
Attn: Mark J. Hanson

Shearer, Kirk
1001 - 44th Street, Southeast
Cedar Rapids, Iowa 52403

Sheldon's Auto Parts
Rural Route 6
Box 290
Thief River Falls, MN 56701

Shores, Bernice E.
Star Route, Box 141
Detroit Lakes, Minnesota 56501

Shred-Tech Sales
Box 547
Latham, NY 12110
Attn: Ed Monsoor

Sibley County Zoning Administrator
Post Office Box 44
Gaylord, MN 55334
Attn: Orlin Grack

Small Farms Action Group
721 K Street
Lincoln, Nebraska 68508
Attn: Steve Burdic

Smith, Vernon
Route 2, Box 152
Braham, MN 55006

Smude, Alex Jr.
Route 4, Box 149
Brainerd, Minnesota 56401

Soring, Eleanor R.
Box 79
Warba, Minnesota 55793

Southwest Development Commission
2524 Broadway Ave.
Slayton, MN 56172
Attn: Annette Bair

Special Commission on Solid
and Hazardous Waste
State House, #489
Boston, MA 02213
Attn: Sarah Hooke

Spring Valley Star Cities
Development Corporation
101 North Broadway
Spring Valley, Minnesota 55975
Attn: Keith A. Hagen, Sec.-Treas.

St. Cloud Conversion Corporation
670 North Highway 10
St. Cloud, MN 56301
Attn: David Mehrenberg

St. Louis County Attorney
St. Louis County Courthouse, #501
100 N. 5th Ave. W.
Duluth, MN 55802
Attn: Alan Mitchell

State Fire Marshal Division
289 East 5th Street
St. Paul, MN 55101
Attn: Raymond Geffre

Stan and Gene's Auto Salvage
Route 2
Pine City, MN 55063
Attn: Les

Steele County Sanitary Landfill
Courthouse
590 Dunnell Drive, Box 890
Owatonna, MN 55060
Attn: Scott Golberg

Sterner Industries, Inc.
421 6th Street South
Winsted, MN 55395
Attn: Gerald J. Sterner

Stewart and Walker, Inc.
15th Street and Bemidji Avenue
Bemidji, Minnesota 56601
Attn: Mark Stromberg

Stolson, Roger
2710 Pacific Street
Mpls., MN 55411

Sward, Gary
2245 Knoll Drive
New Brighton, MN 55112

T and D Resources, Inc.
Post Office Box 7625
Louisville, KY 40207
Attn: Ted Ross

Tellijohn Landfill Services
Post Office Box 1671
LeSueur, MN 56058
Attn: Tom Tellijohn

Tim's Truck, Tractor, and Tire Company
209 America Avenue
Bemidji, Minnesota 56601
attn: Lowell Bjella

Timm's Auto Salvage
Route 3, Box 75
St. Charles, Minnesota 55972
Attn: Dean Bockenhauer

Tire Recycling Systems
5410 Bellvue
Detroit, MI 48211
Attn: Charlie Palaian

TNT Contractors
P.O. Box C
Proctor, MN 55810
Attn: Leslie Tomporowski

Tobin, Renee
Director of Economic Development
and Planning
33 Northwest 2nd Street
Ortonville, MN 56278

Todd County/Department of Highways
Route 4, Box 5
Long Prairie, Minnesota 56347
Attn: Duane G. Lorsung

Tonson Corporation
P.O. Box 65
Andover, MN 55303

Town and Country Tire Center
Box 294
Clinton, Minnesota 56225
Attn: Charles Brandt

Town and Kountry Sanitation Co.
Box 443
Cold Spring, MN 56320
Attn: Thom Kraemer

Treadway Tire Company
Post Office Box 456
Mankato, MN 56002
Attn: Craig Natvig

Tyr-Electric Corp.
4309 Vist De Lago Way
Fair Oaks, CA 95628
Attn: O. James Pardau

U.S. EPA, M/S
1200 - 6th Avenue
Seattle, WA 98101
Attn: Mark Hooper

U.S. EPA, Waste Management Branch
230 South Dearborn Street
Chicago, IL 60604
Attn: Ken Westlake

U.S. Steel Corporation
Minntac
Post Office 417
Mountain Iron, MN 55768
Attn: Jon Christofferson

Universal Cooperatives, Inc.
P.O. Box 460
7801 Metro Parkway
Mpls., MN 55440
Attn: Robert Trevis

University of Minnesota
Min Tap, Health Services
163 Bowynton
Minneapolis, MN 55455
Attn: Cindy McCombs

Vacuum America
Post Office Box 574
2032 W. Goodhope Road
Lannon, WI 53046
Attn: Duncan Johnstone

Van Roekel, Larry
Route 1, Box 41
Hillman, Minnesota 56338

VanWestern, Gene
Rural Route 1
Round Lake, MN 56167

Vermont Dept. of Water Resources
State Office Building
Montpelier, Vermont 05602
Attn: John Malter

Vernon Resource Systems
Post Office Box 271
Middleboro, MA 02346
Attn: Mark Mattos

Viking Auto Salvage
Route 2, Highway 3 North
Northfield, MN 55057
Attn: Buford/Tony Faust

Voss, Marvin
Post Office Box 86
Belle Plaine, Minnesota 56011

Wadena Recappers
Highway 10 West
303 North Ash Avenue
Wadena, MN 56482
Attn: Doug Wright

Walsh, Robert
Route 1
Osakis, MN 56360

Washington County
Washington County Courthouse
2000 Industrial Boulevard
Stillwater, MN 55082
Attn: Eric Magee

Waste Age Magazine
1730 Rhode Island Ave. N.W., #1000
Washington, D.C. 20036
Attn: Tom Naber/Joe Salimando

Waste Management Administration
201 West Preston Street
Baltimore, MA 21201
Attn: Lawrence K. Leasner

Waste Management Inc.
12448 Pennsylvania Ave. S.
Savage, MN 55378
Attn: J. Gencauski

Waste Management Inc. of MN
West 124th North 8925 Boundry Road
Menominee, WI 53051
Attn: Jim O'Conner

Waste Management of Milwaukee
N96 West 13616 Countyline Road
Germantown, WI 53022
Attn: Walter Weissbach

Waste Recovery, Inc.
8501 North Borthwick
Portland, OR 97217
Attn: Mark Hope

Waste Systems Corporation
2110 Consul Street
Albert Lea, MN 56007
Attn: John Webb

Waste Tire Commission, Chairman
Box 568/607 East Howard
Hibbing, Mn 55746
Attn: Z. A. Valerie

Watson, Terry
1073 - 1st Avenue South
St. James, MN 56801

Watson, Wallace
23601 Ambassador Boulevard
St. Francis, MN 55070

Wawina Tire Disposal
County Road 25
Wawina, MN 55794
Attn: Nancy Drews

Wenkel, Herb
Blue Earth County
P.O. Box 3368
202 East Jackson Street
Mankato, MN 56001

West End Iron and Metal
1932 West Michigan Street, Box 6185
Duluth, MN 55806
Attn: Steven Jackson

West Virginia Department
of Natural Resources
1201 Greenbrier Street
Charleston, WV 25311
Attn: Robert D. Seip

Willmar State Hospital
North Highway 71
Willmar, MN 56201
Attn: Dave Smith

Winberg, Robert
Box 457
Buffalo, MN 55313

Winona County Sanitary
Landfill
Courthouse
Winona, MN 55987
Attn: Gene Mossing

Winslow, Bruce
325 South Main
Lonsdale, MN 55046

Wisconsin DNR
101 South Webster Street
Madison, WI 53707
Attn: John Reindel

Wisconsin DNR
2300 North Dr. King Drive
Milwaukee, WI 53212
Attn: Elizabeth Duchelle

Wisconsin DNR
1300 Clairemont Ave.
Box 4001
Eau Claire, WI 54702
Attn: Dave Lundberg

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Route 7, Box 537
Brainerd, MN 56401

Witte, Galen
Route 4, Box 227
Hutchinson, MN 55350

Wiyberg, Scott
Route 2, Box 80
Harris, Minnesota 55032

Worthington Tractor Salvage
Route 4, Highway 59/60 South
Worthington, Minnesota 56187
Attn: David Dyke/Allen Renstrom

Wyoming Dept. of Environmental Quality
Solid Waste - Herscheler Bldg.
122 West 25th Street
Cheyenne, WY 82002
Attn: Marjorie Knight

Young, Leonard
4038 Russell Avenue North
Minneapolis, MN 55412

Ziemann Recycling
Route 3, Box 261
Fairmont, Minnesota 56031
Attn: Dennis Ziemann

Charles Bonneville
Aitkin County Zoning Office
Aitkin, MN 56431

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Anoka County Health Dept.
County Courthouse/4th Floor
Anoka, MN 55303

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Becker County Engineer
County Courthouse
Detroit Lakes, MN 56501

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Beltrami County Courthouse, Box 248
Bemidji, MN 56601

Al Barthelemy
Benton County Zoning Office
County Courthouse
Foley, MN 56329

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Big Stone County Solid Waste Officer
County Courthouse, 437 N. Minnesota St.
Ortonville, MN 56278

Herb Wenkel
Blue Earth County Sanitarian
City Hall, 202 E. Jackson Street
Mankato, MN 56001

Charles Enter
Brown County Courthouse
Courthouse
New Ulm, MN 56073

Bruce E. Benson
Carlton County Zoning Office
County Courthouse
Carlton, MN 55718

Virginia Harris
Carver County Courthouse
600 E. 4th Street
Chaska, MN 55318

Kathy Bergmann
Cass County Solid Waste Officer
County Courthouse
Walker, MN 56484

Jerry Einerson
Chippewa County Soil Conser. Off.
County Courthouse, 11th St. and Washington Ave.
Montevideo, MN 56265

Gerald L. Peterson/M. Hensbeger
Chisago County SWD & Zoning Off.
County Courthouse, Box 202
Center City, MN 55012

John Cousins
Clay County Engineer
1300 15th Avenue North
Moorhead, MN 56560

Daniel R. Logelin
Clearwater County Sanitarian
Route 1, Box 20, County Courthouse
Bagley, MN 56621

Tim Kennedy
Sanitation and Zoning Adm.
Cook County Courthouse
Grand Marais, MN 55604

Merritt C. Petersen
Cottonwood County
1453 3rd Avenue
Windom, MN 56101

Carter Kuehn
Crow Wing County Zoning Adm.
County Courthouse
Brainerd, MN 56401

Dakota County Community Health Services
33 East Wentworth, #101
West St. Paul, Minnesota 55118

Cecil Samuelson
Dodge County Zoning Administrator
County Courthouse, Box 18
Mantorville, MN 55955

John Helgeson
Douglas County Assistant Zoning Adm.
County Courthouse
Alexandria, MN 56308

Hershel L. Koenig, P.E.
Faribault County Engineer
County Courthouse, P.O. Box 325
Blue Earth, MN 56013

Norman L. Craig/Vern Finnyseth
Zoning Administrator
Fillmore County Courthouse/Box 155
Preston, MN 55965

Richard Hoffman/Dick Johnson
Freeborn County Courthouse
411 S. Broadway
Albert Lea, MN 56007

Chuck Dornack
Goodhue County Zoning Administrator
County Courthouse
Red Wing, MN 55066

Jim Standish
Grant County Solid Waste Officer
County Courthouse
Elbow Lake, MN 56531

Edward Monteleone/Mark Zaban
Hennepin Co. Dept. of Environment & Energy
822 South Third Street, #300
Minneapolis, Minnesota 55415

Richard Frank
Houston County Solid Waste Officer
County Courthouse
Caledonia, MN 55921

Vern Massie
Hubbard County Zoning Administrator
County Courthouse
Park Rapids, MN 56470

George Rindelaub
Isanti County Solid Waste Officer
County Courthouse
Cambridge, MN 55008

Schuyler D. Mitchell
Itasca County Planning and
Zoning Office C/O Engrs. Office
County Courthouse
Grand Rapids, MN 55744

Dennis Hanselman
Jackson County Pollution Control
and Environmental Health Officer
P.O. Box 64
Jackson, MN 56143

Ronald Grace/Marvin Erickson
Kanabec County Board
County Courthouse
Mora, MN 55051

Denise Erickson
Kandiyohi County
County Courthouse, 1801 E. Litchfield Ave.
Willmar, MN 56201

Floyd Sanner
Kittson County Courthouse
Hallock, MN 56728

John Polkinghorne
Koochiching County Solid Waste Officer
County Courthouse
International Falls, MN 56649

Bob Holzhiemer
Lac Qui Parle County Engineer
County Courthouse
Madison, MN 56256

Alan Goodman
Solid Waste Officer
Lake County Courthouse, P.O. Box J
Two Harbors, MN 55616

Gary Lockner
Lake of the Woods County
County Courthouse, Route 1, Box 272B
Baudette, MN 56623

Brian Smith
Le Sueur County
Highway Department, Box 146
Le Center, MN 56057

Luke Haugen
Lincoln County Engineer
County Courthouse/P. O. Box 97
Ivanhoe, MN 56142

Michael Gort
Lyon County Environmental Administrator
607 West Main
Marshall, MN 56258

Edwin Homan
McLeod County Zoning Administrator
County Courthouse, 830 - 11th St. E.
Glencoe, MN 55336

Mark Diekman
Mahnomen County Solid Waste Officer
County Courthouse
Mahnomen, MN 56557

Charles Cheney
County Auditor
Marshall County Courthouse
Warren, MN 56762

Warren Shuros
Martin County Solid Waste Admin.
County Courthouse
Fairmont, MN 56031

Gordon Regenscheid
Meeker County Engineer
County Courthouse
Litchfield, MN 55355

Douglas Lien
Mille Lacs County Zoning Admin.
County Courthouse
635 Second St. S.E.
Milaca, MN 56353

Ken Paulson
Morrison County Landfill Board
Zoning Officer
County Courthouse, Admin. Bldg.
Little Falls, MN 56345

William Buckley
Mower County Sanitarian
County Courthouse
Austin, MN 55912

Claire Jerome/David Barth
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2516 - 27th Street
Slayton, MN 56172
Attn: Donald Barth

Phil R. Lutzi, Sr./Willard Johnson
Zoning Administrator
Nicollet County Courthouse, Box 27
St. Peter, MN 56082

Steve Bloom
P.O. Box 757
Nobles County Courthouse
Worthington, MN 56187

Jack Deitz
Norman County
County Courthouse
Ada, MN 56510

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Pine County Solid Waste Officer
County Courthouse
Pine City, MN 55063

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Pipestone, MN 56164

Mark Bobman
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County Courthouse, Box 27
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Pope County Environmental
Planning Office
County Courthouse
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Ramsey Co. Div. of Environment and Health
Health
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Red Lake County Courthouse
Red Lake Falls, MN 56750

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County Courthouse
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P.O. Box 308/1120 N. Blue Mound
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County Courthouse
Roseau, MN 56751

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Benson, MN 56215

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Courthouse Annex
Long Prairie, MN 56347

Mike Marxen
Traverse County Solid Waste Officer
15 - 10th Street South
Wheaton, MN 56296

Charles McDonald
Wabasha County Auditor
County Courthouse
Wabasha, MN 55981

Greg J. Kempf
Wadena County Zoning Administrator
County Courthouse
Wadena, MN 56482

Robert J. McPartlin
Waseca County Engineer
Fairgrounds/P. O. Box 487
Waseca, MN 56093

Eric Magee/Zack Hanson
Washington County Dept. of Pub. Hea.
14900 North 61st Street
Post Office Box 6
Stillwater, MN 55082

G. A. Engstrom, Public Works Director
Watonwan County Engineer
P.O. Box 467
St. James, MN 56081

Dan Franklin
Wilkin County Solid Waste Officer
Wilkin County Courthouse, Box 167
Breckenridge, MN 56520

Gene L. Mossing, Sanitarian
Winona County Comm. Health Services
171 W. Third St., County Courthouse
Winona, MN 55987

Chuck Davis/Rick Patrow
Wright County Sanitarian
10 - NW 2nd Street, County Courthouse
Buffalo, MN 55313

Jerry Holien
Yellow Medicine County Planner
Box 675
Clarkfield, MN 56223

STATE OF MINNESOTA
POLLUTION CONTROL AGENCY

In the Matter of the Proposed Rules Governing the Management of Waste Tires and the Permitting of Waste Tire Facilities, Minn. Rules Pts. 7001.0020, 7001.0040, 7001.0050, 7001.0190, 7001.4000 to 7001.4150, and 7035.8200 to 7035.8710

AFFIDAVIT OF MAILING

STATE OF MINNESOTA)
) SS.
COUNTY OF RAMSEY)

Ronald Linn, being duly sworn, deposes and says:

That on the 16 day of April, 1987, at the City of St. Paul, County of Ramsey, State of Minnesota, s/he served the attached Notice of Hearing and Notice of Intent to Cancel Hearing if Fewer than 25 Persons Request a Hearing in Response to Notice of Intent to Adopt Rules Without a Public Hearing, and Notice of Intent to Adopt Rules Without a Public Hearing and Notice of Intent to Adopt Rules with a Public Hearing if 25 or More Persons Request a Hearing, by depositing in the State of Minnesota Central Mail System or in the United States mail for first class mailing at said City of St. Paul, a copy thereof, properly enveloped, with postage prepaid, on all persons and associations who have requested that their names be placed on file with the Minnesota Pollution Control Agency for the purpose of receiving notice of the proposed adoption of rules by the Minnesota Pollution Control Agency.

Ronald Linn

Subscribed and sworn to before me
this 16 day of April, 1987

Cynthia B. Gillingham
Notary Public

CYNTHIA B. GILLINGHAM
NOTARY PUBLIC - MINNESOTA
HENNEPIN COUNTY
My commission expires 10-

STATE OF MINNESOTA

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Monday 20 April 1987

VOLUME 11, NUMBER 42

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St. Paul, Minnesota 55155

number and the same monthly date as the original issue. Applications for renewal shall not be presented before 30 days of the expiration date of the license. License holders who fail to renew their licenses before the expiration of the ten days of grace are subject to subparts 2 and 3.

Subp. 2. **Applications for renewal within one year of expiration date.** Licenses that have expired within one year of application for renewal may be renewed without the necessity of an examination upon filing an application for renewal, accompanied by the fee required in this part.

Subp. 3. **Applications for renewal beyond one year of expiration date.** If a license holder has failed to submit an application for renewal within one year of the date of expiration of the license, renewal will not be allowed unless the applicant files the application, pays the fee required by this part, and passes the examination required by part 5226.0010.

Subp. 4. **Examination and licensing fees.** The fees for examination and licensure are as follows:

A. pipefitter journeyman examination and license, $50;

B. renewal of journeyman license, $30;

C. contracting pipefitter examination and license, $125;

D. renewal of contracting pipefitter license, $100;

E. contractor bond and insurance processing, $50; and

F. late (expired license renewal) fees:

(1) contractor, $125; and

(2) journeyman, $50.

Payment of all examination and license fees must accompany the application. There will be no refund of fees paid. All licenses will expire December 31, but may be renewed upon application made the following January or February. Applications made in February will be processed only upon payment of the late fee in item F.

A temporary pipefitter license must be renewed every 12 months. An individual may not hold a temporary license for more than 36 months.

Subp. 5. **Permit to construct or install power piping systems.** A person, firm, or corporation that intends to construct or install power piping systems must file an application for a permit with the department of labor and industry or a municipality that is authorized by law to issue that type of permit. The department's fees for a permit to construct or install power piping systems are:

A. filing fee (application for permit), $25; and

B. inspection fee: 0.010 of the first $1,000,000, plus 0.0075 of the next $2,000,000, plus 0.0005 of the next $47,000,000, plus 0.00025 of the amount over $50,000,000 of the cost of bids awarded for the construction or installation of the power piping systems as defined in part 5230.0260.

REPEALER. Minnesota Rules, parts 5225.0100; 5225.0200; 5225.0300; 5225.0400; 5225.0500; 5225.0600; 5225.0700; 5225.0900; 5230.0050; 5230.0060; 5230.0070; 5230.0080; 5230.0090; and 5230.0100, are repealed.

Pollution Control Agency

Proposed Permanent Rules Governing the Management of Waste Tires and the Permitting of Waste Tire Facilities

Notice of Hearing and Notice of Intent to Cancel Hearing if Fewer than 25 Persons Request a Hearing in Response to Notice of Intent to Adopt Rules Without a Public Hearing

Notice is hereby given that the Minnesota Pollution Control Agency (Agency) will hold a public hearing on the above-entitled matter at the Agency's Board Room, 520 Lafayette Road, St. Paul, commencing at 10:30 a.m. on Monday, June 8, 1987, and continuing in an evening session at the same location starting at 7:00 p.m. Additional days of hearing will be scheduled if necessary. All interested or affected persons will have an opportunity to participate by submitting either oral or written data, statements, or arguments. Statements or briefs may be submitted without appearing at the hearing.

PLEASE NOTE, HOWEVER, THAT THE HEARING WILL BE CANCELLED IF FEWER THAN 25 PERSONS REQUEST A HEARING IN RESPONSE TO THE NOTICE OF INTENT TO ADOPT THESE SAME RULES WITHOUT A PUBLIC HEARING PUBLISHED IN THIS *STATE REGISTER* AND MAILED TO PERSONS REGISTERED WITH THE MINNESOTA POLLUTION

CONTROL AGENCY. To verify whether a hearing will be held, please call Shelly Sporer, Minnesota Pollution Control Agency, between May 25, 1987 and June 5, 1987 at 612/296-7712.

The matter will be heard before Administrative Law Judge Alan Klein, Office of Administrative Hearings, 400 Summit Bank Building, 310 Fourth Avenue South, Minneapolis, Minnesota 55415, 612/341-7609. The rule hearing procedure is governed by Minn. Stat. §§ 14.131 to 14.20 (1986) and by the rules of the Office of Administrative Hearings, Minn. Rules pts. 1400.0200 to 1400.1200 (1985). Questions concerning the rule hearing procedure should be directed to the Administrative Law Judge at the address and telephone number stated above.

The subject of the hearing will be the proposed rules governing the management of waste tires and the permitting of waste tire facilities, Minn. Rules pts. 7001.0020, 7001.0040, 7001.0050, 7001.0190, 7001.4000 to 7001.4150, and 7035.8200 to 7035.8710. The proposed rules are authorized by Minn. Stat. §§ 115A.914, subd. 1 and 116.07, subd. 4 (1986). The proposed rules are published below. One free copy of the rules is available upon request by contacting:

Shelly Sporer
Minnesota Pollution Control Agency
520 Lafayette Road North
St. Paul, Minnesota 55155
612/296-7712

The purpose of the proposed rules is to establish a regulatory program for waste tire management. The proposed rules will govern all aspects of waste tire management, including waste tire generation, transportation, collection, processing, and storage, and will provide for the administration of the Agency's waste tire facility permit program. Persons involved in the management of waste tires may be affected by the proposed rules.

The proposed rules include: amendments to the Agency's current permit rules contained in Minn. Rules pts. 7001.0010 to 7001.0210; rules that address information and administrative requirements for a waste tire collector or processor to obtain a facility permit; and technical standards for waste tire transfer, processing, and storage facilities, including emergency procedures, record keeping and reporting requirements, closure procedures, and financial assurance requirements for facility closure. The proposed rules also address the regulation of persons who generate or transport waste tires.

Questions regarding the content of the proposed rules should be directed to Shelly Sporer at the address and telephone number stated above.

Notice is hereby given that a Statement of Need and Reasonableness is now available for review at the Agency offices and at the Office of Administrative Hearings. The Statement of Need and Reasonableness includes a summary of all the evidence and argument which the Agency anticipates presenting at the hearing justifying both the need for and reasonableness of the proposed rules. Copies of the Statement of Need and Reasonableness may be reviewed at the Agency offices or at the Office of Administrative Hearings and copies may be obtained from the Office of Administrative Hearings at the cost of reproduction.

Copies of the proposed rules and the Statement of Need and Reasonableness may also be viewed at the Agency regional offices at the following locations:

Duluth Region
Duluth Government Service Center
320 West Second Street, #704
Duluth, Minnesota 55802
218/723-4660

Brainerd Region
1601 Minnesota Drive
Brainerd, Minnesota 56401
218/828-2492

Detroit Lakes Region
714 Lake Avenue
Lake Avenue Plaza, #220
Detroit Lakes, Minnesota 56501
218/847-1519

Marshall Region
RLC Building
109 South Fifth Street
Marshall, Minnesota 56258
507/537-7146

Rochester Region
2116 Campus Drive, Southeast
Rochester, Minnesota 55904
507/285-7343

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Any person may present his or her views on the proposed rules in one or more of the following ways: by submitting written data to the Administrative Law Judge at any time before the close of the hearing; by submitting oral or written data at the hearing; and by submitting written data to the Administrative Law Judge during the comment period following the hearing. The comment period will be not less than five working days after the public hearing ends. The comment period may be extended for a longer period not to exceed 20 calendar days if ordered by the Administrative Law Judge at the hearing. The written material received during the comment period shall be available for review at the Office of Administrative Hearings. Within three business days after the expiration of the comment period, the Agency and interested persons may respond in writing to any new information received during the comment period; however, no additional evidence may be submitted during this three-day period.

The Agency requests that any person submitting written views or data to the Administrative Law Judge prior to the hearing or during the comment period also submit a copy of the written data to Shelly Sporer at the address stated above.

The proposed rules may be modified if the data and views received during the hearing process warrant modification and the modification does not result in a substantial change in the proposed rules.

Any person may request notification of the date on which the Administrative Law Judge's report will be available, after which date the Agency may not take any final action on the rules for a period of five working days. If you desire to be so notified, you may request notification by sending a written request to the Administrative Law Judge. Any person may request notification of the date on which the rules are adopted and filed with the Secretary of State. The notice must be mailed on the same day that the rules are filed. If you want to be so notified you may so indicate at the hearing or send a request in writing to the Agency at any time prior to the filing of the rules with the Secretary of State.

You are hereby advised, pursuant to Minn. Stat. § 14.115 (1986), "Small business considerations in rulemaking," that the proposed rules may have an effect on small businesses which engage in the management of waste tires, by imposing requirements on persons who generate, transport, collect, process, or store waste tires. For additional information regarding possible effects, please see part VI of the Statement of Need and Reasonableness.

Please be advised that Minn. Stat. ch. 10A (1986) requires each lobbyist to register with the State Ethical Practices Board within five days after he or she commences lobbying. A lobbyist is defined in Minn. Stat. § 10A.01, subd. 11 (1986) as any individual:

(a) Engaged for pay or other consideration, or authorized by another individual or association to spend money, who spends more than five hours in any month or more than $250, not including his own travel expenses and membership dues, in any year, for the purpose of attempting to influence legislative or administrative action by communicating or urging others to communicate with public officials; or

(b) Who spends more than $250, not including his own travel expenses and membership dues, in any year, for the purpose of attempting to influence legislative or administrative action by communicating or urging others to communicate with public officials.

The statute contains certain exceptions. Questions should be directed to the Ethical Practices Board, 41 State Office Building, St. Paul, Minnesota 55155, telephone 612/296-5615.

Thomas J. Kalitowski
Executive Director

Notice of Intent to Adopt Rules Without a Public Hearing and Notice of Intent to Adopt Rules with a Public Hearing if 25 or More Persons Request a Hearing

Notice is hereby given that the Minnesota Pollution Control Agency (Agency) intends to adopt the above-entitled rules without a public hearing following the procedures set forth in the Administrative Procedure Act for adopting rules with a public hearing in Minn. Stat. §§ 14.22 to 14.28 (1986). The Agency's authority to adopt the rules is set forth in Minn. Stat. §§ 115A.914, subd. 1, and 116.07, subd. 4 (1986).

All persons have until 4:30 p.m. on May 20, 1987 to submit comments in support of or in opposition to the proposed rules or any part or subpart of the rules. Comment is encouraged. Each comment should identify the portion of the proposed rules addressed, the reason for the comment, and any change proposed.

Any person may make a written request for a public hearing on the proposed rules within the comment period. If 25 or more persons submit a written request for a public hearing within the comment period, a public hearing will be held unless a sufficient number withdraw their requests in writing. Any person requesting a public hearing should state his or her name and address, and is encouraged to identify the portion of the proposed rules addressed, the reason for the request, and any change proposed. If a public hearing is required, the Agency will proceed pursuant to Minn. Stat. §§ 14.131 to 14.20 (1986).

PLEASE NOTE THAT IF 25 OR MORE PERSONS SUBMIT WRITTEN REQUESTS FOR A PUBLIC HEARING WITHIN THE 30-DAY COMMENT PERIOD, A HEARING WILL BE HELD ON JUNE 8, 1987 UNLESS A SUFFICIENT NUMBER WITHDRAW THEIR REQUEST, IN ACCCORDANCE WITH THE NOTICE OF PUBLIC HEARING ON THESE SAME RULES PUBLISHED IN THIS *STATE REGISTER* AND MAILED TO PERSONS REGISTERED WITH THE MINNESOTA POLLUTION

CONTROL AGENCY. To verify whether a hearing will be held, please call Shelly Sporer, Minnesota Pollution Control Agency, between May 25, 1987 and June 5, 1987 at 612/296-7712.

Comments or written requests for a public hearing must be submitted to:

Shelly Sporer
Minnesota Pollution Control Agency
520 Lafayette Road
St. Paul, Minnesota 55155
612/296-7712

The proposed rules may be modified if the modifications are supported by data and views submitted to the Agency and do not result in a substantial change in the proposed rules as noticed.

The proposed rules, if adopted, will impose requirements on persons who generate, transport, collect, process, or store waste tires. The proposed rules are published below. One free copy of the rules is available upon request from Shelly Sporer at the address and telephone number stated above.

The purpose of the proposed rules is to establish a regulatory program for waste tire management. The proposed rules will govern all aspects of waste tire management, including waste tire generation, transportation, collection, processing, and storage, and will provide for the administration of the Agency's waste tire facility permit program. Persons involved in the management of waste tires may be affected by the proposed rules.

The proposed rules include: amendments to the Agency's current permit rules contained in Minn. Rules pts. 7001.0010 to 7001.0210; rules that address information and administrative requirements for a waste tire collector or processor to obtain a facility permit; and technical standards for waste tire transfer, processing and storage facilities, including emergency procedures, record keeping and reporting requirements, closure procedures, and financial assurance requirements for facility closure. The proposed rules also address the regulation of persons who generate or transport waste tires.

Questions regarding the content of the proposed rules should be directed to Shelly Sporer at the address and telephone number stated above.

A Statement of Need and Reasonableness that describes the need for and reasonableness of each provision of the proposed rules and identifies the data and information relied upon to support the proposed rules has been prepared and is available from Shelly Sporer upon request.

Copies of the proposed rules and the Statement of Need and Reasonableness may also be viewed at the Agency regional offices at the following locations:

Duluth Region
Duluth Government Service Center
320 West Second Street, #704
Duluth, Minnesota 55802
218/723-4660

Brainerd Region
1601 Minnesota Drive
Brainerd, Minnesota 56401
218/828-2492

Detroit Lakes Region
714 Lake Avenue
Lake Avenue Plaza, #220
Detroit Lakes, Minnesota 56501
218/847-1519

Marshall Region
RLC Building
109 South Fifth Street
Marshall, Minnesota 56258
507/537-7146

Rochester Region
2116 Campus Drive, Southeast
Rochester, Minnesota 55904
507/285-7343

You are hereby advised, pursuant to Minn. Stat. § 14.115 (1986), "Small business considerations in rulemaking," that the proposed rules may have an effect on small businesses which engage in the management of waste tires, by imposing requirements on persons who generate, transport, collect, process, or store waste tires. For additional information regarding possible effects, please see part VI of the Statement of Need and Reasonableness.

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If no hearing is required, upon adoption of the rules, the rules and required supporting documents will be submitted to the Attorney General for review as to legality and form to the extent form relates to legality. Any person may request notification of the date of submission to the Attorney General. Persons who wish to be advised of the submission of this material to the Attorney General, or who wish to receive a copy of the rules, must submit the written request to Shelly Sporer.

Thomas J. Kalitowski
Executive Director

Rules as Proposed

7001.0020 SCOPE.

Except as otherwise specifically provided, parts 7001.0010 to 7001.0210 apply to the following:

A. to K. [Unchanged.]

L. An agency permit required for the collection, deposit, storage, or processing of waste tires and tire-derived products.

7001.0040 APPLICATION DEADLINES.

Subpart 1. **Application for new permit.** Except as otherwise required by parts 7001.0530 ~~and~~, 7001.1050, and 7001.4060, a permit application for a new facility or activity may be submitted at any time. However, it is recommended that the permit application be submitted at least 180 days before the planned date of the commencement of facility construction or of the activity.

Subp. 2. and 3. [Unchanged.]

7001.0050 WRITTEN APPLICATION.

A person who requests the issuance, modification, revocation and reissuance, or reissuance of a permit shall complete, sign, and submit to the director a written application. The person shall submit the written application in a form prescribed by the director. The application shall contain the items listed in items A to I unless the director has issued a written exemption from one or more of the data requirements. After receiving a written request for an exemption from a data requirement, the director shall issue the exemption if the director finds that the data is unnecessary to determine whether the permit should be issued or denied. The application must contain:

A. to H. [Unchanged.]

I. other information relevant to the application as required by parts 7001.0550 to 7001.0640, 7001.1050, 7001.1215, 7001.1290, 7001.4000 to 7001.4150, or 7040.0500 and 7040.0600.

7001.0190 PROCEDURE FOR MODIFICATION; REVOCATION AND REISSUANCE; AND REVOCATION WITHOUT REISSUANCE OF PERMITS.

Subpart 1. [Unchanged.]

Subp. 2. **Modification solely as to ownership or control.** Upon obtaining the consent of the permittee, the agency shall consider a request to modify a permit as to the ownership or control of a permitted facility or activity without following the procedures in parts 7001.0100 to 7001.0130 if the agency finds that no other change in the permit is necessary. If the permit is a permit described in part 7001.0020, item A ~~or~~, B, or L, the agency shall also find that the agency has received a binding written agreement between the permittee and the proposed transferee containing a specific date for transfer of permit responsibilities and allocation of liabilities between the permittee and the proposed transferee. Within 60 days of receipt of a complete written application for modification as to ownership and control, the director shall place the matter on the agenda for consideration by the agency. The agency shall not unreasonably withhold or unreasonably delay approval of the proposed permit modification.

Subp. 3. **Minor modification.** Upon obtaining the consent of the permittee, the director may modify a permit to make the following corrections or allowances without following the procedures in parts 7001.0100 to 7001.0130:

A. and B. [Unchanged.]

C. to change a provision in the permit that will not result in allowing an actual or potential increase in the emission or discharge of a pollutant into the environment, or that will not result in a reduction of the agency's ability to monitor the permittee's compliance with applicable statutes and rules; ~~and~~

D. if applicable, to make a change as provided in parts 7001.0730, subpart 3 and 7001.1350; and

E. if applicable, to make a change as provided in part 7001.4130, subpart 2.

Subp. 4. [Unchanged.]

Rules as Proposed (all new material)

7001.4000 SCOPE.

Except as otherwise provided, parts 7001.0010 to 7001.0210 and 7001.4000 to 7001.4150 govern the application procedures for the issuance of and the conditions relating to waste tire facility permits. Parts 7000.0100 to 7000.1100, 7001.0010 to 7001.0210, and 7001.4000 to 7001.4150 shall be construed to complement each other.

7001.4010 DEFINITIONS.

The definitions in part 7001.0010 of the agency's permitting rules, part 7035.8205 of the agency's waste tire rules, and Minnesota Statutes, section 115A.90, apply to the terms used in parts 7001.4000 to 7001.4150.

7001.4020 PERMITS.

Subpart 1. **Permit required.** Except as provided in subpart 2, no person may do any of the following without obtaining a waste tire facility permit from the agency:

A. store, process, or dispose of waste tires or tire-derived products; or

B. establish, construct, modify, own, or operate a waste tire facility.

Subp. 2. **Exclusions.** The following persons are not required to obtain a waste tire facility permit:

A. a retail tire seller for the retail selling site if no more than 500 waste tires are kept on the business premises;

B. an owner or operator of a tire retreading business for the business site if no more than 3,000 waste tires are kept on the business premises;

C. an owner or operator of a business who, in the ordinary course of business, removes tires from motor vehicles if no more than 500 waste tires are kept on the business premises;

D. a permitted landfill operator with less than 10,000 waste tires stored above ground at the permitted site;

E. a person using waste tires for agricultural purposes if the waste tires are kept on the site of use. Agricultural purposes do not include the burning of waste tires; or

F. a person conducting abatement activities under an abatement order or stipulation agreement entered into under part 7035.8020. This exemption does not exempt the person from the duty to obtain a waste tire facility permit for activities other than the abatement action.

Subp. 3. **Old waste tires.** An owner or operator of a waste tire facility is not eligible to obtain a waste tire facility permit for old waste tires located at the facility.

7001.4030 PERMIT BY RULE.

Subpart 1. **Facilities eligible.** The owner and operator of the following waste tire facilities shall be considered to have obtained a waste tire facility permit without submitting the application described in part 7001.4070 if the director has received the notification described in subpart 2:

A. a waste tire facility used for the storage of no more than 500 waste tires at any one time if the owner or operator, at least once per year, removes all the waste tires, and the facility is in compliance with the locational requirements of part 7035.8240, subpart 2;

B. a waste tire facility used for the processing of no more than 500 waste tires during any 30 days if the facility is in compliance with the locational requirements of part 7035.8240, subpart 2; or

C. a waste tire facility used as a temporary location for mobile shredding or baling equipment if the equipment is located at the facility for 30 days or less, and all tire-derived products and residuals from processing are shipped from the facility within 30 days of completion of the shredding or baling operation.

Subp. 2. **Written notification.** To obtain permit by rule status, the owner and operator of a qualifying waste tire facility must submit the following information to the director. For an existing facility, the notification must be submitted within 90 days of the effective date of parts 7001.4000 to 7001.4150. For a new facility, the notification must be submitted 15 days before the operation begins. The notification must contain:

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A. the name, address, and telephone number of the owner and operator of the facility; and the name, address, and telephone number of the facility;

B. a description of the general operation of the facility, including quantities of waste tires accumulated or processed per month;

C. a description of arrangements made to acquire fire protection services for the facility;

D. the township, range, and section numbers of the facility; and

E. a description of how the waste tires, tire-derived products, and residuals from processing will be disposed.

Subp. 3. **Termination of eligibility for permit by rule.** The agency shall terminate the eligibility of an owner or operator of a facility for permit by rule status after notice and opportunity for a contested case hearing or a public informational meeting if the agency finds that the facility does not qualify for permit by rule status or that the facility should be permitted to protect human health or the environment. When eligibility to be permitted under this part has been terminated, the owner and operator of the facility must apply for a waste tire facility permit under parts 7001.4000 to 7001.4150 within 90 days or close the facility in compliance with part 7035.8250 and the applicable requirements of part 7035.8260.

7001.4035 NOTIFICATION BY EXISTING FACILITIES.

Subpart 1. **Notification.** The owner or operator of an existing waste tire facility must submit a signed, written notification to the director not more than 90 days after the effective date of parts 7001.4000 to 7001.4150. The written notification must include:

A. the name, address, and telephone number of the owner and operator of the facility; and the name, address, and telephone number of the facility;

B. a description of the facility and the type of operation, the maximum storage or processing capacity, and where the waste tires and tire-derived products are stored;

C. the approximate quantity and type of waste tires, designating passenger, truck, heavy equipment, or off-the-road tires, and tire-derived products stored on the site;

D. the township, range, and section numbers of the facility, and the zoning classification of the land; and

E. a statement indicating the intent of the owner or operator to continue to accept waste tires at the facility and to apply for a waste tire facility permit or to close the facility in compliance with parts 7035.8250 and 7035.8260.

Subp. 2. **Certification of written notification.** The owner or operator of a waste tire facility must sign the written notification and shall make the following certification: "I certify under penalty of law that this written notification was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete."

Subp. 3. **Closure.** The owner or operator of an existing waste tire facility who has specified in the written notification an intent to close the facility, or who does not qualify for provisional status under part 7001.4040, must close the facility in accordance with parts 7035.8250 and 7035.8260.

Subp. 4. **Submittal of closure plan.** The owner or operator of an existing waste tire facility required to close under subpart 3 must submit to the director a closure plan in accordance with part 7035.8250 no later than 60 days after the date of receipt of a written request from the director for submission of the closure plan.

Subp. 5. **Compliance with standards.** The owner or operator of an existing waste tire facility must comply with the requirements specified in items A to C during the period from 90 days after the effective date of parts 7001.4000 to 7001.4150 until a permit is issued by the agency or closure is completed in compliance with parts 7035.8250 and 7035.8260, whichever occurs first.

A. Processes at the facility must be limited to those specified in the written notification.

B. Any waste tires accepted at the facility after the effective date of parts 7001.4000 to 7001.4150 must be stored in a new storage area according to the locational requirements of part 7035.8240, subpart 2, and the storage requirements of part 7035.8240, subpart 3, items D, F, and G.

C. Compliance with the financial assurance requirements of parts 7035.8400 to 7035.8590 must be maintained.

7001.4040 PROVISIONAL STATUS.

Subpart 1. **Scope.** The owner or operator of a waste tire facility that qualifies for provisional status shall be considered to have fulfilled the requirement to obtain a permit so long as provisional status is maintained. When requested by the director, the owner and operator of a facility with provisional status shall submit a permit application within the time period specified in part 7001.4060.

Subp. 2. **Qualifying for provisional status.** To qualify for provisional status, an owner or operator of an existing waste tire facility

shall submit the notification required under part 7001.4035. However, the notification must contain the information required by this subpart. During the period after the submission of the written notification to the director and until a permit is issued by the agency or closure is completed in compliance with parts 7035.8250 and 7035.8260, the owner or operator of an existing facility shall be considered to be in compliance with the requirement to obtain a permit and shall be considered to have provisional status. The written notification shall include:

A. the information required under part 7001.4035, subpart 1;

B. documentation that the facility is in compliance with the locational requirements of part 7035.8240, subpart 2. For existing facilities located in a 100-year floodplain, a plan meeting the requirements of part 7001.4070, subpart 6, must be submitted with the notification; and

C. documentation verifying that the owner or operator of the facility has informed the local fire protection agency of the facility's location, and describing the arrangements that have been made to immediately acquire fire protection services for the facility, if needed.

Subp. 3. **Termination of provisional status by permitting or closure.** Provisional status shall terminate when a permit is issued or when the director verifies that closure is complete.

Subp. 4. **Termination of provisional status for cause.** The following constitute justification for the director to commence proceedings to terminate provisional status:

A. the director discovers that the owner or operator of the facility has failed to fully disclose all the information required under subpart 2 or has submitted false or misleading information to the agency or the director;

B. the facility is not in compliance with the locational standards of part 7035.8240, subpart 2;

C. the facility is not in compliance with any of the standards established in part 7001.4035, subpart 5;

D. the director has requested that the owner and operator of the facility submit a permit application and the owner and operator of the facility have failed to submit an application within the time period allowed; or

E. the director discovers that the facility threatens human health or the environment due to the activities conducted at the facility.

7001.4050 DESIGNATION OF PERMITTEE.

The agency shall designate all facility owners and operators of the waste tire facility as co-permittees when issuing a waste tire facility permit.

7001.4060 WASTE TIRE FACILITY PERMIT APPLICATION PROCEDURES.

Subpart 1. **Form.** The application for a waste tire facility permit consists of a general application, which includes the appropriate supporting documents, maps, and additional application information specific to the facility that is the subject of the application. The content requirements of the general permit application are set forth in part 7001.4070. The additional application information requirements specific to the facility type are set forth in parts 7001.4080, 7001.4090, and 7001.4100, and must be submitted with the general permit application.

Subp. 2. **Copies required.** An applicant for a waste tire facility permit shall submit four copies of the complete permit application to the director.

Subp. 3. **Time of submittal.** A person shall submit a permit application for a new or existing waste tire facility or for reissuance of an existing permit for a facility in accordance with items A to C.

A. For a new facility, a person shall submit a permit application at least 180 days before the planned date of the beginning of facility construction or the planned activity, whichever is earlier.

B. For an existing facility, the owner or operator may submit a permit application at any time after the effective date of parts 7001.4000 to 7001.4150, except that upon the written request of the director for submission of a permit application, the owner or operator shall submit a permit application no later than 90 days after the date of receipt of the director's request.

C. For the reissuance of an existing permit, part 7001.0040, subpart 3, governs the submittal of an application except that if the applicant receives the written approval of the director, the applicant may submit an application to the agency for reissuance of an existing permit less than 180 days before the expiration of the existing permit.

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Subp. 4. **Certification of permit applications and permit reports.** A person who signs an application for a waste tire facility permit, or any portion of it, or any report required by a permit to be submitted to the director or to the agency, shall make the certification required by part 7001.0070. If required by Minnesota Statutes, section 326.03, an engineer registered in the state shall certify all technical documents required to be submitted as part of a permit application or by permit conditions.

7001.4070 GENERAL INFORMATION REQUIREMENTS FOR A PERMIT APPLICATION.

Subpart 1. **Scope.** The information required by this part and the applicable provisions of part 7001.4080, 7001.4090, or 7001.4100, must be submitted for both new and existing waste tire facilities. The information in the permit application must address both existing and proposed operations, structures, and conditions. If a provision does not apply to the particular facility, the applicant must note this on the application.

Subp. 2. **General facility information.** The application shall contain the information in part 7001.0050, except item G, and shall indicate whether the facility to be permitted is new or existing, and whether the application is an initial or amended application.

Subp. 3. **Description of facility operation.** The application shall describe the location and operation of the facility. The application shall, at a minimum, include a description of the following:

A. the type of facility operation, the manner in which waste tires will be collected at the facility, and how those waste tires will be stored, processed, or used;

B. the maximum quantity and type of waste tires to be stored on the site at any time, specifying the quantity and type of waste tires stored on the site currently and the storage capacity of the facility;

C. the facility's ability to meet the storage requirements of part 7035.8240, subpart 3, items D, F, and G;

D. the present use of the land at the site of the facility and of the land within a one-quarter mile radius of the facility, identifying the landowners and their addresses, and zoning designations;

E. the access to the site by roads, including weight or other use restrictions;

F. surface water drainage, the slope of the land, and soil composition;

G. the location of the facility and whether that location complies with the restrictions established in part 7035.8240, subpart 2;

H. the types, sizes, conditions, and availability of equipment needed for operation and emergency response at the facility, and the functions of each piece of equipment described;

I. the security procedures and the location of fences, gates, and other access control measures;

J. the relationship of the facility to the applicable county solid waste management plan, and the area to be served by the facility; and

K. the expected operating life of the facility and how this number was calculated.

Subp. 4. **Topographic map.** The topographic map submitted as part of the general facility information required by subpart 2 shall show the facility and the area surrounding the facility for a distance of at least 1,320 feet using a scale of one inch equals 200 feet, and shall show, at a minimum, the following:

A. the date the map was prepared;

B. the map scale and directions;

C. wetlands, floodplains, shorelands, and surface waters, including permanent and intermittent streams and wetlands;

D. legal boundaries and land ownership, including county, township, and municipal boundaries; and township, range, and section numbers; and easements and rights-of-way;

E. the locations of wells, both operating and abandoned;

F. occupied dwellings; and

G. contours that show the pattern of surface water flow in and adjacent to the facility.

Subp. 5. **Development map.** A development map shall be submitted with the application. This map shall show the waste tire facility in detail. At a minimum, the development map shall show the following:

A. the facility design and the location of all waste tire storage areas and fire lanes;

B. all structures and buildings at the facility, including those used in collection, storage, or processing operations;

C. loading and unloading areas;

D. access and internal roads;

E. run-off control measures, ditches, and dikes;

F. the location of the area used for collection, storage, or processing of waste tires, tire-derived products, and residuals from processing; and the total land area in square feet used for storage of waste tires, tire-derived products, and residuals from processing; and

G. the location of water supplies.

Subp. 6. **Floodplains.** If the facility is located within a 100-year floodplain, the application must describe the procedures that the applicant will follow to remove waste tires and tire-derived products to safety before the facility is flooded. The following information must, at a minimum, be included:

A. the timing of the removal relative to flood levels, showing that removal can be completed before floodwaters reach the facility;

B. the location of the facility or facilities to which the waste tires and tire-derived products will be moved and information indicating that these facilities will be able to receive waste tires and tire-derived products in accordance with parts 7001.4000 to 7001.4150, and parts 7035.8200 to 7035.8710; and

C. the planned procedures, equipment, and personnel to be used and how these resources will be made available when needed.

Subp. 7. **Closure.** The application shall include an estimate of the cost of closing the facility. This estimate shall be prepared following the procedures in part 7035.8430. The application shall also include a copy of the financial assurance mechanism required by part 7035.8420, and the closure plan required by part 7035.8250.

7001.4080 ADDITIONAL APPLICATION INFORMATION REQUIRED FOR WASTE TIRE TRANSFER FACILITIES.

The application for a waste tire transfer facility must include the following information in addition to the information required by part 7001.4070:

A. the types of vehicles intended to use the facility;

B. information on how the accumulation of waste tires at the transfer facility will be controlled so that no more than 10,000 passenger tires or the equivalent weight of other waste tires shall be present at the transfer facility at any time;

C. information on the type of storage that will be present at the facility, designating drop boxes, containers, trailers, or stockpiles; and

D. information on size, capacity, and volume of drop boxes, containers, and trailers to be maintained at the facility.

7001.4090 ADDITIONAL APPLICATION INFORMATION REQUIRED FOR WASTE TIRE PROCESSING FACILITIES.

The application for a waste tire processing facility must include the following information in addition to the information required by part 7001.4070:

A. the maximum quantity and type of tire-derived products and residuals from processing to be stored on the site at any time, specifying the quantity and type of tire-derived products and residuals from processing stored on the site currently and how they are being stored;

B. a description of the processes and procedures used at the facility for processing waste tires;

C. the processing capacity of the facility, and the number of tons of waste tires currently being processed;

D. a description of how the facility will comply with the 75 percent annual processing requirement of part 7035.8270, subpart 3, item B;

E. a description of how residuals from processing will be disposed;

F. the existing and proposed markets for the facility's tire-derived products; and

G. a copy of the emergency preparedness manual required by part 7035.8280, subpart 3.

7001.4100 ADDITIONAL APPLICATION INFORMATION REQUIRED FOR WASTE TIRE STORAGE FACILITIES.

Subpart 1. **General information.** The application for a waste tire storage facility must include the following information in addition to the information required by part 7001.4070:

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A. the procedures that will be used at the facility to minimize or prevent mosquito and rodent breeding in the waste tire stockpiles;

B. a copy of the emergency preparedness manual required by part 7035.8290, subpart 2;

C. a copy of the contingency plan required by part 7035.8290, subpart 5; and

D. information on how the accumulation of waste tires at the waste tire storage facility will be controlled so that no more than 500,000 passenger tires or the equivalent weight of other waste tires are ever stored at the facility.

Subp. 2. **Tire pile limitation exemption.** The owner or operator of a waste tire storage facility who seeks to obtain an exemption from the waste tire pile size or fire lane requirements established in part 7035.8240, subpart 3, items F and G, must demonstrate that compliance with the standards is not technically feasible and that alternative methods can be successfully used to reduce the danger of fires at the facility. The request for an exemption from either requirement shall accompany the permit application, and shall include the following information:

A. a statement of the reason compliance with the requirement cannot be achieved at the facility;

B. the proposed alternative methods for controlling the spread of fire at the facility; and

C. a statement from the fire marshal that the alternative methods have been approved for use at the facility.

If the director finds, based on the information submitted, that compliance with the standards is not technically feasible and that alternative methods can be successfully employed to reduce the danger of fires at the facility, the director shall issue a permit that specifies waste tire pile size and fire lane requirements that reduce to the maximum extent any danger from fire at the facility.

7001.4110 PUBLIC NOTICE OF PRELIMINARY DETERMINATION AND DRAFT PERMIT; PUBLIC COMMENTS.

In addition to the requirements of part 7001.0100, subpart 5, relating to the distribution of the public notice, the director shall mail a copy of the public notice to the governing body of each county and city or township that has jurisdiction over the waste tire facility.

7001.4120 TERMS AND CONDITIONS OF WASTE TIRE FACILITY PERMITS.

In addition to the terms and conditions in part 7001.0150, each draft and final waste tire facility permit shall require compliance with parts 7035.8200 to 7035.8710, unless an exemption is permitted under part 7001.4100, subpart 2.

7001.4130 MODIFICATION OF PERMITS; REVOCATION AND REISSUANCE OF PERMITS.

Subpart 1. **Scope.** In addition to the provisions of parts 7001.0170, 7001.0180, and 7001.0190, this part governs the modification, revocation, and reissuance of waste tire facility permits.

Subp. 2. **Minor modifications.** In addition to the authority to modify a permit under part 7001.0190, subparts 2 and 3, upon obtaining the consent of the permittee, the director shall have the authority, without following the procedures in parts 7001.0100 to 7001.0130:

A. to modify a permit to change an interim compliance date in a schedule of compliance provided the new date does not interfere with the attainment of the final compliance date; and

B. to amend the closure plan, emergency preparedness manual, or contingency plan for a waste tire facility.

7001.4140 INTERACTION OF PERMIT AND ABATEMENT RULES.

If a tire collector wishes to obtain an agency permit for a site that is the subject of an abatement action, the tire collector must notify the director of this intent within 90 days of the effective date of parts 7001.4000 to 7001.4150 or at the time the abatement plan is submitted, whichever is later, and agree to develop a plan for bringing the site into compliance with the technical rules for waste tire transfer, processing, or storage facilities. This shall not exempt the owner or operator of a facility that is the subject of an abatement action from the duty to obtain a permit by following the procedures established in parts 7001.4000 to 7001.4150 for activities other than the abatement action.

7001.4150 TRANSPORTER APPLICATION REQUIREMENTS.

Subpart 1. **Scope.** A person required to obtain an agency waste tire transporter identification number under part 7035.8710, subpart 3, must follow the procedures established in subpart 2.

Subp. 2. **Application.** To obtain an agency waste tire transporter identification number and approval to transport waste tires, a transporter shall submit a written application to the director. For a transporter currently transporting waste tires, the application must be submitted not more than 30 days after the effective date of parts 7001.4000 to 7001.4150. For a new transporter, the application must be submitted 15 days before the transporter begins transporting waste tires. The application must contain the following information:

A. the name, address, and telephone number of the person who will be transporting waste tires. If a company will be

transporting waste tires, the name, address, and telephone number of the officers of the company must be submitted, along with an identification of the number of drivers that will be transporting tires for the company;

B. the geographical area that will be served;

C. the type of vehicle(s) or trailer(s) or both vehicle(s) and trailer(s) that will be used, the license number(s), and registered vehicle owner(s);

D. where the waste tires will be collected, and where delivered or deposited; and

E. an estimate of the quantity and type of waste tires that will be collected quarterly.

WASTE TIRE FACILITY STANDARDS

7035.8200 SCOPE.

Parts 7035.8200 to 7035.8590 apply to owners and operators of waste tire facilities except those who are exempt from the requirement to obtain a waste tire facility permit under part 7001.4020 or are permitted by rule under part 7001.4030. Parts 7035.8700 to 7035.8710 apply to persons who generate or transport waste tires.

7035.8205 DEFINITIONS.

Subpart 1. **Scope.** For the purposes of parts 7035.8200 to 7035.8710 and parts 7001.4000 to 7001.4150, the terms in subparts 2 to 28 have the meanings given them.

Subp. 2. **Agency.** "Agency" means the Minnesota Pollution Control Agency.

Subp. 3. **Closure.** "Closure" means the removal of all stockpiles of waste tires and other materials from the waste tire facility in compliance with the procedures established by statute, rule, or permit.

Subp. 4. **Director.** "Director" means the executive director of the Minnesota Pollution Control Agency.

Subp. 5. **Existing waste tire facility.** "Existing waste tire facility" means a waste tire facility which has received waste tires after November 21, 1985, and which is in existence on the effective date of parts 7035.8200 to 7035.8710.

Subp. 6. **Floodplain.** "Floodplain" means any land area that is subject to a one percent or greater chance of flooding in any given year from any source.

Subp. 7. **New waste tires.** "New waste tires" means waste tires accumulated at a waste tire facility after November 21, 1985.

Subp. 8. **Old waste tires.** "Old waste tires" means waste tires accumulated at a waste tire facility before November 21, 1985.

Subp. 9. **Operator.** "Operator" means the person responsible for the overall operation of the waste tire facility. An operator is a tire collector or tire processor as defined in Minnesota Statutes, section 115A.90, subdivisions 8 and 10 respectively.

Subp. 10. **Owner.** "Owner" means a person who owns, in whole or in part, a waste tire facility, the waste tires located at a facility, or the land on which the facility is located.

Subp. 11. **Person.** "Person" has the meaning given in Minnesota Statutes, section 115A.90, subdivision 5.

Subp. 12. **Processing.** "Processing" has the meaning given in Minnesota Statutes, section 115A.90, subdivision 6.

Subp. 13. **Ravine.** "Ravine" means a deep, narrow cleft or gorge in the earth's surface. A ravine cannot be smoothed out by ordinary tillage.

Subp. 14. **Residuals from processing.** "Residuals from processing" means the unusable material resulting from any chemical or physical processing of waste tires.

Subp. 15. **Shoreland.** "Shoreland" means land located within 1,000 feet from the normal high water mark of a lake, pond, or flowage, or land within 300 feet of a river or stream, or a floodplain as established by ordinance.

Subp. 16. **Sinkhole.** "Sinkhole" means a closed depression formed by subsidence of the underlying bedrock.

Subp. 17. **Tire.** "Tire" has the meaning given in Minnesota Statutes, section 115A.90, subdivision 7.

Subp. 18. **Tire collector.** "Tire collector" has the meaning given in Minnesota Statutes, section 115A.90, subdivision 8.

Subp. 19. **Tire-derived products.** "Tire-derived products" means usable materials produced from the chemical or physical processing of a waste tire.

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Subp. 20. **Tire dump.** "Tire dump" has the meaning given in Minnesota Statutes, section 115A.90, subdivision 9.

Subp. 21. **Tire processor.** "Tire processor" has the meaning given in Minnesota Statutes, section 115A.90, subdivision 10.

Subp. 22. **Transporter.** "Transporter" means a person who removes waste tires from a source of generation, a tire dump, or a waste tire facility, and who has received an agency waste tire transporter identification number.

Subp. 23. **Waste tire.** "Waste tire" has the meaning given in Minnesota Statutes, section 115A.90, subdivision 11.

Subp. 24. **Waste tire facility or facility.** "Waste tire facility" or "facility" means any area where waste tires, including tire-derived products, are collected, deposited, stored, or processed. The incidental storage of tire-derived products at the site of final utilization or tire-derived oil at a refinery does not make the site a waste tire facility.

Subp. 25. **Waste tire processing facility.** "Waste tire processing facility" means any area where tires or tire-derived products are processed. A waste tire processing facility must meet the qualifications in part 7035.8270.

Subp. 26. **Waste tire storage facility.** "Waste tire storage facility" means any area where waste tires, or tire-derived products, are collected, deposited, or stored. A waste tire storage facility is a facility which does not meet the qualifications for regulation as a waste tire transfer facility or a waste tire processing facility.

Subp. 27. **Waste tire transfer facility.** "Waste tire transfer facility" means any area where waste tires are concentrated for transport to waste tire processing facilities. A waste tire transfer facility must meet the qualifications in part 7035.8270.

Subp. 28. **Wetland.** "Wetland" means any area that is covered by standing water during any portion of a year. Wetland includes, but is not limited to, wetlands as defined in Classification of Wetlands and Deep Water Habitats of the United States, 1979. This publication was issued by the United States Department of the Interior, Fish and Wildlife Service, Washington, D.C. 20402. This publication is available at the Minnesota State Government Law Library, Ford Building, 117 University Avenue, Saint Paul, Minnesota. This publication is incorporated into this definition by reference and is not subject to frequent change.

7035.8210 LAND DISPOSAL PROHIBITED.

Disposal of waste tires and tire-derived products in landfills is prohibited.

7035.8220 PERMIT REQUIRED.

An agency permit is required to establish, construct, modify, own, or operate a waste tire facility, unless that facility is exempt from the requirement to obtain a permit by statute or rule. The procedures that must be followed to obtain an agency permit, and the facilities that are exempt from the requirement to obtain an agency permit, are set out in parts 7001.4000 to 7001.4150.

7035.8230 RULE CONFLICTS.

Nothing in parts 7035.8200 to 7035.8710 shall relieve any person from obligations or duties imposed by any other laws, statutes, rules, standards, or ordinances of the federal, state, or local governments or any agency thereof now in effect or which become effective in the future. In the event parts 7035.8200 to 7035.8710 conflict with any such laws, statutes, rules, standards, or ordinances, the more stringent provisions shall apply.

7035.8240 GENERAL STANDARDS FOR PERMITTED FACILITIES.

Subpart 1. **Scope.** All permitted waste tire facilities must comply with the technical and operational standards in this part. In addition to the requirements in this part, each permitted facility must comply with requirements specific to the operation conducted at the facility and any special conditions established in a permit. Part 7035.8270 establishes qualifications for regulation as a waste tire transfer or processing facility. Facilities that do not meet the standards for regulation as a waste tire transfer or processing facility are subject to regulation as a waste tire storage facility and must comply with the standards of part 7035.8290.

Subp. 2. **Location of facility.** A waste tire facility shall not be constructed or operated in a wetland, sinkhole, shoreland, ravine, 100-year floodplain, or any area where it may be subjected to immersion in water. An existing facility may be located in a 100-year floodplain if the owner or operator submits to the director a plan meeting the requirements of part 7001.4070, subpart 6, with the permit application.

Subp. 3. **Operation.** A waste tire facility shall be operated in compliance with the following standards:

A. No operations involving the use of open flames, blow torches, or highly flammable substances shall be conducted within 50 feet of a waste tire pile.

B. An approach and access road to the waste tire facility shall be maintained passable for any vehicle at all times. Access to the facility shall be strictly controlled through the use of fences, gates, or other means of controlling access.

C. An attendant shall be present at all times the waste tire facility is open for business.

D. A waste tire storage area shall be designated. Only waste tires and tire-derived products may be stored in the designated waste tire storage area. This area must be maintained free of vegetation.

E. Waste tires stored indoors shall be stored under conditions that meet or exceed those in The Standard for Storage of Rubber Tires, NFPA 231D-1980 edition, written by the NFPA Committee on Standards for Rubber Tires, adopted by the National Fire Protection Association and published by the NFPA Standards Council (Dec. 18, 1980), San Diego, California. This publication is available at the Minnesota State Government Law Library, Ford Building, 117 University Avenue, Saint Paul, Minnesota; the Office of Public Safety, Fire Marshal Division; or any local fire department. This publication is incorporated by reference and is not subject to frequent change.

F. No waste tire pile shall have an area greater than 10,000 square feet or a vertical height greater than 20 feet, except as established in the permit as provided in part 7001.4100, subpart 2.

G. A 50-foot fire lane shall be placed around the perimeter of each waste tire pile, except as established in the permit as provided in part 7001.4100, subpart 2. Access to the fire lane for emergency vehicles must be unobstructed at all times. The fire lane shall be maintained free of rubbish and vegetation at all times.

H. All tire piles shall be maintained free of mosquitoes, through spraying or removal of water ponded in the waste tires.

I. All tire piles shall be maintained free of rodents.

J. Surface water drainage must be diverted around and away from the waste tire storage area.

Subp. 4. **Transfer of ownership or operation.** The permittee of a waste tire facility shall notify the director before transferring ownership or operation of a facility during its operating life. The permittee must also notify the new owner or operator in writing of the requirements of parts 7035.8200 to 7035.8710 and existing permit conditions. The requirements of parts 7035.8200 to 7035.8710 are transferred to the new owner or operator immediately upon the transfer of ownership or operation of the facility. A permittee's failure to notify the new owner or operator of these requirements does not relieve the new owner or operator of the obligation to comply with parts 7035.8200 to 7035.8710. No ownership or operation transfer may occur without a permit modification as required in part 7001.0190, subpart 2. The facility must be in compliance with all agency rules before transfer of the permit shall be approved.

Subp. 5. **Annual report.** A permittee of a waste tire facility shall submit a report containing the following information to the director annually, on March 1 of each year:

A. the facility name, address, and permit number;

B. the year covered by the report;

C. the total quantity and type of waste tires or weight of tire-derived products received at the facility during the year covered by the report;

D. the total quantity and type of waste tires or weight of tire-derived products shipped from the facility during the year covered by the report;

E. the total quantity and type of waste tires and weight of tire-derived products located at the facility on the date of reporting;

F. for all waste tires and tire-derived products shipped from the facility, the name and agency waste tire transporter identification number of the transporter who accepted the waste tires or tire-derived products for transport, and the quantity of waste tires or volume of tire-derived products shipped with that transporter. If the waste tires were shipped with a person who is not a waste tire transporter, the number of tires shipped, the person's name and telephone number, and the place where the tires were deposited should be noted;

G. for all waste tires and tire-derived products received at the facility, the name and agency waste tire transporter identification number of the transporter who delivered the waste tires or tire-derived products to the facility, and the quantity of waste tires or volume of tire-derived products received from that transporter. If the waste tires were delivered by a person who is not a waste tire transporter, the number of tires delivered, and the person's name and telephone number should be noted;

H. for all waste tires removed for recapping, the quantity and type removed, and the name and location of the recapping facility receiving the tires; and

I. the most recent closure cost estimate prepared using the criteria in part 7035.8430.

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7035.8250 CLOSURE.

Subpart 1. **Closure conditions.** The owner or operator of a waste tire facility must cease to accept waste tires and must immediately close the facility in compliance with any special closure conditions established in the permit, this part, and part 7035.8260, if:

A. the owner or operator declares the facility closed;

B. the owner or operator fails to provide alternate financial assurance and obtain written approval of the financial assurance from the director within the specified time period as required by parts 7035.8400 to 7035.8590;

C. the agency permit for a facility expires and renewal of the permit is not applied for, or is applied for and denied;

D. the agency permit for the facility is revoked without reissuance;

E. an agency order to cease operations is issued;

F. an agency stipulation agreement specifies closure is to begin; or

G. the owner or operator of a permitted facility has failed to receive and ship waste tires for a continuous six-month period.

Subp. 2. **Submittal of closure plan.** The owner or operator of a waste tire facility shall submit to the director a closure plan with the permit application, upon request of the director, or as required by an order or stipulation agreement. The director shall approve the closure plan as part of the permit issuance procedure or as part of a submittal required by a stipulation agreement, or other enforcement action. Compliance with the approved closure plan shall be made a condition of any permit, order, or stipulation agreement. No closure plan shall be approved unless the closure plan is consistent with this part, and the applicable closure requirements of part 7035.8260.

Subp. 3. **Contents of closure plan.** A copy of the approved closure plan and all revisions to the plan must be kept at the facility until closure is completed and verified by the director. To be approved, a closure plan must identify steps needed to close the facility at any point during its intended operating life and to close the facility completely at the end of its operating life. The closure plan must include:

A. a description of the facility's operation, including the maximum inventory of waste tires and tire-derived products that will be collected at the facility at any time during the operating life of the facility;

B. when or under what circumstances the facility will close;

C. how all waste tires and tire-derived products will be removed from the facility upon closure, and what end-use is planned for the waste tires and tire-derived products;

D. an estimate of the cost of closing the facility, including an itemized breakdown of the cost of transportation, tipping fees, and labor associated with closure of the facility; and

E. a schedule for the applicable closure procedures of part 7035.8260, including the time period for completing the closure procedures.

Subp. 4. **Amendment of plan.** The owner or operator may amend the closure plan at any time during the life of the facility. Any amendments to the closure plan must be submitted to and approved by the director before they become effective. The owner or operator must amend the closure plan and submit the amended plan to the director for approval whenever changes in the operating plan or facility design affect the closure procedures required, or whenever the expected year of closure changes.

7035.8260 CLOSURE PROCEDURES.

Subpart 1. **Time for completion of closure.** Within 90 days after closure of the facility must begin under part 7035.8250, the owner or operator of a waste tire facility shall complete the closure activities of this part. Additional procedures shall be completed as specified in the facility's approved closure plan. For waste tire processing or waste tire storage facilities, the director may approve a longer, specified period of time for completing the procedures set out in this part, provided the owner or operator demonstrates that all steps have been and will continue to be taken to minimize threats to human health, natural resources, and the environment, and the activities required by this part will take longer than 90 days to complete.

Subp. 2. **Closure procedures.** If the conditions of part 7035.8250, subpart 1 exist, the owner or operator must:

A. close public access to the facility;

B. post a gate notice indicating to the public that the facility is closed and indicating the nearest facility where tires can be deposited;

C. notify the agency, local units of government, local land use authorities, and fire and health authorities of the closing of the facility;

D. remove all solid waste to a permitted solid waste facility;

E. remove all waste tires to a waste tire processing facility that has a permit or provisional status. If a waste tire processing facility is not available to accept the waste tires, the director shall approve shipment of the waste tires to a waste tire storage or transfer facility willing and able to accept the waste tires;

F. remove all tire-derived products to a market; and

G. notify the director when the closure activities are completed.

Subp. 3. **Certification of closure.** After receiving certification from the owner or operator of the facility that the closure procedures have been completed in accordance with subpart 2, the director shall inspect the facility site. If all procedures have been correctly completed, the director shall verify that the facility has been closed in compliance with parts 7035.8200 to 7035.8710, and that all duties established by parts 7035.8200 to 7035.8710, and by the facility permit, have been discharged.

7035.8270 QUALIFICATIONS FOR REGULATION AS A PERMITTED WASTE TIRE TRANSFER OR WASTE TIRE PROCESSING FACILITY.

Subpart 1. **Scope.** This part sets out the qualifications for regulation as a permitted waste tire transfer facility or waste tire processing facility. Facilities that do not meet the standards for regulation as a waste tire transfer or processing facility shall be subject to regulation as a waste tire storage facility.

Subp. 2. **Waste tire transfer facility qualifications.** To qualify for regulation as a permitted waste tire transfer facility, the following standards must be met:

A. Waste tires stored at the facility shall be limited to 10,000 passenger tires or the equivalent weight of other waste tires.

B. All waste tires received at the facility shall be transported to a permitted waste tire processing facility at least twice annually or as otherwise provided in the facility's waste tire transfer facility permit as necessary to protect human health, natural resources, or the environment.

Subp. 3. **Waste tire processing facility qualifications.** To qualify for regulation as a permitted waste tire processing facility, the following standards must be met:

A. Waste tires stored shall be limited to one waste tire pile meeting the limits in part 7035.8240, subpart 3, item F, of the general facility standards, which is approximately 70,000 passenger tires.

B. At least 75 percent of the waste tires and tire-derived products must be processed and removed from the waste tire processing facility during a calendar year. This 75 percent annual processing requirement applies to all waste tires and tire-derived products received or produced by the facility during a calendar year. Compliance with the 75 percent annual processing requirement is determined based on the amount of waste tires and tire-derived products that are at the facility at the beginning of the calendar year, that are received or produced at the facility during the calendar year, and that remain at the facility at the end of the calendar year. The volume of waste tires and tire-derived products processed shall be calculated based on weight. This requirement shall not apply to facilities that have a waste tire storage facility permit, or that have received from the director, through the petitioning process established in part 7035.8300, an exemption from the 75 percent annual processing requirement.

7035.8280 WASTE TIRE PROCESSING FACILITY STANDARDS.

Subpart 1. **Scope.** This part sets out the standards that shall be applied to the operation of a permitted waste tire processing facility in addition to the general standards in part 7035.8240. To qualify for regulation as a waste tire processing facility, the standards in part 7035.8270 must be met.

Subp. 2. **Emergency preparedness.** Equipment for communications and the control of fires shall be provided and maintained at the waste tire processing facility at all times. Arrangements to acquire police and fire protection services for the waste tire processing facility shall be made with local police and fire protection authorities.

Subp. 3. **Emergency preparedness manual.** The permittee of the waste tire processing facility shall maintain an emergency preparedness manual at the facility. This manual shall be submitted to the director with the permit application. Once approved, the manual shall become part of the permit. This manual shall be updated if a change in the operations of the waste tire processing facility occurs, or if the director requires an update. This emergency preparedness manual must, at a minimum, contain:

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A. a list of names and telephone numbers of persons to be contacted in the event of a fire, flood, or other emergency involving the waste tire processing facility;

B. a list of the emergency response equipment present at the waste tire processing facility or available for use at the facility, the location of the equipment, and how it should be used in the event of a fire or other emergency;

C. an assessment of the possible hazards to human health and the environment should an emergency occur;

D. the procedures to be followed by facility personnel from discovery of an emergency until the situation is corrected, including the measures that will be taken to minimize the occurrence, recurrence, or spread of fires, explosions, and releases;

E. the locations of known water supplies, fire hydrants, dry-chemical extinguishers, or other materials that may be used for fire fighting purposes; and

F. additional relevant information.

No emergency preparedness manual shall be approved unless the permittee demonstrates that arrangements to acquire police and fire protection services for the waste tire processing facility have been made.

Subp. 4. **Emergency procedures.** The permittee of the waste tire processing facility shall implement the emergency procedures of subpart 3, item D, in the event of a fire or other emergency.

Subp. 5. **Emergency notification and reports.** The permittee of the waste tire processing facility shall immediately notify the director in the event of a fire or other emergency with potential off-site impacts. Within one week of correcting an emergency situation at the waste tire processing facility, the permittee of the facility shall submit to the director a report on the emergency. This report shall set out the type of emergency, the date and time of the emergency, the origins of the emergency, the actions that were taken to respond to the emergency, the results of the actions that were taken, and an analysis of the success or failure of the actions.

Subp. 6. **Market information.** In addition to the information to be included in the annual report required under the general facility standards of part 7035.8240, subpart 5, the permittee of a waste tire processing facility shall include a list of markets for the product of the processing operation, and the form and quantity of the product shipped to the markets. The permittee of a waste tire processing facility shall also report on the quantity of residuals from processing produced at the facility, and how and where those residuals were disposed.

7035.8290 WASTE TIRE STORAGE FACILITY STANDARDS.

Subpart 1. **Scope.** This part sets out the standards that shall be applied to the operation of a permitted waste tire storage facility in addition to the general standards in part 7035.8240. A waste tire facility that cannot qualify for regulation as a waste tire transfer facility or as a waste tire processing facility shall comply with the standards in this part.

Subp. 2. **Emergency preparedness standards.** Waste tire storage facilities shall comply with the emergency preparedness standards for waste tire processing facilities in part 7035.8280, subparts 2 to 5.

Subp. 3. **Storage limitation.** No waste tire storage facility shall store more than 500,000 passenger tires or the equivalent weight of other waste tires or tire-derived products at any time.

Subp. 4. **Additional information.** In addition to the information required to be submitted in the annual report required under the general facility standards of part 7035.8240, subpart 5, the permittee of the waste tire storage facility shall submit:

A. information on the procedures used at the facility to minimize or prevent mosquito breeding and rodent infestation, including the dates when mosquito or rodent control operations were conducted; and

B. reports that identify all incidents that required implementing the contingency plan of subpart 5. The report must contain a description of the actions that have been taken to minimize hazards to human health and the environment since the emergency occurred, and what actions will be taken to continue to correct the emergency if the emergency has not been corrected.

Subp. 5. **Contingency plan.** The permittee of a waste tire storage facility that has more than one waste tire pile, shall prepare and maintain a contingency plan at the facility. This contingency plan must identify the procedures to be followed in the event an emergency causes a release of substances or pollutants that threaten human health, natural resources, or the environment. The contingency plan must include:

A. an identification of the events, including vandalism, spills, fires, explosions, or any incident that could cause a release of substances or pollutants that threaten human health, natural resources, or the environment;

B. a detailed description of the procedures that should be followed in the event of a release of substances or pollutants that threaten human health, natural resources, or the environment at the facility including the procedures that should be followed to prevent the contamination of soil and ground water from the release and run-off contaminated with substances discharged from the burning tires;

C. a description of how and where run-off contaminated with substances discharged from the burning tires will be confined and collected;

D. a description of how and where the contaminated run-off will be stored before it is treated, used, or disposed of; and

E. a description of the emergency equipment available on- or off-site to implement the contingency plan, the response time for any emergency equipment available off-site, and the function and capacity of the equipment.

Subp. 6. **Contingency plan submittal.** The contingency plan shall be submitted to the director with the permit application. Once approved, the plan shall become part of the permit. This plan shall be updated if a change in the operations at the waste tire storage facility occurs, or if the plan did not provide for an appropriate response to an emergency situation involving a release, or if required by the director to protect human health, natural resources, or the environment.

Subp. 7. **Contingency plan implementation.** The permittee of the waste tire storage facility shall implement the contingency plan of subpart 5 when needed to prevent, mitigate, or clean up a release of substances or pollutants that threaten human health, natural resources, or the environment.

Subp. 8. **Notification of implementation of contingency plan.** The permittee of the waste tire storage facility must immediately notify the director when the contingency plan is implemented.

Subp. 9. **Removal of contaminated soil.** If required by the director to protect human health, natural resources, or the environment, the permittee shall remove soil contaminated by substances released by an event specified in subpart 5. The action shall be taken in accordance with any applicable rules governing the removal, transportation, and disposal of the material.

7035.8300 PETITION PROCEDURES.

Subpart 1. **Scope.** This part sets out the procedures for submitting a petition for an exemption from the 75 percent annual processing requirement established by part 7035.8270, subpart 3.

Subp. 2. **Submission of the petition.** The permittee of a waste tire processing facility may petition the director for an exemption from the 75 percent annual processing requirement by submitting to the director a petition containing the information described in subpart 3, as soon as the permittee becomes aware that compliance with the 75 percent annual processing requirement cannot be achieved.

Subp. 3. **Information required.** The petition for an exemption from the 75 percent annual processing requirement shall contain information sufficient to allow the director to find:

A. that the 75 percent annual processing requirement will be met in the year following the year for which the exemption is obtained;

B. that an exemption from the 75 percent annual processing requirement will not cause the facility to be out of compliance with any other standard applicable to the facility; and

C. that an exemption from the 75 percent annual processing requirement will not cause the facility to become a hazard to human health, natural resources, or the environment.

Subp. 4. **Determination by the director.** If the director, upon evaluation of the information submitted as part of the petition, makes the findings listed under subpart 3, the director shall grant the petition. The director shall determine whether the petition shall be granted within 60 days of receiving a petition containing information sufficient for the director to make the required findings. An exemption granted under this part shall be valid for one year. The director shall not grant the permittee of a waste tire processing facility an exemption from the 75 percent annual processing requirement for any two consecutive years.

WASTE TIRE FACILITY

FINANCIAL ASSURANCE REQUIREMENTS

7035.8400 SCOPE.

Parts 7035.8400 to 7035.8590 apply to owners and operators of waste tire facilities, except those who are exempt from the requirement to obtain a waste tire facility permit under part 7001.4020, or are permitted by rule under part 7001.4030.

7035.8410 DEFINITIONS.

Subpart 1. **Scope.** When used in parts 7035.8400 to 7035.8590, the terms in subparts 2 and 3 have the meanings given them.

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Subp. 2. **Closure plan.** "Closure plan" means the plan for closure as required in part 7035.8250, subpart 2, and the applicable requirements of parts 7035.8250 and 7035.8260.

Subp. 3. **Current closure cost estimate.** "Current closure cost estimate" means the most recent of the estimates prepared in accordance with part 7035.8430.

7035.8420 FINANCIAL ASSURANCE REQUIRED.

The owner or operator of a waste tire facility shall establish financial assurance for closure of the facility within the time periods established in part 7035.8450, by obtaining one or more of the financial assurance mechanisms described in parts 7035.8470, 7035.8480, 7035.8490, and 7035.8500, or a county-held financial assurance mechanism that meets the standards in part 7035.8460. The financial assurance mechanism selected must provide the amount of financial assurance required by part 7035.8430. No financial assurance is required for old waste tires.

7035.8430 COST ESTIMATE FOR CLOSURE.

Subpart 1. **Amount.** The amount of financial assurance to be provided by the owner or operator of a waste tire facility shall be based on the estimates prepared under this part, and shall be established according to the time schedule in part 7035.8450.

Subp. 2. **Phase I waste tire collection estimate.** The owner or operator of a waste tire facility shall make a written estimate, in current dollars, of the cost of complying with closure standards in parts 7035.8250 and 7035.8260 for all waste tires that have been collected at the facility at any time since the effective date of parts 7035.8200 to 7035.8710 and that will be collected at the facility at any time during the period from July 1, 1988, to July 1, 1990.

Subp. 3. **Phase II waste tire collection estimate.** The owner or operator of a waste tire facility shall make a written estimate, in current dollars, of the cost of complying with closure standards in parts 7035.8250 and 7035.8260 for the maximum number of new waste tires that will be collected at the facility at any time during the operating life of the facility.

Subp. 4. **Submission to director.** The estimates prepared under subparts 2 and 3 shall be submitted to the director with the permit application or upon the request of the director.

7035.8440 ADJUSTMENTS TO FINANCIAL ASSURANCE LEVEL.

Subpart 1. **Yearly adjustment.** After July 1, 1990, the owner or operator of a waste tire facility shall recalculate annually the cost of closure for new waste tires using an inflation factor. This inflation factor shall be calculated using the Implicit Price Deflator for Gross National Product as found in the Survey of Current Business issued annually by the United States Department of Commerce. The inflation factor is the result of dividing the latest published annual deflator by the deflator for the previous year. Upon request, the director shall provide the inflation factor to the owner or operator. The closure cost estimate shall be recalculated by multiplying the latest closure cost estimate by the latest inflation factor. The financial assurance mechanism used by the owner and operator of the facility shall be adjusted to reflect changes in the cost of closure caused by inflation. The date upon which the owner or operator of a waste tire facility shall adjust the financial assurance mechanism shall be July 1 of each year.

Subp. 2. **Other revisions.** The owner or operator of the waste tire facility shall revise the closure cost estimate whenever a change in the closure plan changes the cost of closure. If the estimate of the cost of closure changes, the owner or operator of a waste tire facility shall increase or decrease the amount of financial assurance by following the procedures in part 7035.8470, 7035.8480, 7035.8490, or 7035.8500.

Subp. 3. **Record keeping.** During the operating life of the facility, the owner or operator of a waste tire facility shall keep a record of the latest adjusted closure cost estimate, and shall submit this record to the agency upon the request of the director.

7035.8450 SCHEDULE FOR ESTABLISHING FINANCIAL ASSURANCE.

Subpart 1. **Scope.** The owner or operator of a waste tire facility shall establish the required level of financial assurance under this part.

Subp. 2. **Phase I.** By July 1, 1988, the owner or operator of a waste tire facility shall establish financial assurance for all waste tires that have been collected since the effective date of parts 7035.8200 to 7035.8710, and for those waste tires that will be collected at the facility at any time during the next two years of operation. By July 1, 1988, the owner or operator of a waste tire facility shall submit to the director evidence that the financial assurance required under this subpart has been obtained.

Subp. 3. **Phase II.** By July 1, 1990, the owner or operator of a waste tire facility shall establish financial assurance for the maximum number of new waste tires that will be collected at the facility at any time during the operating life of the facility. By July 1, 1990, the owner or operator of a waste tire facility shall submit to the director evidence that the financial assurance required under this subpart has been obtained.

7035.8460 COUNTY-HELD FINANCIAL ASSURANCE MECHANISM.

Subpart 1. **Scope.** An owner or operator of a waste tire facility may use a county-held financial assurance mechanism to satisfy

the requirements of parts 7035.8400 to 7035.8590 if the county-held mechanism meets or exceeds the requirements of parts 7035.8400 to 7035.8590. The wording of the instruments used to satisfy parts 7035.8400 to 7035.8590 must be identical to the wording in parts 7035.8550 to 7035.8590, except that the language that appears in double brackets must be used.

Subp. 2. **Action by the county.** A county holding a financial assurance mechanism for a waste tire facility in lieu of the agency must take all actions needed to gain access to the funds available through the financial assurance mechanism when the owner or operator of the waste tire facility has failed to:

A. begin or complete closure as required by the permit or part 7035.8260;

B. provide alternate financial assurance and obtain written approval of the financial assurance from the director and the county within the time period required by parts 7035.8400 to 7035.8590; or

C. fund the standby trust fund within the specified time period as required by part 7035.8480.

Subp. 3. **Action by the director.** In the event that the county has failed to gain access to the funds available through the financial assurance mechanism within 30 days of the owner's or operator's failure to perform as specified in subpart 2, or if the county has failed to use any funds obtained under subpart 2 to close the facility in compliance with the closure plan or part 7035.8260, including time schedules, the director shall be given access to the funds. The county shall take no action that interferes with the director's access to the funds, and shall cooperate with the director if necessary to allow the director to gain access to the funds.

Subp. 4. **Notice.** In the event that the director takes action under subpart 3, the director shall give notice of this action to the county and all other involved parties, including the owner or operator of the waste tire facility, and any trustee, surety, or letter of credit institution. Failure by the director to give notice shall not invalidate the director's actions under subpart 3.

7035.8470 CLOSURE TRUST FUND.

Subpart 1. **Scope.** Subparts 2 to 13 apply to closure trust funds. For trust funds held by a county under part 7035.8460, provisions in this part that refer to the director shall apply to both the director and the county.

Subp. 2. **Establishment of trust fund.** An owner or operator of a waste tire facility may satisfy the requirements of part 7035.8420 by establishing a closure trust fund that conforms to the requirements of subparts 2 to 13 and by submitting an originally-signed duplicate of the trust agreement to the director. The trustee shall be an entity that has the authority to act as a trustee and whose trust operations are regulated and examined by a federal or state agency. The owner or operator of the waste tire facility shall submit the originally-signed duplicate of the trust agreement to the director with the facility permit application, or in accordance with part 7035.8450.

Subp. 3. **Wording of trust agreement.** The wording of the trust agreement must be identical to the wording in part 7035.8550 and must be accompanied by a formal certification of acknowledgment as shown in part 7035.8560. The trust agreement must be updated within 60 days after a change in the amount of the current closure cost estimate covered by the agreement.

Subp. 4. **Pay-in period.** The owner or operator must make annual payments into the trust fund over the period for which the financial assurance is required, hereinafter called the pay-in period. After July 1, 1990, the pay-in period shall equal five years or the remaining operating life of the facility, whichever is shorter.

Subp. 5. **Payments.** For a new facility, the first payment must be made and a receipt submitted to the director before the initial receipt of waste tires. For an existing facility, the first payment must be made no later than 30 days after the originally-signed duplicate of the trust agreement is sent to the director. The first payment must at least be equal to the applicable current closure cost estimate, divided by the number of years in the pay-in period. Subsequent payments must be made no later than 30 days after each anniversary date of the first payment. The minimum amount of each subsequent payment must be determined by this formula:

$$\text{next payment} = \frac{CE - CV}{Y}$$

Where CE is the current closure cost estimate, CV is the current value of the trust fund, and Y is the number of years remaining in the pay-in period.

Subp. 6. **Establishment of trust fund as an alternate financial assurance mechanism.** If the owner or operator chooses to establish a closure trust fund after having used one or more alternate financial assurance mechanisms in parts 7035.8470 to 7035.8500, the first payment into the trust fund must be at least the amount that the fund would contain if the trust fund were established initially and annual payments made according to specifications of this part as applicable.

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Subp. 7. **Additional payments.** If, after the pay-in period is completed, the sum of the current closure cost estimate changes, the owner or operator shall compare the new estimate with the trustee's most recent annual valuation of the trust fund. If the value of the fund is less than the amount of the new estimate, the owner or operator, within 60 days after the change in the cost estimate, shall either deposit an amount into the fund so that its value after this deposit at least equals the amount of the current closure cost estimate and submit a receipt from the trustee for this payment to the director, or establish other financial assurance mechanisms as specified in parts 7035.8470 to 7035.8500 to cover the difference.

Subp. 8. **Request for release of excess funds.** During the operating life of the facility, if the value of the trust fund is greater than the sum of the current closure cost estimate, the owner or operator may submit a written request, together with supporting documents to the director, for release of the amount in excess of the current closure cost estimate covered by the trust fund.

Subp. 9. **Substitution of alternate financial assurance mechanisms.** If an owner or operator substitutes other financial assurance mechanisms as specified in parts 7035.8470 to 7035.8500 in place of all or part of the trust fund, the owner or operator may submit a written request to the director for release of the amount in excess of the current closure cost estimate covered by the trust fund.

Subp. 10. **Release of funds.** Within 60 days after receiving a request from the owner or operator for release of funds specified in subpart 8 or 9, the director shall instruct the trustee to release any funds in excess of the latest closure cost estimate covered by the trust fund to the owner or operator.

Subp. 11. **Notification.** The trust fund instrument shall require the trustee to notify the owner or operator and the director by certified mail within ten days following the expiration of the 30-day period after the anniversary of the establishment of the trust if no payment is received from the owner or operator during the period. Within 60 days after receipt by the director of a notice of nonpayment of any payment required by this part, the owner or operator shall:

A. make the required payment;

B. provide alternate financial assurance as specified in this part and obtain the director's written approval of the assurance provided; or

C. stop accepting waste tires and begin closure of the facility.

Subp. 12. **Reimbursement.** After beginning closure of the waste tire facility, an owner, operator, or other person authorized to perform closure may request reimbursement for completed closure expenditures by submitting itemized bills to the director. Within 60 days after receiving bills for completed closure activities, the director shall determine whether the closure expenditures are in accordance with the closure plan or are needed to ensure proper closure, and if so, the director shall instruct the trustee to make reimbursement in the amount the director specifies in writing. If the director has reason to believe that the cost of closure will be significantly greater than the value of the trust fund, the director may withhold reimbursement of the amount as considered prudent until it is determined, under part 7035.8530, that the owner or operator is no longer required to maintain financial assurance for closure.

Subp. 13. **Termination of trust fund.** The director shall agree to termination of the trust if:

A. an owner or operator substitutes alternate financial assurance as specified in parts 7035.8470 to 7035.8530; or

B. the director releases the owner or operator from the requirements of this part under part 7035.8530.

7035.8480 SURETY BOND GUARANTEEING PAYMENT INTO A STANDBY TRUST FUND.

Subpart 1. **Scope.** Subparts 2 to 10 apply to surety bonds that guarantee payment into a standby trust fund. For surety bonds held by a county under part 7035.8460, provisions in this part that refer to the director shall apply to both the director and the county.

Subp. 2. **Surety bond requirements.** An owner or operator may satisfy the requirements of part 7035.8420 by obtaining a surety bond that conforms to the requirements of subparts 2 to 10 and by submitting the bond to the director. The surety company issuing the bond must be among those listed as acceptable sureties on federal bonds in Circular 570, issued by the United States Department of the Treasury, as published annually in the Federal Register on July 1. An owner or operator shall submit the bond to the director with the permit application or under part 7035.8450.

Subp. 3. **Wording of surety bond.** The wording of the surety bond must be identical to the wording specified in part 7035.8570.

Subp. 4. **Establishment of standby trust fund.** The owner or operator who uses a surety bond to satisfy the requirements of part 7035.8420 shall also establish a standby trust fund. The bond shall require the surety to deposit all payments made under the bond directly into the standby trust fund in accordance with instructions from the director. An originally-signed duplicate of the trust agreement must be submitted to the director with the surety bond. The standby trust fund must meet the requirements of part 7035.8470, except that compliance with the requirements in items A to D is not required until the standby trust fund is funded under this part:

A. payments into the trust fund as specified in part 7035.8470;

B. updating of Schedule A of the trust agreement to show current closure cost estimates;

C. annual valuations as required by the trust agreement; and

D. notices of nonpayment as required by the trust agreement.

Subp. 5. **Performance guarantee.** The bond must guarantee that the owner or operator will:

A. pay into the standby trust fund an amount equal to the penal sum of the bond before the beginning of closure of the facility;

B. pay into the standby trust fund an amount equal to the penal sum within 15 days after an order to close the facility is issued by the director, the agency, or court of competent jurisdiction; or

C. provide alternate financial assurance as specified in parts 7035.8470 to 7035.8500 and obtain the director's written approval of the assurance provided, within 90 days after receipt by the director of a notice of cancellation of the bond from the surety.

Subp. 6. **Failure to perform.** Under the terms of the bond, the surety must become liable on the bond obligation when the owner or operator fails to perform as guaranteed by the bond.

Subp. 7. **Penal sum.** The penal sum of the bond must be at least equal to the sum of the applicable current closure cost estimate.

Subp. 8. **Changes to penal sum.** Within 60 days of an increase in the sum of the current closure cost estimate to an amount greater than the penal sum, the owner or operator shall either cause the penal sum to be increased to an amount at least equal to the sum of the current closure cost estimate and submit evidence of the increase to the director, or obtain other financial assurance as specified in parts 7035.8470 to 7035.8500 to cover the increase. Whenever the sum of the current closure cost estimate decreases, the penal sum may be reduced to the sum of the current closure cost estimate following written approval by the director.

Subp. 9. **Notification.** The bond must provide that the surety may cancel the bond only by sending notice of cancellation by certified mail to the owner or operator and the director. The bond must also provide that cancellation shall not be effective until 120 days after the director has received the notice of cancellation, as evidenced by the return receipt. For a surety bond held by a county under part 7035.8460, the bond must provide a 150-day cancellation period rather than a 120-day period.

Subp. 10. **Cancellation of surety bond.** The owner or operator may cancel the bond if the director has given prior written consent. The director shall provide written consent if:

A. an owner or operator substitutes alternate financial assurance as specified in parts 7035.8470 to 7035.8500; or

B. the director releases the owner or operator from the requirements of this part in accordance with part 7035.8530.

7035.8490 LETTER OF CREDIT.

Subpart 1. **Scope.** Subparts 2 to 11 apply to closure letters of credit. For letters of credit held by a county under part 7035.8460, provisions in this part that refer to the director shall apply to both the director and the county.

Subp. 2. **Letter of credit requirements.** An owner or operator may satisfy the requirements of part 7035.8420 by obtaining an irrevocable letter of credit that conforms to the requirements of subparts 2 to 11, and by submitting the letter to the director. The issuing institution must be an entity that has the authority to issue letters of credit and whose letter of credit operations are regulated and examined by a federal or state agency. An owner or operator of a waste tire facility shall submit the letter of credit to the director with the facility permit application or under part 7035.8450.

Subp. 3. **Wording of letter of credit.** The wording of the letter of credit must be identical to the wording in part 7035.8490.

Subp. 4. **Establishment of standby trust fund.** An owner or operator who uses a letter of credit to satisfy the requirements of part 7035.8420 shall also establish a standby trust fund. Under the terms of the letter of credit, the issuing institution will deposit all amounts paid directly into the standby trust fund in accordance with instructions from the director. An originally-signed duplicate of the standby trust fund agreement must be submitted to the director with the letter of credit. The standby trust fund agreement must meet the requirements in part 7035.8470, except that compliance with the requirements in items A to D is not required until the standby trust fund is funded under this part:

A. payments into the trust fund as specified in part 7035.8470;

B. updating of Schedule A of the trust agreement to show current closure cost estimates;

C. annual valuations as required by the trust agreement; and

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D. notices of nonpayment as required by the trust agreement.

Subp. 5. **Submittal.** The letter of credit submitted to the director must be accompanied by a letter from the owner or operator referring to the letter of credit by number, issuing institution, date of issuance, the name and address of the waste tire facility, and the amount of funds assured for closure of the facility by the letter of credit.

Subp. 6. **Notification.** The letter of credit must be irrevocable and issued for a period of at least one year. The letter of credit must provide that the expiration date will be extended automatically for a period of at least one year unless, at least 120 days before the current expiration date, the issuing institution notifies both the owner or operator and the director by certified mail of a decision not to extend the expiration date. Under the terms of the letter of credit, the 120 days must begin on the date when the director received the notice, as evidenced by the return receipt. For a letter of credit held by a county under part 7035.8460, the letter of credit must provide a 150-day expiration period rather than a 120-day period.

Subp. 7. **Amount of credit.** The letter of credit must be issued in an amount at least equal to the sum of the applicable current closure cost estimate.

Subp. 8. **Changes to amount of credit.** Within 60 days of an increase in the sum of the current closure cost estimate to an amount greater than the amount of the credit, the owner or operator shall either cause the amount of the credit to be increased to an amount at least equal to the sum of the current closure cost estimate and submit evidence of the increase to the director, or obtain other financial assurance as specified in parts 7035.8470 to 7035.8500 to cover the increase. Whenever the sum of the current closure cost estimate decreases, the amount of the credit may be reduced to the sum of the current closure cost estimate following written approval by the director.

Subp. 9. **Failure to perform.** The letter of credit must provide that the director may draw on the letter of credit, when the director has determined that the owner or operator has failed to perform closure when required to do so in accordance with the closure plan or part 7035.8260.

Subp. 10. **Failure to establish alternate financial assurance.** The director shall draw on the letter of credit if the owner or operator does not establish alternate financial assurance as specified in parts 7035.8470 to 7035.8500 and obtain written approval of alternate assurance from the director within 90 days after the director receives notice that the issuing institution has decided not to extend the letter of credit beyond the current expiration date. The director may delay the drawing if the issuing institution grants an extension of the term of the credit. During the last 30 days of any extension, the director shall draw on the letter of credit if the owner or operator has failed to provide alternate financial assurance as specified in parts 7035.8470 to 7035.8500 and obtain written approval of the assurance from the director.

Subp. 11. **Termination of letter of credit.** The director shall return the letter of credit to the issuing institution for termination if:

A. an owner or operator substitutes alternate financial assurance as specified in parts 7035.8470 to 7035.8500; or

B. the director releases the owner or operator from the requirements of this part in accordance with part 7035.8530.

7035.8500 SURETY BOND GUARANTEEING PERFORMANCE OF CLOSURE FOR PERMITTED FACILITIES.

Subpart 1. **Scope.** Subparts 2 to 11 apply to surety bonds that guarantee performance of closure. Surety bonds that guarantee performance of closure can only be used for permitted facilities with approved closure plans. For surety bonds held by a county under part 7035.8460, provisions in this part that refer to the director shall apply to both the director and the county.

Subp. 2. **Surety bond requirements.** An owner or operator may satisfy the requirements of part 7035.8420 by obtaining a surety bond that conforms to the requirements of subparts 2 to 11 and by submitting the bond to the director. The surety company issuing the bond must be among those listed as acceptable sureties on federal bonds in Circular 570, issued by the United States Department of the Treasury, as published annually in the Federal Register on July 1. An owner or operator of a waste tire facility shall submit the bond to the director with the permit application or in accordance with part 7035.8450.

Subp. 3. **Wording of surety bond.** The wording of the surety bond must be identical to the wording specified in part 7035.8590.

Subp. 4. **Establishment of standby trust fund.** The owner or operator who uses a surety bond to satisfy the requirements of part 7035.8420 shall also establish a standby trust fund. The bond shall require the surety to deposit all payments made under the bond directly into the standby trust fund in accordance with instructions from the director. An originally-signed duplicate of the standby trust fund agreement must be submitted to the director with the surety bond. The standby trust must meet the requirements of part 7035.8470, except that compliance with the requirements in items A to D is not required until the standby trust fund is funded under this part:

A. payments into the trust fund as specified in part 7035.8470;

B. updating of Schedule A of the trust agreement to show current closure cost estimates;

C. annual valuations as required by the trust agreement; and

D. notices of nonpayment as required by the trust agreement.

Subp. 5. **Performance guarantee.** The bond must guarantee that the owner or operator will:

A. perform closure in accordance with the closure plan, and other requirements of the permit for the facility whenever required to do so; or

B. provide alternate financial assurance as specified in parts 7035.8470 to 7035.8500 and obtain the director's written approval of the assurance provided, within 90 days after receipt by the director of a notice of cancellation of the bond from the surety.

Subp. 6. **Failure to perform.** Under the terms of the bond, the surety must become liable on the bond obligation when the owner or operator fails to perform as guaranteed by the bond. Following a determination by the director that the owner or operator has failed to perform closure in accordance with the closure plan, and other permit requirements, under the terms of the bond the surety shall deposit the amount of the penal sum into the standby trust fund.

Subp. 7. **Penal sum.** The penal sum of the bond must be at least equal to the sum of the applicable current closure cost estimate.

Subp. 8. **Changes to penal sum.** Within 60 days of an increase in the sum of the current closure cost estimate to an amount greater than the penal sum, the owner or operator shall either cause the penal sum to be increased to an amount at least equal to the sum of the current closure cost estimate and submit evidence of the increase to the director, or obtain other financial assurance specified in parts 7035.8470 to 7035.8500. Whenever the sum of the current closure cost estimate decreases, the penal sum may be reduced to the sum of the current closure cost estimate following written approval by the director.

Subp. 9. **Notification.** The bond must provide that the surety may cancel the bond only by sending notice of cancellation by certified mail to the owner or operator and to the director. The bond must also provide that cancellation shall not be effective until 120 days after the director has received the notice of cancellation as evidenced by the return receipt. For a surety bond held by a county under part 7035.8460, the bond must provide a 150-day cancellation period rather than a 120-day period.

Subp. 10. **Cancellation of surety bond.** The owner or operator may cancel the bond if the director has given prior written consent. The director shall provide written consent if:

A. an owner or operator substitutes alternate financial assurance as specified in parts 7035.8470 to 7035.8500; or

B. the director releases the owner or operator from the requirements of this part in accordance with part 7035.8530.

Subp. 11. **Limitation on liability.** The surety will not be liable for deficiencies in the owner's or operator's performance of closure after the director releases the owner or operator from the requirements of this part in accordance with part 7035.8530.

7035.8510 USE OF MULTIPLE FINANCIAL ASSURANCE MECHANISMS.

An owner or operator may satisfy the requirements of part 7035.8420 by establishing more than one financial assurance mechanism per waste tire facility. These mechanisms are limited to trust funds, surety bonds guaranteeing payment into a trust fund, and letters of credit. The mechanisms must be established as specified in parts 7035.8470, 7035.8480, and 7035.8490, except that it is the combination of mechanisms, rather than a single mechanism, that must provide financial assurance at least equal to the sum of the current closure cost estimate. If an owner or operator uses a trust fund in combination with a surety bond or a letter of credit, the owner or operator may use the trust fund as the standby trust fund for the other mechanisms. A single standby trust fund may be established for two or more mechanisms. The director may use any or all of the financial assurance mechanisms to provide for closure of the facility.

7035.8520 USE OF FINANCIAL ASSURANCE MECHANISM FOR MULTIPLE WASTE TIRE FACILITIES.

An owner or operator may use a financial assurance mechanism specified in parts 7035.8470 to 7035.8500 to meet the requirements of part 7035.8420 for more than one waste tire facility. Evidence of financial assurance submitted to the director must include a list showing, for each facility, the name, address, and the amount of funds for closure assured by the mechanism. The amount of funds available through the mechanism must be no less than the sum of funds that would be available if a separate mechanism had been established and maintained for each facility. When directing disbursement of funds for closure at any of the facilities covered by the mechanism, the director shall direct that only the amount of funds designated for that facility be disbursed unless otherwise agreed to by the owner or operator.

7035.8530 RELEASE OF OWNER OR OPERATOR FROM FINANCIAL ASSURANCE REQUIREMENTS.

When an owner or operator has completed, to the satisfaction of the director, all closure requirements in accordance with the

KEY: PROPOSED RULES SECTION —. Underlining indicates additions to existing rule language. ~~Strike outs~~ indicate deletions from existing rule language. If a proposed rule is totally new, it is designated "all new material." ADOPTED RULES SECTION — Underlining indicates additions to proposed rule language. ~~Strike outs~~ indicate deletions from proposed rule language.

closure plan or other closure requirements, the director shall notify the owner or operator in writing that financial assurance for closure of the waste tire facility is no longer required.

7035.8540 INCAPACITY OF OWNERS OR OPERATORS, GUARANTORS, OR FINANCIAL INSTITUTIONS.

Subpart 1. **Notification of bankruptcy.** An owner or operator shall notify the director by certified mail of the commencement of a voluntary or involuntary proceeding under United States Code, title 11, Bankruptcy, naming the owner or operator as a debtor, within ten days after commencement of the proceeding.

Subp. 2. **Incapacity of financial institutions.** An owner or operator who fulfills the requirements of part 7035.8420 by obtaining a trust fund, surety bond, or letter of credit will be considered to be without the required financial assurance in the event of bankruptcy of the trustee or issuing institution; or in the event that the authority of the trustee to act as trustee is revoked or suspended; or in the event that the institution's authority to issue the surety bond or letter of credit is revoked or suspended. The owner or operator shall establish other financial assurance within 60 days after such an event.

7035.8550 LANGUAGE REQUIRED FOR TRUST AGREEMENT.

A trust agreement for a trust fund as specified in part 7035.8470 must be worded as specified in this part. Instructions in brackets must be replaced with the relevant information and the brackets deleted. Instructions or language in double brackets shall be used when the instrument is to serve as a county-held financial assurance mechanism.

TRUST AGREEMENT

Trust Agreement, the "Agreement," entered into on [date] by [name of the owner or operator], a [name of state] [insert "corporation," "partnership," "association," or "proprietorship"], the "Grantor," and [name of corporate trustee], [insert "incorporated in the state of ....." or "a national bank"], the "Trustee."

RECITALS:

- The Minnesota Pollution Control Agency (Agency), an agency of the state of Minnesota, has established rules applicable to the Grantor, requiring that an owner or operator of a waste tire facility shall provide assurance that funds will be available when needed for closure for the facility.
- The Grantor has chosen to establish a trust to provide the financial assurance for the facilities identified in this Agreement.
- The Grantor, acting through its duly authorized officers, has selected the Trustee to be the trustee under this Agreement, and the Trustee is willing to act as trustee.

AGREEMENT:

The Grantor and the Trustee agree as follows:

Section 1. **Definitions.** As used in this Agreement:

a. The term "Grantor" means the owner or operator who enters into this Agreement and any successors or assigns of the Grantor.

b. The term "Trustee" means the Trustee who enters into this Agreement and any successor Trustee.

c. The term "beneficiary" means the Minnesota Pollution Control Agency [[substitute "The term "1st beneficiary" means the [name of county]; the term "2nd beneficiary" means the Minnesota Pollution Control Agency" for the entire definition]].

Section 2. **Identification of Facilities and Cost Estimates.** This Agreement pertains to the facilities and cost estimates, if any, identified on attached Schedule A [on Schedule A, for each facility list the name, address, and the current closure cost estimate for which financial assurance is demonstrated by this Agreement].

Section 3. **Establishment of Fund.** The Grantor and the Trustee establish a trust fund, the "Fund," for the benefit of the Agency [[substitute "1st and 2nd beneficiaries" for "Agency"]]. The Grantor and the Trustee intend that no third party have access to the Fund except as provided in this Agreement. The Fund is established initially as the property, which is acceptable to the Trustee and described in Schedule B attached to this Agreement. This property and any other property subsequently transferred to the Trustee is referred to as the Fund, together with all earnings and profits, less any payments or distributions made by the Trustee under this Agreement. The Fund shall be held by the Trustee, IN TRUST, as provided in this Agreement. The Trustee shall not be responsible or undertake any responsibility for the amount or adequacy of, or any duty to collect from the Grantor, any payments necessary to discharge any liabilities of the Grantor established by the Agency.

Section 4. **Payment for Closure.** The Trustee shall make payments from the Fund as the Agency Director [[substitute "1st or 2nd beneficiary" for "Agency Director"]] shall direct, in writing, to provide for the payment of the costs of closure of the facilities covered by this Agreement. [[Add the following sentence "Direction to the Trustee shall be given by the 1st or 2nd beneficiary in accordance with Section 14."]] The Trustee shall reimburse the Grantor or other persons as specified by the Agency Director [[substitute "1st or 2nd beneficiary" for "Agency Director"]] shall direct in writing. In addition, the Trustee shall refund to the

Grantor the amounts the Agency Director [[substitute "1st or 2nd beneficiary" for "Agency Director"]] specifies in writing. Upon refund, these funds shall no longer constitute part of the Fund.

Section 5. **Payments Comprising the Fund.** Payments made to the Trustee for the Fund shall consist of cash or securities acceptable to the Trustee.

Section 6. **Trustee Management.** The Trustee shall invest and reinvest the principal income of the Fund as a single fund in accordance with general investment policies and guidelines. In investing, reinvesting, exchanging, selling, and managing the Fund, the Trustee's duties with respect to the trust fund shall be discharged solely in the interest of the beneficiary [[substitute "1st and 2nd beneficiaries" for "beneficiary"]] and with the care, skill, prudence, and diligence under the circumstances then prevailing that persons of prudence, acting in a like capacity and familiar with such matters, would use in the conduct of an enterprise of a like character and with like aims; except that:

a. securities or other obligations of the Grantor, or any other owner or operator of the facilities, or any of their affiliates as defined in the Investment Company Act of 1940, United States Code, title 15, section 80a-2(a), shall not be acquired or held, unless they are securities or other obligations of the federal or state government;

b. the Trustee is authorized to invest the Fund in time or demand deposits of the Trustee, to the extent insured by an agency of the federal or state government; and

c. the Trustee is authorized to hold cash awaiting investment or distribution uninvested for a reasonable time and without liability for the payment of interest thereon.

Section 7. **Commingling and Investment.** The Trustee is expressly authorized in its discretion:

a. to transfer from time to time any or all of the assets of the Fund to any common, commingled, or collective trust fund created by the Trustee in which the Fund is eligible to participate, subject to all of the provisions thereof, to be commingled with the assets of other trusts participating therein; and

b. to purchase shares in any investment company registered under the Investment Company Act of 1940, United States Code, title 15, sections 80a-1 et seq., including one that may be created, managed, underwritten, or to which investment advice is rendered or the shares are sold by the Trustee. The Trustee may vote such shares in its discretion.

Section 8. **Express Powers of Trustee.** Without in any way limiting the powers and discretions conferred upon the Trustee by the other provisions of this Agreement or by law, the Trustee is expressly authorized and empowered:

a. to sell, exchange, convey, transfer, or otherwise dispose of any property held by it, by public or private sale. No person dealing with the Trustee may be bound to see to the application of the purchase money or to inquire into the validity or expediency of a sale or other disposition;

b. to make, execute, acknowledge, and deliver any and all documents of transfer and conveyance and any and all other instruments that may be necessary or appropriate to carry out the powers granted in this Agreement;

c. to register any securities held in the Fund in its own name or in the name of a nominee and to hold any security in bearer form or in book entry, or to combine certificates representing the securities with certificates of the same issue held by the Trustee in other fiduciary capacities, or to deposit or arrange for the deposit of the securities in a qualified central depository even though, when so deposited, the securities may be merged and held in bulk in the name of the nominee of the depository with other securities deposited therein by another person, or to deposit or arrange for the deposit of any securities issued by the United States Government, or any agency or instrumentality thereof, with a federal reserve bank, but the books and records of the Trustee shall at all times show that all these securities are part of the Fund;

d. to deposit any cash in the Fund in interest-bearing accounts maintained or savings certificates issued by the Trustee, in its separate corporate capacity, or in any other banking institution affiliated with the Trustee, in its separate corporate capacity, or in any other banking institution affiliated with the Trustee, to the extent insured by an agency of the federal or state government; and

e. to compromise or otherwise adjust all claims in favor of or against the Fund.

Section 9. **Taxes and Expenses.** All taxes of any kind that may be assessed or levied against or in respect of the Fund and all brokerage commissions incurred by the Fund shall be paid from the Fund. All other expenses incurred by the Trustee in connection with the administration of this Trust, including fees for legal services rendered to the Trustee, the compensation of the Trustee to the extent not paid directly by the Grantor, and all other proper charges and disbursements of the Trustee shall be paid from the Fund.

KEY: PROPOSED RULES SECTION — Underlining indicates additions to existing rule language. ~~Strike outs~~ indicate deletions from existing rule language. If a proposed rule is totally new, it is designated "all new material." ADOPTED RULES SECTION — Underlining indicates additions to proposed rule language. ~~Strike outs~~ indicate deletions from proposed rule language.

Section 10. **Annual Valuation.** The Trustee shall annually, at least 30 days prior to the anniversary date of establishment of the Fund, furnish to the Grantor and to the Agency Director [[substitute "1st and 2nd beneficiaries" for "Agency Director"]] a statement confirming the value of the Trust. Any securities in the Fund shall be valued at market value as of no more than 60 days prior to the anniversary date of establishment of the Fund. The failure of the Grantor to object in writing to the Trustee within 90 days after the statement has been furnished to the Grantor and the Agency Director [[substitute "1st and 2nd beneficiaries" for "Agency Director"]] shall constitute a conclusively binding assent by the Grantor, barring the Grantor from asserting any claim or liability against the Trustee with respect to matters disclosed in the statement.

Section 11. **Advice of Counsel.** The Trustee may from time to time consult with counsel with respect to any question arising as to the construction of this Agreement or any action to be taken hereunder. The Trustee shall be fully protected, to the extent permitted by law, in acting upon the advice of counsel.

Section 12. **Trustee Compensation.** The Trustee shall be entitled to reasonable compensation for its services as agreed upon in writing from time to time with the Grantor.

Section 13. **Successor Trustee.** The Trustee may resign or the Grantor may replace the Trustee, but the resignation or replacement shall not be effective until the Grantor has appointed a successor trustee and this successor accepts the appointment. The successor trustee shall have the same powers and duties as those conferred upon the Trustee hereunder. Upon the successor trustee's acceptance of the appointment, the Trustee shall assign, transfer, and pay over to the successor trustee the funds and properties then constituting the Fund. If for any reason the Grantor cannot or does not act in the event of the resignation of the Trustee, the Trustee may apply to a court of competent jurisdiction for the appointment of a successor trustee or for instructions. The successor trustee shall specify the date that it assumes administration of the trust in a writing sent to the Grantor, the Agency Director [[substitute "1st and 2nd beneficiaries" for "Agency Director"]] and the present Trustee by certified mail ten days before the change becomes effective. Any expenses incurred by the Trustee as a result of any of the acts contemplated by this Section shall be paid as provided in Section 9.

Section 14. **Instructions to the Trustee.** All orders, requests, and instructions by the Agency Director [[substitute "1st or 2nd beneficiary" for "Agency Director"]] to the Trustee shall be in writing, signed by the Agency Director [[substitute "a designee of the 1st or 2nd beneficiary" for "the Agency Director"]]; and the Trustee shall act and shall be fully protected in acting in accordance with the orders, requests, and instructions [[add, "except that the Trustee shall not act in accordance with the orders, requests, and instructions of the 1st beneficiary if the 2nd beneficiary notifies the Trustee, in writing, that the Trustee shall only act in accordance with the orders, requests, and instructions of the 2nd beneficiary. In the event that the Trustee has received such notice from the 2nd beneficiary, the Trustee shall only act in accordance with the orders, requests, and instructions from the 2nd beneficiary"]]. The Trustee shall have the right to assume, in the absence of written notice to the contrary, that no event constituting a change or a termination of the authority of any person to act on behalf of the Grantor or the Agency [[substitute "1st or 2nd beneficiary" for "Agency"]] under this Agreement has occurred. The Trustee shall have no duty to act in the absence of orders, requests, and instructions from the Agency Director, [[substitute "a designee of the 1st or 2nd beneficiary" for "the Agency Director"]] except as provided in this Agreement.

Section 15. **Notice of Nonpayment.** The Trustee shall notify the Grantor and the Agency Director [[substitute "1st and 2nd beneficiaries" for "Agency Director"]] by certified mail within ten days following the expiration of the 30-day period after the anniversary of the establishment of the Trust, if no payment is received from the Grantor during that period. After the pay-in period is completed, the Trustee shall not be required to send a notice of nonpayment.

Section 16. **Amendment of Agreement.** This Agreement may be amended by an instrument in writing executed by the Grantor, the Trustee, and the Agency Director or by the Trustee and the Agency Director, if the Grantor ceases to exist.

Section 17. **Irrevocability and Termination.** Subject to the right of the parties to amend this Agreement as provided in Sections 13 and 16, this Trust shall be irrevocable and shall continue until terminated at the written agreement of the Grantor, the Trustee, and the Agency Director [[substitute "1st and 2nd beneficiaries" for "Agency Director"]] or by the Trustee and the Agency Director [[substitute "1st and 2nd beneficiaries" for "Agency Director"]] if the Grantor ceases to exist. Upon termination of the Trust, all remaining trust property, less final trust administration expenses, shall be delivered to the Grantor or any successors or assigns of the Grantor.

Section 18. **Immunity and Indemnification.** The Trustee shall not incur personal liability of any nature in connection with any act or omission, made in good faith, in the administration of this Trust, or in carrying out any directions by the Agency Director [[substitute "1st or 2nd beneficiary" for "Agency Director"]] issued in accordance with this Agreement. The Trustee shall be indemnified and saved harmless by the Grantor or from the Trust Fund, or both, from and against any personal liability to which the Trustee may be subjected by reason of any act or conduct in its official capacity, including all expenses reasonably incurred in its defense in the event the Grantor fails to provide a defense.

Section 19. **Choice of Law.** This Agreement shall be administered, construed, and enforced according to the laws of the state of Minnesota.

Section 20. **Interpretation.** As used in this Agreement, words in the singular include the plural and words in the plural include the singular. The descriptive headings for each Section of this Agreement shall not affect the interpretation or the legal efficacy of this Agreement.

The parties have caused this Agreement to be executed by their respective officers duly authorized and their corporate seals to be affixed and attested on the date first above written. The parties below certify that the wording of this Agreement is identical to the wording specified in Minnesota Rules, part 7035.8550, as the rules were constituted on the date of signing.

[SIGNATURE OF GRANTOR]

[TITLE]

Attest:

[TITLE]
[SEAL]

[SIGNATURE OF TRUSTEE]

Attest:

[TITLE]
[SEAL]

7035.8560 LANGUAGE REQUIRED FOR CERTIFICATE OF ACKNOWLEDGMENT.

This part contains an example of the certification of acknowledgment that must accompany the trust agreement for a trust fund as specified in part 7035.8470.

CERTIFICATION OF ACKNOWLEDGMENT

State of _____
County of _____

On this [date], before me personally came [owner or operator] to me known, who, being by me duly sworn, did depose and say that she/he resides at [address], that she/he is [title] of [corporation, proprietorship, local government entity], the entity described in and that executed the above instrument; that she/he knows the seal of said [corporation, local government entity]; that the seal affixed to the instrument is the [corporate, local government entity's] seal; that it was so affixed by order of the [Board of Directors, Board of Commissioners, City Council] of said [corporation, local government entity] and that she/he signed her/his name thereto by like order:

_____
(signature of Notary Public)

7035.8570 LANGUAGE REQUIRED FOR SURETY BOND GUARANTEEING PAYMENT INTO A STANDBY TRUST FUND.

A surety bond guaranteeing payment into a trust fund as specified in part 7035.8480 must be worded as in this part. The instructions in brackets must be replaced with the relevant information and the brackets deleted. Instructions or language in double brackets must be used when the instrument is to serve as a county-held financial assurance mechanism.

FINANCIAL GUARANTEE BOND

Date bond executed: _____
Effective Date: _____
Principal: [Legal name and business address of owner or operator]
Type of organization: [insert "individual," "joint venture," "partnership," or "corporation"]
State of incorporation: _____
Surety(ies): [name(s) and business address(es)]
Name, address, and closure amount(s) for each facility guaranteed by this bond:
Total penal sum of bond: $_____
Surety's bond number: _____

KEY: PROPOSED RULES SECTION — Underlining indicates additions to existing rule language. ~~Strike outs~~ indicate deletions from existing rule language. If a proposed rule is totally new, it is designated "all new material." ADOPTED RULES SECTION — Underlining indicates additions to proposed rule language. ~~Strike outs~~ indicate deletions from proposed rule language.

Know All Persons By These Presents, That we, the Principal and Surety(ies) are firmly bound to the Minnesota Pollution Control Agency (hereinafter called Agency) [[and the [name of county] (hereinafter county)]] in the penal sum for the payment we bind ourselves, our heirs, executors, administrators, successors, and assigns jointly and severally; provided that, where the Surety(ies) are corporations acting as co-sureties, we, the Sureties, bind ourselves in the sum "jointly and severally" only for the purpose of allowing a joint action or actions against any or all of us, and for all other purposes each Surety binds itself, jointly and severally with the Principal, for the payment of the sum only as is set forth opposite the name of the Surety; but if no limit of liability is indicated, the limit of liability shall be the full amount of the penal sum.

Whereas said Principal is required to have a permit or provisional status in order to own or operate each waste tire facility identified above, and

Whereas said Principal is required to provide financial assurance for closure as a condition of the permit or provisional status, and

Whereas said Principal shall establish a standby trust fund as required when a surety bond is used to provide financial assurance;

Now, Therefore, the conditions of the obligation are such that if the Principal faithfully, before the beginning of closure of each facility identified above, funds the standby trust fund in the amount(s) identified above for the closure of the facility,

Or, if the Principal funds the standby trust fund in the amount(s) identified above for closure of the facility within 15 days after an order to begin closure is issued by the Agency Director, the Agency, [[county,]] or court of competent jurisdiction,

Or, if the Principal provides alternate financial assurance, as specified in parts 7035.8470 to 7035.8500 as applicable and obtains the Agency Director's [[and the county's]] written approval of assurance, within 90 days after the date the notice of cancellation is received by the Agency Director from the Surety(ies),

Then this obligation shall be null and void, otherwise it is to remain in full force and effect.

The Surety(ies) shall become liable on this bond obligation only when the Principal has failed to fulfill the conditions described above. Upon notification by the Agency Director [[or the county]] that the Principal has failed to perform as guaranteed by this bond, the Surety(ies) shall place funds in the amount guaranteed for the facility(ies) into the standby trust fund as directed by the Agency Director [[or the county]].

The liability of the Surety(ies) shall not be discharged by any payment or succession of payments hereunder, unless and until payment or payments shall amount in the aggregate to the penal sum of the bond, but in no event shall the obligation of the Surety(ies) hereunder exceed the amount of said penal sum.

The Surety(ies) may cancel the bond by sending notice of cancellation by certified mail to the Principal and to the Agency Director [[and to the county]]; provided, however, that cancellation shall not occur during the 120 [[substitute "150" for "120"]] days beginning on the date of receipt of the notice of cancellation by the Agency Director, as evidenced by the return receipt.

The Principal may terminate this bond by sending written notice to the Surety(ies); provided, however, that no such notice shall become effective until the Surety(ies) receive(s) written authorization for termination of the bond by the Agency Director [[and the county]].

(The following paragraph is an optional rider that may be included but is not required.)

The Principal and Surety(ies) agree to adjust the penal sum of the bond yearly so that it guarantees a new closure amount, provided that the penal sum does not increase by more than 20 percent in any year, and no decrease in the penal sum takes place without the written permission of the Agency Director [[and the county]].

The Principal and Surety(ies) have signed this Financial Guarantee Bond on the date set forth above.

The persons whose signatures appear below hereby certify that they are authorized to sign this surety bond on behalf of the Principal and Surety(ies) and that the wording of this surety bond is identical to the wording specified in Minnesota Rules, part 7035.8570, as the rules were constituted on the date this bond was signed.

Principal

[SIGNATURE(S)]

[NAME(S)]

[TITLE(S)]

Corporate Surety(ies)

[NAME AND ADDRESS]

State of incorporation: _____

Liability limit: $_____

[SIGNATURE(S)]

[NAME(S) AND TITLE(S)]

[For every co-surety, provide signature(s), and other information in the same manner as for Surety above.]

Bond premium: $_____

7035.8580 LANGUAGE REQUIRED FOR LETTER OF CREDIT.

A letter of credit, as specified in part 7035.8490, must be worded as specified in this part. The instructions in brackets must be replaced with the relevant information and the brackets deleted. The instructions or language in double brackets must be used when the instrument is to serve as a county-held financial assurance mechanism.

IRREVOCABLE STANDBY LETTER OF CREDIT

[Agency Director]
Minnesota Pollution Control Agency

[[county designee]]
[[(name of county)]]

Dear Director [[and county designee]]:

We hereby establish our Irrevocable Standby Letter of Credit No. _____in your favor, at the request and for the account of [owner's or operator's name and address] up to the aggregate amount of [in words] U.S. dollars $_____, available upon presentation of:

1. your sight draft, bearing reference to this Letter of Credit No. _____, and

2. your signed statement reading as follows: "I certify that the amount of the draft is payable pursuant to the State of Minnesota's rules regarding the management of waste tires."

This letter of credit is effective as of [date] and shall expire on [date at least one year later], but the expiration date shall be automatically extended for a period of [at least one year] on [date] and on each successive expiration date, unless, at least 120 days before the current expiration date, we notify you by certified mail that we have decided not to extend this letter of credit beyond the current expiration date. In the event you are so notified, any unused portion of the credit shall be available upon presentation of your sight draft for 120 days after the date of receipt by you, as shown on the signed return receipt.

Whenever this letter of credit is drawn on and under and in compliance with the terms of this credit, we shall duly honor the draft upon presentation to us and we shall deposit the amount of the draft directly into the standby trust fund of [owner's or operator's name] in accordance with your instructions.

We certify that the wording of this letter of credit is identical to the wording specified in Minnesota Rules, part 7035.8580, on the date shown immediately below.

[SIGNATURE(S) AND TITLE(S) OF OFFICIAL(S) OF ISSUING INSTITUTION]

[DATE]

This credit subject to (insert "the most recent edition of the Uniform Customs and Practice for Documentary Credits, published by the International Chamber of Commerce," or "the Uniform Commercial Code published in Minnesota Statutes, chapter 336").

7035.8590 LANGUAGE REQUIRED FOR SURETY BOND GUARANTEEING PERFORMANCE OF CLOSURE.

A surety bond guaranteeing performance of closure as specified in part 7035.8500, must be worded as specified in this part. The instructions in brackets must be replaced with the relevant information and the brackets deleted. The instructions and language in double brackets must be used if the instrument is to serve as a county-held financial assurance mechanism.

PERFORMANCE BOND

Date bond executed: _____
Effective date: _____
Principal: [legal name and business address of owner or operator]
Type of organization: [insert "individual," "joint venture," "partnership," or "corporation"]

KEY: PROPOSED RULES SECTION — Underlining indicates additions to existing rule language. ~~Strike outs~~ indicate deletions from existing rule language. If a proposed rule is totally new, it is designated "all new material." ADOPTED RULES SECTION — Underlining indicates additions to proposed rule language. ~~Strike outs~~ indicate deletions from proposed rule language.

State of incorporation: _____
Surety(ies): [name(s) and business address(es)]
Name, address, and closure amount(s) for each facility guaranteed by this bond: _____
Total penal sum of bond: $_____
Surety's bond number: _____

Know All Persons By These Presents, That we, the Principal and Surety(ies) are firmly bound to the Minnesota Pollution Control Agency (hereinafter called Agency) [[and the [name of county] (hereinafter called county)]], in the penal sum for the payment we bind ourselves, our heirs, executors, administrators, successors, and assigns jointly and severally; provided that, where the Surety(ies) are corporations acting as co-sureties, we, the Sureties, bind ourselves in the sum "jointly and severally" only for the purpose of allowing a joint action or actions against any or all of us, and for all other purposes each Surety binds itself, jointly and severally with the Principal, for the payment of the sum only as is set forth opposite the name of the Surety, but if no limit of liability is indicated, the limit of liability shall be the full amount of the penal sum.

Whereas said Principal is required to have a permit in order to own or operate each waste tire facility identified above, and

Whereas said Principal is required to provide financial assurance for closure; or closure action as a condition of the permit, and

Whereas said Principal shall establish a standby trust fund as is required when a surety bond is used to provide financial assurance;

Now, Therefore, the conditions of this obligation are such that if the Principal faithfully performs closure, whenever required to do so, of each facility for which this bond guarantees closure, in accordance with the closure plan and other requirements of the permit including any amendments, and pursuant to all applicable laws, statutes, rules, and regulations, as currently in force and as may in the future be in force.

Or, if the Principal provides alternate financial assurance as specified in Minnesota Rules, parts 7035.8470 to 7035.8500, and obtains the Agency Director's [[and the county's]] written approval of the assurance, within 90 days after the date the notice of cancellation is received by the Agency Director from the Surety(ies),

Then this obligation shall be null and void, otherwise it is to remain in full force and effect.

The Surety(ies) shall become liable on this bond obligation only when the Principal has failed to fulfill the conditions described above.

Upon notification by the Agency Director [[or the county]] that the Principal has been found in violation of the closure requirements for a facility that this bond guarantees performance of closure, the Surety(ies) shall either perform closure in accordance with the closure plan and other permit requirements or place the closure amounts guaranteed for the facility into the standby trust fund, as directed by the Agency Director [[or the county]].

Upon notification by the Agency Director [[or the county]] that the Principal has failed to provide alternate financial assurance as specified in Minnesota Rules, parts 7035.8470 to 7035.8500, and obtain written approval of the assurance from the Agency Director [[and the county]] during the 90 days following receipt by the Agency Director of a notice of cancellation of the bond, the Surety(ies) shall place funds in the amount guaranteed for the waste tire facility(ies) into the standby trust fund as directed by the Agency Director.

The Surety(ies) hereby waive(s) notification of amendments to closure plans, permits, applicable laws, statutes, rules, and regulations and agrees that no amendment shall in any way alleviate its (their) obligation on this bond.

The liability of the Surety(ies) shall not be discharged by any payment or succession of payments hereunder, unless and until the payment or payments shall amount in the aggregate to the penal sum of the bond, but in no event shall the obligation of the Surety(ies) hereunder exceed the amount of said penal sum.

The Surety(ies) may cancel the bond by sending notice of cancellation by certified mail to the owner or operator and to the Agency Director [[add "and the county"]], provided, however, that cancellation shall not occur during the 120 [[substitute "150" for "120"]] days beginning on the date of receipt of the notice of cancellation by the Agency Director, as evidenced by the return receipt.

The Principal may terminate this bond by sending written notice to the Surety(ies); provided, however, that no notice shall become effective until the Surety(ies) receive(s) written authorization for termination of the bond by the Agency Director [[add "and the county"]].

(The following paragraph is an optional rider that may be included but is not required.)

The Principal and Surety(ies) hereby agree to adjust the penal sum of the bond yearly so that it guarantees a new closure amount, provided that the penal sum does not increase by more than 20 percent in any one year, and no decrease in the penal sum takes place without the written permission of the Agency Director [[add "and the county"]].

The Principal and Surety(ies) have signed this Performance Bond on the date set forth above.

The persons whose signatures appear below hereby certify that they are authorized to sign this surety bond on behalf of the Principal and Surety(ies) and that the wording of this surety bond is identical to the wording in Minnesota Rules, part 7035.8590, as the rule was constituted on the date this bond was signed.

Principal

[SIGNATURE(S)]

[NAME(S)]

[TITLE(S)]

Corporate Surety(ies)

[NAME AND ADDRESS]

State of incorporation: _____

Liability limit: $_____

[SIGNATURE(S)]

[NAME(S) AND TITLE(S)]

[For every co-surety, provide signature(s), and other information in the same manner as for Surety above.]

Bond premium: $_____

REQUIREMENTS FOR WASTE TIRE GENERATION AND TRANSPORTATION

7035.8700 WASTE TIRE GENERATION.

Subpart 1. **Scope.** The requirements of subpart 2 apply to all persons who generate waste tires. The requirements of subpart 3 only apply to persons who generate more than 50 waste tires in a calendar year.

Subp. 2. **Waste tire generation.** Within 60 days of the effective date of parts 7035.8200 to 7035.8710, any person who generates waste tires, and who contracts or arranges with a person for their disposal, shall only contract or arrange for disposal of waste tires with a person displaying an agency waste tire transporter identification number, or a person exempt under part 7035.8710, subpart 2.

Subp. 3. **Generator record keeping.** All persons who generate more than 50 waste tires in a calendar year shall maintain a record of the quantity and type of waste tires sent for disposal. For shipments made in accordance with subpart 2, this record shall also note the name of the person transporting the waste tires, the identification number of the waste tire transporter, if applicable, and the date of the transaction. For persons who transport their own waste tires for disposal, this record shall also note the date of shipment, and the name of the waste tire facility where the waste tires were delivered. When requested by the director, this record shall be made available for inspection. This record shall be retained for three years from the date of the transaction.

7035.8710 WASTE TIRE TRANSPORTATION.

Subpart 1. **Scope.** This part sets out the requirements that shall be applied to persons who are in the business of transporting waste tires.

Subp. 2. **Exempt persons.** The requirements of this part shall not apply to:

A. a person who transports household quantities of waste tires incidental to municipal waste collection, and delivers those waste tires to a permitted solid waste facility, a waste tire facility with a permit or provisional status, or a waste tire facility that is exempt from the requirement to obtain a waste tire permit;

B. a person who receives waste tires incidental to the collection of recyclable materials and who delivers those waste tires to a permitted solid waste facility, a waste tire facility with a permit or provisional status, or a waste tire facility that is exempt from the requirement to obtain a waste tire facility permit;

C. a person transporting no more than ten waste tires to a permitted solid waste facility, a waste tire facility with a permit or provisional status, or a waste tire facility that is exempt from the requirement to obtain a waste tire facility permit;

D. a person transporting waste tires that will only be used for agricultural purposes which do not include burning;

KEY: PROPOSED RULES SECTION — Underlining indicates additions to existing rule language. ~~Strike outs~~ indicate deletions from existing rule language. If a proposed rule is totally new, it is designated "all new material." ADOPTED RULES SECTION — Underlining indicates additions to proposed rule language. ~~Strike outs~~ indicate deletions from proposed rule language.

E. a person transporting tire-derived products to a market; and

F. a person who generates waste tires and removes those waste tires from the waste tire generation site and delivers those waste tires to a waste tire facility.

Subp. 3. **Agency identification number required.** Except as exempt by subpart 2, any person who transports waste tires must obtain and display an agency waste tire transporter identification number when transporting waste tires. The information that must be submitted to the director to obtain an agency waste tire transporter identification number is specified in part 7001.4150.

Subp. 4. **Waste tire transportation.** A transporter who collects waste tires from a person who generates waste tires, a waste tire facility, or a tire dump must deliver the waste tires to a waste tire facility with a permit or provisional status, or a waste tire facility that is exempt from the requirement to obtain a waste tire permit.

Subp. 5. **Record keeping.** Transporters shall record and maintain the following information regarding their activities for each month of operation:

A. the type and quantity of waste tires collected;

B. where the waste tires collected were deposited, specifying the number and type deposited at each location; and

C. where or from whom the waste tires were collected.

Subp. 6. **Submittal of operating record.** Transporters shall submit to the director an operating record that identifies the transporter by name and identification number, and that summarizes the information accumulated under subpart 5 for the three months preceding the month the record is to be submitted. This record shall be submitted ten days after April 1, July 1, October 1, and January 1 of each year.

ADOPTED RULES

The adoption of a rule becomes effective after the requirements of Minn. Stat. § 14.14-14.28 have been met and five working days after the rule is published in *State Register*, unless a later date is required by statutes or specified in the rule.

If an adopted rule is identical to its proposed form as previously published, a notice of adoption and a citation to its previous *State Register* publication will be printed.

If an adopted rule differs from its proposed form, language which has been deleted will be printed with strikeouts and new language will be underlined. The rule's previous *State Register* publication will be cited.

An emergency rule becomes effective five working days after the approval of the Attorney General as specified in Minn. Stat. § 14.33 and upon the approval of the Revisor of Statutes as specified in § 14.36. Notice of approval by the Attorney General will be published as soon as practicable, and the adopted emergency rule will be published in the manner provided for adopted rules under § 14.18.

Pollution Control Agency

Adopted Permanent Rules Relating to Small Quantity Generators

The rules proposed and published at *State Register*, Volume 11, Number 25, pages 1102-1106, December 22, 1986 (11 S.R. 1102) are adopted as proposed.

Pollution Control Agency
Solid and Hazardous Waste Division

Outside Opinions Sought Concerning Proposed Rules Relating to the Permitting of Waste Tire Collectors and Waste Tire Processors by the Minnesota Pollution Control Agency

Notice is hereby given that the Minnesota Pollution Control Agency (MPCA) is seeking information or opinions from sources outside the MPCA in preparing rules pursuant to Minnesota Laws 1984, Chapter 654, Article II, Section 93 which requires a tire collector or tire processor with a determined amount of waste tires to obtain a permit from the MPCA unless exempted.

The permitting rules will address waste tire collectors and processors who will be required to obtain permits, permit application requirements and procedures, standards or guidelines for operation of waste tire collection and processing facilities, permit fees, public participation, and permit issuance or denial procedures.

The MPCA requests information and comments concerning the subject of these rules.

Written or oral information or comments may be submitted to Karen Ryss at the address listed below or at 612/297-1793 during regular business hours.

Karen Ryss
Minnesota Pollution Control Agency
Solid and Hazardous Waste Division
1935 West County Road B2
Roseville, Minnesota 55113

Information or comments will be accepted until October 31, 1984. Any written material received by the MPCA shall become part of the background record regarding these permitting rules.

September 21, 1984

Thomas J. Kalitowski
Executive Director

Office of the Secretary of State

Notice of Vacancies in Multi-Member State Agencies

Notice is hereby given to the public that vacancies have occurred in multi-member state agencies, pursuant to Minn. Stat. § 15.0597, subd. 4. Application forms may be obtained at the Office of the Secretary of State, 180 State Office Building, St. Paul 55155-1299; (612) 296-2805. Application deadline is October 23, 1984.

BOARD ON AGING has 2 vacancies open for members. The board develops, coordinates, evaluates, and administers federal and state funds for programs for the aging of approximately 15 million; makes grants to 13 area agencies on aging and non-profit agencies; serves as an advocate for older persons, programs and legislation for older persons in Minnesota. Members are appointed by the Governor. Monthly meetings, Metro Square Bldg., St. Paul; members receive $35 per diem plus expenses. For specific information contact the Board on Aging, Suite 240, Metro Square Bldg., St. Paul 55101; (612) 296-2770.

ADVISORY TASK FORCE ON AMERICAN INDIAN LANGUAGE AND CULTURE EDUCATION PROGRAMS has 1 vacancy open for an urban representative. Members include representatives of community groups, parents of children eligible to be served by the programs, American Indian Administrators and teachers, and persons knowledgeable in the field of American Indian language and culture education. The task force advises the Board of Education on the administration of the American Indian Language and Culture Education Act; reviews proposals and makes recommendations to the board on approval and funding of bicultural programs in Minnesota schools. Between 3 and 5 meetings per year at various sites statewide; members are reimbursed for expenses. Members are appointed by the Board of Education. For specific information contact the Advisory Task Force on American Indian Language and Culture Education Programs, 303 Capitol Square Bldg., St. Paul 55101; (612) 296-6458.

SEE THE
North Shore Scenic Drive
Lake Superior
International Highway

OFFICE OF
SOLID WASTE MANAGEMENT
COUNTY OF LAKE
P.O. Box J
Two Harbors, MN 55616

Alan D. Goodman
Solid Waste Officer
Phone: (218) 834-5581

October 5, 1984

RECEIVED
OCT 09 1984
MINN. POLLUTION
CONTROL AGENCY

Ms. Karen Ryss
Minnesota Pollution Control Agency
Solid and Hazardous Waste Division
1935 West County Road B2
Roseville, Minnesota 55113

RE: Proposed Rates for Permitting of Waste
Tire Collectors and Waste Tire Processors

Dear Karen,

First of all, I would ask that the rulemaking be done in a timely fashion. Apparently, it is law that we begin removing tires from the waste stream. No doubt this will result in a pile of tires at our Castle Danger Sanitary Landfill.

Secondly, please explain to the lawmakers that we do not want to be left with a pile of tires. Provisions must be made to remove these tires at a reasonable cost. Common sense rulemaking is needed here. Hopefully, the new tax on tires will be of some help here.

Yours truly

Alan D. Goodman

Alan D. Goodman
Lake County Solid Waste Officer

ADG/RKM

PILQUIST RECYCLE, INC.

WE RECYCLE JUNK TIRES
AND ALUMINUM TRANSMISSIONS

3000 Quant Ave. N.
Stillwater, Minnesota 55082
South of Bayport on Hwy. 95
Phone: (612) ~~430-1251~~ 439-2604

RECEIVED
OCT 10 1984
MINN. POLLUTION CONTROL AGENCY

Oct. 5, 1984

Karen Ryss
MPCA

In response to your request for some input for ground rules of tire collection and disposal.

We are convinced that existing tire piles can not be made into chips economically. The reason is that there is to much dirt. We believe that the pyrolisis system will have to be used to salvage the oil from these tires. Fresh tires are no problem, even at the low prices in this area. Fresh tires can be made into chips or oil through pyrolisis.

We feel that the rules for operating a tire dump should be, first of all only those that are set-up for processing the tires. There could be no argument in the business if only those that are set-up for tire processing are able to take in tires. If the state has a market for the products made from these tires it will make a good deal of difference in cost and the amount of return possible in tire processing.

Other rules we feel would be good are as follows:
Whole tire storage should be limited to what can be processed in thirty days.
Processed sheddings should not be stock piled more than 60 days.
Legal tire piles or shedded piles should not exceed 500 ton in one pile.
These piles should be separated by at least 50 feet of clear space.
Any amount of tires should be at least 1000 feet from any housing.
Cleaning out of tire piles should be bid on by the job. Each pile will be different and should be treated as such.

Sincerely,

Walfred Pilquist

IRON RANGE TOWNSHIP

Taconite, Minnesota 55786

RECEIVED
OCT 1 9 1984
MINN. POLLUTION CONTROL AGENCY

Oct. 6,1984

MS Karen Ryss
MPCA
Roseville, Mn.

In reply to your letter of Sept.28 regarding requirement of permits for tire collectors or processors. I am writting in the capcity of a township official, supervisor of our local landfill, and a member of the solid waste advisory committee to the Itasca County Board. I agree that permits should be required.

From the tone of your letter I get the impression that there are quite a number. I wonder what that may do to the availibility of tires. Itasca County and the village of Bovey are enterested in a process called Tirecycle and the sucess of that venture hangs on the availabilty of a great number of tires. That process is also a part of our solid waste plan for the county. Perhaps this may be of some use to you.

Yours Truly
W.E. Gardinier

W.E.Gardinier

WASECA COUNTY HIGHWAY DEPARTMENT

3rd Street 9th Avenue N.E.

WASECA, MINNESOTA 56093

ROBERT J. McPARTLIN
Highway Engineer

507-835-1250

RECEIVED

OCT 10 1984

MINN. POLLUTION CONTROL AGENCY

October 8, 1984

Karen Ryss
Minnesota Pollution Control Agency
Solid and Hazardous Waste Division
1935 W. CR B2
Roseville, MN 55113

RE: Proposed Rules Relating to Waste Tire Collectors

Dear Ms. Ryss,

The Waseca County Board of Commissioners requested me to comment to the MPCA regarding their and my views of the proposed rules.

Due to the fact that we own and operate the Waseca County Sanitary Landfill SW-100. We are very concerned about the type and amount of material that is received at our gates. We have accepted car and some truck tires from individuals (and small, local garages). We are not burying them at our Landfill site, but stockpiling them. This pile is away from other disposal sites and we feel it is small and managable. We do not believe we are "Waste Tire Collectors" and do not wish to be forced into the permit, fee and rules process.

Therefore, we request that Landfill operators be exempt from any Waste Tire Collector results. Please contact me if additional information is needed.

Yours truly,

Robert J McPartlin

Robert J. McPartlin
Waseca County Solid Waste Officer

RJM/cs

RUBBER RESEARCH ELASTOMERICS, INC.
824 ninth ave. s. e. • minneapolis, minnesota 55414-1392 • (612) 378-9647

October 12, 1984

RECEIVED
OCT 15 1984
MINN. POLLUTION
CONTROL AGENCY

Ms Karen Ryss
Minnesota Pollution Control Agency
1935 West County Rd B2
Roseville Minnesota 55113

Dear Ms Ryss,

In regard to your solicitation of September 28th for comments on proposed rules, we have a number of comments, because of our background in utilizing scrap tires. The recent legislation requiring disposal of tires to be controlled creates an even larger problem. The present ultimate disposal of tires is a highly fragmented operation. The large number of tire collectors presently in business to mill retreadable tires, are basically disseminating the scrap tires throughout the countryside. Many of the tires are placed in the historical piles, but new piles of large magnitude must be created. In short, the tires have nowhere to go but to be piled somewhere.

There are those who are trying to dismantle tire piles. The enclosed article best explains the circumstances that prevail. The charge for accepting and piling tires is what subsidizes any processing of the scrap tires.

An ultimate disposition of the scrap tires is necessary to validate the legislation. Imposing rules on the present tire collectors borders on being useless. Imposing rules on tire processors will essentially nullify innovation. The present rules for pollution control are adequate for governing tire processors in terms of effluent production.

Our motivation is our interest in processing scrap tires by means of our TIRECYCLE® process. To provide an initial explanation, we have enclosed a copy of a proposal we made for funding by the Waste Management Board. In this proposal a general methodology for the collection of tires is detailed. If there is an available means of disposal, rules can be meaningful for disposal of tires. Simply requiring tires to be delivered to a disposal facility would be an adequate regulation.

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DOCUMENT N - DOCUMENTATION ON THE LEGISLATIVE PRIORITIES

Documentation of the legislative priorities is best explained by referral to the state's efforts embodied in the Governor's Commission on Tire Disposal chaired by Z. A. Valeri and the proposed legislation (Senate File 697). The Pollution Control Agency has made their contribution to define the problem on a state wide basis. The accumulations of scrap tires of both current generation and historical background are defined on a conservatively low basis at least. The consideration of a use tax on new tires indicates the gravity of the situation and the inability of any existing means to handle the scrap tire situation in a comprehensive fashion.

The fact that whole tires cannot be landfilled effectively regardless of the soil conditions obviates addressing the capacity of solid waste facilities. Above ground outside storage has been and will be the major disposal means in the future unless a facility is constructed for recycling the tires.

DOCUMENT M - REPORT ON INSTITUTIONAL ARRANGEMENTS

In the course of preparing this proposal Governor Perpich appointed a Commission on scrap tire disposal chaired by Z. A. Valeri of Hibbing. Our original concerns were in the areas of state subsidization for fuel usage of tires. We submitted a letter to Z. A. Valeri explaining our position (Appendix D-1). Mr. Valeri invited our participation in his committee to the extent of allowing us to submit our views of the topics which his commission reviewed. Our subsequent letters (Appendix D2-4) presented our views. Z. A. Valeri has been the chief advisor for the legislative effort for Senate File 697. Though we have offered views different from those embodied in S.F. 697 and the Valeri Commission recommendations we are in agreement with S.F. 697.

Our letter to Z. A. Valeri of February 9th (Appendix D-4) makes a point of detailing an institutional arrangement in terms of utilizing the revenue from the tire tax to direct the cleanup of tire storage sites and either dispose of the excess amounts of scrap tire as fuel, landfill that which is not recoverable, or store separately that which can be utilized at a later date.

A TIRECYCLE processing facility is critical to the proposed arrangement with the state's efforts to clean up tire storage and regulate disposal of currently generated scrap tires. The intention was to propose an innovative institutional arrangement that could encompass broad cooperation with the state regardless of which way the state decides to move. Again, if the state is unable to coordinate its efforts and if the Pollution Control Agency has no means of controlling the disposal of tires, a comprehensive operating plan will evolve, at least if there is a TIRECYCLE facility. The TIRECYCLE facility provides the means of conversion which is the keystone of any plan.

DOCUMENT K - REQUIRED RESOLUTIONS

Resolutions are to be submitted by Hennepin County.

DOCUMENT L - REPORT ON GEOGRAPHIC CHARACTERISTICS

The geographic characteristics are that the higher population densities produce more scrap tires and that certain areas can have large numbers of unusual tires (mining areas). Even though the iron mining areas have a disproportionate supply of tires the location of a processing facility is best in the generally high population density. The metropolitan area produces over 50 percent of scrap tires generated in Minnesota.

DOCUMENT J - REPORT ON TIME FRAME OF PROJECT DEVELOPMENT

Project development is conservatively envisioned to consist of three 120 day phases. The first 120 days entail order and delivery of equipment. The second 120 days will be consumed by installation, and the third 120 days are utilized for testing, training and shakedown. These estimates are based on suppliers' guidelines and RRE, Inc's. experience with bringing rubber processing equipment on line.

It is important to point out that the TIRECYCLE process produces no effluent so that environmental compliance demonstration pertains to normal heavy industrial operations rather than to a specific by-product from the recycling procedure.

Site selection and preparation can entail simply modifying an existing building or the choosing of land and building. The former can take as much time as 120 days and the latter can take as much time as 240 days because of weather.

The only geographical and utility requirements for the site are typical - heavy industrial zoning, rail spur, availability of 3000 amps of 480 volt electricity, a water supply for sanitation facilities and sprinkler system and sanitation sewage system.

Training of additional staff is done on the job site under operations. Equipment for chopping tires is to be assembled in working sequence by manufacturer and tested. Then the equipment is to be dismantled and installed by the manufacturer and retested, and personnel trained both at the manufacturer's site and our site.

Grinding and screening equipment is to be operating at manufacturer's site and transferred with operating performance ensured by manufacturer's staff.

Ground rubber treating equipment and polymer preparation equipment is presently being operated so there is in-house experience. The equipment to be acquired can be proven at time of installation or delivery.

DOCUMENT I - REPORT ON STATUS OF REQUIRED PERMITS

To our knowledge no other operating permits are necessary other than what we presently use. These are permits for the following:

1. Store, handle or use flammable liquids. We use mineral spirits in processing and have an underground storage tank.

2. Heating equipment, process kettles, chemical storage, industrial water discharge. We have no industrial water discharge, but we do have heating equipment.

3. Air compressor license.

4. Boiler engineer license.

Building permits would be required.

DOCUMENT H - REPORT ON POTENTIAL FOR STATEWIDE APPLICATION OR SIGNIFICANCE

As described in Document A - Conceptual and Technical Feasibility Report, this waste tire processing facility will have statewide significance; that is, it will have the capability of refining all scrap tires in the state to allow for the diminution of health and fire hazards which accrue to improperly stored waste tires and the greatest potential for providing complete recycling of the constituents of a tire to extract their highest economic value. Not only has this project not been demonstrated in Minnesota before, but the patents pending indicate its world-wide significance.

An important aspect of this project is the coordination between public collection and private processing of waste tires. Although the segregation of waste tires has proven fairly easy because of their inherent incompatability with the majority of the waste stream, the logistics involved in this division of the waste stream has important ramifications for future projects aimed at utilizing other components of the waste stream. The biggest obstacles to efficient recycling are the result of a lack of coordination between the public and private sectors.

Trash has become part of the public domain. Although much of the regulation has been warranted to prevent indiscriminate disposal, it has had a deliterious effect on private efforts to utilize this waste. In a sense, the public's zeal to dispose of trash in a comprehensive fashion has been too successful; resource recovery from landfilled trash is fraught with difficulty because of its inaccessibility. This demonstration project is intended to illustrate the advantages created for waste recycling through the efforts of public organization and private utilization.

2.	Employee Benefits	
	FICA	22,080
	Health Insurance	31,400
		54,080
3.	Fuel	24,000
4.	Electricity	45,000
5.	Water	280
6.	Maintenance (includes labor and replacement eqpt)	133,500
7.	Residue Removal	4,000
8.	Overhead, Packaging and Raw Materials	200,000
9.	Insurance	25,000
10.	Professional Services	15,000
		824,860

DOCUMENT G - ANNUAL OPERATING AND MAINTENANCE COSTS

G1. Annual Operating and Maintenance Costs for 4 million pounds of TIRECYCLE

1.	Salaries	
	Operating Personnel	$ 100,000
	Administrative	60,000
	Sales Personnel	40,000
		200,000
2.	Employee Benefits	
	FICA	14,000
	Health Benefits	16,200
		30,200
3.	Fuel	12,000
4.	Electricity	30,000
5.	Water	280
6.	Maintenance (including labor - includes repl eqpt)	52,000
7.	Residue Removal	2,000
8.	Overhead, Packaging and Raw Materials	200,000
9.	Insurance	25,000
10.	Professional Services	15,000
		566,480

G2. Annual Operating and Maintenance Costs for 50 million Pounds of Shredded Tire and 4 Million Pounds of TIRECYCLE

1.	Salaries	
	Operating Personnel - 16	224,000
	Administrative - 2	60,000
	Sales Personnel - 2	40,000
		324,000

non-binding agreements. Only in the case of the state purchasing chopped tires for resale or landfill is there a truly valid intent to purchase because the state would be committed to deliver tires from the accumulated piles and deliver the chopped tire as fuel. This situation can only be resolved after legislation (S.F. 697) is enacted and provisions negotiated with all the parties.

The final analysis of market potential depends on being able to obtain large quantities of ground rubber from scrap tires of negative value and thereby develop the most competitive market prices to motivate assimilation in all the areas of potential. If RRE, Inc. cannot integrate backward into grinding tire to lower its costs and to stabilize its supply, TIRECYCLE has a low chance of reaching any sort of potential emanating from Minnesota.

In summation, tire utilization has the following areas for development under this proposal:

Fuel - one inch x one inch pieces

Mulch - for sewage treatment - 1/4 inch x 1/4 inch

Ground rubber - 10 mesh to 30 mesh

TIRECYCLE - 10 mesh to 30 mesh

- Rubber Compounding
- Thermoplastic compounding
- PVC compounding
- Polyester compounding
- Asphalt modification

TIRECYCLE is estimated to be a market far in excess of 60 million pounds per year which can be realized in due time. The intermediate products of the integrated processing can provide initial markets - in established uses/markets.

be collected. We have two years of background in this type of endeavor, and this is the motivation for preparing this proposal. TIRECYCLE will take its place in the spectrum of raw materials used in basic and heavy industry. In Appendix C some additional sales material is presented to illustrate the method of introducing TIRECYCLE by direct mail. A follow up by direct sales calls is usually the procedure. Our general brochure is included.

Besides rubber goods, the three main markets for rubber from scrap tires are fuel, plastics and asphalt. Fuel should be viewed as a last alternative use when suitable storage cannot be arranged; it is probable that this will have short term appeal as a means for reducing historical piles of scrap tires. The enclosed NSP report to the Valeri Tire Commission (Appendix D-7) indicates that burning tires is feasible on a large scale within certain specific constraints. From an economic perspective the burning of tires will incur costs greater than their market value to the large power companies. It may have greater appeal as a substitute to smaller scale users of coal (e.g., the University of Minnesota) but it is a stopgap measure as opposed to a long term solution.

Plastics have high price and volume potential. The market is being explored at the present time. Uses include applications in plastic compounding (polyethylene, polypropylene, polystyrene, etc) polyvinyl chloride compounding, polyester (fiberglass reinforced) as well as a number of other uses. Development in this area is ongoing, but sales projections at this time are somewhat premature. However, plastics offer almost greater sales and profit potential than rubber, and it is a very dynamic market highly receptive to new ideas.

Asphalt modification has great potential in terms of market size, but the market price is not as attractive as that found in the area of rubber or plastics compounding. RRE, Inc. has 20 years of experience in the asphalt modification business, and thus approaches this market with a far greater appreciation of its strengths and limitations than most ventures seeking a niche for ground rubber tires in asphalt.

The TIRECYCLE approach has a tremendous validity in asphalt modification because it is reactive rather than inert like untreated ground rubber. This market will be developed as warranted, but RRE, Inc's. expertise has led to the conclusion that the competition will be far greater in this market, and the product must be highly refined, in terms of price and processing, before it will be widely accepted.

For the 1984 calendar year RRE, Inc. has customer agreements to process over seven million pounds of TIRECYCLE. These agreements have been growing significantly in volume for the past two years, and prospects continue to be promising. The potential for TIRECYCLE is astonishing and well documented, but the sales history demonstrates that this is a viable rather than experimental product. New markets present tremendous opportunities for diversification and sales growth. All in all, TIRECYCLE is a proven product which can only become more competitive as economies of scale improve.

Letters of intent have little effect in this area of commerce. At least in our twenty some years of experience we have not been enamored of

DOCUMENT F - MARKET ANALYSIS

RRE, Inc. has been marketing custom compounded rubbers and modified polymers for over twenty years. In the course of work the concept of treating ground scrap rubber materialized. The general development was originally meant to solve a problem of quality control in compounding rather than solve the problem of tire disposal. The utilization of scrap tires was obvious because of the very large supply and the immense negative value of scrap tires. The decline of rubber reclaim in terms of manufacturing and use removed the existing potential for utilizing scrap tire rubber to any great degree. There are still four reclaim manufacturers in the U.S. but their capacity has declined greatly. The reclaim process is not new, but it is still valid. There are problems with effluent in the manufacturing process and the process is a high consumer of energy. Most of all, after over 50 years of development, production and sales, the actual utilization level hardly exceeds 15% of a rubber compound's constituents. TIRECYCLE is primarily used at 50% in rubber compounding. In some instances 100% TIRECYCLE is used for direct molding of rubber products.

When analyzing market factors TIRECYCLE must be viewed as a wholly new raw material that will be assimilated in established products, but it will also spawn new product development because of its versatility, supply, and low cost. The major obstacle for TIRECYCLE is the bias that exists against recycled material. TIRECYCLE can be assimilated quickly into an existing compound or process, but this does not usually provide the high tonnage that is preferred. The market is proven, but the usage has not been maximized. When a new product is designed with TIRECYCLE the maximum usage is realized. This simply takes more time but has been the focus of much research and development.

As has been stated, the production of TIRECYCLE is a successful commercial venture given the constraints of high raw material costs (for purchased ground tire rubber) and fixed production capacity. The main focus of RRE, Inc's. marketing effort over the past two years has been the mechanical goods subdivision of the rubber industry. Response has been reasonably positive, although high costs of semi-works production have limited broad appeal to the midwestern region of the United States. This area has provided the bulk of sales of two million and four million for the preceding two years respectively and will absorb most of the projected seven million pounds of sales for the 1984 calendar year.

New product development in the rubber industry using TIRECYCLE as a starting point includes matting for roofs and floors, roof shingles, carpet underlay, athletic cushioning for playing fields and childrens' playgrounds. TIRECYCLE is being worked into tire tread compound as well as industrial wheels, brake linings and shoesoles. The usefulness of TIRECYCLE is as diffuse as the industry. One of the indexes of the rubber industry is the Rubber Red Book which lists almost all of the companies. The primary objective of RRE, Inc. has been to analyze the market, approaching it with a product to sell and prices that can be compared with market conditions under commercial situations to minimize hypothetical assumptions. Only by analyzing sales, loss of sales, product performance, quality control over a period of years can valid information

DOCUMENT E - WASTE SUPPLY DOCUMENTATION

The quantity of scrap tires has been fairly well documented, but if anything, our research has led us to the conclusion that estimates may be too low (Appendix D-4). As a part of the total waste stream, the MPCA estimates that tires account for 1.5 percent of solid waste. The annual production of waste tires, which is seasonably nonspecific to creation if not disposal, is about 3 million tires, consisting of 80% passenger and 20% truck. Assuming passenger tires to weigh 20 pounds and truck tires to weigh 100 pounds, annual production rates for waste tires are estimated at over 100 million pounds.

As has been documented earlier, no more than 15% of waste tires are currently being recycled. This translates to 85 million pounds of scrap tires which are being disposed in one fashion or another. Prorated on a historical basis this indicates a vast supply of tires many of which have been documented as being stored improperly at various sites throughout the state. As the enclosed letter to Z. A. Valeri's committee indicates, (Appendix D-4) cleaning up one of these tire piles is a tremendous undertaking. Generation rates for scrap tires are closely linked to population density; that is, the metropolitan area produces over half the tires discarded in Minnesota, and Hennepin County produces close to half of these. Population is the main determinant of scrap tire generation rate but the scale of industrialization also plays an important role in determining the size of the waste stream. For example, Northeastern Minnesota has a disproportionate tonnage of tires because of the massive tires used in mining operations. Otherwise outstate areas generate far fewer tires than the metropolitan area. This does not speak to documented and undocumented tire piles but only current waste tire flow.

To guarantee the supply of tires, the current bill before the State Legislature will provide money to license sites for tire disposal. Although compliance should be fairly high, money will be provided to enforce the law as well as investigate and organize historical piles of tires which have not been granted licenses. The supply and quantity of waste can be guaranteed with a high degree of reliability.

If no legislation is passed regulating the disposal of tires the market forces will direct tires to a facility that can process or consume them. In all instances the assumption is made that scrap tire haulers simply need a disposal route for their own purposes.

If there is a question as to whether or not there is an adequate supply of scrap tires for the proposed facility the present "tire haulers" can ensure the supply by continuing their present practice. There is so little use for scrap steel belted radials that many haulers bring back loads of scrap tires from other states for storage in Minnesota. The cartage fee of 50 cents or more per tire makes this a profitable venture. The load of tires pays dead head freight costs, for example.

30% of a tire is fiber, and the amount of fiber is a considerable impediment to grinders who cannot utilize the fiber. The recovered fiber is a primary raw material for a TIRECYCLE derivative - FIBRECYCLE.

After the fiber separation stage the two streams are fed to two final cracker mill grinders which feed the final screening for each unit. The oversize particles are recycled. The final screen is 30 mesh and the screened product is defined at 100% passing 30 mesh. The particle size is not critical when defined in this way. The screening equipment is standard (Rotex Shaker) and allows screen changes to obtain almost any size. There is no need to develop a higher degree of gradation.

The next state is the treatment of the ground rubber with polymer and curatives. The ground rubber from the final screening state is fed to treating equipment which typically mixes polymer at three parts per 100 parts of ground rubber. For FIBRECYCLE, fiber is added to the ground rubber and usually 50% fiber is used. The typical process conditions are fully explained (Appendix B). Six treating units would be used. Final quality control would be performed on the TIRECYCLE and final product packaging would be performed which is simple bagging or bulk loading of gaylords. An option we have is to prepare a masterbatch of the TIRECYCLE in a rubber compound by Banbury mixer.

TIRECYCLE products made for polyethylene, polypropylene or polystyrene plastic modification are processed in the same treating equipment. TIRECYCLE products made for asphalt modification as well as the other uses are also processed in the same equipment. The variable of all these products or product uses is the polymer treatment that is applied. The polymer treatment is similar to what we have produced for some 20 years. The specifics of the polymers is described in the A.C.S. Rubber Division papers and the other publications (Appendix B). The processing of the polymer is proprietary.

It should be emphasized that up to the point of treating the ground rubber to make TIRECYCLE the ground rubber is completely competitive with the other varieties of ground rubber available from five sources in the U.S. This product can enter the market as ground tire rubber.

DOCUMENT D - PRELIMINARY DESIGN AND ENGINEERING SPECIFICATIONS

The preliminary plans for equipment are included in Appendix E. Land and facility requirements are of a general nature. The building housing the equipment will total approximately 40,000 square feet. Land requirements are four to five acres, including the building. The floor plan is general to heavy industrial operations. 10,000 square feet of building space requires 25 foot ceilings while 16 foot ceilings are sufficient elsewhere. Six inch cement flooring is adequate, and a sprinkler system is mandatory. It is anticipated that these requirements can be met from existing stocks of industrial construction.

In all the instances or stages of processing whole tire to TIRECYCLE there are essentially standard pieces of equipment used; however, the way in which they are used may be unusual. To our knowledge no particular preconstruction permits are required. No effluent is given off in any of the processes. Only electrical energy is used for processing (electric motors). Each segment of operation is a unit operation. That is, there is no continuous flow which is the controlling output factor. Each unit operation is closely tied into the next for a non broken chain of operations but, yet, product yield can be taken in any quantity from any of the stages.

The stages are whole tire chopping, rubber grinding, polymer processing, and ground rubber treatment. A great deal of the information used in processing is proprietary and certain aspects will be described without exact details. Full disclosure can be made under controlled circumstances. The chopping of tires has been a major problem for most equipment. The proposal is to use a three stage chopping. The first stage takes the whole tire and reduces it to a size classified as a 12 inch. It should be noted at this time that a tire slitter is included in the equipment design to reduce any large truck tires or off the road and other tires to facilitate throughput. A tire slitter is viewed as insurance.

Subsequent to the 12 inch stage another chopping stage is employed without screening for reduction to a size classified as a four inch. After exit from this chopping unit the unscreened flow is divided into three streams for the next stage of chopping which is a size classified as one inch. Three chopping units are used at this poing to reduce maintenance, to handle the additional volume of chopping and obviate the need for screening. Only after the one inch stage is there any screening. The flow may be interrupted at any stage and product taken.

The three streams of one inch stage feed three separate grinding units which are called cracker mills. These are separate grinding units where the one inch stage is reduced and the primary separation of metal and fabric (cord) from the rubber occurs. These three streams are combined for metal removal through magnetic separation. The separation of metal is most effective at this point relative to the problems of additional grinding action on the metal. The metal comes out as small strands of no more than 1 inch in length.

The demetallized stream is then fed to two other cracker mills without screening for further size reduction. The fiber or cord is removed after this grinding pass by screening and suction for the fine fibers. Approximately

The problem of recycling of any items from low population density is always present - even with aluminum cans which are the most ubiquitious item of society. A portable tire chopper or shredder has been suggested to service rural areas and this is effective, but it only answers one portion of the problem. Portable tire choppers require organization and have their own operational expenses. The portable tire choppers do not answer scrap tire consumption even for fuel for most portable equipment cannot easily reach the 1 inch x 1 inch requirement of size.

In regard to estimating the scrap tire situation through the year 2000 it is probably best to admit that not enough is presently known about the total tonnage of scrap tires being generated. There will be an increase in scrap tires which could be as much as 50%. With the poundage of passenger tires decreasing the actual tonnage of scrap tires might only increase by 35%.

A comprehensive waste management plan for scrap tires can be effectively put in place with the establishment of a facility for consumption that can address the usually suggested paths of disposal (fuel, landfill, mulch, etc) and the more sophisticated paths of utilization, such as TIRECYCLE. In short, the proposed legislation (S.F. 697) will be a great help but if it is not enacted a currently generated scrap tire management plan will still be in force if a TIRECYCLE facility is available.

With all the above factors considered a comprehensive scrap tire plan would embody the following elements:

The establishment of a TIRECYCLE facility that could demonstrate the chopping of currently generated scrap tires and the transformation of this scrap rubber into a series of products.

A free tire dump for the tire haulers would be automatically established with a TIRECYCLE facility that could handle the currently generated scrap tires. Anyone wishing to dispose of scrap tires would gravitate to the free dump to relieve themselves of negative value material.

The TIRECYCLE facility would produce a full range of products to not only demonstrate the effectiveness of operation but to demonstrate the profit factor.

If the state implemented the proposed legislation the easy integration of the state's efforts could be demonstrated for regulation and clean up of present tire dumps.

DOCUMENT C - COMPREHENSIVE SOLID WASTE MANAGEMENT PLAN

As has been pointed out earlier there is presently no waste management plan for scrap tires or scrap rubber from rubber product manufacturers or retreaders. The retreaders have fairly large amounts of tire buffings which are essentially landfilled. The material is a particulate and causes no problems. The rubber is inert and will last for a very long time in the land fill. The situation is the same for the scrap from rubber product molders. The present situation for tires is simply that there are a number of tire haulers who provide the service of picking up scrap tires from tire dealers of all sorts. These tire haulers are typically paid 50 cents per tire. There are instances where one dollar per truck tire is paid for removal. This relatively small payment is enough to motivate the tire hauler; nevertheless the tire hauler exercises limited options. The scrap tires can be culled for carcasses that can be retreaded. These bring something like 8 dollars from a retreader. The remainder of the scrap tires are then disposed of by either whole tire storage or the tires are chopped for landfill or burning. The cost of chopping has proved to be too much for the tire haulers, and most tires are stored in large piles. A few tire haulers has attempted to chop tires for fuel, but this has not proven to be economically feasible. There are those who have made a business out of storing tires for a fee even though they do not provide the service of pick up.

There are some tire haulers who have culled the scrap tires for the bias constructed tires that do not have steel belting. There has been a limited market for these tires in St Louis where a reclaim company is located. This is not considered a profitable situation, but about two trailer loads of tires (35,000 pounds per trailer) are shipped out each week. At least there is some removal of the tires. The number of bias ply or all fabric tires has decreased dramatically in recent years with the emergence of the steel belted radial tire and shipping from Minneapolis to St Louis is efficacious only because of the supply situation. If the reclaimer (Midwest Rubber Reclaiming Co) begins to handle steel belted radials the need for all fabric tires from Minneapolis decreases.

The salient point is that there is now a network of tire haulers in operation, and the system is self-sustaining except for the answer to the final resting place of the scrap tires. If there was a facility to which tires could be taken for consumption the tire haulers would profit for they would be getting rid of a negative value.

If the facility for consumption of tires was in the Hennepin County area it could easily serve the whole metropolitan area of seven counties. Scrap tires originating in the out state areas could be brought to the facility with freight cost being the only problem.

The proposed legislation (Senate File 697) calls for an organization for tire collection and authorizes money from the tire tax. If this legislation is enacted and implemented the transportation costs would be paid. If the legislation is not enacted or implemented the resolution of finding someone to pay the freight costs goes back to the tire haulers who have already been paid. If the county governments without state legislation restrict tire dumps, hauling tires to a Hennepin County facility would be a reasonable course.

D.	Capital Costs	
	Interest @ 12%	184,800
	Machinery (10 years amortization)	104,000
	Building (20 years amortization)	40,000
		328,800
	Total	1,153,660
E.	Revenue	
	TIRECYCLE	1,000,000
	Shredding	375,000
		1,375,000
F.	Profit	221,340

Maintenance (Shredder Manufacturer Guarantee + Other @ 5%)

Power @ $0.025/KWH - usage charge

$5.05/KW - demand charge

Packaging @ $0.01/lb

Raw Materials @ $0.035/lb

Interest @ 12%

Depreciation: 10 year straight line

B.	Fixed Costs	$ 1,840,000
C.	Annual Operating and Maintenance Costs for 50 million pounds of shredded tire and 4 million pounds of TIRECYCLE	
1.	Salaries	
	Operating Personnel - 16	224,000
	Administrative - 2	60,000
	Sales Personnel - 2	40,000
		324,000
2.	Employee Benefits	
	FICA	22,680
	Health Insurance	31,400
		54,080
3.	Fuel	24,000
4.	Electricity	45,000
5.	Water	280
6.	Maintenance (includes maintenance and replacement eqpt)	133,500
7.	Residue Removal	4,000
8.	Overhead, Packaging and Raw Materials	200,000
9.	Insurance	25,000
10.	Professional Services	15,000
		824,860

2.	Employee Benefits	
	FICA	14,000
	Health Insurance	16,200
		30,200
3.	Fuel	12,000
4.	Electricity	30,000
5.	Water	280
6.	Maintenance (includes labor and replacement eqpt)	52,000
7.	Residue Removal	2,000
8.	Overhead, Packaging and Raw Materials	200,000
9.	Insurance	25,000
10.	Professional Services	15,000
		566,480
D.	Capital Costs	
	Interest @ 12%	184,800
	Machinery (10 years amortization)	104,000
	Building (20 years amortization)	40,000
		328,800
	Total	895,280
E.	Revenue	1,000,000
F.	Profit	104,720

A2. Assumptions

50 million pounds of shredded tire @ $0.0075/lb and 4 million pounds of TIRECYCLE @ $0.25/lb

Labor Requirements: 3 shift operation

12 low skilled men @ $12,000/yr

3 foremen @ $20,000/yr

1 lab technician @ $20,000/yr

ESTIMATED OPERATING COSTS - 2 SCENARIOS

A1. Assumptions

4 million pounds of TIRECYCLE at $0.25/lb

Labor Requirements: 1 shift operation

5 low skilled men @ $12,000/yr

1 foreman @ $20,000/yr

1 lab technician @ $20,000/yr

Maintenance @ 5% of fixed costs

Power @ $0.025/KWH - usage charge

$5.05/KW - demand charge

Packaging @ $0.01/lb

Raw Materials @ $0.035/lb

Interest @ 12%

Depreciation 10 year straight line

B. Fixed Costs

Chopping Equipment	$ 350,000
Grinding Equipment	250,000
Polymer Equipment	280,000
Operations Equipment	60,000
Quality Control Equipment	100,000
	1,040,000
Buildings and Land	800,000
Total	1,840,000

C. Annual Operating and Maintenance Costs for 4 million pounds of TIRECYCLE

1. Salaries

Operating Personnel - 7	100,000
Administrative - 2	60,000
Sales Personnel - 2	40,000
	200,000

DOCUMENT B - FINANCIAL FEASIBILITY REPORT

Our proposal encompasses several economic situations simultaneously. The basic premise is that one particular product of waste tires can provide sufficient economic return to provide an adequate payback and generate profit if the facilities were only used for producing TIRECYCLE. An economic projection is provided for only producing TIRECYCLE from the facilities as well as a combination of TIRECYCLE and shredding. Projections based on TIRECYCLE offshoots in various phases of market development (e.g., RRECYCLE, FIBRECYCLE) are not included.

It is typical to the market development of almost any product that the growth be gradual. A system to produce TIRECYCLE for its uses in rubber, plastic, asphalt, etc. will have excess capacity initially which will be diminished as TIRECYCLE demand increases. It is possible to utilize this excess capacity to serve the needs of pure tire disposal by the first stage of chopping for use as fuel or as landfill to minimize the hazards of fire and all the other factors of scrap tire storage.

The following provides an analysis of the financial feasibility under varying conditions. The four million pounds per year at 25 cents per pound calculation is based on immediately attainable customers given this lower than market price. Our market analyses have led to the conclusion that reducing our average prices by five cents would allow our sales to increase more than 20% due to high elasticity of demand; it also shows that a reduction in the price of TIRECYCLE does not significantly impinge upon revenues covering costs. Calculations for revenues generated by shredding and TIRECYCLE processing demonstrate even greater profitability. Again this merely increases the reliability of financial projections; it is not a watershed of profitability but rather another factor in determining potential for expansion of the revenue base.

We think our proposal offers the best means to achieve this goal. State assistance can ameliorate the problems inherent in current tire disposal practices and create an economic benefit to the state for both the public and private sectors.

a base from which new products can be designed and built. Many items can be made of 100% TIRECYCLE. When used as a component in rubber compounding the concentration is usually 40 to 50% of the total compound weight. This factor elevates TIRECYCLE to the potential of a major constituent in the vast majority of mechanical goods. In addition, TIRECYCLE is used as a process aid to improve quality control in many instances at 20 to 25%. In all the applications TIRECYCLE has high poundage potential.

The total number of potential customers is quite large in number and quite diverse. There are approximately 1414 companies and 2239 manufacturing plants. The market is well defined in terms of the potential customers being identified and categorized. A copy of the Rubber Red Book is submitted as background information.

A market assessment of product desirability can be made from sales price and volume over a historical period. Sales volume has been growing dramatically, albeit constrained by semi-works capacity, since production commenced in May of 1982. TIRECYCLE sales for that year totalled some two million pounds; in 1983 this amount increased to almost four million pounds. Production in 1984 is proceeding at an annualized rate exceeding seven million pounds. Prices have been well established for TIRECYCLE and have not suffered erosion due to utilization of substitutive products. Although productivity gains have allowed stability and some reduction in prices, unusual inflationary increases in raw materials prices have been passed on to customers with little diminution of demand. The Financial Feasibility Report will present projections on production of TIRECYCLE solely for rubber, asphalt and plastics markets as well as projections including shredding of tires for the state for safe storage or burning. This latter calculation represents a more predictable and orderly payback of principle and interest on the loan; however, production solely for existing or impending TIRECYCLE markets can provide for a reasonable payback schedule even with a reduction of market price to expand markets.

Hennepin County will be the political subdivision under whose auspices the tire recycling operation will proceed. It is anticipated however that the scope of this demonstration project will easily lend itself to statewide implementation. Again the exact disposition of the tire disposal bill makes final pronouncements somewhat premature at this time. A coordinated effort has been seen as highly desirable and easy to effect.

Organization of the infrastructure necessary to supply RRE, Inc. with tires the state is desirous of shredding is seen as a governmental concern whereby it will choose the most effective means of delivering tires to the shredding site and removing those which will not be utilized by RRE, Inc. It should be pointed out that collection of tires on RRE, Inc's. part for TIRECYCLE production would be relatively easy to accomplish given the negative value accorded tires. The mechanics of efficient tire collection are more problematical than identification of sources for tires.

The concept of recycling tires through utilization of the TIRECYCLE process is not experimental but realistic. The conceptual and technical feasibility of the project is amply documented. The need for a demonstration program in Minnesota is to allow comprehensive and efficient management of the waste tire stream.

$15/TON; 15¢ TO 18.15¢/TIRE

With our guarantee of operating costs we would be able to shred tires for 3/4 cents per pound. Any rubber to be utilized for TIRECYCLE would be shredded at our cost; tires to be stored or burned would be shredded at the public's expense, paid by the $1 per tire tax if S.F. 697 is passed. As the utilization of tire rubber for TIRECYCLE increases, the tax could be reduced or eliminated. Again the tire bill has the express intent of encouraging and accelerating the implementation of solutions to this problem from private industry rather than providing for a permanent public clean-up. The proposed 60 million pounds per year capacity is based on three shifts working 250 days per year. One of the many advantages of RRE, Inc's. integrated system, which is designed to increase productivity, is that predicted or unpredicted maintenance requirements will not significantly impede production.

Since segregated storage is the norm for most scrap tires, waste flow can be highly refined before introduction into the processing equipment. Part of the shredding procedure is to clean the tire of any impurities which may denigrate the performance of the final product (Appendix E). The characteristics of a scrap tire which make it an undesirable constituent of the waste stream provide for easy collection and reduce problems of contamination. In addition, rubber itself is impervious to most impurities or degredation (Appendix D-10). This results in a highly predictable waste flow and allows generalized procedures to process the vast majority of tires.

Performance is a highly critical factor in the operation of a tire shredding facility. We have been investigating shredding equipment for over three years. Virtually all of them are incapable of operating reliably on a continuous basis (Appendix D-6). This has caused us to realize that it is imperative that some performance guarantee be contracted to insure reliability or remuneration in lieu thereof. This is the salient difference between our proposed shredding operation and all other proposed or operating systems. We can guarantee a price of 3/4 cents per pound while others claim this to be an unreasonable price.

Although it is to the state's advantage to pay as little as possible for any required shredding of tires, it should be recognized that this procedure reduces rather than eliminates the hazards posed by the disposal of tires. RRE, Inc. is the only company doing business in Minnesota which has demonstrated a viable and extensive market for processed tires. A determination of product quality is best made in terms of technical acceptance. Included with this proposal are four papers presented to the American Chemical Socity - Rubber Division, and two articles published in rubber journals over the past two years (Appendix B). All of these document the exhaustive research into the potential and reproducibility of products containing TIRECYCLE treated ground rubber from scrap tires.

In addition to our development of the basic technology and product development (TIRECYCLE) the market has been defined and market acceptance achieved. The objective is now expansion in the identified markets as opposed to proposing a market. TIRECYCLE is a unique product and its market potential is based on several factors. TIRECYCLE has application in both the present rubber compounding technology but also in the development of totally new items. TIRECYCLE is an engineering tool in that it provides

DOCUMENT A - CONCEPTUAL AND TECHNICAL FEASIBILITY REPORT

Current management of the waste tire stream is a piecemeal effort without any comprehensive organization which has resulted in the haphazard and often dangerous disposal of tires. Presently the most significant use for discarded whole tires is in the area of retreading which accounts for about 9% of total supply (Department of Energy, Rubber Industry Report, 1979). The only other significant usage discovered by this report was by the rubber industry as a compound extender, when the tire was ground into a particulate form; this uses 5% of the total available supply. While the former percentage may be valid for Minnesota, it is doubtful that even 1% is being ground as a rubber compound extender because of the freight costs involved with shipping whole tires to potential grinders.

Most sanitary landfills will no longer accept whole tires for disposal. This has exacerbated the problem of inappropriate storage whether it occurs on highway shoulders or on private land. This latter disposal method is potentially the most catastrophic. There are piles in Minnesota that meet or exceed the size of a pile in Virginia of 10 million tires which was set on fire on October 31, 1983 and is still burning. Not only does the indiscriminate storage of tires increase the risk of fire but also the incidence of multiplying insect populations, especially of mosquitos (Appendix D-5).

The state legislature is in the process of passing a bill aimed at improving control over the disposal of scrap tires (S.F. 697). Although the final disposition of the bill is still in doubt, there appears to be a consensus for utilizing public policy to accelerate the implementation of a private sector solution to the problem. At this time we are the only company with the realistic potential for effectively managing the tire waste stream.

As we envision a comprehensive waste management plan, a facility capable of processing 60 million pounds annually would have to be constructed; this would equal the average annual discard rate for tires. Effective storage of tires dictates that they be shredded to relieve health and fire hazards but also to reduce space requirements; a shredded tire will take up one tenth of the volume of a whole tire. Once the tires are shredded they can be kept underground or underwater for safest storage (See Appendix D-10) or above ground but sprayed with fire retardant as an alternative. It should be recognized that tire storage is viewed as an interim step before utilization in TIRECYCLE or another process rather than as an end in and of itself; therefore, the chosen storage method should insure effective retrieval.

We have included plans for the shredding equipment in Appendix E. As has been stated this equipment will have an annual processing capability of 60 million pounds per year. It is our desire to shred this amount regardless of its final utilization (i.e., storage or grinding). We think this is a prudent insurance method given potential hazards. Nevertheless it should be understood that complete utilization is viewed within a five to ten year time frame.

that they attempted to service was the fuel. Rather than discuss the arguments put forth by the three separate tire choppers we submit the position of Northern States Power Co. regarding the burning of tires. This information was submitted to Governor Perpich's commission on tire disposal (Appendix D-7). The salient points are that they can burn tires if the pieces are one inch x one inch and the price is one cent per pound delivered. There are other negative aspects of burning tires due to SO_2 and SO_3 generation and the fouling of boiler tubes with zinc from the zinc oxide in the tire. ZnO is a constituent of the vulcanization process of the rubber and this will remain constant along with the sulfur. It is reasonable to assume that there is a market as fuel for chopped tire if the price and size requirements are met.

When RRE, Inc. first assayed the situation of scrap tires, the main source of tires was those currently discarded. There was the question of how many tires there were. A better phrasing of the question is how many pounds of tires are discarded each year in Minnesota? Testimony before the Governor's committee revealed that the MPCA (Don Kyser) estimates there are between two million to three and a half million tires per year. The average weight is 60 pounds because of the higher weight of truck tires. There are estimated to be four times as many passenger tires as truck tires. The main point is that we do not know exactly the number of tires being discarded per year. It is a large amount in any case.

In addition to the current accumulations there are numerous piles which must hold over fifty years worth of discarded tires. The complete analysis of the tonnage of rubber tires is basically beyond specific calculation at this time. Though this figure is an eventual necessity the means to solve the problem can be devised at this time on the basis that this proposal is meant to be a demonstration for a process. The key to this more narrow problem is that the equipment needed for twenty million pounds is essentially the same as for 60 million pounds. Since it is impossible to immediately leap into a 60 million pound per year market for TIRECYCLE, the capacity can be directed to other uses for the intermediate forms of refined scrap tire prior to becoming TIRECYCLE. It essentially costs as much to chop tires for burning or landfilling as it does to chop tires for a sophisticated usage.

The original circumstances under which we began our work with was to develop a plan to just process TIRECYCLE. The pressures of attending to the environmental problems of storing tires has oriented our treatment of the whole subject somewhat. TIRECYCLE has to be coordinated with the statewide problem of tire disposal.

The financial feasibility of this project is very competitive with all other solid waste processing facilities. This is true for other waste tire processing projects as well as other attempts aimed at extracting value or reducing costs from solid waste management procedures. TIRECYCLE products have established a market price between 20 and 35 cents per pound (Appendix C). In most instances the price paid represents a 25-50% savings for the rubber compounder who utilizes TIRECYCLE. Despite RRE, Inc. lack of vertical production integration resulting in significant production and transportation costs, TIRECYCLE operations are profitable at this price level. It will be demonstrated that an orderly payback of principle and interest on the loan can be achieved through current or increased operation revenues and reduced costs.

Besides the rubber industry, the application of TIRECYCLE for plastics possesses the greatest potential in terms of quantity demanded and price received. Asphalt and fuel applications provide fewer economic incentives, but their potential volume is attractive to insure stability and diversification of demand.

At present management of scrap tire disposal is of limited effectiveness. In recognition of this the Minnesota Legislature has proposed a bill (S.F. 697) to more closely control the disposal of scrap tires and provide money to clean up existing hazardous tire storage piles. As part of this latter effort, it is expected that shredding will be utilized as an interim measure, awaiting final utilization of the tires' constituent parts. With guaranteed lowest operating costs, RRE, Inc. could shred tires for mutual benefit, providing the state with reduced health and fire hazards at tire dumps and RRE, Inc. with guaranteed production volume and low cost raw material supply.

It is expected that the existence of highly reliable operating and maintenance costs combined with an initial market of high volume (shredding for the state) and reliability will yield financial projections which are both conservative and profitable. With the prospect for greatly improved market demand and price enhancement through product refinement, significant improvement upon these calculations can be expected. This will expedite the process of comprehensive waste tire management and reduce the need for continued state intervention to insure compliance with present or proposed statutes. This demonstration project can be an important example of how cooperation between public and private forces yields effective and efficient management of significant waste disposal problems.

RRE, Inc. has been in the process of developing background for this application for over two years. In the course of that time the exact circumstances of scrap tire disposal have been in a state of flux. Initially there was a flurry of activity that produced three tire choppers working in the state. Each used a different technique and equipment. All three only produced various sizes of first stage chop. The smallest piece produced was a two inch X two inch. We believe that all three systems are basically not reliable for chopping tires for assorted reasons, but the common thread is that the operating expenses are so high that the chopped tire in whatever its final size is not able to meet any of the market cost requirements (Appendix D-6). The only market known to us

OVERVIEW

This application requests a grant/loan of $1 million for equipment to process waste tires under the Special Waste Stream Facilities category. Whole tires of all sizes will be reduced to a series of ground rubber particle sizes which are then surface treated to produce a series of unique products for rubber compounding. The rubber and the fiber of the tires are utilized with only the metal to be discarded or sold as scrap. The process produces no effluent and only uses electrical energy. The product is called TIRECYCLE. Although the TIRECYCLE product is unique, the intermediate products are commercially viable and can compete in existing markets. This production facility will have a capacity of 60 million pounds annually which equals the approximate annual discard rate for Minnesota. The primary market for the product produced is the rubber industry; however, equally significant opportunities exist in plastics, asphalt and fuel applications.

The refinement of scrap tires to mitigate the significant health and fire hazards posed by disposal of whole tires has always been faced with the significant problems associated with an inability to find markets with profitable economic returns. Reasonable operating costs are achievable and are guaranteed with our process while viable markets are already a reality despite poor economies of scale at present.

The equipment required can be divided into four main categories: shredding, grinding, polymer processing and particulate processing. At the present time only the latter two are operational, in a semi-works capacity. The product has been marketed under the name of TIRECYCLE for two years. In 1983 approximately four million pounds of TIRECYCLE were processed, and we have agreements to process over seven million pounds this year (Appendix A). None of this particulate rubber originates in Minnesota, but all of it would, if suitable equipment for shredding and grinding were in place.

The technical feasibility of this operation can be divided into two parts. The first entails the mechanics involved in refining the scrap tire to a form suitable for sale as a TIRECYCLE product or variant. The manufacturer of the shredding equipment has provided a guarantee for maintenance costs. The grinding equipment is commonly used throughout the rubber industry in various arrangements and thus historical operating costs are well known. Rubber Research Elastomerics, Inc. (RRE, Inc.) has been in the business of polymer modification for over 20 years and thus has specific knowledge of the costs of this operation. The TIRECYCLE treatment process has been operating two years, and appropriate equipment and operating costs have been well documented.

The second facet of technical feasibility is an authentication of the claims of chemical transformation. Numerous papers have been presented at American Chemical Society - Rubber Division technical meetings and published in rubber journals (Appendix B). The process is the object of a patent application which will be granted during 1984. All told the technical merit of this process has been exhaustively documented.

Minneapolis Star and Tribune
Wednesday
July 25/1984
6B.

"We need revenue from the acceptance of more tires. Until we get the volume of tires coming in built up, we need to reduce the number of tires we're required to shred," Chapman said.

Chapman said the city-permit change will provide financial relief until a state waste-tire law takes effect in 1985 and makes recycling more profitable.

The law's provisions will prohibit landfills from accepting waste tires, which should bring more tires, and fees, to North American, Chapman said. "It's hard for us to compete in the collection of tires now with people who don't have recycling costs," he said.

The law also establishes a loan and grant program for firms that use recycled tires for fuel, which "will definitely open up the market for shredded tires," Chapman said.

Andover Mayor Gerald Windschitl said city officials were willing to relax permit requirements, but only temporarily, and in exchange for a guarantee that North American will leave town when Heidelberger's tires are gone.

"This change is for an interim period of time. What we're not willing to do is drop this ratio of old tires shredded to new ones accepted permanently.... We have no desire to become the tire capital of the Twin Cities," he said.

Chapman said North American has shredded about 1.5 million tires "without really putting a dent" in Heidelberger's tire mountain.

Andover gives relief to troubled firm in tire recycling

By Paul Gustafson
Staff Writer

Andover officials have agreed to allow a firm that's having financial trouble recycling a mountain of 12 million to 15 million tires to accept as many additional waste tires as it shreds for six months.

In return, North American Tire Tech, Inc., has agreed to dismantle its tire-shredding operation when it has recycled the 15-acre pile of tires collected over 30 years by Cecil Heidelberger, Anoka County's self-proclaimed "tire king."

Heidelberger agreed last year to sell his tires to Schriptek Recovery Systems International, which was later bought by North American.

Under its city operating permit, North American has been required to shred and dispose of three tires from Heidelberger's tire mountain for every additional waste tire it accepts.

The company is making money through fees charged for accepting additional waste tires, but not enough to offset losses from its tire-shredding operation, said North American official Darrel Chapman.

The company is selling about 1,500 tons of shredded tires a month to an Owens-Illinois paper mill in Tomahawk, Wis., which is burning them as fuel, but it has no other customers, and is "basically losing" money on its recycling operation, Chapman said.

For example, if a simple manufacturing process like TIRECYCLE® is to be regulated because scrap tires are a raw material, there will be a general dampening of the innovative aspects, and obtaining the necessary financing will be precluded.

If you have any questions please do not hesitate to call on us. The background information of the Appendix is readily available to you.

Sincerely,

Fred J. Stark, Jr.

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