



RHODE ISLAND  
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

235 Promenade Street, Providence, RI 02908-5767

TDD 401-222-4462

May 18, 2011

**CERTIFIED MAIL**

Mr. Kyle Naylor, Vice President of Operations  
Briarcliffe Manor  
49 Old Pocasset Road  
Johnston, RI 02919

**RE: Final RIPDES Permit for Medical Homes of Rhode Island, Inc.  
RIPDES Application No. RI0020168**

Dear Mr. Naylor:

Enclosed is your final Rhode Island Pollutant Discharge Elimination System (RIPDES) Permit issued pursuant to the referenced application. State regulations, promulgated under Chapter 46-12 of the Rhode Island General Laws of 1956, as amended, require this permit to become effective on the date specified in the permit.

The Department of Environmental Management (DEM) is willing to enter into a Consent Agreement with Briarcliffe Manor. This consent agreement will include interim limits for Total Lead, Total Copper and Total Zinc and an enforceable schedule for Briarcliffe Manor to design and construct facility upgrades that are necessary to allow Briarcliffe Manor to come into compliance with the final permit limits for these pollutants. In order for the DEM to enter into a Consent Agreement, Briarcliffe Manor will need to file a request for an adjudicatory hearing for the above-mentioned permit limits within thirty (30) days of receipt of this letter. Additionally, to obtain a stay of these permit limits, so that Briarcliffe Manor will not have violations during the interim period between issuing the final permit and entering into a consent agreement, Briarcliffe Manor must also request a temporary stay for the duration of the adjudicatory hearing proceedings (see the attached instructions for Stays of RIPDES Permits).

We appreciate your cooperation throughout the development of this permit. Should you have any questions concerning this permit, feel free to contact Joseph Camara of the State Permits Staff at (401) 222-4700, extension 7640.

Sincerely,

Joseph Haberek, P.E.  
Principal Sanitary Engineer  
Rhode Island Department of Environmental Management

JH:jc

Enclosures

cc: Akshay Talwar, Briarcliffe Manor  
EPA Permits Branch, New England Division  
Traci Pena, RIDEM-OWR

Annie McFarland, RIDEM-OWR  
Alex Pinto, RIDEM

Office of Water Resources/Telephone: 401.222.4700/Fax: 401.222.6177



30% post-consumer fiber

**Response to Public Comments  
Briarcliffe Manor  
RIPDES Permit No. RI0020168**

From April 4, 2011 to May 6, 2011, the Rhode Island Department of Environmental Management (DEM) solicited public comment on a draft Rhode Island Pollutant Discharge Elimination System (RIPDES) permit for Briarcliffe Manor. The following response addresses the written comment that was submitted to the DEM by Briarcliffe Manor on May 6, 2011. No other comments were received.

*Comment:* Briarcliffe Manor noted that it will not be able to immediately comply with the Total Lead, Total Copper and Total Zinc limits in the final permit and indicated its desire to enter into a consent agreement that will allow Briarcliffe Manor to be able to consistently comply with its final permit limits.

*Response:* The DEM is willing to enter into a consent agreement with Briarcliffe Manor that will include interim limits for Total Lead, Total Copper and Total Zinc and an enforceable schedule for Briarcliffe Manor to design and construct facility upgrades that are necessary to allow Briarcliffe Manor to come into compliance with the final permit limits for these pollutants.

**HEARING REQUESTS**

If you wish to contest any of the provisions of this permit, you may request a formal hearing within thirty (30) days of receipt of this letter. The request should be submitted to the Administrative Adjudication Division at the following address:

Bonnie Stewart, Clerk  
Department of Environmental Management  
Office of Administrative Adjudication  
235 Promenade Street, 3rd Floor  
Providence, Rhode Island 02908

Any request for a formal hearing must conform to the requirements of Rule 49 of the State Regulations.

**STAYS OF RIPDES PERMITS**

Should the Department receive and grant a request for a formal hearing, the contested conditions of the permit will not automatically be stayed. However, the permittee, in accordance with Rule 50, may request a temporary stay for the duration of adjudicatory hearing proceedings. Requests for stays of permit conditions should be submitted to the Office of Water Resources at the following address:

Angelo S. Liberti, P.E.  
Chief of surface Water Protection  
Office of Water Resources  
235 Promenade Street  
Providence, Rhode Island 02908

All uncontested conditions of the permit will be effective and enforceable in accordance with the provisions of Rule 49.

AUTHORIZATION TO DISCHARGE UNDER THE  
RHODE ISLAND POLLUTANT DISCHARGE ELIMINATION SYSTEM

In compliance with the provisions of Chapter 46-12 of the Rhode Island General Laws, as amended,

**Medical Homes of Rhode Island, Inc.**  
49 Old Pocasset Road  
Johnston, Rhode Island 02919

is authorized to discharge from a facility located at

**Briarcliffe Manor**  
49 Old Pocasset Road  
Johnston, Rhode Island 02919

to receiving waters named

**Unnamed Stream Tributary to Dry Brook**

in accordance with effluent limitations, monitoring requirements and other conditions set forth herein.

This permit shall become effective on August 1, 2011.

This permit and the authorization to discharge expire at midnight, five (5) years from the effective date.

This permit supersedes the permit issued on June 24, 2004.

This permit consists of 15 pages in Part I including effluent limitations, monitoring requirements, etc. and 10 pages in Part II including General Conditions.

Signed this 18<sup>th</sup> day of May, 2011.



Angelo S. Liberti, P.E., Chief of Surface Water Protection  
Office of Water Resources  
Rhode Island Department of Environmental Management  
Providence, Rhode Island



## PART I

## A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. During the period beginning on the effective date and lasting through permit expiration, the permittee is authorized to discharge from outfall serial number 001A (final discharge from the treatment facility prior to discharge to surface waters). Such discharges shall be limited and monitored by the permittee as specified below:

<u>Effluent Characteristic</u>	<u>Discharge Limitations</u>					<u>Monitoring Requirement</u>	
	<u>Quantity - lbs./day</u>		<u>Concentration - specify units</u>			<u>Measurement Frequency</u>	<u>Sample Type</u>
	<u>Average Monthly</u>	<u>Maximum Daily</u>	<u>Average Monthly</u> <u>*(Minimum)</u>	<u>Average Weekly</u> <u>*(Average)</u>	<u>Maximum Daily</u> <u>*(Maximum)</u>		
Flow	0.025 MGD	--- MGD				Continuous	Recorder
BOD <sub>5</sub>	3.13		15 mg/l	25 mg/l	25 mg/l	1/Week	24-Hr. Comp.
BOD <sub>5</sub> -% Removal	85 %					1/Month	Calculated
TSS	3.13		15 mg/l	25 mg/l	25 mg/l	1/Week	24-Hr. Comp.
TSS - % Removal	85 %					1/Month	Calculated
Settleable Solids			--- ml/l	--- ml/l	--- ml/l	1/Day	Grab

--- Signifies a parameter which must be monitored and data must be reported; no limit has been established at this time.

All BOD<sub>5</sub> and TSS samples shall be taken on the influent and effluent with appropriate allowances for hydraulic detention (flow-through) time.

Samples taken in compliance with the monitoring requirements specified above shall be taken Monday through Friday at the following location: Outfall 001A (final discharge from the treatment facility prior to discharge to surface waters).

PART I

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

2. During the period beginning on the effective date and lasting through permit expiration, the permittee is authorized to discharge from outfall serial number 001A (final discharge from the treatment facility prior to discharge to surface waters). Such discharges shall be limited and monitored by the permittee as specified below:

Effluent Characteristic	Discharge Limitations					Monitoring Requirement	
	Quantity - lbs./day		Concentration - specify units			Measurement Frequency	Sample Type
	Average Monthly	Maximum Daily	Average Monthly *(Minimum)	Average Weekly *(Average)	Maximum Daily *(Maximum)		
Fecal Coliform			200 MPN <sup>1</sup> 100 ml	400 MPN <sup>1</sup> 100 ml	400 MPN 100 ml	1/Week	Grab
Total Residual Chlorine (TRC)			11.0 ug/l <sup>2</sup>		19.0 ug/l <sup>2</sup>	1/Week <sup>3</sup>	Grab
pH			(6.5 S.U)		(9.0 S.U)	2/Day	Grab

<sup>1</sup>The Geometric Mean of all results during the month shall be used to obtain the "monthly average." The Geometric Mean of the weekly results shall be calculated and the highest week's Geometric Mean from the month shall be reported as the "weekly average".

<sup>2</sup> The use of a continuous TRC recorder after chlorination and prior to dechlorination is required to provide a record that proper disinfection was achieved at all times. However, compliance with these limitations shall be determined by taking a minimum of one (1) grab sample per week. The following methods may be used to analyze the grab samples: (1) Low Level Amperometric Titration, Standard Methods (18th Edition) No. 4500-Cl E; (2) DPD Spectrophotometric, EPA No. 330.5 or Standard Methods (18th Edition) No. 4500-Cl G; The limit at which compliance/noncompliance determinations will be based is the Quantitation Limit which is defined as 20 µg/l for TRC. These values may be reduced by permit modification as more sensitive methods are approved by EPA and the State

<sup>3</sup> In addition to the weekly compliance grab samples, the permittee shall also analyze the treatment facility's effluent, after dechlorination, at a minimum frequency of once per day, using a colorimeter and maintain a log book with the results of these tests to provide a record that proper dechlorination was achieved at all times.

\*Values in parentheses ( ) are to be reported as Minimum/Maximum for the reporting period rather than Average Monthly/Maximum Daily.

Samples taken in compliance with the monitoring requirements specified above shall be taken Monday through Friday at the following location: Outfall 001A (final discharge from the treatment facility prior to discharge to surface waters).

## PART I

## A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

3. During the period beginning on the effective date and lasting through permit expiration, the permittee is authorized to discharge from outfall serial number 001A (final discharge from the treatment facility prior to discharge to surface waters).

Such discharges shall be monitored by the permittee as specified below:

<u>Effluent Characteristic</u>	<u>Discharge Limitations</u>				<u>Monitoring Requirement</u>		
	<u>Quantity - lbs./day</u>		<u>Concentration - specify units</u>		<u>Measurement Frequency</u>	<u>Sample Type</u>	
	<u>Average Monthly</u>	<u>Maximum Daily</u>	<u>Average Monthly</u>	<u>Average Weekly</u>			<u>Maximum Daily</u>
Phosphorus, Total			--- mg/l		--- mg/l	1/Quarter	24-Hr. Comp.
TKN			--- mg/l		--- mg/l	1/Quarter	24-Hr. Comp.
Nitrate, Total (as N)			--- mg/l		--- mg/l	1/Quarter	24-Hr. Comp.
Nitrite, Total (as N)			--- mg/l		--- mg/l	1/Quarter	24-Hr. Comp.
Nitrogen, Total (TKN + Nitrate + Nitrite, as N)			--- mg/l		--- mg/l	1/Quarter	Calculated
Ammonia, Total (as N) (May-Oct)			1.66 mg/l		10.6 mg/l	1/Month	24-Hr. Comp.
Ammonia, Total (as N) (Nov-April)			3.38 mg/l		10.6 mg/l	1/Month	24-Hr. Comp.

--- signifies a parameter which must be monitored and data must be reported; no limit has been established at this time.

Samples taken in compliance with the monitoring requirements specified above shall be taken Monday through Friday at the following locations: Outfall 001A (final discharge from the treatment facility prior to discharge to surface waters).



PART I

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

4. During the period beginning on the effective date and lasting through permit expiration, the permittee is authorized to discharge from outfall serial number 001A (final discharge from the treatment facility prior to discharge to surface waters). Such discharges shall be monitored by the permittee as specified below:

Effluent Characteristic	Discharge Limitations					Monitoring Requirement	
	Quantity - lbs./day		Concentration - specify units			Measurement Frequency	Sample Type
	Average Monthly	Maximum Daily	Average Monthly	Average Weekly	Maximum Daily		
Cyanide			4.1 µg/l <sup>1</sup>		17.6 µg/l	1/ Year	Grab
Lead, Total			0.3 µg/l <sup>1</sup>		8.0 µg/l	1/ Month	24-Hr. Comp.
Zinc, Total			23.6 µg/l		23.6 µg/l	1/ Month	24-Hr. Comp.
Copper, Total			1.8 ug/l <sup>1</sup>		2.4 µg/l <sup>1</sup>	1/ Month	24-Hr. Comp.
Nickel, Total			10.3 µg/l		92.7 µg/l	1/ Year	24-Hr. Comp.
Aluminum, Total			69.6 µg/l		600.0 µg/l	1/ Year	24-Hr. Comp.
Cadmium, Total			0.06 µg/l <sup>1</sup>		0.32 µg/l <sup>1</sup>	1/ Year	24-Hr. Comp.
<u>Ceriodaphnia Sp.</u> LC <sub>50</sub> <sup>2</sup>					100% or Greater <sup>3</sup>	1/Year	24-Hr. Comp.
C-NOEC <sup>4</sup>					100% or Greater <sup>3</sup>	1/Year	24-Hr. Comp.

<sup>1</sup> The limit at which compliance/noncompliance determinations will be based is the quantitation limit which is defined as 3.0 ug/l for total lead, 0.5 ug/l for total cadmium, 10 ug/l for cyanide, and 3.0 ug/l for total copper. These values may be reduced by permit modification as EPA and the State approve more sensitive methods.

<sup>2</sup> LC<sub>50</sub> is defined as the concentration of wastewater that causes mortality to 50% of the test organisms.

<sup>3</sup> The 100% or greater limit is defined as a sample that is composed of 100% effluent.

<sup>4</sup> C-NOEC is defined as the highest concentration of toxicant or effluent at which no adverse effects are observed.

Samples taken in compliance with the monitoring requirements specified above shall be taken Monday through Friday at the following location: Outfall 001A (final discharge from the treatment facility prior to discharge to surface waters).

5. The pH of the effluent shall not be less than 6.5 nor greater than 9.0 standard units at any time, unless these values are exceeded due to natural causes or as a result of the approved treatment processes.
6. The discharge shall not cause visible discoloration of the receiving waters.
7. The effluent shall contain neither a visible oil sheen, foam, nor floating solids at any time.
8. The permittee's treatment facility shall maintain a minimum of 85 percent removal of both total suspended solids and 5-day biochemical oxygen demand. The percent removal shall be based on monthly average values.
9. When the effluent discharged for a period of 90 consecutive days exceeds 80 percent of the permitted flow from Part I.A.1, the permittee shall submit to the permitting authorities a projection of loadings up to the time when the design capacity of the treatment facility will be reached, and a program for maintaining satisfactory treatment levels consistent with approved water quality management plans.
10. All existing manufacturing, commercial, mining, and silvicultural dischargers must notify the Director as soon as they know or have reason to believe:
  - a. That any activity has occurred or will occur which would result in the discharge, on a routine or frequent basis, of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":
    - (1) One hundred micrograms per liter (100 ug/l);
    - (2) Two hundred micrograms per liter (200 ug/l) for acrolein and acrylonitrile; five hundred micrograms per liter (500 ug/l) for 2,4-dinitrophenol and for 2-methyl-4,6-dinitro-phenol; and one milligram per liter (1 mg/l) for antimony;
    - (3) Five (5) times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 C.F.R. s122.21(g)(7); or
    - (4) Any other notification level established by the Director in accordance with 40 C.F.R. s122.44(f) and Rhode Island Regulations.
  - b. That any activity has occurred or will occur which would result in the discharge, on a non-routine or infrequent basis, of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":
    - (1) Five hundred micrograms per liter (500 ug/l);
    - (2) One milligram per liter (1 mg/l) for antimony;
    - (3) Ten (10) times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 C.F.R. s122.21(g)(7); or
    - (4) Any other notification level established by the Director in accordance with 40 C.F.R. s122.44(f) and Rhode Island Regulations.



- c. That they have begun or expect to begin to use or manufacture as an intermediate or final product or by-product any toxic pollutant which was not reported in the permit application.
11. The permittee shall analyze its effluent for the EPA Priority Pollutants once (1) every five (5) years. The Priority Pollutant testing shall be conducted during the final calendar year of this permit and the results shall be submitted to the RIDEM at least one hundred eighty (180) days prior to the expiration date of this permit with the permit reapplication. All sampling and analysis shall be done in accordance with EPA Regulations, including 40 CFR, Part 136; grab and composite samples shall be taken as appropriate.
  12. This permit serves as the State's Water Quality Certificate for the discharges described herein.

**B. BIOMONITORING REQUIREMENTS AND INTERPRETATION OF RESULTS**

1. General

Beginning on the effective date of the permit, the permittee shall perform one (1) acute and chronic toxicity test per year on samples collected from discharge outfall 001A. The permittee shall conduct the tests during dry weather periods (no rain within forty-eight (48) hours prior to or during sampling unless approved by RIDEM) according to the following test frequency and protocols. Chronic and acute toxicity data shall be reported as outlined in Section I.B.8. The chronic daphnid tests shall be used to calculate the acute LC<sub>50</sub> at the forty-eight (48) hour exposure interval. Test results will be interpreted by the State. The State may require additional screening, range finding, definitive acute or chronic bioassays as deemed necessary based on the results of the initial bioassays required herein. Indications of toxicity could result in requiring a Toxicity Reduction Evaluation (TRE) to investigate the causes and to identify corrective actions necessary to eliminate or reduce toxicity to an acceptable level.

2. Test Frequency

For one sampling event per year (1/Year), the permittee will conduct a seven day chronic toxicity test on the species listed below. This requirement entails performing one-specie testing as follows:

<u>Species</u>	<u>Test Type</u>	<u>Frequency</u>
Daphnid ( <u>Ceriodaphnia sp.</u> )	Reproduction/Survival Acute Static (LC <sub>50</sub> )	Annually

A sampling event is defined as three 24-hour composites collected over the seven-day test period (see Section I.B.4).

3. Testing Methods

Chronic toxicity tests shall be conducted in accordance with protocols listed in the latest edition of Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms (EPA-600/4-89/011), incorporating any deviations from protocol listed herein, or additional methods if approved by the Director of RIDEM.

4. Sample Collection

For each sampling event a twenty-four- (24) hour flow proportioned composite final effluent sample shall be collected during a dry weather period (no rain 48 hours prior to or during sampling unless approved by RIDEM). For each sampling event, the effluent samples shall be collected on days 0, 3 and 5 of the 7-day exposure period. The first sample is used for

test initiation, Day 1, and for test solution renewal on Day 2. The second sample would be used for test solution renewal on Days 3 and 4. The third sample would be used for test solution renewal on Days 5, 6 and 7.

To eliminate the problem of potential rainfall interference during the five-day sampling period for the chronic tests, the permittee shall collect enough sample on Day 0 to properly store and use one-third on both Days 3 and 5 if rain has occurred since Day 0. In addition, if no rainfall has occurred since Day 3, enough sample shall also be collected on Day 3 to use for Day 5 if necessary.

In the laboratory, the initial sample (Day 0) will be split into two (2) subsamples, after thorough mixing, for the following:

- A: Chemical Analysis
- B: Chronic Toxicity Testing

Day 3 and 5 samples will be held until test completion. If either the Day 3 or 5 renewal sample is of sufficient potency to cause lethality to 50% or more test organisms in any of the dilutions for either species, then a chemical analysis shall be performed on the appropriate samples as well.

All samples held overnight shall be refrigerated at 4°C.

5. Dilution Water

Dilution water used for freshwater chronic toxicity analyses should be of sufficient quality to meet minimum acceptability of test results (see Section I.B.6). Natural freshwater shall be used as the dilution water. This water shall be collected from Pawtucket Reservoir. If this natural freshwater diluent is found to be, or suspected to be toxic or unreliable, an alternate or laboratory source of water of known quality with a hardness and pH similar to that of the receiving water may be substituted AFTER RECEIVING WRITTEN APPROVAL FROM RIDEM.

6. Effluent Toxicity Test Conditions for the Daphnid (Ceriodaphnia sp.) Survival and Reproduction Test<sup>1</sup>

a.	Test Type	Static Renewal
b.	Temperature (C)	25° ± 1° C
c.	Light Quality	Ambient laboratory illumination
d.	Photoperiod	16 hours light, 8 hours dark
e.	Test Chamber Size	30 ml
f.	Test Solution Volume	15 ml
g.	Renewal of Test Solutions	Daily, using most recently collected sample.
h.	Age of Test Organisms	Less than twenty-four (24) hours and all released within an eight (8) hour period of each other.
i.	Number of Neonates Per Test Chamber	1
j.	Number of Replicate Test Chambers	10

Per Treatment		
k.	Number of Neonates Per Test Concentration	10
l.	Feeding Regime	Feed 0.1 ml each of YTC and algal suspension per exposure chamber daily.
m.	Aeration	None
n.	Dilution Water	Pawtucket Reservoir, see Section I.B.5
o.	Dilutions	Five (5) dilutions plus a control: 100%, 50%, 25%, 12.5%, 6.25% and 0% effluent.
p.	Test Duration	Until 60% of control females have three (3) broods (may require seven (7) days).
q.	End Points	Survival and reproduction
r.	Test Acceptability	80% or greater survival and an average of fifteen (15) or more young per female in the control solutions. At least 60% of surviving females in controls should have produced third brood.
s.	Sampling Requirements	For off site tests, a minimum of three (3) samples are collected (i.e., Days 0,3 &5) and used for renewal (see Section I.B.4). Off-site samples must be first used Within forty-eight (48) hours of Collection.
t.	Sample Volume Required	Minimum 2 liters/day

<sup>1</sup>Adapted from EPA/600/4-90/027

7. Chemical Analysis

The following chemical analysis shall be performed for every two-specie sampling event.

<u>Parameter</u>	<u>Effluent</u>	<u>Freshwater Diluent</u>	<u>Minimum Detection Limit (mg/l)</u>
Hardness <sup>1</sup>	X	X	0.5
Alkalinity	X	X	2.0
pH	X	X	---
Specific Conductance	X	X	---
Total Solids and Suspended Solids	X	X	---



Ammonia	X	X	0.1
Total Organic Carbon	X		0.5
Cyanide	X		0.010

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<sup>1</sup>Method 314A (Hardness by Calculation) from APHA (1985) Standard Methods for the Examination of Water and Wastewater. 16th Edition

<u>Total Metals</u>	<u>Effluent</u>	<u>Freshwater Diluent</u>	<u>Minimum Detection Limit (µg/l)</u>
Total Nickel	X	X	1.0
Total Aluminum	X	X	20.0
Total Lead	X	X	1.0
Total Copper	X	X	1.0
Total Zinc	X	X	5.0
Total Cadmium	X	X	0.1

The above metal analyses may be used to fulfill, in part or in whole, monitoring requirements in the permit for these specific metals.

8. Toxicity Test Report Elements

A report of results will include the following:

- Description of sample collection procedures and site description.
- Names of individuals collecting and transporting samples, times, and dates of sample collection and analysis.
- General description of tests: age of test organisms, origin, dates and results of standard toxicant tests (quality assurance); light and temperature regime; dilution water description; other information on test conditions if different than procedures recommended.
- The method used to adjust the salinity of the effluent must be reported.
- All chemical and physical data generated (include detection limits).
- Raw data and bench sheets.
- Any other observations or test conditions affecting test outcome.

Toxicity test data shall include the following:

Chronic

- Daily survival of test organisms in the controls and all replicates in each dilution. Survival data should be analyzed by Fisher's Exact Test prior to analysis of reproduction data.

- Young per female for all replicates in each dilution for Ceriodaphnia and weight for minnow larvae.
- Dissolved oxygen, pH, specific conductance and temperature for each dilution.
- Results of Dunnett's Procedure and/or other EPA recommended or approved methods for analyzing the data.
- C-NOEC = Chronic No Observed Effect Concentration
- LOEC = Lowest Observed Effect Concentration
- MATC = Maximum Allowable Toxicant Concentration

Acute - (These data points are to be obtained 48 hours into the chronic test).

- Survival for each concentration and replication at time 24 and 48 hours.
- Dissolved oxygen, pH and specific conductance for each concentration.
- LC<sub>50</sub> and 95% confidence limits using one of the following methods in order of preference: Probit, Trimmed Spearman Karber, Moving Average Angle, or the graphical method; printout or copy of these calculations. The Probit, Trimmed Spearman Karber and Moving Average Angle methods of analyses can only be used when mortality of some of the test organisms are observed in at least two (2) of the (% effluent) concentrations tested (i.e., partial mortality). If a test results in a 100% survival and 100% mortality in adjacent treatments ("all or nothing" effect), a LC<sub>50</sub> may be estimated using the graphical method.

9. Reporting of Bioassay Testing

Bioassay reports shall be submitted, no later than January 15<sup>th</sup> for the previous calendar year, to:

Office of Water Resources  
RIPDES Program  
Rhode Island Department of Environmental Management  
235 Promenade Street  
Providence, Rhode Island 02908-5767

**C. SLUDGE**

The permittee shall conform and adhere to all conditions, practices and regulations as contained in the State of Rhode Island Rules and Regulations for the Treatment, Disposal, Utilization and Transportation of Sewage Sludge.

**D. DETECTION LIMITS**

The permittee shall assure that all wastewater testing required by this permit, is performed in conformance with the method detection limits below. All sludge testing required by this permit shall be in conformance with the method detection limits found in 40 CFR 503.8. In accordance with 40 CFR Part 136, EPA approved analysis techniques, quality assurance procedures and quality control procedures shall be followed for all reports required to be submitted under the RIPDES program. These procedures are described in "Methods for the Determination of Metals in Environmental Samples" (EPA/600/4-91/010) and "Methods for Chemical Analysis of Water and Wastes" (EPA/600/4-79/020).

The report entitled "Methods for the Determination of Metals in Environmental Samples" includes a test which must be performed in order to determine if matrix interferences are present, and a series of tests to enable reporting of sample results when interferences are identified. Each step of the series of tests becomes increasingly complex, concluding with the complete Method of Standard Additions analysis. The analysis need not continue once a result which meets the applicable quality control requirements has been obtained. Documentation of all steps conducted to identify and account for matrix interferences shall be submitted along with the monitoring reports.

If, after conducting the complete Method of Standard Additions analysis, the laboratory is unable to determine a valid result, the laboratory shall report "could not be analyzed." Documentation supporting this claim shall be submitted along with the monitoring report. If valid analytical results are repeatedly unobtainable, DEM may require that the permittee determine a method detection limit (MDL) for their effluent or sludge as outlined in 40 CFR Part 136, Appendix B.

Therefore, all sample results shall be reported as: an actual value, "could not be analyzed", less than the reagent water MDL, or less than an effluent or sludge specific MDL. The effluent or sludge specific MDL must be calculated using the methods outlined in 40 CFR Part 136, Appendix B. Samples which have been diluted to ensure that the sample concentration will be within the linear dynamic range shall not be diluted to the extent that the analyte is not detected. If this should occur the analysis shall be repeated using a lower degree of dilution.

When calculating sample averages for reporting on discharge monitoring reports (DMRs):

1. "could not be analyzed" data shall be excluded, and shall not be considered as failure to comply with the permit sampling requirements;
2. results reported as less than the applicable MDL from this section shall be replaced with zeros on the MDL, and the average shall be reported as the calculated value.





### OTHER TOXIC POLLUTANTS

	MDL ug/l (ppb)
Antimony, Total	3.0
Arsenic, Total	1.0
Beryllium, Total	0.2
Cadmium, Total	0.1
Chromium, Total	1.0
Chromium, Hexavalent	20.0
Copper, Total	1.0
Lead, Total	1.0
Mercury, Total	0.2
Nickel, Total	1.0
Selenium, Total	2.0
Silver, Total	0.5
Thallium, Total	1.0
Zinc, Total	5.0
Asbestos	**
Cyanide, Total	10.0
Phenols, Total***	50.0
TCDD	**
MTBE (Methyl Tert Butyl Ether)	1.0

\*Polynuclear Aromatic Hydrocarbons

\*\*No Rhode Island Department of Environmental Management (DEM) MDL

#### NOTE:

The MDL for a given analyte may vary with the type of sample. MDLs which are determined in reagent water may be lower than those determined in wastewater due to fewer matrix interferences. Wastewater is variable in composition and may therefore contain substances (interferents) that could affect MDLs for some analytes of interest. Variability in instrument performance can also lead to inconsistencies in determinations of MDLs.

To help verify the absence of matrix or chemical interference the analyst is required to complete specific quality control procedures. For the metals analyses listed above the analyst must withdraw from the sample two equal aliquots; to one aliquot add a known amount of analyte, and then dilute both to the same volume and analyze. The unspiked aliquot multiplied by the dilution factor should be compared to the original. Agreement of the results within 10% indicates the absence of interference. Comparison of the actual signal from the spiked aliquot to the expected response from the analyte in an aqueous standard should help confirm the finding from the dilution analysis. (Methods for Chemical Analysis of Water and Wastes EPA-600/4-79/020).

For Methods 624 and 625 the laboratory must on an ongoing basis, spike at least 5% of the samples from each sample site being monitored. For laboratories analyzing 1 to 20 samples per month, at least one spiked sample per month is required. The spike should be at the discharge permit limit or 1 to 5 times higher than the background concentration determined in Section 8.3.2, whichever concentration would be larger. (40 CFR Part 136 Appendix B Method 624 and 625 subparts 8.3.1 and 8.3.11).

**D. MONITORING AND REPORTING**

1. Monitoring

All monitoring required by this permit shall be done in accordance with sampling and analytical testing procedures specified in Federal Regulations (40 CFR Part 136).

2. Reporting

Monitoring results obtained during the previous month shall be summarized and reported on Discharge Monitoring Report (DMR) Forms, postmarked no later than the 15th day of the month following the completed reporting period. A copy of the analytical laboratory report, specifying analytical methods used, shall be included with each report submission. Signed copies of these, and all other reports required herein, shall be submitted to:

Office of Water Resources  
RIPDES Program  
Rhode Island Department of Environmental Management  
235 Promenade Street  
Providence, Rhode Island 02908



RHODE ISLAND DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF WATER RESOURCES  
235 PROMENADE STREET  
PROVIDENCE, RHODE ISLAND 02908-5767

STATEMENT OF BASIS

RHODE ISLAND POLLUTANT DISCHARGE ELIMINATION SYSTEM (RIPDES) PERMIT TO DISCHARGE TO WATERS OF THE STATE

RIPDES PERMIT NO. **RI0020168**

NAME AND ADDRESS OF APPLICANT:

**Medical Homes of Rhode Island, Inc.**  
49 Old Pocasset Road  
Johnston, Rhode Island 02919

NAME AND ADDRESS OF FACILITY WHERE DISCHARGE OCCURS:

**Briarcliffe Manor**  
49 Old Pocasset Road  
Johnston, Rhode Island 02919

RECEIVING WATER: **Unnamed Stream Tributary to Dry Brook**

CLASSIFICATION: **B1**

**I. Proposed Action, Type of Facility, and Discharge Location**

The above named applicant has applied to the Rhode Island Department of Environmental Management for reissuance of a Rhode Island Pollutant Discharge Elimination System (RIPDES) permit to discharge into the designated receiving water. The current permit expired on July 31, 2009. A timely application was submitted and the permit was administratively continued. The permit will expire five (5) years from the effective date. The facility is a package, wastewater treatment plant located at 49 Old Pocasset Road, Johnston, Rhode Island. The discharge consists of treated sanitary wastewater from the nursing home. A diagram of the treatment facility may be found in Attachment A.

**II. Limitations and Conditions**

The proposed effluent limitations and monitoring requirements may be found in the draft permit. Historic discharge data can be found in Attachment B. Based upon a review of the historic discharge data, it has been determined that the permittee may not be able to comply with the Copper, Lead and Zinc limits contained in this permit. Therefore, the DEM intends to enter into a consent agreement that will establish an enforceable schedule to either upgrade the treatment facility or eliminate the discharge.

### III. Permit Basis and Explanation of Effluent Limitation Derivation

#### *Facility*

The Medical Homes of Rhode Island wastewater treatment facility is a 0.025 million gallon per day (MGD) secondary treatment facility located at 49 Old Pocasset Road, Johnston, Rhode Island. The discharge, which discharges to an unnamed stream tributary to Dry Brook consists of treated sanitary wastewater. The wastewater treatment system consists of bar racks, aeration, final clarification, sand filtration, chlorine disinfection, and de-chlorination.

#### *General Requirements*

Development of RIPDES permit limitations is a multi-step process consisting of the following steps: identifying applicable technology-based limits; calculating allowable water-quality based discharge levels based on instream criteria, background data and available dilution; establishing Best Professional Judgement (BPJ) limits in accordance with Section 402 of the CWA; and assigning the most stringent as the final discharge limitations.

Water quality criteria are comprised of numeric and narrative criteria. Numeric criteria are scientifically derived ambient concentrations developed by EPA or States for various pollutants of concern to protect human health and aquatic life. Narrative criteria are statements that describe the desired water quality goal. A technology-based limit is a numeric limit, which is determined by examining the capability of a treatment process to reduce or eliminate pollutants.

Since the effluent discharges into a small stream prior to discharging into Dry Brook, dilution is not available at the point of discharge. Therefore, a dilution factor of one (1) was used in the determination of water quality-based discharge limits.

#### *Conventional Pollutants*

The water quality-based pH limitations are equivalent to the water quality criteria for discharges to freshwater from the RI Water Quality Regulations.

The previous permit specified BOD<sub>5</sub> and TSS permit limitations of 15mg/L, 25mg/L and 25mg/L for the average monthly, average weekly and maximum daily concentration limitations, respectively. In accordance with antibacksliding requirements set forth in 40 CFR 122.44(l)(1) and Section 303(d) of the CWA, which prohibit the relaxation of parameters that could cause long term water quality changes, the concentration limitations for BOD<sub>5</sub> and TSS will remain at 15 mg/L, 25mg/L and 25mg/L for the average monthly, average weekly and maximum daily concentration limitations, respectively.

This mass limit was calculated using the permitted design flow and the average monthly concentration limits using the following equation:

$$\text{Mass Limit} = (8.34)(15 \text{ mg/l})(0.025 \text{ MGD}) = 3.13 \text{ lb/d}$$

In addition, a minimum average monthly percent removal requirement of 85% for the BOD<sub>5</sub> and TSS limitations has also been included in the permit, in accordance with the minimum secondary treatment standards. Use of these regulations and requirements as guidance for establishing permit limits is consistent with Best Professional Judgement, as described in Section 401(a)(1) of the CWA.



### *Settleable Solids*

Settleable Solids are a "process-control parameter" that can aid in the assessment of the operation of the plant but need not be an effluent limit. Therefore, the permit requirements for Settleable Solids will remain as monitor only.

### *Water Quality Based Permit Limitations*

The allowable effluent limitations were established based on the class A freshwater acute and chronic aquatic life criteria and human health criteria specified in Appendix B of the July 2006 Rhode Island Water Quality Regulations, as amended, using 80% allocation when no background data was available and 90% allocation when background data was available. Aquatic life criteria have been established to ensure the protection and propagation of aquatic life while human health criteria represent the pollutant levels that would not result in a significant risk to public health from ingestion of aquatic organisms. The more stringent of the two criteria was then used in establishing allowable effluent limitations.

Since background data was not available, the allowable discharge limits were calculated as follows:

a) Background concentration unknown or available data is impacted by sources that have not yet achieved water quality based limits.

$$Limit_1 = (DF) * (Criteria) * (80\%)$$

Where: DF = acute or chronic dilution factor, as appropriate = 1.0

The formula noted above was applied with the following exception:

### *Total residual chlorine (TRC)*

TRC limits were established in accordance with the DEM Effluent Disinfection Policy. The "Monthly Average" and "Daily Maximum" were based on a 100% allocation, a zero background concentration, and a dilution factor of one (1). The 100% allocation factor for TRC was used due to the non-conservative nature of chlorine and the improbability of the receiving water having a detectable background TRC concentration. Using this method, the average monthly and daily maximum TRC limits have been set at 11.0 ug/L and 19.0 ug/L.

For toxicity-based ammonia limitations, the 2006 Water Quality Regulations include ammonia criteria, which are dependent on both pH and temperature. In the absence of site-specific data on the receiving water, the DEM used an evaluation of all freshwater rivers in the state for the 1999 water year to determine an appropriate assumption for the temperature and pH of the receiving water. This evaluation resulted in the conservative assumptions of 7.5 S.U. for pH and winter and summer water temperatures of 15°C and 26°C, respectively. The pH and summer temperature were used to determine the acute, with salmonids present, and chronic criteria for Total Ammonia Nitrogen of 13.3 mgN/L and 2.08 mgN/L, respectively, which translate into discharge limitations of 10.6 mgN/L and 1.66 mgN/L with no dilution at the point of discharge. The pH and winter temperature were used to determine the acute and chronic criteria for Total Ammonia Nitrogen of 13.3 mgN/L and 4.23 mgN/L, respectively, which translate into the winter discharge limitations of 10.6 mgN/L and 3.38 mgN/L with no dilution at the point of discharge.



### *Metals and Other Toxic Pollutants*

Based on the data from a monitoring station that is located on Dry Brook, a hardness of 19.1 mg/l was used to determine the appropriate metals criteria. In accordance with 40 CFR 122.4(d)(1)(iii), water quality based effluent limitations are only required for those pollutants in the discharge that have the reasonable potential to cause or contribute to the exceedence of instream criteria. In order to evaluate the need for permit limits, the allowable monthly average (chronic) and allowable maximum daily (acute) discharge limits are compared to the monthly average and maximum daily Discharge Monitoring Report (DMR) data and data that was collected during bioassay testing events conducted under the previous permit to determine if reasonable potential exists for any pollutants detected in the discharge. Based on this review it was determined that water quality limitations are necessary for Total Residual Chlorine, Total Ammonia, Lead, Copper and Zinc. The permit also includes permit limits for Cyanide, Total Nickel, Total Aluminum and Total Cadmium, which the permittee is required to monitor on an annual basis as part of the toxicity testing. A spreadsheet of the water quality-based limit calculations is presented in Attachment C.

### *Nutrient monitoring*

Since there is no dilution at the point of discharge, there is a potential impact of nutrients to the wetland area and ultimate receiving water. Therefore, the DEM has also included quarterly monitoring for Phosphorus, TKN, nitrite, and nitrate in the draft permit based on provisions of Section 308 of the Clean Water Act. The information submitted by the permittee will help establish a database of loadings, which can be used to quantitatively assess the impact of loading and transport of nutrients to the receiving water. This database will provide the basis for future permit limitations.

### *Whole Effluent Toxicity (WET)*

Biomonitoring requirements are set forth in 40 CFR 131.11 and in the State's Water Quality Regulations. The previous permit includes WET limitations with acute and chronic testing required four (4) times annually with a LC<sub>50</sub> limit of  $\geq 100\%$  and a C-NOEC limit of  $\geq 100\%$ . The previous permit also allowed for the reduction in the frequency of toxicity testing if the facility achieved four consecutive quarters with results of 100% for the LC<sub>50</sub> and C-NOEC tests. Since the permit was issued in 2004 the facility was able to meet the conditions necessary to justify a reduction in the monitoring frequency. As a result, the DEM has modified the testing frequency in the draft permit to 1/year.

### *Antibacksliding/Antidegradation*

The Antibacksliding Provision of the Clean Water Act (found at Section 402(o) and repeated at 40 CFR 122.44(l)) prohibits reissuing a permit containing less stringent effluent limits than the comparable limits from the previous permit. Since none of the permit limits, both concentration and mass loadings, are less stringent than in the previous permit, antibacksliding regulations are being met. The draft permit is being reissued with limitations as stringent or more stringent than those in the existing permit with no change to the outfall location or increase in flow. Therefore, as there will be no increase in loadings or flow to the receiving waterbody, no additional antidegradation review is necessary.

#### *Additional Requirements*

The permit contains requirements for the permittee to comply with the State's Sludge Regulations for sludge disposal in accordance with the requirements of Section 405(d) of the Clean Water Act (CWA). Permits must contain sludge conditions requiring compliance with limits, state laws and applicable regulations as per Section 405(d) of the CWA and 40 CFR 503.

#### *Selection of Final Permit Limits*

The effluent monitoring requirements have been specified in accordance with RIPDES regulations as well as 40 CFR 122.41(j), 122.44(l), and 122.48 to yield data representative of the discharge. The Office has determined that all permit limitations are consistent with the Rhode Island Antidegradation Policy. The remaining general and specific conditions of the permit are based on the RIPDES regulations as well as 40 CFR Parts 122 through 125 and consisting primarily of management requirements common to all permits.

#### **IV. Comment Period, Hearing Requests, and Procedures for Final Decisions**

All persons, including applicants, who believe any condition of the draft permit is inappropriate must raise all issues and submit all available arguments and all supporting material for their arguments in full by the close of the public comment period, to the Rhode Island Department of Environmental Management, Office of Water Resources, 235 Promenade Street, Providence, Rhode Island, 02908-5767. Any person, prior to such date, may submit a request in writing for a public hearing to consider the draft permit to the Rhode Island Department of Environmental Management. Such requests shall state the nature of the issues proposed to be raised in the hearing. A public hearing may be held after at least thirty (30) days public notice whenever the Director finds that response to this notice indicates significant public interest. In reaching a final decision on the draft permit the Director will respond to all significant comments and make these responses available to the public at DEM's Providence Office.

Following the close of the comment period, and after a public hearing, if such hearing is held, the Director will issue a final permit decision and forward a copy of the final decision to the applicant and each person who has submitted written comments or requested notice. Within thirty (30) days following the notice of the final permit decision any interested person may submit a request for a formal hearing to reconsider or contest the final decision. Requests for formal hearings must satisfy the requirements of Rule 49 of the Regulations for the Rhode Island Pollutant Discharge Elimination System (16 July 1984).

#### **V. DEM Contact**

Additional information concerning the permit may be obtained between the hours of 8:30 a.m. and 4:00 p.m., Monday through Friday, excluding holidays from:

Joseph Camara  
RIPDES Program  
Office of Water Resources  
Department of Environmental Management  
235 Promenade Street



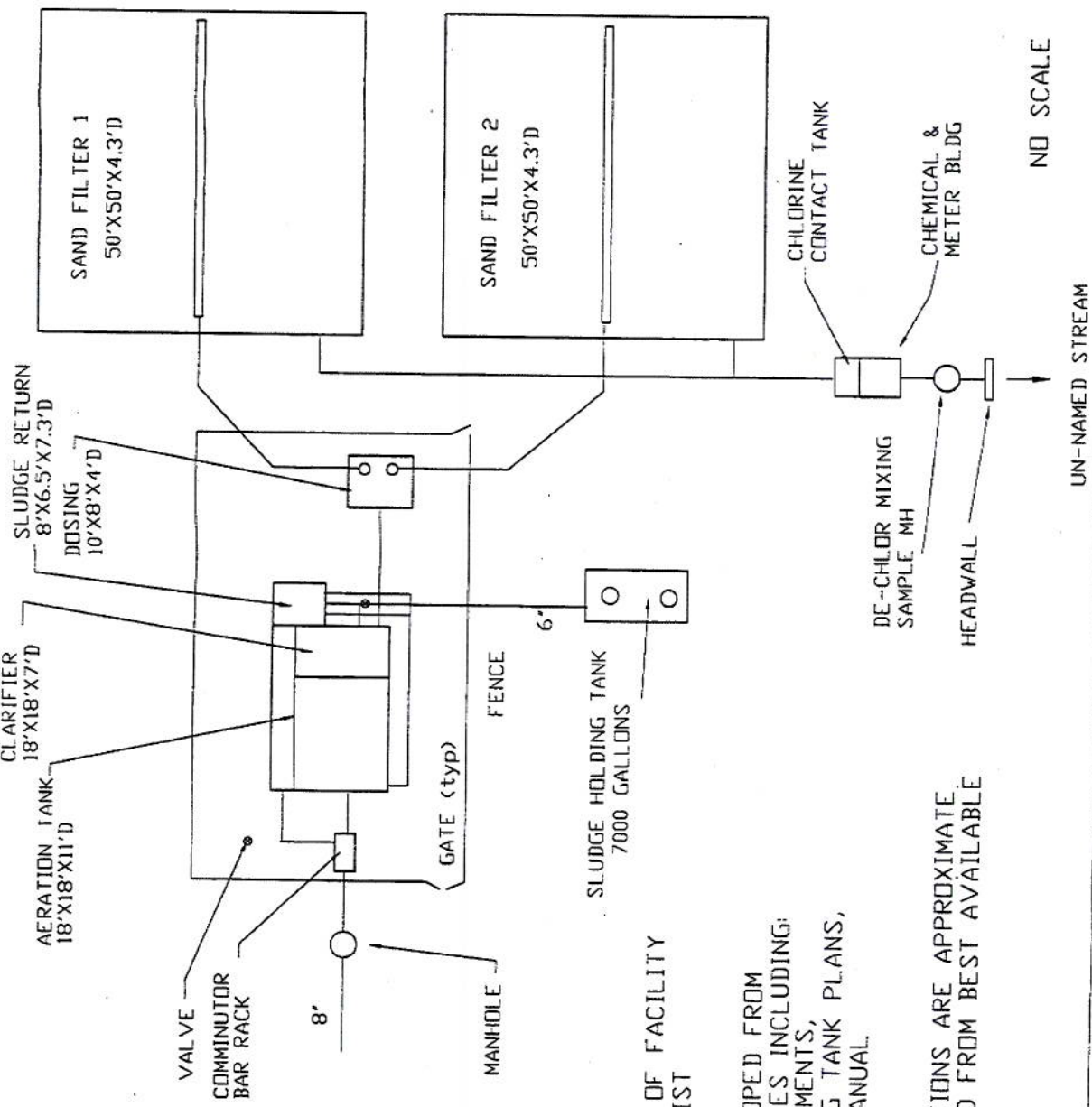
Providence, Rhode Island 02908  
Telephone: (401) 222-4700, extension 7640  
email: joseph.camara@dem.ri.gov

3/29/11  
Date

*Eric A. Beck*  
for Eric A. Beck, P.E.  
Supervising Sanitary Engineer  
RIPDES Program  
Office of Water Resources  
Department of Environmental Management



**ATTACHMENT A**



NO SCALE

UN-NAMED STREAM

DESIGN PLANS OF FACILITY  
NO LONGER EXIST

LAYOUT DEVELOPED FROM  
VARIOUS SOURCES INCLUDING:  
FIELD MEASUREMENTS,  
SLUDGE HOLDING TANK PLANS,  
& OPERATION MANUAL

PIPELINE LOCATIONS ARE APPROXIMATE  
AND DETERMINED FROM BEST AVAILABLE  
INFORMATION

## ATTACHMENT B

**DESCRIPTION OF DISCHARGE:** treated domestic wastewater.

**DISCHARGE:** 001 - Treatment Discharge

AVERAGE EFFLUENT CHARACTERISTICS AT POINT OF DISCHARGE OF SELECTED POLLUTANTS:

PARAMETER	MONTHLY AVERAGE <sup>1</sup>	WEEKLY VERAGE <sup>1</sup>	DAILY MAXIMUM <sup>1</sup>
BOD <sub>5</sub>	3.47 mg/l	6.61 mg/l	9.25 mg/l
BOD % Removal	97.96%		
Chlorine Residual	6.1 ug/l		6.1 ug/l
Fecal Coliform	3.39 MPN/100ml	23.68 MPN/100ml	72.17 MPN/100ml
Flow	0.008 Mgal/d		0.015 Mgal/d
Ammonia	1.36 mg/l		1.38 mg/l
PH	6.49 min		6.65 max
Settleable Soilds	0.148 ml/l	0.148 ml/l	0.148 ml/l
Total Suspended Solids	3.16 mg/l	4.17 mg/l	5.63mg/l
Total Suspended Solids % Removal	96.6%		
Nitrogen Kjeldahl	6.02 mg/l		
Nitrate	7.04 mg/l		
Nitrite	0.082 mg/l		
Nitrogen Total	12.86 mg/l		
Phosphorus	2.78 mg/l		
Total Lead <sup>2</sup>	3.0 ug/l		
Total Zinc <sup>2</sup>	201.2 ug/l		
Total Copper <sup>2</sup>	18.8 ug/l		
Ceriodaphnia Sp.	100 % min (data count 3)		100% max
C-NOEC	100 % min (data count 3)		100% max

<sup>1</sup>Data represents the mean of the average data from January 2005 – December 2009

<sup>2</sup>Data is based on Bioassay data from 2004 and 2005



**ATTACHMENT C**

**CALCULATION OF WATER QUALITY BASED NON-CLASS AA FRESHWATER DISCHARGE LIMITS  
FACILITY SPECIFIC DATA INPUT SHEET**

NOTE: LIMITS BASED ON RI WATER QUALITY CRITERIA DATED JULY 2006

FACILITY NAME: **Medical Homes of Rhode Island**  
RIPDES PERMIT #: **RI0020168**

	DISSOLVED BACKGROUND DATA (ug/L)	ACUTE METAL TRANSLATOR	CHRONIC METAL TRANSLATOR	FLOW DATA
ALUMINUM	NA	NA	NA	DESIGN FLOW = 0.025 MGD
ARSENIC	NA	1	1	= 0.039 CFS
CADMIUM	NA	1.013175412	0.978175412	7Q10 FLOW = 0.000 CFS
CHROMIUM III	NA	0.316	0.86	7Q10 (JUNE-OCT) = 0.000 CFS
CHROMIUM VI	NA	0.982	0.962	7Q10 (NOV-MAY) = 0.000 CFS
COPPER	NA	0.96	0.96	30Q5 FLOW = 0.000 CFS
LEAD	NA	1.031920176	1.031920176	HARMONIC FLOW = 0.000 CFS
MERCURY	NA	0.85	0.85	
NICKEL	NA	0.998	0.997	DILUTION FACTORS
SELENIUM	NA	NA	NA	ACUTE = 1.000
SILVER	NA	0.85	NA	CHRONIC = 1.000
ZINC	NA	0.978	0.986	(MAY-OCT) = 1.000
AMMONIA (as N)	NA			(NOV-APR) = 1.000
				30Q5 FLOW = 1.000
				HARMONIC FLOW = 1.000

USE NA WHEN NO DATA IS AVAILABLE

NOTE 1: METAL TRANSLATORS FROM RI WATER QUALITY REGS.

pH =	7.5 S.U.
HARDNESS =	19.1 (mg/L as CaCO3)

WATER QUALITY BASED EFFLUENT LIMITS - FRESHWATER

CALCULATION OF WATER QUALITY BASED NON-CLASS AA FRESHWATER DISCHARGE LIMITS  
 FACILITY NAME: Medical Homes of Rhode Island      RIPDES PERMIT #: RI0020168

Month	Upper 90 <sup>th</sup> % pH	Acute Criteria* mg/L as N	Chronic Criteria* mg/L as N
May	7.5	13.3	2.08
Jun	7.5	13.3	2.08
Jul	7.5	13.3	2.08
Aug	7.5	13.3	2.08
Sep	7.5	13.3	2.08
Oct	7.5	13.3	2.08
Nov	7.5	13.3	4.23
Dec	7.5	13.3	4.23
Jan	7.5	13.3	4.23
Feb	7.5	13.3	4.23
Mar	7.5	13.3	4.23
Apr	7.5	13.3	4.23

\*NOTE: Criteria from Appendix B of the RI Water Quality Regs., July 2006.



**CALCULATION OF WATER QUALITY BASED NON-CLASS AA FRESHWATER DISCHARGE LIMITS**

FACILITY NAME: Medical Homes of Rhode Island

RIPDES PERMIT #: RI0020168

NOTE: METALS CRITERIA ARE EXPRESSED AS DISSOLVED, METALS LIMITS ARE EXPRESSED AS TOTAL

CHEMICAL NAME	CAS #	BACKGROUND CONCENTRATION (ug/L)	FRESHWATER CRITERIA ACUTE (ug/L)	DAILY MAX LIMIT (ug/L)	FRESHWATER CRITERIA CHRONIC (ug/L)	HUMAN HEALTH NON-CLASS A CRITERIA (ug/L)	MONTHLY AVE LIMIT (ug/L)
<b>PRIORITY POLLUTANTS:</b>							
<b>TOXIC METALS AND CYANIDE</b>							
ANTIMONY	7440360		450	360	10	640	8
ARSENIC (limits are total recoverable)	7440382	NA	340	272	150	1.4	1.12
ASBESTOS	1332214			No Criteria			No Criteria
BERYLLIUM	7440417		7.5	6	0.17		0.136
CADMIUM (limits are total recoverable)	7440439	NA	0.402471622	0.31779028	0.077762795		0.063598241
CHROMIUM III (limits are total recoverable)	16065831	NA	147.0974174	372.3985251	19.13435186		17.79939708
CHROMIUM VI (limits are total recoverable)	18540299	NA	16	13.03462322	11		9.147609148
COPPER (limits are total recoverable)	7440508	NA	2.830194636	2.35849553	2.180325866		1.816938221
CYANIDE	57125		22	17.6	5.2	140	4.16
LEAD (limits are total recoverable)	7439921	NA	10.26805631	7.960349294	0.400131413		0.310203384
MERCURY (limits are total recoverable)	7439976	NA	1.4	1.317647059	0.77	0.15	0.141176471
NICKEL (limits are total recoverable)	7440020	NA	115.6078897	92.67165507	12.84046738	4600	10.30328375
SELENIUM (limits are total recoverable)	7782492	NA	20	16	5	4200	4
SILVER (limits are total recoverable)	7440224	NA	0.200797837	0.188986199	NA		No Criteria
THALLIUM	7440280		46	36.8	1	0.47	0.376
ZINC (limits are total recoverable)	7440666	NA	28.8698533	23.61542192	29.10600752	26000	23.61542192
<b>VOLATILE ORGANIC COMPOUNDS</b>							
ACROLEIN	107028		2.9	2.32	0.06	290	0.048
ACRYLONITRILE	107131		378	302.4	8.4	2.5	2
BENZENE	71432		265	212	5.9	510	4.72
BROMOFORM	75252		1465	1172	33	1400	26.4
CARBON TETRACHLORIDE	56235		1365	1092	30	16	12.8
CHLOROBENZENE	108907		795	636	18	1600	14.4
CHLORODIBROMOMETHANE	124481			No Criteria		130	104
CHLOROFORM	67663		1445	1156	32	4700	25.6
DICHLOROBROMOMETHANE	75274			No Criteria		170	136
1,2DICHLOROETHANE	107062		5900	4720	131	370	104.8
1,1DICHLOROETHYLENE	75354		580	464	13	7100	10.4
1,2DICHLOROPROPANE	78875		2625	2100	58	150	46.4
1,3DICHLOROPROPYLENE	542756			No Criteria		21	16.8
ETHYLBENZENE	100414		1600	1280	36	2100	28.8
BROMOMETHANE (methyl bromide)	74839			No Criteria		1500	1200
CHLOROMETHANE (methyl chloride)	74873			No Criteria			No Criteria
METHYLENE CHLORIDE	75092		9650	7720	214	5900	171.2

**CALCULATION OF WATER QUALITY BASED NON-CLASS AA FRESHWATER DISCHARGE LIMITS**

FACILITY NAME: Medical Homes of Rhode Island  
 RIDPES PERMIT #: RI0020168

NOTE: METALS CRITERIA ARE EXPRESSED AS DISSOLVED, METALS LIMITS ARE EXPRESSED AS TOTAL

CHEMICAL NAME	CAS #	BACKGROUND CONCENTRATION (ug/L)	FRESHWATER CRITERIA ACUTE (ug/L)	DAILY MAX LIMIT (ug/L)	FRESHWATER CRITERIA CHRONIC (ug/L)	HUMAN HEALTH NON-CLASS A CRITERIA (ug/L)	MONTHLY AVE LIMIT (ug/L)
1,1,2,2TETRACHLOROETHANE	79345		466	372.8	10	40	8
TETRACHLOROETHYLENE	127184		240	192	5.3	33	4.24
TOLUENE	108883		635	508	14	15000	11.2
1,2TRANSDICHLOROETHYLENE	156605			No Criteria		10000	8000
1,1,1TRICHLOROETHANE	71556		900	No Criteria	20	160	No Criteria
1,1,2TRICHLOROETHANE	79005		1950	720	43	300	16
TRICHLOROETHYLENE	79016			1560		2.4	34.4
VINYL CHLORIDE	75014			No Criteria			1.92
ACID ORGANIC COMPOUNDS							
2CHLOROPHENOL	95578		129	103.2	2.9	150	2.32
2,4DICHLOROPHENOL	120832		101	80.8	2.2	290	1.76
2,4DIMETHYLPHENOL	105679		106	84.8	2.4	850	1.92
4,6DINITRO2METHYL PHENOL	534521			No Criteria		280	224
2,4DINITROPHENOL	51285		31	24.8	0.69	5300	0.552
4NITROPHENOL	88755			No Criteria			No Criteria
PENTACHLOROPHENOL	87865		0.058191123	0.046552898	0.044644576	30	0.035715661
PHENOL	108952		251	200.8	5.6	1700000	4.48
2,4,6TRICHLOROPHENOL	88062		16	12.8	0.36	24	0.288
BASE NEUTRAL COMPOUNDS							
ACENAPHTHENE	83329		85	68	1.9	990	1.52
ANTHRACENE	120127			No Criteria		40000	32000
BENZIDINE	92875			No Criteria		0.002	0.0016
POLYCYCLIC AROMATIC HYDROCARBONS				No Criteria		0.18	0.144
BIS(2CHLOROETHYL)ETHER	111444			No Criteria		5.3	4.24
BIS(2CHLOROISOPROPYL)ETHER	108601			No Criteria		65000	52000
BIS(2ETHYLHEXYL)PHTHALATE	117817		555	444	12	22	9.6
BUTYL BENZYL PHTHALATE	85687		85	68	1.9	1900	1.52
2CHLORONAPHTHALENE	91587			No Criteria		1600	1280
1,2DICHLOROBENZENE	95501		79	63.2	1.8	1300	1.44
1,3DICHLOROBENZENE	541731		390	312	8.7	960	6.96
1,4DICHLOROBENZENE	106467		56	44.8	1.2	190	0.96
3,3DICHLOROBENZIDENE	91941			No Criteria		0.28	0.224
DIETHYL PHTHALATE	84662		2605	2084	58	44000	46.4
DIMETHYL PHTHALATE	131113		1650	1320	37	1100000	29.6
DI-n-BUTYL PHTHALATE	84742			No Criteria		4500	3600
2,4DINITROTOLUENE	121142		1550	1240	34	34	27.2



**CALCULATION OF WATER QUALITY BASED NON-CLASS AA FRESHWATER DISCHARGE LIMITS**

FACILITY NAME: Medical Homes of Rhode Island

RIPDES PERMIT #: RI0020168

NOTE: METALS CRITERIA ARE EXPRESSED AS DISSOLVED, METALS LIMITS ARE EXPRESSED AS TOTAL

CHEMICAL NAME	CAS #	BACKGROUND CONCENTRATION (ug/L)	FRESHWATER CRITERIA ACUTE (ug/L)	DAILY MAX LIMIT (ug/L)	FRESHWATER CRITERIA CHRONIC (ug/L)	HUMAN HEALTH NON-CLASS A CRITERIA (ug/L)	MONTHLY AVE LIMIT (ug/L)
1,2DIPHENYLHYDRAZINE	122667		14	11.2	0.31	2	0.248
FLUORANTHENE	206440		199	159.2	4.4	140	3.52
FLUORENE	86737			No Criteria		5300	4240
HEXACHLOROBENZENE	118741			No Criteria		0.0029	0.00232
HEXACHLOROBUTADIENE	87683			No Criteria		180	144
HEXACHLOROCYCLOPENTADIENE	77474		0.35	0.28	0.008	1100	0.0064
HEXACHLOROETHANE	67721		49	39.2	1.1	33	0.88
ISOPHORONE	78591		5850	4680	130	9600	104
NAPHTHALENE	91203		115	92	2.6		2.08
NITROBENZENE	98953		1350	1080	30	690	24
N-NITROSODIMETHYLAMINE	62759			No Criteria		30	24
N-NITROSODI-N-PROPYLAMINE	621647			No Criteria		5.1	4.08
N-NITROSODIPHENYLAMINE	86306		293	234.4	6.5	60	5.2
PYRENE	129000		75	No Criteria	1.7	4000	3200
1,2,4trichlorobenzene	120821			60		70	1.36
PESTICIDES/PCBS							
ALDRIN	309002		3	2.4		0.0005	0.0004
Alpha BHC	319846			No Criteria		0.049	0.0392
Beta BHC	319857			No Criteria		0.17	0.136
Gamma BHC (Lindane)	58899		0.95	0.76	0.0043	1.8	1.44
CHLORDANE	57749		2.4	1.92	0.001	0.0081	0.00344
4,4DDT	50293		1.1	0.88		0.0022	0.0008
4,4DDE	72559			No Criteria		0.0022	0.00176
4,4DDD	72548			No Criteria		0.0031	0.00248
DIELDRIN	60571		0.24	0.192	0.056	0.00054	0.000432
ENDOSULFAN (alpha)	959988		0.22	0.176	0.056	89	0.0448
ENDOSULFAN (beta)	33213659		0.22	0.176	0.056	89	0.0448
ENDOSULFAN (sulfate)	1031078			No Criteria	0.036	89	71.2
ENDRIN	72208		0.086	0.0688		0.06	0.0288
ENDRIN ALDEHYDE	7421934			No Criteria		0.3	0.24
HEPTACHLOR	76448		0.52	0.416	0.0038	0.00079	0.000632
HEPTACHLOR EPOXIDE	1024573		0.52	0.416	0.0038	0.00039	0.000312
POLYCHLORINATED BIPHENYLS3	1336363			No Criteria	0.014	0.00064	0.000512
2,3,7,8TCDD (Dioxin)	1746016			No Criteria		0.000000051	4.08E-08
TOXAPHENE	8001352		0.73	0.584	0.0002	0.0028	0.00016
TRIBUTYL TIN			0.46	0.368	0.072		0.0576



**CALCULATION OF WATER QUALITY BASED NON-CLASS AA FRESHWATER DISCHARGE LIMITS**

FACILITY NAME: Medical Homes of Rhode Island

RIPDES PERMIT #: RI0020168

NOTE: METALS CRITERIA ARE EXPRESSED AS DISSOLVED, METALS LIMITS ARE EXPRESSED AS TOTAL

CHEMICAL NAME	CAS #	BACKGROUND CONCENTRATION (ug/L)	FRESHWATER CRITERIA ACUTE (ug/L)	DAILY MAX LIMIT (ug/L)	FRESHWATER CRITERIA CHRONIC (ug/L)	HUMAN HEALTH NON-CLASS A CRITERIA (ug/L)	MONTHLY AVE LIMIT (ug/L)
<b>NON PRIORITY POLLUTANTS:</b>							
<b>OTHER SUBSTANCES</b>							
ALUMINUM (limits are total recoverable)	7429905	NA	750	600	87		69.6
AMMONIA as N(winter/summer)	7664417		13.3   18	10640   14.4	4.23   0.4		3384   1664
4BROMOPHENYL PHENYL ETHER	16887006		860000	688000	230000		184000
CHLORIDE	7782505		19	19	11		11
CHLORINE			15	12	0.32		0.256
4CHLORO2METHYLPHENOL			80	64	1.8		1.44
1CHLORONAPHTHALENE			192	153.6	4.3		3.44
4CHLOROPHENOL	106489		22	17.6	0.48		0.384
2,4DICHLORO6METHYLPHENOL			1150	920	26		20.8
1,1DICHLOROPROPANE	142289		303	242.4	6.7		5.36
1,3DICHLOROPROPANE			17	13.6	0.37		0.296
2,3DINITROTOLUENE			12	9.6	0.26		0.208
2,4DINITRO6METHYL PHENOL				No Criteria	1000		800
IRON	7439896		13	10.4	0.28		0.224
pentachlorobenzene	608935		362	289.6	8		6.4
PENTACHLOROETHANE			321	256.8	7.1		5.68
1,2,3,5tetraclorobenzene			980	784	22		17.6
1,1,1,2TETRACHLOROETHANE	630206		7	5.6	0.16		0.128
2,3,4,6TETRACHLOROPHENOL	58902		8.5	6.8	0.19		0.152
2,3,5,6TETRACHLOROPHENOL			23	18.4	0.51		0.408
2,4,5TRICHLOROPHENOL	95954		4235	3388	94		75.2
2,4,6TRINITROPHENOL	88062		133	106.4	3		2.4
XYLENE	1330207						

**CALCULATION OF WATER QUALITY BASED NON-CLASS AA FRESHWATER DISCHARGE LIMITS**

FACILITY NAME: Medical Homes of Rhode Island

RIPDES PERMIT #: RI0020168

CHEMICAL NAME	CAS#	DAILY MAX LIMIT (ug/L)	MONTHLY AVE LIMIT (ug/L)
PRIORITY POLLUTANTS:			
TOXIC METALS AND CYANIDE			
ANTIMONY	7440360	360.00	8.00
ARSENIC, TOTAL	7440382	272.00	1.12
ASBESTOS	1332214	No Criteria	0.00000
BERYLLIUM	7440417	6.00	0.14
CADMIUM, TOTAL	7440439	0.32	0.06360
CHROMIUM III, TOTAL	16065831	372.40	17.80
CHROMIUM VI, TOTAL	18540299	13.03	9.15
COPPER, TOTAL	7440508	2.36	1.82
CYANIDE	57125	17.60	4.16
LEAD, TOTAL	7439921	7.96	0.31
MERCURY, TOTAL	7439976	1.32	0.14
NICKEL, TOTAL	7440020	92.67	10.30
SELENIUM, TOTAL	7782492	16.00	4.00
SILVER, TOTAL	7440224	0.19	0.19
THALLIUM	7440280	36.80	0.38
ZINC, TOTAL	7440666	23.62	23.62
VOLATILE ORGANIC COMPOUNDS			
ACROLEIN	107028	2.32	0.04800
ACRYLONITRILE	107131	302.40	2.00
BENZENE	71432	212.00	4.72
BROMOFORM	75252	1172.00	26.40
CARBON TETRACHLORIDE	56235	1092.00	12.80
CHLOROBENZENE	108907	636.00	14.40
CHLORODIBROMOMETHANE	124481	No Criteria	104.00
CHLOROFORM	67663	1156.00	25.60
DICHLOROBROMOMETHANE	75274	No Criteria	136.00
1,2DICHLOROETHANE	107062	4720.00	104.80
1,1DICHLOROETHYLENE	75354	464.00	10.40
1,2DICHLOROPROPANE	78875	2100.00	46.40
1,3DICHLOROPROPYLENE	542756	No Criteria	16.80
ETHYLBENZENE	100414	1280.00	28.80
BROMOMETHANE (methyl bromide)	74839	No Criteria	1200.00
CHLOROMETHANE (methyl chloride)	74873	No Criteria	0.0000000
METHYLENE CHLORIDE	75092	7720.00	171.20
1,1,2,2TETRACHLOROETHANE	79345	372.80	8.00

CHEMICAL NAME	CAS#	DAILY MAX LIMIT (ug/L)	MONTHLY AVE LIMIT (ug/L)
TETRACHLOROETHYLENE	127184	192.00	4.24
TOLUENE	108883	508.00	11.20
1,2TRANSDICHLOROETHYLENE	156605	No Criteria	8000.00
1,1,1TRICHLOROETHANE	71556	No Criteria	0.0000000
1,1,2TRICHLOROETHANE	79005	720.00	16.00
TRICHLOROETHYLENE	79016	1560.00	34.40
VINYL CHLORIDE	75014	No Criteria	1.92
ACID ORGANIC COMPOUNDS			
2CHLOROPHENOL	95578	103.20	2.32
2,4DICHLOROPHENOL	120832	80.80	1.76
2,4DIMETHYLPHENOL	105679	84.80	1.92
4,6DINITRO2METHYL PHENOL	534521	No Criteria	224.00
2,4DINITROPHENOL	51285	24.80	0.55
4NITROPHENOL	88755	No Criteria	0.0000000
PENTACHLOROPHENOL	87865	0.05	0.03572
PHENOL	108952	200.80	4.48
2,4,6TRICHLOROPHENOL	88062	12.80	0.29
BASE NEUTRAL COMPOUNDS			
ACENAPHTHENE	83329	68.00	1.52
ANTHRACENE	120127	No Criteria	32000.00
BENZIDINE	92875	No Criteria	0.00160
PAHS		No Criteria	0.14
BIS(2CHLOROETHYL)ETHER	111444	No Criteria	4.24
BIS(2CHLOROISOPROPYL)ETHER	108601	No Criteria	52000.00
BIS(2ETHYLHEXYL)PHTHALATE	117817	444.00	9.60
BUTYL BENZYL PHTHALATE	85687	68.00	1.52
2CHLORONAPHTHALENE	91587	No Criteria	1280.00
1,2DICHLOROBENZENE	95501	63.20	1.44
1,3DICHLOROBENZENE	541731	312.00	6.96
1,4DICHLOROBENZENE	106467	44.80	0.96
3,3DICHLOROBENZIDENE	91941	No Criteria	0.22
DIETHYL PHTHALATE	84662	2084.00	46.40
DIMETHYL PHTHALATE	131113	1320.00	29.60
DI-N-BUTYL PHTHALATE	84742	No Criteria	3600.00
2,4DINITROTOLUENE	121142	1240.00	27.20
1,2DIPHENYLHYDRAZINE	122667	11.20	0.25
FLUORANTHENE	206440	159.20	3.52



**CALCULATION OF WATER QUALITY BASED NON-CLASS AA FRESHWATER DISCHARGE LIMITS**  
 FACILITY NAME: Medical Homes of Rhode Island  
 RIPDES PERMIT #: RI0020168

CHEMICAL NAME	CAS#	DAILY MAX LIMIT (ug/L)	MONTHLY AVE LIMIT (ug/L)
FLUORENE	86737	No Criteria	4240.00
HEXACHLOROBENZENE	118741	No Criteria	0.00232
HEXACHLOROBUTADIENE	87683	No Criteria	144.00
HEXACHLOROCYCLOPENTADIENE	77474	No Criteria	0.00640
HEXACHLOROETHANE	67721	0.28	0.88
ISOPHORONE	78591	39.20	104.00
NAPHTHALENE	91203	4680.00	2.08
NITROBENZENE	98953	92.00	24.00
N-NITROSODIMETHYLAMINE	62759	1080.00	24.00
N-NITROSODI-N-PROPYLAMINE	621647	No Criteria	4.08
N-NITROSODIPHENYLAMINE	86306	No Criteria	5.20
PYRENE	129000	234.40	3200.00
1,2,4trichlorobenzene	120821	No Criteria	1.36
PESTICIDES/PCBs		60.00	
ALDRIN	309002	2.40	0.00040
Alpha BHC	319846	No Criteria	0.04
Beta BHC	319857	No Criteria	0.14
Gamma BHC (Lindane)	58899	No Criteria	0.76
CHLORDANE	57749	0.76	0.00344
4,4DDT	50293	1.92	0.00080
4,4DDE	72559	0.88	0.00176
4,4DDD	72548	No Criteria	0.00248
DIELDRIN	60571	No Criteria	0.00043
ENDOSULFAN (alpha)	959988	0.19	0.04480
ENDOSULFAN (beta)	33213659	0.18	0.04480
ENDOSULFAN (sulfate)	1031078	0.18	0.04480
ENDRIN	72208	No Criteria	71.20
ENDRIN ALDEHYDE	7421934	0.07	0.03
HEPTACHLOR	76448	No Criteria	0.24
HEPTACHLOR EPOXIDE	1024573	0.42	0.00
POLYCHLORINATED BIPHENYLS3	1336363	0.42	0.00
2,3,7,8TCDD (Dioxin)	1746016	No Criteria	0.00
TOXAPHENE	8001352	No Criteria	0.00
TRIBUTYL TIN		0.58	0.00
		0.37	0.06

CHEMICAL NAME	CAS#	DAILY MAX LIMIT (ug/L)	MONTHLY AVE LIMIT (ug/L)
NON PRIORITY POLLUTANTS:			
OTHER SUBSTANCES			
ALUMINUM, TOTAL	7429905	600.00	69.60
AMMONIA (as N), WINTER (NOV-APR)	7664417	10640.00	3384.00
AMMONIA (as N), SUMMER (MAY-OCT)	7664417	10640.00	1664.00
4BROMOPHENYL PHENYL ETHER		14.40	0.32
CHLORIDE	16887006	688000.00	184000.00
CHLORINE	7782505	19.00	11.00
4CHLORO2METHYLPHENOL		12.00	0.26
1CHLORONAPHTHALENE		64.00	1.44
4CHLOROPHENOL	106489	153.60	3.44
2,4DICHLORO6METHYLPHENOL		17.60	0.38
1,1DICHLOROPROPANE		920.00	20.80
1,3DICHLOROPROPANE	142289	242.40	5.36
2,3DINITROTOLUENE		13.60	0.30
2,4DINITRO6METHYL PHENOL		9.60	0.21
IRON	7439896	No Criteria	800.00
pentachlorobenzene	608935	10.40	0.22
PENTACHLOROETHANE		289.60	6.40
1,2,3,5tetrachlorobenzene		256.80	5.68
1,1,1,2TETRACHLOROETHANE	630206	784.00	17.60
2,3,4,6TETRACHLOROPHENOL	58902	5.60	0.13
2,3,5,6TETRACHLOROPHENOL		6.80	0.15
2,4,5TRICHLOROPHENOL	95954	18.40	0.41
2,4,6TRINITROPHENOL	88062	3388.00	75.20
XYLENE	1330207	106.40	2.40