AGENCY OF NATURAL RESOURCES
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
WATERSHED MANAGEMENT DIVISION
ONE NATIONAL LIFE DRIVE, MAIN BUILDING, 2nd FLOOR
MONTPELIER, VT 05620-3522

Permit No.: 3-1118
PIN: EJ96-0028
NPDES No.: VT0000469

Name of Applicant: WestRock Converting Company
P.O. Box 98
Sheldon Springs, VT 05485

Expiration Date: June 30, 2023

DISCHARGE PERMIT

In compliance with the provisions of the Vermont Water Pollution Control Act as amended (10 V.S.A. chapter 47), the Vermont Water Pollution Control Permit Regulations as amended (Environmental Protection Rules, Chapter 13), and the federal Clean Water Act as amended (33 U.S.C. § 1251 *et seq*.), and implementing federal regulations, WestRock Converting Company (hereinafter referred to as the "Permittee") is authorized by the Secretary of the Agency of Natural Resources ("Secretary") to discharge from the WestRock Converting Company Wastewater Treatment Facility (WWTF) to the Missisquoi River in accordance with the following conditions.

This permit shall become effective on August 1, 2018.

Emily Boedecker, Commissioner
Department of Environmental Conservation

By: Jessica Bulova Date: July 20, 2018

Jessica Bulova, Wastewater Program Manager
Watershed Management Division

I. SPECIAL CONDITIONS

A. EFFLUENT LIMITS AND MONITORING REQUIREMENTS

1. During the term of this permit, the Permittee is authorized to discharge from outfall serial number **S/N 003** of the WestRock Converting Company to the Missisquoi River, an effluent for which the characteristics shall not exceed the values listed below:

EFFLUENT CHARACTERISTICS	DISCHARGE LIMITATIONS AND MONITORING REQUIREMENTS							
	Annual Average	Annual Limit	Monthly Average	Maximum Day	Monthly Average	Maximum Day	Monitoring Requirements	
		Mass (**lbs/yr**)	Mass (**lbs/day**)		Concentration (**mg/L**)		Measurement Frequency	Sample Type
Flow[1]			1.5 MGD				Continuous	Daily Total
Biochemical Oxygen Demand (5-day, 20° C) (BOD_5)[2]			739	1300/1487			1 x week	24-hour composite
Total Suspended Solids (TSS)			1226	2453			1 x week	24-hour composite
Total Phosphorus (TP)[3,4]		1523			0.8		1 x week	24-hour composite
Total Nitrogen (TN)[5]				Monitor Only		Monitor only	1 x month	[Calculated]
Total Kjeldahl Nitrogen (TKN)						Monitor only	1 x month	24-hour composite
Nitrate/Nitrite Nitrogen (NO_x)						Monitor only	1 x month	24-hour composite
Turbidity[6]	100 NTU					**Monitor only**	1 x week	Grab
pH					Between 6.5-8.5 Standard Units		1 x day	Grab

Samples taken in compliance with the monitoring requirements specified above shall be collected following the Dissolved Air Flotation unit and before discharge to the Missisquoi River.

[1] Monthly average flow calculated by summing daily effluent flow for each day in the given month and dividing the sum by the number of days of discharge in that month.

[2] During the period May 1 through October 31, the daily maximum BOD_5 limitation shall be 1300 lbs/day. From November 1 through April 30, the daily maximum BOD_5 limitation shall be 1487 lbs/day.

[3] The Permittee shall operate the facility to meet the concentration limitations or pounds limitation, whichever is more restrictive.

[4] Total Phosphorus shall be reported as Total Monthly Pounds, Running Total Annual Pounds, and Percentage of Running Total Annual Pounds to Annual Permit Limitation. See Condition I.B.5.

[5] Total nitrogen (TN) shall be reported as pounds and calculated as: *Average TN (mg/L) x Total Daily Flow x 8.34*; where, *TN (mg/L) = TKN (mg/L) + NO_x (mg/L)*

[6] The turbidity limit is an annual average under dry weather base flow conditions. See Special Condition A.3.

Turbidity edit dated 9/21/2018.

2. During the term of this permit, the Permittee is authorized to discharge from outfall serial number **S/N 005** of the WestRock Converting Company to the Missisquoi River: Non-contact cooling water from the emergency diesel generator. Such discharges shall be limited and monitored by the permittee as specified below:

Effluent Characteristics	**Discharge Limitations**		**Monitoring Requirements**	
	Monthly Average	Daily Maximum	Measurement Frequency	Sample Type
Flow[1]		See [2] below	Each discharge	Estimate
Temperature		96 °F	Each discharge	Instantaneous maximum

[1] This flow is only authorized with a minimum flow of 70 cfs in the mill tailrace.

[2] The permittee may, during power outages, discharge up to an amount not to exceed 1.5 MGD, daily maximum, in combination with S/N 003.

3. In accordance with Section 29A-204(a) of the Vermont Water Quality Standards, this permit hereby establishes a mixing zone for turbidity not to exceed 200 feet from the point of the S/N 003 discharge. Within the mixing zone, Section 29A-302(4)(B) of the Water Quality Standards is waived in accordance with Section 29A-204(a) up to the turbidity discharge limitation of 100 NTU.

4. The effluent shall not have concentrations or combinations of contaminants including oil, grease, scum, foam, or floating solids which would cause a violation of the water quality standards of the receiving waters.

5. The use of chlorophenolic-based biocides in the production process is prohibited.

6. The permittee shall maintain a submersible pump in the wet well of the underdrain discharge of sufficient capacity to pump the volume and rate equivalent to the 'worst case' liner breach previously experienced at the facility. The underdrain pump shall pump the collected wet well waters back into the lagoon. A meter shall be maintained for the purpose of recording the amount of time the submersible pump is operated. The wet well shall be inspected and the run time meter reading recorded on a **monthly** basis, assuming safe conditions to access the wet well. Records of these monthly readings shall be maintained at the facility. If the monthly run time reading changes from the previous reading, the readings and an explanation for the changes shall be reported with the corresponding monthly Discharge Monitoring Report form. If the change in readings is due to a liner breach then the permittee shall notify the Department within 24 hours, or by the next business day, and follow this notification with a written report within 5 calendar days.

7. The permittee is limited to using those chemicals which are similar in composition, concentration, and toxicity to those identified in the permit application unless substantially different chemicals are approved by the Department. A significant increase in the dosage rate or a substantial change in the chemicals used must be reviewed by the Department to assure that no adverse impact will occur on either the treatment facility or the receiving water. A substantial change in chemicals shall be defined as chemicals that are not similar in composition, concentration, and toxicity to those identified in the application.

8. The discharge shall not cause a violation of the water quality standards of the receiving water.

9. Any action on the part of the Secretary in reviewing, commenting upon or approving plans and specifications for the construction of WWTFs shall not relieve the Permittee from the responsibility to achieve effluent limitations set forth in this permit and shall not constitute a waiver of, or act of estoppel against any remedy available to the Secretary, the State of Vermont or the federal government for failure to meet any requirement set forth in this permit or imposed by state or federal law.

B. TOTAL PHOSPHORUS

1. Wasteload Allocation for Phosphorus

This permit includes a total phosphorus (TP) water quality based effluent limitation of 1,523 pounds per year, consistent with the waste load allocation (WLA) for TP of 0.691 metric tons per year, established by the U.S. Environmental Protection Agency (U.S. EPA) in the 2016 "Phosphorus TMDLs for Vermont Segments of Lake Champlain" (LC TMDL). The Secretary reserves the right to reopen and amend this permit, pursuant to Condition II.B.4 of this permit, to include an alternate TP limitation or additional monitoring requirements based on the monitoring data, the results of phosphorus optimization activities, or a reallocation of phosphorus wasteload allocations between the Permittee and another WWTF pursuant to the requirements of TMDL and Vermont's "Wasteload Allocation Process" Rule (Environmental Protection Rule, Chapter 17).

2. Phosphorus Optimization Plan

a) **Within 120 days of the permit issuance date**, the Permittee shall develop or update (as appropriate), and submit to the Secretary a Phosphorus Optimization Plan (POP) to increase the WWTF's phosphorus removal efficiency by implementing optimization techniques that achieve phosphorus reductions using primarily existing facilities and equipment. The POP shall:

i. Be developed by a qualified professional with experience in the operation and design of WWTFs in consultation with the WWTF;

ii. Evaluate alternative methods of operating the existing WWTF, including operational, process, and equipment changes designed to enhance phosphorus removal. The techniques to be evaluated may include operational process changes

to enhance biological and/or chemical phosphorous removal, incorporation of anoxic/anaerobic zones, septage receiving policies and procedures, and side stream management;

iii. Determine which alternative methods of operating the existing WWTF, including operational, process, and equipment changes will be most effective at increasing phosphorus removal; and

iv. Include a proposed implementation schedule for those methods of operating the WWTF determined to be most effective at increasing phosphorus removal.

b) The Secretary shall review the POP. The Permittee shall commence implementation of the POP 60 days after submittal to the Secretary, unless the Secretary rejects the POP prior to that date for failure to meet the requirements of subsection (a) of this section.

c) The Permittee shall annually submit a report to the Secretary as an attachment to the monthly electronic Discharge Monitoring Reporting (DMR) form WR-43 that documents:

i. The optimization techniques implemented under the POP during the previous year.

ii. Whether the techniques are performing as expected.

iii. The phosphorus discharge trends relative to the previous year.

The first annual report shall include data collected during 2019 and shall be attached to the December 2019 DMR form WR-43.

3. Phosphorus Elimination/Reduction Plan

a) The facility shall have 12 months from the permit issuance date to optimize removal of TP.

b) If, after the optimization period, the WWTF's actual, TP loads reach or exceed 80% of the LC TMDL WLA for the WWTF, based on the WWTF's 12-month running annual load calculated using the Running Total Annual Pounds Calculation (Condition I.B.4.), the Permittee shall, within 90 days of reaching or exceeding 80% of the LC TMDL WLA for the WWTF, develop and submit to the Secretary a projection based on the WWTF's current operations and expected future loadings of whether it will exceed its WLA during the permit term.

c) If the facility is not projected to exceed its WLA within the permit term, the WWTF shall reassess when it is projected to reach its WLA prior to permit renewal and submit that information with its next permit application.

d) If the facility is projected to exceed its WLA during the permit term, the Permittee shall submit a Phosphorus Elimination/Reduction Plan (PERP) within 6 months from

the date of submittal of the projection submitted under Condition I.B.3.b. The PERP shall be submitted to the Secretary to ensure the WWTF continues to comply with its WLA.

e) The PERP shall be developed by qualified professionals in consultation with the WWTF.

The PERP shall include:

i. An evaluation of alternatives to ensure the WWTF's compliance with its WLA.

ii. An identification of the chosen alternative or alternatives to ensure the WWTF's compliance with its WLA;

iii. A proposed schedule, including an engineer approved design and construction schedule and, if the chosen alternative or alternatives require a pilot study, a schedule for testing, that shall ensure the WWTF's compliance with its WLA as soon as possible; and

iv. A financing plan that estimates the costs for implementing the PERP and describes a strategy for financing the project.

The PERP shall be treated as an application to amend the permit, and therefore, shall be subject to all public notice, hearing, and comment provisions, in place at the time the plan is submitted, that are applicable to permit amendments. The WWTF shall revise the PERP, if required by the Secretary.

4. Running Total Annual Pounds Calculation

Compliance with the annual TP limitation (presented in Conditions I.A.1. and I.B.1.) will be evaluated each month, using the Running Total Annual Pounds Calculation. In order to calculate running annual TP loading relative to the TMDL WLA:

a) Calculate the average of results for all TP monitoring events conducted in a month (Monthly Average TP Concentration). Units = mg/L

b) For flow, use the average daily flow for the month as reported on the DMR. Units = MGD

c) Calculate Total Monthly Pounds = (Monthly Average TP Concentration) × (average daily flow from DMR) × 8.34 × number of daily discharges in the month.

d) Sum the results for the immediately preceding 12 months to derive the Running Total Annual Pounds.

5. Total Phosphorus Reporting

Total Phosphorus shall be reported monthly, via electronic Discharge Monitoring Report, in the following ways:

a) Monthly Average TP Concentration. See Condition I.B.4.a.

b) Total Monthly Pounds, meaning the total monthly pounds of TP discharged during the month. See Condition I.B.4.c.

c) Running Total Annual Pounds, meaning the 12-month running annual TP load, as specified by Condition I.B.4.d.

d) Comparison (%) of Running Total Annual Pounds to Annual Permit Limitation, meaning the percentage of the Running Total Annual Pounds to the Annual TP Limitation. The comparison shall be calculated as:

Percentage of Running Total Annual Pounds to Annual Permit Limitation, % = Running Total Annual Pounds / Annual TP Permit Limit × 100

C. REAPPLICATION

If the Permittee desires to continue to discharge after the expiration of this permit, the Permittee shall reapply on the application forms then in use at least 180 days before this permit expires.

Reapply for a Discharge Permit by: **December 31, 2022**

D. OPERATING FEES

This discharge is subject to operating fees as required by 3 V.S.A. § 2822.

E. TOXICITY TESTING

1. WHOLE EFFLUENT TOXICITY (WET) TESTING

a) During **August or September 2020 and in subsequent even-numbered years**, the Permittee shall conduct two-species (*Pimephales promelas* and *Ceriodaphnia dubia*) modified acute/chronic WET tests (48-hour acute endpoints within a 7-day chronic test) on a composite effluent sample collected from S/N 003. The results shall be submitted to the Secretary **by December 31, 2020 and by December 31 in subsequent even-numbered years**.

b) During **January or February 2019 and in subsequent odd-numbered years**, the Permittee shall conduct two-species (*Pimephales promelas* and *Ceriodaphnia dubia*) modified acute/chronic WET tests (48-hour acute endpoints within a 7-day chronic test) on a composite effluent sample collected from S/N 003. The results shall be

submitted to the Secretary **by June 30, 2019 and by June 30 in subsequent odd-numbered years**.

The WET tests shall be conducted according to the procedures and guidelines specified in "Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms" and "Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms" (both documents U.S. EPA October 2002 or, if a newer edition is available, the most recent edition).

2. The Permittee shall conduct an effluent analysis of S/N 003 for the pollutants included in Appendix D, Tables 2 and 3 of 40 CFR Part 122. The effluent sample shall be collected in **August or September 2022** and the results submitted to the Secretary **by December 31, 2022**.

Based upon the results of these tests or any other toxicity tests conducted, the Secretary reserves the right to reopen and amend this permit, pursuant to Condition II.B.4 of this permit, to require additional WET testing or a Toxicity Reduction Evaluation.

F. MONITORING AND REPORTING

1. Sampling and Analysis

The sampling, preservation, handling, and analytical methods used shall conform to the test procedures published in Title 40 of the Code of Federal Regulations (C.F.R.) Part 136.

The Permittee shall use sufficiently sensitive test procedures (i.e., methods) approved under 40 C.F.R. Part 136 for the analysis of the pollutants or pollutant parameters required under this Section.

Samples shall be representative of the volume and quality of effluent discharged over the sampling and reporting period. All samples are to be taken during normal operating hours. The Permittee shall identify the effluent sampling location used for each discharge. A description of the effluent sample location is included in Condition I.I.2.

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2. Reporting

The Permittee is required to submit monthly reports of monitoring results on Discharge Monitoring Report (DMR) form WR-43. Reports are due on the 15th day of each month, beginning with the month following the issuance date of this permit.

The Permittee shall electronically submit its DMRs via Vermont's on-line electronic reporting system. The Permittee shall electronically submit additional compliance monitoring data and reports specified by the Secretary. When the Permittee submits DMRs using an electronic system designated by the Secretary, which requires attachment of scanned DMRs in pdf format, it is not required to submit hard copies of DMRs. The link below shall be used for electronic submittals:

https://anronline.vermont.gov/

If, in any reporting period, there has been no discharge, the Permittee must submit that information by the report due date.

All reports shall be signed:

a) In the case of corporations, by a principal executive officer of at least the level of vice president, or his/her duly authorized representative, if such representative is responsible for the overall operation of the facility from which the discharge described in the permit form originates and the authorization is made in writing and submitted to the Secretary;

b) In the case of a partnership, by a general partner;

c) In the case of a sole proprietorship, by the proprietor; or

d) In the case of a municipal, State, or other public facility, by either a principal executive officer, ranking elected official, or other duly authorized employee.

3. Recording of Results

The Permittee shall maintain records of all information resulting from any monitoring activities required, including:

a) The exact place, date, and time of sampling or measurement;

b) The individual(s) who performed the sampling or measurements;

c) The dates and times the analyses were performed;

d) The individual(s) who performed the analyses;

e) The analytical techniques and methods used including sample collection handling and preservation techniques;

f) The results of such analyses;

g) The records of monitoring activities and results, including all instrumentation and calibration and maintenance records;

h) The original calculation and data bench sheets of the operator who performed analysis of the influent or effluent pursuant to requirements of this permit; and

i) For analyses performed by contract laboratories:

a. The detection level reported by the laboratory for each sample; and

b. The laboratory analytical report including documentation of the QA/QC and analytical procedures.

The results of monitoring requirements shall be reported (in the units specified) on the DMR form WR-43 or other forms approved by the Secretary.

When "non-detects" are recorded, the method detection limit shall be reported and used in calculating any time-period averaging for reporting on DMRs.

4. Additional Monitoring

If the Permittee monitors any pollutant at the location(s) designated herein more frequently than required by this permit, using approved analytical methods as specified above, the results of such monitoring shall be included in the calculation and reporting of the values required in the DMR form WR-43. Such increased frequency shall also be indicated.

II. GENERAL CONDITIONS

A. MANAGEMENT REQUIREMENTS

1. Facility Modification / Change in Discharge

All discharges authorized herein shall be consistent with the terms and conditions of this permit. The discharge of any pollutant more frequently than, or at a level in excess of, that identified and authorized by this permit shall constitute a violation of the terms and conditions of this permit. Such a violation may result in the imposition of civil and/or criminal penalties pursuant to 10 V.S.A. chapters 47, 201, and/or 211. Any anticipated facility alterations or expansions or process modifications which will result in new, different, or increased discharges of any pollutants must be reported by submission of a new permit application or, if such changes will not violate the effluent limitations specified in this permit, by notice to the Secretary of such changes. Following such notice, the permit may be modified, pursuant to Condition II.B.4 of this permit, to specify and limit any pollutants not previously limited.

2. Noncompliance Notification

a) The Permittee shall give advance notice to the Secretary of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

b) In the event the Permittee is unable to comply with any of the conditions of this permit due, among other reasons, to:

i. Breakdown or maintenance of waste treatment equipment (biological and physical-chemical systems including all pipes, transfer pumps, compressors, collection ponds or tanks for the segregation of treated or untreated wastes, ion exchange columns, or carbon absorption units);

ii. Accidents caused by human error or negligence;

iii. Any unanticipated bypass or upset which exceeds any effluent limitation in the permit;

iv. Violation of a maximum day discharge limitation for any of the pollutants listed by the Secretary in this permit; or

v. Other causes such as acts of nature,

the Permittee shall provide notice as specified in subdivisions (c) and (d) of this subsection.

c) Pursuant to 10 V.S.A. §1295, notice for "untreated discharges," as defined.

i. Public notice. For "untreated discharges" an operator of a WWTF or the operator's delegate shall as soon as possible, but no longer than one hour from discovery of an untreated discharge from the WWTF, post on a publicly accessible electronic network, mobile application, or other electronic media designated by the Secretary an alert informing the public of the untreated discharge and its location, except that if the operator or his or her delegate does not have telephone or Internet service at the location where he or she is working to control or stop the untreated discharge, the operator or his or her delegate may delay posting the alert until the time that the untreated discharge is controlled or stopped, provided that the alert shall be posted no later than four hours from discovery of the untreated discharge.

ii. Secretary notification. For "untreated discharges" an operator of a WWTF shall within 12 hours from discovery of an untreated discharge from the WWTF notify the Secretary and the local health officer of the municipality where the facility is located of the untreated discharge. The operator shall notify the Secretary through use of the Department of Environmental Conservation's online event reporting system. If, for any reason, the online event reporting system is not operable, the operator shall notify the Secretary via telephone or e-mail. The notification shall include:

(1) The specific location of each untreated discharge, including the body of water affected. For combined sewer overflows, the specific location of each untreated discharge means each outfall that has discharges during the wet weather storm event.

(2) Except for discharges from a WWTF to a separate storm sewer system, the date and approximate time the untreated discharge began.

(3) The date and approximate time the untreated discharge ended. If the untreated discharge is still ongoing at the time of reporting, the entity reporting the untreated discharge shall amend the report with the date and approximate time the untreated discharge ended within three business days of the untreated discharge ending.

(4) Except for discharges from a WWTF to a separate storm sewer system, the approximate total volume of sewage and, if applicable, stormwater that was released. If the approximate total volume is unknown at the time of reporting, the entity reporting the untreated discharge shall amend the report with the approximate total volume within three business days.

(5) The cause of the untreated discharge and a brief description of the noncompliance, including the type of event and the type of sewer structure involved.

(6) The person reporting the untreated discharge.

d) For any non-compliance not covered under Condition II.A.2.c. of this permit, an operator of a WWTF or the operator's delegate shall notify the Secretary within 24 hours of becoming aware of such condition and shall provide the Secretary with the following information, in writing, within five days:

i. Cause of non-compliance;

ii. A description of the non-complying discharge including its impact upon the receiving water;

iii. Anticipated time the condition of non-compliance is expected to continue or, if such condition has been corrected, the duration of the period of non-compliance;

iv. Steps taken by the Permittee to reduce and eliminate the non-complying discharge; and

v. Steps to be taken by the Permittee to prevent recurrence of the condition of non-compliance.

3. Operation and Maintenance

All waste collection, control, treatment, and disposal facilities shall be operated in a manner consistent with the following:

a) The Permittee shall, at all times, maintain in good working order and operate as efficiently as possible all treatment and control facilities and systems (and related appurtenances) installed or used by the Permittee to achieve compliance with the terms and conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems which are installed by the Permittee only when the operation is necessary to achieve compliance with the conditions of this permit.

b) The Permittee shall provide an adequate operating staff which is duly qualified to carry out the operation, maintenance, and testing functions required to ensure compliance with the conditions of this permit; and

c) The operation and maintenance of this facility shall be performed only by qualified personnel who are licensed as required by Secretary and the Director of the Vermont Office of Professional Regulation.

4. Quality Control

The Permittee shall calibrate and perform maintenance procedures on all monitoring and analytical instrumentation at regular intervals to ensure accuracy of measurements, or shall ensure that both activities will be conducted.

The Permittee shall keep records of these activities and shall provide such records upon request of the Secretary.

The Permittee shall demonstrate the accuracy of the S/N 003 effluent flow measurement device **weekly** and report the results on the monthly report forms. The acceptable limit of error is ± 10%.

For purposes of demonstrating compliance with the requirements of Condition II.A.3.a) of this permit regarding adequate laboratory controls and appropriate quality assurance procedures, the Permittee shall conduct an annual laboratory proficiency test, via an accredited laboratory, for the analysis of all pollutant parameters performed within their facility laboratory and reported as required by this permit. This can be carried out as part of an EPA DMR-QA study. Results shall be submitted to the Secretary by **December 31, annually**.

5. Bypass

The bypass of facilities (including pump stations) is prohibited, except where authorized under the terms and conditions of an Emergency Pollution Permit issued pursuant to 10 V.S.A. § 1268. It shall not be a defense for the Permittee in an enforcement action that it would have been necessary to halt or reduce the activity in order to maintain compliance with the conditions of this permit.

6. Duty to Mitigate

The Permittee shall take all reasonable steps to minimize or prevent any adverse impact to waters of the State, the environment, or human health resulting from non-compliance with any condition specified in this permit, including accelerated or additional monitoring as necessary to determine the nature and impact of the non-complying discharge.

7. Records Retention

All records and information resulting from the monitoring activities required by this permit including all records of analyses performed, all calibration and maintenance of instrumentation records and all original chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit shall be retained for a minimum of three years, and shall be submitted to the Secretary upon request. This period shall be extended during the

course of unresolved litigation regarding the discharge of pollutants or when requested by the Secretary.

8. Solids Management

Collected screenings, sludges, and other solids removed in the course of treatment and control of wastewaters shall be stored, treated, and disposed of in accordance with 10 V.S.A. chapter 159 and with the terms and conditions of any certification, interim or final, transitional operation authorization, or order issued pursuant to 10 V.S.A. chapter 159 that is in effect on the issuance date of this permit or is issued during the term of this permit.

9. Emergency Pollution Permits

Maintenance activities, or emergencies resulting from equipment failure or malfunction, including power outages, which result in an effluent which exceeds the effluent limitations specified herein, shall be considered a violation of the conditions of this permit, unless the Permittee's discharge is covered under an emergency pollution permit under the provisions of 10 V.S.A. § 1268. The Permittee shall notify the Secretary of the emergency situation by the next working day, unless notice is required sooner under Section II.A.2.

10 V.S.A. § Section 1268 reads as follows:

> When a discharge permit holder finds that pollution abatement facilities require repairs, replacement or other corrective action in order for them to continue to meet standards specified in the permit, he may apply in the manner specified by the secretary for an emergency pollution permit for a term sufficient to effect repairs, replacements or other corrective action. The Secretary shall proceed in accordance with chapter 170 of this title. No emergency pollution permit shall be issued unless the applicant certifies and the secretary finds that:
>
> (1) there is no present, reasonable alternative means of disposing of the waste other than by discharging it into the waters of the state during the limited period of time of the emergency;
>
> (2) the denial of an emergency pollution permit would work an extreme hardship upon the applicant;
>
> (3) the granting of an emergency pollution permit will result in some public benefit;
>
> (4) the discharge will not be unreasonably harmful to the quality of the receiving waters;
>
> (5) the cause or reason for the emergency is not due to willful or intended acts or omissions of the applicant.

Application shall be made to the Secretary at the following address: Agency of Natural Resources, Department of Environmental Conservation, One National Life Drive, Main Building, 2nd Floor, Montpelier VT 05620-3522.

B. RESPONSIBILITIES

1. Right of Entry

The Permittee shall allow the Secretary or authorized representative, upon the presentation of proper credentials:

a) To enter upon the Permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;

b) To have access to and copy, at reasonable times, any records required to be kept under the terms and conditions of this permit;

c) To inspect, at reasonable times, any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and

d) To sample or monitor, at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the Clean Water Act, any substances or parameters at any location.

2. Transfer of Ownership or Control

This permit is not transferable without prior written approval of the Secretary. All application and operating fees must be paid in full prior to transfer of this permit. In the event of any change in control or ownership of facilities from which the authorized discharges emanate, the Permittee shall provide a copy of this permit to the succeeding owner or controller and shall send written notification of the change in ownership or control to the Secretary **at least 30 days in advance of the proposed transfer date**. The notice to the Secretary shall include a written agreement between the existing and new Permittees containing a specific date for transfer of permit responsibility, coverage, and liability between them. The Permittee shall also inform the prospective owner or operator of their responsibility to make an application for transfer of this permit.

This request for transfer application must include as a minimum:

a) A properly completed application form provided by the Secretary and the applicable processing fee.

b) A written statement from the prospective owner or operator certifying:

i. The conditions of the operation that contribute to, or affect, the discharge will not be materially different under the new ownership;

ii. The prospective owner or operator has read and is familiar with the terms of the permit and agrees to comply with all terms and conditions of the permit; and

iii. The prospective owner or operator has adequate funding to operate and maintain the treatment system and remain in compliance with the terms and conditions of the permit.

c) The date of the sale or transfer.

The Secretary may require additional information dependent upon the current status of the facility operation, maintenance, and permit compliance.

3. Confidentiality

Pursuant to 10 V.S.A. § 1259(b):

Any records or information obtained under this permit program that constitutes trade secrets under 1 V.S.A. § 317(c)(9) shall be kept confidential, except that such records or information may be disclosed to authorized representatives of the State and the United States when relevant to any proceedings under this chapter.

Claims for confidentiality for the following information will be denied:

a) The name and address of any permit applicant or Permittee.

b) Permit applications, permits, and effluent data.

c) Information required by application forms, including information submitted on the forms themselves and any attachments used to supply information required by the forms.

4. Permit Modification, Suspension, and Revocation

After notice and opportunity for a hearing, this permit may be modified, suspended, or revoked in whole or in part during its term for cause including the following:

a) Violation of any terms or conditions of this permit;

b) Obtaining this permit by misrepresentation or failure to disclose fully all relevant facts;

c) Reallocation of WLA under the LC TMDL;

d) Development of an integrated WWTF and stormwater runoff NPDES permit; or

e) A change in any condition that requires either a temporary or permanent reduction or elimination of the permitted discharge.

The filing of a request by the Permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance shall not stay any permit condition.

The Permittee shall provide to the Secretary, within a reasonable time, any information which the Secretary may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit or to determine compliance with this permit. The Permittee shall also furnish to the Secretary upon request, copies of records required to be kept by this permit.

5. Toxic Effluent Standards

If a toxic effluent standard or prohibition (including any schedule of compliance specified in such effluent standard or prohibition) is established under section 307(a) of the Clean Water Act for a toxic pollutant which is present in the Permittee's discharge and such standard or prohibition is more stringent than any limitation upon such pollutant in this permit, then this permit shall be modified or revoked and reissued, pursuant to Condition II.B.4 of this permit, in accordance with the toxic effluent standard or prohibition and the Permittee so notified.

6. Oil and Hazardous Substance Liability

Nothing in this permit shall be construed to preclude the institution of legal action or relieve the Permittee from any responsibilities, liabilities, or penalties to which the Permittee is or may be subject under 10 V.S.A. § 1281.

7. Other Materials

Other materials ordinarily produced or used in the operation of this facility, which have been specifically identified in the application, may be discharged at the maximum frequency and maximum level identified in the application, provided:

a) They are not:

i. Designated as toxic or hazardous under provisions of Sections 307 and 311, respectively, of the Clean Water Act, or

ii. Known to be hazardous or toxic by the Permittee,

except that such materials indicated in (i) and (ii) above may be discharged in certain limited amounts with the written approval of, and under special conditions established by, the Secretary or his/her designated representative, if the substances will not pose any imminent hazard to the public health or safety;

b) The discharge of such materials will not violate the Vermont Water Quality Standards; and

c) The Permittee is not notified by the Secretary to eliminate or reduce the quantity of such materials entering the water.

8. Navigable Waters

This permit does not authorize or approve the construction of any onshore or offshore physical structures or facilities or the undertaking of any work in any navigable waters.

9. Civil and Criminal Liability

The Permittee shall comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Clean Water Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or denial of a permit renewal application. Except as provided in "Bypass" (Condition II.A.5) and “Emergency Pollution Permits” (Condition II.A.9), nothing in this permit shall be construed to relieve the Permittee from civil or criminal penalties for noncompliance. Civil and criminal penalties for non-compliance are provided for in 10 V.S.A. Chapters 47, 201, and 211.

10. State Laws

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the Permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable state law or regulation under authority preserved by Section 510 of the Clean Water Act.

11. Property Rights

Issuance of this permit does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of federal, state, or local laws or regulations.

12. Other Information

If the Permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Secretary, it shall promptly submit such facts or information.

13. Severability

The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

14. Authority

This permit is issued under authority of 10 V.S.A. §§1258 and 1259 of the Vermont Water Pollution Control Act, the Vermont Water Pollution Control Permit Regulation, and Section 402 of the Clean Water Act, as amended.

15. Definitions

For purposes of this permit, the following definitions shall apply.

Agency – means the Vermont Agency of Natural Resources.

Annual Average - means the highest allowable average of daily discharges calculated as the sum of all daily discharges (mg/L, lbs or gallons) measured during a calendar year divided by the number of daily discharges measured during that year.

Average - means the arithmetic means of values taken at the frequency required for each parameter over the specified period.

Bypass – means **t**he intentional diversion of waste streams from any portion of the treatment facility.

The Clean Water Act - means the federal Clean Water Act, as amended (33 U.S.C. § 1251, *et seq*.).

Composite Sample - means a sample consisting of a minimum of one grab sample per hour collected during a 24-hour period (or lesser period as specified in the section on Monitoring and Reporting) and combined proportionally to flow over that same time period.

Daily Discharge - means the discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling.

For pollutants with limitations expressed in pounds the daily discharge is calculated as the total pounds of pollutants discharged over the day.

For pollutants with limitations expressed in mg/L the daily discharge is calculated as the average measurement of the pollutant over the day.

Discharge – means the placing, depositing, or emission of any wastes, directly or indirectly, into an injection well or into the waters of the State.

Grab Sample – means an individual sample collected in a period of less than 15 minutes.

Incompatible Substance – means any waste being discharged into the treatment works which interferes with, passes through without treatment, or is otherwise incompatible with said works or would have a substantial adverse effect on the works or on water quality. This includes all pollutants required to be regulated under the Clean Water Act.
Instantaneous Maximum - means a value not to be exceeded in any grab sample.

Major Contributing Industry – means one that: (1) has a flow of 50,000 gallons or more per average work day; (2) has a flow greater than five percent of the flow carried by the municipal system receiving the waste; (3) has in its wastes a toxic pollutant in toxic amounts as defined in standards issued under Section 307(a) of the Clean Water Act; or (4)

has a significant impact, either singly or in combination with other contributing industries, on a treatment works or on the quality of effluent from that treatment works.

Maximum Day (maximum daily discharge limitation) - The highest allowable "daily discharge" (mg/L, lbs or gallons).

Mean - is the arithmetic mean.

Monthly Average (average monthly discharge limitation) – means the highest allowable average of daily discharges (mg/L, lbs or gallons) over a calendar month, calculated as the sum of all daily discharges (mg/L, lbs or gallons) measured during a calendar month divided by the number of daily discharges measured during that month.

NPDES - The National Pollutant Discharge Elimination System.

Secretary – means the Secretary of the Agency of Natural Resources or the Secretary's duly authorized representative.

Septage – means the liquid and solid material pumped from a septic tank, cesspool, or similar domestic sewage treatment system, or a holding tank when the system is cleaned or maintained.

Untreated Discharge – means (1) combined sewer overflows from a WWTF; (2) overflows from sanitary sewers and combined sewer systems that are part of a WWTF during dry weather flows, which result in a discharge to waters of the State; (3) upsets or bypasses around or within a WWTF during dry or wet weather conditions that are due to factors unrelated to a wet weather storm event and that result in a discharge of sewage that has not been fully treated to waters of the State; and (4) discharges from a WWTF to separate storm sewer systems.

Waste – means effluent, sewage or any substance or material, liquid, gaseous, solid, or radioactive, including heated liquids, whether or not harmful or deleterious to waters.

Waste Management Zone – A specific reach of Class B waters designated by a permit to accept the discharge of properly treated wastes that prior to treatment contained organisms pathogenic to human beings. Throughout the receiving waters, water quality criteria must be achieved but increased health risks exist in a waste management zone due to the authorized discharge.

Waters includes all rivers, streams, creeks, brooks, reservoirs, ponds, lakes, springs, and all bodies of surface waters, artificial or natural, which are contained within, flow through, or border upon the State or any portion of it.

Weekly average - (average weekly discharge limitation) – means the highest allowable average of daily discharges (mg/L, lbs or gallons) over a calendar week, calculated as the sum of all daily discharges (mg/L, lbs or gallons) measured during a calendar week divided by the number of daily discharges measured during that week.

Whole Effluent Toxicity (WET) – Means the aggregate toxic effect of an effluent measured directly by a toxicity test.

WWTF or wastewater treatment facility shall have the same meaning as "pollution abatement facilities," as defined under 10 V.S.A. § 1251, which means municipal sewage treatment plants, pumping stations, interceptor and outfall sewers, and attendant facilities as prescribed by the Department to abate pollution of the waters of the State.

AGENCY OF NATURAL RESOURCES
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
WATERSHED MANAGEMENT DIVISION
ONE NATIONAL LIFE DRIVE, MAIN BUILDING, 2ND FLOOR
MONTPELIER, VT 05620-3522

FACT SHEET FOR DRAFT PERMIT
(June 2018)

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT TO DISCHARGE TO WATERS OF THE STATE

PERMIT NO: **3-1118**
PIN: **EJ96-0028**
NPDES NO: **VT0000469**

NAME AND ADDRESS OF APPLICANT:

WestRock Converting Company
P.O. Box 98
Sheldon Springs, VT 05485

NAME AND ADDRESS OF FACILITY WHERE DISCHARGE OCCURS:

WestRock Converting Company Wastewater Treatment Facility
369 Mill Street
Sheldon Springs, VT 05485

RECEIVING WATER: Missisquoi River

CLASSIFICATION: All uses Class B(2) with a waste management zone. Class B waters are suitable for swimming and other primary contact recreation; irrigation and agricultural uses; aquatic biota and aquatic habitat; good aesthetic value; boating, fishing, and other recreational uses; and suitable for public water source with filtration and disinfection or other required treatment. A waste management zone is a specific reach of Class B(1) or B(2) waters designated by a permit to accept the discharge of properly treated wastes that prior to treatment contained organisms pathogenic to human beings.
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I. Proposed Action, Type of Facility, and Discharge Location

The Secretary of the Vermont Agency of Natural Resources (Secretary) received a renewal application for the permit to discharge into the designated receiving water from the above-named applicant on June 25, 2013. The Secretary received an amended application to change the company's name on September 29, 2015. The facility's previous permit was issued on January 2, 2009. The previous permit (hereafter referred to as the "current permit") has been administratively continued, pursuant to 3 V.S.A. § 814, as the applicant filed a complete application for permit

reissuance within the prescribed time period as per the Vermont Water Pollution Control Permit Regulations (VWPCPR) § 13.5(b). At this time, the Secretary has made a tentative decision to reissue the discharge permit.

The facility is engaged in the treatment of industrial process wastewater.

A map showing the location of facility, outfalls and the receiving water is provided in the Reasonable Potential Determination (RPD) (see Attachment A).

II. Description of Discharge

The facility is engaged in the production of recycled paperboard using corrugated and non-corrugated medium furnishes. The discharges are treated industrial process wastewater, process stormwater, and fresh water filter backwash (S/N 003) and, occasionally, non-contact cooling water from the emergency diesel generator (S/N 005).

The wastewater treatment facility is an activated sludge process with a design flow of 0.4 MGD and an aerated stabilization basin with a maximum design flow of 2.5 MGD that provides for surge capacity.

The WWTF maintains a constant discharge to the Missisquoi River.

III. Limitations and Conditions

The draft permit contains limitations for S/N 003 for effluent flow, Biochemical Oxygen Demand, Total Suspended Solids, Total Phosphorus, Turbidity, and pH. It also contains monitoring requirements for total nitrogen, Total Kjeldahl Nitrogen, and nitrate/nitrite. The draft permit contains limitations for S/N 005 for effluent flow and temperature. The effluent limitations of the draft permit and the monitoring requirements may be found on the following pages of the draft permit:

Effluent Limitations:	Pages 2-5 of 22
Monitoring Requirements:	Pages 2-5 and 8-9 of 22

IV. Statutory and Regulatory Authority

A. Clean Water Act and NPDES Background

Congress enacted the Clean Water Act (CWA or Act), "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters." CWA § 101(a). To achieve this objective, the CWA makes it unlawful for any person to discharge any pollutant into the waters of the United States from any point source, except as authorized by specified permitting sections of the Act, one of which is Section 402. CWA §§ 301(a), 402(a). Section 402 establishes one of the CWA's principal permitting programs, the National Pollutant Discharge Elimination System (NPDES). Under this section of the Act, the U.S. Environmental Protection Agency (EPA) may "issue a permit for the discharge of any pollutant, or combination of pollutants" in accordance with certain conditions. CWA § 402(a). The State of Vermont has been approved by the EPA to administer the NPDES Program in Vermont. NPDES permits generally contain discharge

limitations and establish related monitoring and reporting requirements. CWA § 402(a)(1) - (2). Section 301 of the CWA provides for two types of effluent limitations to be included in NPDES permits: “technology-based” limitations and “water quality-based” limitations. CWA §§ 301, 303, 304(b); 40 CFR Parts 122, 125, 131. Technology-based limitations, generally developed on an industry-by-industry basis, reflect a specified level of pollutant-reducing technology available and economically achievable for the type of facility being permitted. CWA § 301(b). As a class, WWTFs must meet performance-based requirements based on available wastewater treatment technology. CWA § 301(b)(1)(B). The performance level for WWTFs is referred to as “secondary treatment.” Secondary treatment is comprised of technology-based requirements expressed in terms of BOD5, TSS and pH; 40 C.F.R. Part 133.

Water quality-based effluent limits, on the other hand, are designed to ensure that state water quality standards are achieved, irrespective of the technological or economic considerations that inform technology-based limits. Under the CWA, states must develop water quality standards for all water bodies within the state. CWA § 303. These standards have three parts: (1) one or more “designated uses” for each water body or water body segment in the state; (2) water quality “criteria,” consisting of numerical concentration levels and/or narrative statements specifying the amounts of various pollutants that may be present in each water body without impairing the designated uses of that water body; and (3) an antidegradation provision, focused on protecting high quality waters and protecting and maintaining water quality necessary to protect existing uses. CWA § 303(c)(2)(A); 40 C.F.R. § 131.12. The applicable water quality standards for this permit are the 2017 Vermont Water Quality Standards (Environmental Protection Rule, Chapter 29a).

A permit must include limits for any pollutant or pollutant parameter (conventional, non-conventional, toxic, and whole effluent toxicity) that is or may be discharged at a level that causes or has "reasonable potential" to cause or contribute to an excursion above any water quality standard, including narrative water quality criteria. See 40 CFR §122.44(d)(1). An excursion occurs if the projected or actual in-stream concentration exceeds the applicable criterion. A NPDES permit must contain effluent limitations and conditions in order to ensure that the discharge does not cause or contribute to water quality standard violations.

Receiving stream requirements are established according to numerical and narrative standards adopted under state law for each stream classification. When using chemical-specific numeric criteria from the State's water quality standards to develop permit limits, both the acute and chronic aquatic life criteria are used and expressed in terms of maximum allowable in stream pollutant concentrations. Acute aquatic life criteria are generally implemented through maximum daily limits and chronic aquatic life criteria are generally implemented through average monthly limits.

Where a state has not established a numeric water quality criterion for a specific chemical pollutant that is present in the effluent in a concentration that causes or has a reasonable potential to cause a violation of narrative water quality standards, the permitting authority must establish effluent limits in one of three ways: based on a “calculated numeric criterion for the pollutant which the permitting authority demonstrates will attain and maintain applicable narrative water quality criteria and fully protect the designated use”; on a “case-by-case basis” using CWA

Section 304(a) recommended water quality criteria, supplemented as necessary by other relevant information; or, in certain circumstances, based on an "indicator parameter." 40 CFR § 122.44(d)(1)(vi)(A-C).

The state rules governing Vermont's NPDES permit program are found in the Vermont Water Pollution Control Permit Regulations (Environmental Protection Rule, Chapter 13).

1. Reasonable Potential Determination

In determining whether this permit has the reasonable potential to cause or contribute to an impairment, Vermont has considered:

1) Existing controls on point and non-point sources of pollution as evidenced by the Vermont surface water assessment database;

2) Pollutant concentration and variability in the effluent as determined from the permit application materials, monthly discharge monitoring reports (DMRs), or other facility reports;

3) Receiving water quality based on targeted water quality and biological assessments of receiving waters, as applicable, or other State or Federal water quality reports;

4) Toxicity testing results based on the Vermont Toxic Discharge Control Strategy, and compelled as a condition of prior permits;

5) Available dilution of the effluent in the receiving water, expressed as the instream waste concentration. In accordance with the applicable Vermont Water Quality Standards, available dilution for rivers and streams is based on a known or estimated value of the lowest average flow which occurs for seven (7) consecutive days with a recurrence interval of once in ten (10) years (7Q10) for aquatic life and human health criteria for non-carcinogens, or at all flows for human health (carcinogens only) in the receiving water. For nutrients, available dilution for stream and river discharges is assessed using the low median monthly flow computed as the median flow of the month containing the lowest annual flow. Available dilution for lakes is based on mixing zones of no more than 200 feet in diameter, in any direction, from the effluent discharge point, including as applicable the length of a diffuser apparatus.

6) All effluent limitations, monitoring requirements, and other conditions of the proposed draft permit.

The Reasonable Potential Determination for this facility is attached to this Fact Sheet as Attachment A.

B. Anti-Backsliding

Section 402(o) of the CWA provides that certain effluent limitations of a renewed, reissued, or modified permit must be at least as stringent as the comparable effluent limitations in the current permit. EPA has also promulgated anti-backsliding regulations which are found at 40 C.F.R. §

122.44(l). Unless applicable anti-backsliding exemptions are met, the limits and conditions in the reissued permit must be at least as stringent as those in the current permit.

V. Description of Receiving Water

The receiving water for this discharge is the Missisquoi River, a designated Warm Water Fish Habitat. At the point of discharge, the river has a contributing drainage area of 802 square miles. The summer 7Q10 flow of the river is estimated to be 96.2 cubic feet per second (CFS) and the summer Low Median Monthly flow is estimated to be 328.8 CFS. The instream waste concentration at the summer 7Q10 flow is 0.023 (2.3 %) and the instream waste concentration at the summer Low Median Monthly flow is 0.0069 (0.69 %).

In addition, the Missisquoi River drains into Lake Champlain, which is impaired for phosphorus and is subject to a Total Maximum Daily Load (TMDL) for phosphorus. This is discussed further in Section VII.C.1. of this Fact Sheet.

VI. Facility History and Background

The Missisquoi Mill, a paperboard manufacturing mill located in Sheldon Springs, has been in operation since 1895. Rock-Tenn Company owned and operated the Missisquoi Mill from March 1991 to July 2015. In July 2015, Rock-Tenn Company entered into a business agreement with MeadWestvaco Corporation, and became a wholly owned subsidiary of a new entity named WestRock Company. This permit renewal changes the legal name of the Permittee to WestRock Converting Company.

The wastewater treatment facility was upgraded from the existing 120-foot diameter primary clarifier and 20 million gallon aerated stabilization basin (aerated lagoon) to include an activated sludge secondary treatment system in October 2013. The primary clarifier was rebuilt in summer 2014. Improvements to the activated sludge process were completed in November 2017. The activated sludge process includes an equalization tank, three-phase aerobic selector tank, two activated sludge tanks with step feed and a jet aeration system, a secondary clarifier, and a centrifuge for sludge dewatering. The Dissolved Air Flotation (DAF) clarifier installed in 2001 is used for effluent polishing.

The mill has an aggressive voluntary recycling program, returning waste fiber and effluent from the primary clarifier to the mill for reuse. Of the design 1.5 MGD of raw wastewater discharged from the mill to the primary clarifier, a design flow of 0.4 MGD receives further treatment in the activated sludge treatment system. The aerated stabilization basin is used to provide surge capacity.

In calendar years 2014 through 2017, the mill's maximum production was 305 tons per day using furnish predominately classified as secondary fiber non-deink corrugated (approximately 37%) and secondary fiber non-deink non-corrugated (approximately 63%).

VII. Permit Basis and Explanation of Effluent Limitation Derivation

This permit was evaluated under the 2017 Vermont Water Quality Standards (VWQS).

A. Flow – The draft permit decreases the monthly average flow limitation for S/N 003 from 2.5 MGD to 1.5 MGD. The flow decrease is due to the upgrade from an aerated stabilization basin to an activated sludge treatment system in 2013. The flow limit of 1.5 MGD provides flexibility to discharge based on the actual volume of wastewater generated, in the event that product quality, product mix, or internal treated water requirements change in the future. This facility maintains a constant discharge. Continuous flow monitoring is required.

B. Conventional Pollutants

1. Biochemical Oxygen Demand (BOD_5) and Total Suspended Solids (TSS)

Guidance for the establishment of BOD_5 and TSS limits for the pulp, paper and paperboard manufacturing processes is provided in 40 CFR Part 430. The facility produces paperboard from corrugated and non-corrugated wastepaper and is subject to the requirements under Subpart J - Secondary Fiber Non-Deink Subcategory.

The current production number of 305 tons per day will be used for the purpose of establishing effluent limits in this permit. The ratio of corrugated to non-corrugated furnish is currently 37% to 63%, although this ratio has varied from 30% - 40% corrugated to 60% - 70% non-corrugated over the past four years.

Calculated categorical effluent limits for the non-corrugating medium furnish subdivision:

	monthly average	daily maximum
BOD_5	915 lbs/day	1830 lbs/day
TSS	1525 lbs/day	3050 lbs/day

Calculated categorical effluent limits for the corrugating medium furnish subdivision:

	monthly average	daily maximum
BOD_5	1708 lbs/day	3477 lbs/day
TSS	2806 lbs/day	5612 lbs/day

Thus, using an annual production of 305 tons/day, a ratio of 37% to 63% corrugated to non-corrugated furnish and the criteria from Subpart J, calculated categorical effluent limits are:

	monthly average	daily maximum
BOD_5	1208 lbs/day	2439 lbs/day
TSS	1999 lbs/day	3998 lbs/day

The Anti-Backsliding provision requires that when a facility is substantially in compliance with current limits, less stringent limits may not be applied to a discharge. Based on monitoring data the facility has remained consistently in compliance with the current BOD_5 (739 lbs/day, monthly average and 1300 (summer) or 1487 (winter) lbs/day, daily maximum)

and TSS (1226 lbs/day, monthly average and 2453 lbs/day, daily maximum) permit limits. Consequently the effluent limitations for BOD_5 remain unchanged from the current permit. The weekly monitoring frequency remains unchanged from the current permit.

2. Turbidity

The instream water quality standard for turbidity is 25 NTU as specified in Section 29A-302(4)(B) of the Vermont Water Quality Standards. This permit, as with the previous permit, establishes a 200 foot mixing zone because the paper manufacturing process often generates a treated effluent exceeding the instream water quality standard despite BPT/BCT treatment.

The Department has made the determination that conditions due to discharges of waste within any mixing zone shall:

a. not result in a significant increase in public health risk when evaluated using reasonable assumptions about exposure pathways;
b. not constitute a barrier to the passage or movement of fish or prevent the full support of aquatic biota, wildlife, and aquatic habitat uses in the receiving waters outside the mixing zone;
c. not kill organisms passing through;
d. protect and maintain the existing uses of the waters;
e. be free from materials in concentrations that settle to form objectionable deposits;
f. be free from floating debris, oil, scum, and other material in concentrations that form nuisances;
g. be free from substances in concentrations that produce objectionable color, odor, taste, or turbidity; and
h. be free from substances in concentrations that produce undesirable aquatic life or result in a dominance of nuisance species. (Section 29A-204(a) in the Vermont Water Quality Standards).

There is ample dilution in the mixing zone, using the instream waste concentration of 0.023 at the summer 7Q10 flow to calculate the turbidity: 0.023 X 100 NTU = 2.3 NTU, which is below the VWQS limit of 25 NTU. Therefore the current limit of 100 NTU at the point of discharge that was previously established in the permit will not violate water quality standards at the end of the mixing zone. Weekly monitoring is unchanged from the previous permit.

3. pH – The pH limitation remains at 6.5 - 8.5 Standard Units as specified in Section 29A-303(6) in the Vermont Water Quality Standards. Monitoring remains at daily.

C. <u>Non-Conventional and Toxics</u>

1. Total Phosphorus (TP)

Background:

Excess phosphorus entering Lake Champlain from a variety of sources has impaired the water quality of the lake. The Lake Champlain Total Maximum Daily Load (LC TMDL), places a cap on the maximum amount of phosphorus from point and non- point sources that is allowed

to flow into the lake while still meeting Vermont's water quality standards. The EPA developed phosphorus TMDLs for the twelve Vermont segments of Lake Champlain in collaboration with the Vermont Agency of Natural Resources, Department of Environmental Conservation and the Vermont Agency of Agriculture, Food, and Markets, and released the document titled "Phosphorus TMDLs for Vermont Segments of Lake Champlain" (June 2016). The 2016 LC TMDL specifies allowable phosphorus loads, or waste load allocations (WLA), expressed as metric tons per year (mt/yr), for each of the 59 WWTFs that discharge to the Lake's watershed. Discharge (NPDES) permits will be issued by the Secretary in accordance with the permit issuance schedule in the Lake Champlain TMDL Phase 1 Implementation Plan (Chapter 3, page 46). The Secretary will follow this schedule unless special circumstances are raised by the facility that warrant the issuance of the permit sooner (e.g., planned facility upgrades), and the Program has sufficient staff capacity to handle the request.

Reductions in WLAs are targeted only to WWTFs in those lake segment watersheds where the currently permitted wastewater load represents a significant (defined as being 10% or greater) portion of the total phosphorus load to that segment from all sources (Main Lake, Shelburne Bay, Burlington Bay, St. Albans Bay) or where wastewater upgrades would meaningfully reduce the phosphorus reduction burden placed on non-wastewater (non-point) sources (Missisquoi Bay). Therefore, WWTFs discharging to the Port Henry, Otter Creek, Mallets Bay, Northeast Arm, Isle LaMotte, and the South Lake A/B lake segments were not assigned a new waste load allocation. The EPA also determined that wastewater facilities with a design flow of < 0.1 MGD would be given the same allocations as in the 2002 TMDLs due their minor contribution of phosphorus loading.

The LC TMDL establishes new annual WLAs for WWTFs with a design flow capacity of above 0.1 million gallons per day (MGD) that discharge to the Main Lake, Shelburne Bay, Burlington Bay, St. Albans Bay, and Missisquoi Bay lake segments. Specifically, WWTFs with a design flow capacity of 0.1 to 0.2 MGD were assigned WLAs based on a 0.8 mg/L effluent phosphorus concentration at permitted flow while WWTFs with design capacity of > 0.2 MGD were assigned a WLA based on a 0.2 mg/L effluent phosphorus concentration at permitted flow.

In the LC TMDL, EPA acknowledged and supported the Secretary's commitment to employ flexible approaches to implementing the WWTF WLAs including "providing a period of time for optimization to be pursued and the corresponding load reduction results to be realized, and then commencement of the process to upgrade phosphorus treatment facilities will be required when actual phosphorus loads reach 80% of the LC TMDL limits." The Wastewater Management Program maintains a tracking system for phosphorus loading from Vermont WWTFs so facilities approaching or over the 80% threshold can be identified. The 80% phosphorus load threshold is calculated by comparing the individual WWTF phosphorus WLA established in the LC TMDL to the actual phosphorus discharge load from the WWTF over last 12 months:

WWTF Annual TP Load / LC TMDL WLA x 100

There are currently WWTFs in the Lake Champlain watershed with existing discharged loads of phosphorus already at, or above, 80% of allowable loads. To ensure facilities are operating

as efficiently as possible, all reissued wastewater discharge (NPDES) permits under the LC TMDL will specify a period of 12-months for optimization to be pursued and the corresponding load reduction results to be realized, prior to evaluating where a facility ranks relative to the 80% trigger. Discharge permits will specify that after the optimization period, when an existing facility reaches 80% of its WLA for phosphorus (evaluated as a rolling, 12-month load), the permittee will have to develop and submit a projection of whether the facility will exceed its WLA during the permit term and if it is projected to do so, then the facility will be required to develop a Phosphorus Elimination/Reduction Plan (PERP) that will ensure the facility continues to comply with its WLA.

Effluent TP limits in permits are expressed as total annual mass loads for facilities that currently have an existing monthly effluent concentration limits for TP in their NPDES permit, as monthly effluent concentration limits.

Phosphorus Limit in Draft Permit:

The current discharge permit for this Facility includes a mass-based, effluent limit of 2,777 pounds of TP per year. This annual mass limitation was based on an allocation of 1.26 metric tons established in the 2002 Lake Champlain Phosphorus TMDL. The current permit also contains an effluent TP concentration limit of 0.8 mg/L, monthly average, consistent with the annual load limit.

This proposed draft permit contains a phosphorous effluent concentration limit of 0.8 mg/l, monthly average, and a mass effluent limit of 1,523 total pounds, annual limitation. The concentration effluent limitation is based on the requirements of 10 V.S.A. § 1266a and is unchanged from the current permit. The mass annual effluent limitation is based on the LC TMDLs. The LC TMDL allocated 0.691 metric tons per year or 1,523 pounds per year to the WestRock Converting Company WWTF. The allocation of 0.691 metric tons per year was based on a concentration of 0.2 mg/L TP and the current flow limit and design capacity of 2.5 MGD. The draft permit contains a new monthly average flow limit of 1.5 MGD, the TP allocation remains at 0.691 metric tons per year as dictated by the LC TMDL.

This new, annual WLA represents a 45% reduction (-1,254 pounds) from the current permit and is equivalent to setting the effluent TP limit at 0.2 mg/L at the design capacity of the WWTF (2.50 MGD). To convert units of the WLA from metric tons to pounds for the annual, mass-based TP permit limit, the following equation was used and the resulting WLA rounded down to the nearest pound:

(0.691 mt/yr) (2204.62lbs/mt) = 1,523 lbs/yr

The LC TMDL includes WLAs for WWTFs expressed as total annual mass loads. Compliance with the annual limit will be calculated each month using the Running Total Annual Pounds Calculation (Condition I.B.4. of the permit), rather than once at the end of the calendar year. The LC TMDL does not include monthly average concentration effluent limits for WWTFs. State law (10 V.S.A. 1266a) requires that, “No person directly discharging into the drainage basins of Lake Champlain or Lake Memphremagog shall discharge any waste that contains a phosphorus concentration in excess of 0.80 milligrams per liter on a monthly average basis.” Therefore, in addition to the annual mass load effluent limitation required by

the TMDL, the permit must also include a monthly average concentration limit for phosphorus. While the WLA in the TMDL was calculated based on a TP effluent concentration of 0.20 mg/L, the permit does not include 0.20 mg/L as the concentration effluent limitation because a permittee may not need to achieve 0.20 mg/L to ensure compliance with the WLA established in the TMDL. Rather the permit includes a monthly average concentration limit for phosphorus of 0.80 mg/L to ensure compliance with state law and to recognize seasonal variations in the facility's discharge. It is important to note that because the annual mass load and average monthly concentration limits are not mathematically consistent in the permit, meeting a 0.8 mg/L concentration limit at design flows will not result in meeting the annual mass limit.

The permittee must comply with both limitations and, as required by the permit, must operate the facility to meet the more restrictive limitation, which may vary depending upon discharge flows at the facility. If the facility is operating at design flows, the annual mass load limitation will be the more restrictive limitation. However, if the facility is operating at low flows, the monthly average concentration limit may be the more restrictive limitation.

Weekly sampling for total phosphorus is required.

Condition I.B.5 of this draft permit requires the submission of monitoring reports to the Secretary specific to tracking TP in the discharge. A report that documents the annual TP discharged from the facility, summarizes phosphorus removal optimization and efficiencies, and tracks trends relative to the previous year shall be attached to the December WR-43 form. The annual and monthly TP loads discharged from the facility shall also be reported electronically with other required parameters.

Analysis in Support of Phosphorus Limit:

The Secretary is using the WLA from the LC TMDL[1] as the water quality based effluent limitation (WQBEL) for phosphorus for this permit. Because this is the first permit issued to this facility under the new LC TMDL and the TMDL is less than five years old[2], an analysis of the assumptions underlying the TMDL is not required. *In re Montpelier WWTF Discharge Permit*, 2009 WL 4396740, 6, 9-10 (Vt. Envtl. Ct. June 30, 2009) (stating that it "probably would have been meaningless to engage in further analysis" of the 2002 Lake Champlain TMDL a mere year and a half after its adoption, while also holding that when issuing a permit more than five years after the adoption of a TMDL, ANR must assess whether the past assumptions upon which the WLA was based upon "continue to have a basis of reliability"). Notwithstanding the fact that an analysis is not required, the Agency provides the following.

Using the WLA from the LC TMDL as the phosphorus WQBEL in the permit is appropriate because the State is making significant progress toward meeting the assumptions upon which the WLA is based.

First, the State has largely met the milestones in the LC TMDL Accountability Framework[3] and

[1] Available at: https://ofmpub.epa.gov/waters10/attains_impaired_waters.show_tmdl_document?p_tmdl_doc_blobs_id=79000
[2] The LC TMDL was issued June 17, 2016.
[3] For the Accountability Framework, see pages 54-59 of the LC TMDL.

is actively working to meet those that are still outstanding. For 2016, EPA has already given Vermont an "excellent" report card for meeting milestones by December 30, 2016 (see below). For 2017, as outlined in the 2018 Vermont Lake Champlain Phosphorus Total Maximum Daily Loads Accountability Framework Report[4], the State has completed a majority of the milestones in the LC TMDL Accountability Framework due by December 30, 2017 and is actively working to complete those that are still outstanding. While not every milestone was completed by December 30, 2017, this is not sufficient to undermine the assumption that reductions in other sectors will occur in the future. For example, while the "Developed Lands General Permit" has not yet been issued, the State is actively working to adopt the rules necessary to issue and implement this permit, and the date by which applicants must apply for coverage under the permit – October 1, 2023 – has not changed. Thus, despite a delay in issuance of this permit, it is still appropriate to assume that reductions will be achieved in this sector based upon the timeframe envisioned when the LC TMDL was issued.

Second, the EPA's assessment of the State's progress under the LC TMDL has found that the State is making satisfactory progress. EPA's "overall assessment is that Vermont has made excellent progress in achieving the milestones in the [LC TMDL] Accountability Framework" through December 30, 2016.[5] EPA's next "report card" is expected within a couple months. If EPA finds that the State's progress is not satisfactory, EPA may, amongst other things, revise the TMDLs to reallocate additional load reductions from nonpoint to point sources (i.e. create more stringent WLAs). EPA has taken no such actions, but rather, has thus far provided positive assessment of the State's compliance with the LC TMDL Accountability Framework. Therefore, the State has nothing from EPA indicating that the assumptions upon which the WLA was developed are no longer reliable.

With so little time having passed since adoption of the LC TMDL, with the State having completed or working to complete milestones, and with positive reports thus far from EPA, there is no reason to believe that the assumptions upon which the WLA was developed – including that discharges in other sectors will be reduced in the future – are no longer valid. Therefore, it is appropriate to establish the phosphorus WQBEL for this facility based upon its WLA in the LC TMDL.

Phosphorus Optimization and Elimination/Reduction Plans:

To ensure the facility is operating as efficiently as possible for purposes of phosphorus removal, Condition I.B.2 of the permit requires that within 120 days of permit issuance, the permittee shall develop or update (as appropriate), and submit to the Secretary, a Phosphorus Optimization Plan (POP) to increase the WWTF's phosphorus removal efficiency by implementing optimization techniques that achieve phosphorus reductions using primarily existing facilities and equipment. The techniques to be evaluated may include operational process changes to enhance biological and/or chemical phosphorous removal, incorporation of anaerobic/anoxic zones, septage receiving policies and procedures, and side stream management.

[4] Submitted by the State to EPA on March 7, 2018; available at: http://dec.vermont.gov/sites/dec/files/wsm/erp/docs/2018VermontLakeChamplainPhosphorusTMDLAccountabilityFrameworkReport.pdf

[5] Letter dated February 15, 2017 from EPA Acting Regional Administrator Deborah A. Szaro to Secretary of Natural Resources Julie Moore and Secretary of Agriculture, Food and Markets Anson Tebbetts.

The facility shall have 12 months from the permit issuance date to optimize removal of total phosphorus. If, after the 12-month optimization period, the WWTF's actual TP loads reach or exceed 80% of the LC TMDL WLA for the WWTF, based on the WWTF's 12-month running annual load calculated using the Phosphorus Load Calculation (Condition I.B.4 of the permit) the permittee shall, within 90 days of reaching or exceeding 80% of the LC TMDL WLA for the WWTF, develop and submit to the Secretary a projection based on the WWTF's current operations and expected future loadings of whether it will exceed its WLA during the permit term.

If the facility is not projected to exceed its WLA within the permit term, the WWTF shall reassess when it is projected to reach its WLA prior to permit renewal and submit that information with its next permit application. If the facility is projected to exceed its WLA during the permit term, the permittee shall submit a Phosphorus Elimination/Reduction Plan (PERP) within 6 months to the Secretary to ensure the WWTF continues to comply with its WLA. The PERP shall be treated as an application to amend the permit, and therefore, shall be subject to all public notice, hearing, and comment provisions, in place at the time the plan is submitted, that are applicable to permit amendments. The WWTF shall revise the PERP, if required by the Secretary.

2. Total Nitrogen (TN)

To gather data on the amount of Total Nitrogen (TN) in this discharge and its potential impact on the receiving water, a monthly "monitor only" requirement for Nitrate/Nitrite (NOx) and Total Kjeldahl Nitrogen (TKN) has been included in this permit. TN is a calculated value based on the sum of NOx and TKN, and, shall be reported as pounds, calculated as:

Average TN (mg/L) x Total Daily Flow x 8.34

where, TN (mg/L) = TKN (mg/L) + NO_x (mg/L)

Per EPA excess nitrogen (N) and phosphorus (P) are the leading cause of water quality degradation in the United States. Historically nutrient management focused on limiting a single nutrient—phosphorus or nitrogen—based on assumptions that production is usually phosphorus limited in freshwater and nitrogen limited in marine waters. Scientific research demonstrates this is an overly simplistic model. The evidence clearly indicates management of both phosphorus and nitrogen is necessary to protect water quality. The literature shows that aquatic flora and fauna have differing nutrient needs, some are P dependent, others N dependent and others are co-dependent on these two nutrients.

Like P, N promotes noxious aquatic plant and algal growth. High concentrations of P and N together cause greater growth of algae than P alone. The relative abundance of these nutrients also influences the type of species within the community. Furthermore, a high N-to-P ratio may exacerbate the growth of cyanobacteria, while elevated levels of nitrogen increase toxicity in some cyanobacteria species. Given the dynamic nature of all aquatic ecosystems, for the State to fully understand the degradation to water quality it is necessary to limit P and monitor bioavailable N (including nitrate, ammonium, and certain dissolved organic nitrogen compounds).

Facilities with design flow greater than 1 MGD will complete monthly monitoring unless more frequent sampling is already required by the permit. Facilities with design flows less than 1 MGD will complete quarterly, unless more frequent sampling is already required by the permit.

Total Nitrogen monitoring remains at a monthly frequency for this facility.

For more information, see:
https://www.epa.gov/sites/production/files/documents/nandpfactsheet.pdf.

3. **Toxicity Testing** – 40 CFR Part 122.44(d)(1) requires the Secretary to assess whether the discharge causes or has the reasonable potential to cause or contribute to an excursion above any narrative or numeric water quality criteria. 40 CFR Part 122 requires an effluent analysis of S/N 003 for the pollutants included in Appendix D, Tables 2 and 3. Per these federal requirements, the Permittee shall conduct WET testing and toxic pollutant analyses according to the schedule outlined in Section I.E. of the draft permit. If the results of these tests indicate a reasonable potential to cause an instream toxic impact, the Secretary may require additional WET testing, establish a WET limit, or require a Toxicity Reduction Evaluation.

D. Special Conditions

1. **Laboratory Proficiency Testing -** To ensure there are adequate laboratory controls and appropriate quality assurance procedures, the Permittee shall conduct an annual laboratory proficiency test for the analysis of all pollutant parameters performed within their facility laboratory and reported as required by their NPDES permit. Proficiency Test samples must be obtained from an accredited laboratory. This requirement can be met as part of an EPA DMR-QA study. Results shall be submitted to the Secretary by December 31, annually.

2. **Electronic Reporting -** The EPA recently promulgated a final rule to modernize the Clean Water Act reporting for municipalities, industries, and other facilities by converting to an electronic data reporting system. The final rule requires the inclusion of electronic reporting requirements in NPDES permits that become effective after December 21, 2015. The rule requires that NPDES regulated entities that are required to submit discharge monitoring reports (DMRs), including majors and nonmajors, individually permitted or covered by a general permit, must do so electronically after December 2016. The Secretary has created an electronic reporting system for DMRs and has recently trained facilities in its use. As of December 2020, these NPDES facilities will also be expected to submit additional information electronically as specified in Appendix A in 40 CFR part 127.

3. **Noncompliance Notification -** As required by the passage of 10 V.S.A. §1295, promulgated in the 2016 legislative session, Condition II.A.2 has been included in the proposed permit. Section 1295 requires the Permittee to provide public notification of untreated discharges from wastewater facilities. The Permittee is required to post a public alert within one hour of discovery and submit to the Secretary specified information regarding the discharge within 12 hours of discovery.

4. **Reopener -** This draft permit includes a reopener whereby the Secretary reserves the right to reopen and amend the permit to implement an integrated plan to address multiple Clean Water Act obligations.

E. S/N 005: Non-contact cooling water from the emergency diesel generator

The discharge typically occurs for a total of a few hours each year, mainly to insure that the generator is functioning. The emergency diesel generator has been out of service since 2011 and may be repaired or replaced in the future. S/N 005 is located immediately upstream of S/N 003.

The proposed permit continues to authorize this discharge. Monitoring for flow and temperature is required for each discharge event. The flow is limited to 1.5 MGD, daily maximum, combined with S/N 003. The temperature limit remains at 96 ^{o}F as in previous permits and must be measured during each discharge. Also, the discharge is only authorized with a minimum flow of 70 cfs in the mill tailrace.

F. Reasonable Potential Analysis

The Secretary has conducted a reasonable potential analysis, which is attached to this Fact Sheet as Attachment A. Based on this analysis, the Secretary has determined that the available data indicate that this discharge does not cause, have a reasonable potential to cause, or contribute to an instream toxic impact or instream excursion above the water quality criteria. As such, other than the effluent limitation for phosphorus, the development of WQBELs will not be necessary.

VIII. Procedures for Formulation of Final Determinations

*The public comment period for receiving comments on this draft permit was from **June 15 through July 16, 2018.** No comments were received during the comment period.*

ATTACHMENT A

Agency of Natural Resources
Department of Environmental Conservation

Watershed Management Division
1 National Life Drive 2 Main
802-828-1535

MEMORANDUM

To: Liz Dickson, Wastewater Program (WWP)

From: Rick Levey, Monitoring, Assessment and Planning Program (MAPP) Rick Levey 05/30/2018

Cc: Pete LaFlamme, Director, WSMD
Jessica Bulova, Section Supervisor, Wastewater Program
Ethan Swift, Manager, (MAPP)

Date: May 30, 2018

Subject: MAPP Reasonable Potential Determination for the WestRock Facility

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MAPP has evaluated the draft permit limits for the WestRock Facility in Sheldon Springs, Vermont pursuant to the 2012 procedure outlining WWM-WSMD roles and responsibilities. This memo provides MAPP's concurrence with the permit limits set forth by the draft permit for WestRock Facility prepared by the WWP.

Facility:
WestRock Facility
Permit No. 3-1118
NPDES No. VT0000469

Hydrology for WestRock Facility used in this evaluation:
Design Flow: 1.5 MGD = 2.32 CFS
7Q10 = 96.2 CFS
LMM = 328 CFS
IWC-7Q10 = 0.023 (IWC >1%)
IWC-LMM= 0.0069 (IWC < 1%)

Receiving Water:
Missisquoi River, Sheldon Springs, VT
Facility Location: Lat. 44.90753 Long. -72.97380 (NAD 83)

The Missisquoi River downstream of the WestRock Facility is classified as Class B and is designated a Warm Water Fish Habitat. At the point of discharge, the river has a contributing drainage area of 802 square miles. Figure 1 shows the approximate location of the WestRock Facility and outfall as well as upstream and downstream sampling locations. There are two Municipal WWTFs that discharge upstream, the Enosburg WWTF is approximately 10 miles upstream and the Richford WWTF is located

approximately 25 miles upstream. The Sheldon Springs WWTF discharges immediately below the outfall.

General Assessment – VTDEC Assessment Database:
MAPP maintains the VTDEC assessment database, an EPA-required database which describes the conditions of Vermont's surface waters with respect to their attainment of VWQS. For the Missisquoi River segment to which this facility discharges, the database indicates the receiving water fully supports all designated uses. However, the Missisquoi River, within this reach is on the 2016 Stressed Waters List. The problems are described as agriculture and streambank erosion, and the pollutants are sediments, nutrients, turbidity, and temperature, prohibiting the waters from attaining a higher water quality.

Ambient Chemistry Data for the Missisquoi River below the WestRock Facility:
There is ambient chemistry data available from VTDEC sampling that occurred in 2009, 2013 & 2017. Sampling was conducted above (RM 22.9, 24.4 & 26.8) the facility outfall in 2009, 2013 & 2017 and below the facility outfall (RM 21.7) in 2017.

Water chemistry measures for the following parameters are available: pH, hardness, dissolved oxygen, turbidity, total phosphorus (TP), total nitrogen (TN), total ammonia (NH3) and water temperature are summarized in Table 1. Priority metals were analyzed above the Facility at RM 26.8 in 2013 and below the Facility in 2017 at RM 21.7, results were all below detection limits (Table 4).

Data representativeness was assessed by evaluating the flow conditions at which samples were collected from field sheets and from the most proximally-located USGS gauge for which data were available, and in consideration of possible downstream sensitive reaches. The location of the sampling locations at RM 22.9 (above) and RM 21.7 (below) effectively bracket the Facility outfall (Figure 1). The downstream sampling location is the most sensitive location, and the sampling results are representative of low flows based on the actual flows shown from the USGS gauge, and field notes collected by DEC technical staff. Thus, the data presented below are relevant for inclusion in this analysis.

Table 1: Concentrations of surface-water chemistry above and below the WestRock Facility (River Miles 22.9, 24.4 & 26.8 above, and RM 21.7 below).

Sample Date	River Mile	pH	Hardness	DO (%)	DO (mg/l)	Turbidity (NTU)	Total Phosphorus (ug/l)	Total Nitrogen (mg/l)	Total Ammonia (mg/l)	Water Temp (deg C)
9/24/2009	24.4	8.04	-	93.8	-	1.63	16.3	0.38	-	18.4
9/30/2013	26.8	7.75	44.1	88	8.6	2.97	16.4	0.39	-	16.6
9/25/2017	22.9	7.8	-	-	-	-	13.3	-	-	23.8
9/25/2017	21.7	7.58	56	-	-	1.84	14.8	0.31	< 0.05	23.3

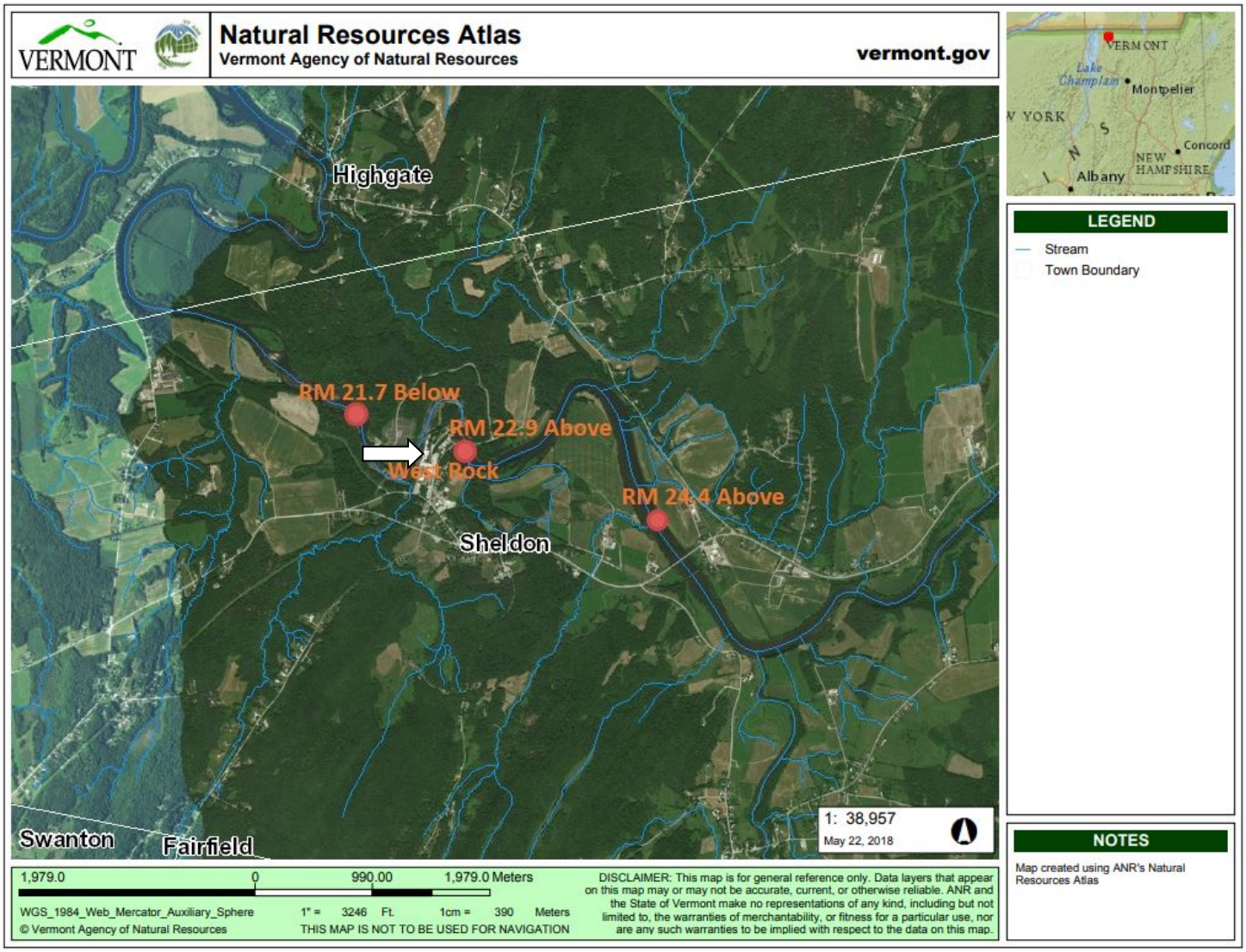

Figure 1. Missisquoi River near the WestRock Facility, shown are the sampling locations above (RM 22.9 & 24.4) and below the outfall (RM 21.7). Outfall location shown by arrow. Figure taken from the Vermont Integrated Watershed Assessment System on the VTANR Atlas (https://anrweb.vt.gov/DEC/IWIS).

Total Phosphorus (TP) above the outfall in 2017 (RM 22.9) was recorded at 13.3 µg/L, additional TP values recorded further upstream at RM 24.4 & 26.8 in 2009 & 2013 were 16.3 and 16.4 µg/L-TP respectively. Below the outfall in 2017 (RM 21.7) the TP was recorded at 14.8 µg/L; 1.5 µg/L-TP higher than the above site (RM 22.9) value of 13.3 µg/L for the same sampling date. All these TP values are significantly below the nutrient criteria threshold of 27 µg/L-TP designated for Warmwater Moderate Gradient Stream Types. Total Nitrogen (TN) values below the outfall (RM 21.7) were 0.31mg/L in 2017, and above the outfall TN was recorded at 0.38 mg/L and 0.39 mg/L.

Turbidity, Dissolved Oxygen, pH:

Turbidity below the outfall (RM 21.7) in 2017 was recorded to be 1.84 Nephelometric Turbidity (NTU), and above the outfall the turbidity was recorded to be 1.63 NTU and 2.97 NTU. Dissolved oxygen and percent saturation above the outfall at RM 26.8 was 8.6 mg/L and 88 percent saturation in 2013.

Dissolved oxygen data has not been recorded below the outfall. The pH ranged from 7.75 – 8.04 above the outfall and below the outfall the pH was 7.89. All measures for Turbidity, Dissolved Oxygen and pH were within range of the VWQS.

Biological Assessments:

In 2009 VTDEC conducted a biological assessment approximately 3.5 miles below the WestRock Facility at RM 18.2 (Table 2). The bioassessments conducted at RM 18.2 met Water Quality Standards for the Warm Water Medium Gradient Stream type.

Table 2. Results of the Biological Monitoring for Macroinvertebrates on the Missisquoi River, approximately 3.5 miles downstream (RM 18.2) of the WestRock Facility outfall.

Macroinvertebrate Site Summary

Location:	Missisquoi River	**Location ID:**	501688
Town:	Highgate	**Bio Site ID:**	420000000182
Description:	Approx. 3.5 miles below the Sheldon Springs WWTF	**WBID:**	VT06-01
Stream Type:	Warm Water Medium Gradient		

Date	Density	Richness	EPT Richness	PMA-O	B.I.	Oligo.	EPT/EPT + Chiro	PPCS-F	Community Assessment
9/24/2009	4744	46.0	26.0	77.7	3.76	0.34	0.94	0.42	Meets WQS
Full Support	≥ 300	≥ 30	≥ 16	≥ 45	≤ 5.4	≤ 12	≥ 0.45	≥ 0.4	
Indeterminate	≥ 250	≥ 28	≥ 15	≥ 40	≤ 5.65	≤ 14.5	≥ 0.43	≥ 0.35	
Non-Support	< 250	< 28	< 15	< 40	> 5.65	> 14.5	< 0.43	< 0.35	

*Scoring Guidelines for Stream Type WWMG and WQ Class B(2).

Total Phosphorus:

Instream Phosphorus Concentrations were calculated using the low monthly median flow (LMMF) of 328 CFS at design flow of 2.32 CFS (1.5 MGD) and using the 90th percentile effluent phosphorus concentration of 0.5 mg/L, which indicates that 90% of the time the effluent concentration was below this value. At these "worst case" conditions the phosphorus concentration attributable to the discharge is 3.4 µg/L-TP, a modest increase.

Review of the WestRock Facility flow records indicate that the 90th percentile flow for 2013- 2017 is less than 20% (0.284 MGD) of the design flow (1.5 MGD). Instream TP concentrations at these 90th percentile flow rates and using the 90th percentile effluent of 0.5 mg/L-TP would be 0.69 µg/L-TP attributable to the discharge, a very minor increase of TP to the receiving water.

The instream TP value observed below the WestRock Facility (Table 1) was 14.8 µg/L, it is likely that this facility contributes only 1 -2 µg/L-TP to this receiving water concentration, based on "worst case" conditions described above, illustrating that the TP contribution to the receiving water is very modest.

The potential impacts of phosphorus discharges from this facility to the receiving water have been assessed in relation to the narrative criteria in §29A-302(2)(A) of the 2017 VWQS, which states:

> *In all waters, total phosphorous loadings shall be limited so that they will not contribute to the acceleration of eutrophication or the stimulation of the growth of aquatic biota in a manner that prevents the full support of uses.*

To interpret this standard, MAPP typically relies on a framework which examines TP concentrations in relation to existing numeric phosphorus criteria and response criteria in §29A-306(a)(3)(c) of the

Vermont Water Quality Standards, for streams that can be assessed using macroinvertebrate biocriteria. Under this framework, MAPP can make a positive finding of compliance with the narrative standard when nutrient criteria are attained, or when specific nutrient response variables; pH, Turbidity, Dissolved Oxygen, and Aquatic Life Use, all display compliance with their respective criteria in the Water Quality Standards.

The total phosphorus concentrations in receiving waters are presently low, well below the nutrient criteria value of 27 µg/L-TP, established for this warmwater moderate gradient stream type. Mass balance calculations presented above, indicate that increases in phosphorus attributable to the facility are very modest; 1.0 µg/L-TP at current facility conditions.

Additionally, Aquatic Life Use is also shown to be fully supported immediately downstream of the facility, and the stream complies with VWQS for all identified response variables measured. Therefore, the narrative standard presented in the VWQS is supported (Table 3), as are the combined numeric nutrient criteria in §29A-306(a)(3)(c). As described below, for facilities where there are increases in phosphorus attributable to the discharge and biological monitoring results consistently indicate attainment of all thresholds, MAPP supports the effluent monitoring, which includes TP, required by the permit; this will help to better assess compliance with the 2014 nutrient criteria at the next permit issuance.

Table 3. Assessment of phosphorus response variables for WestRock Facility. The relevant target values are referenced to the appropriate section of the VWQS.

Response variable (VWQS reference)	Target Value	River-mile 26.8 (Upstream)	River-mile 21.7 (Downstream)
pH (§3-01.B.9), range	<8.5 s.u.	7.75	7.89
Turbidity (§3-04.B.1), range	< 10 NTU at low mean annual flow	2.97	1.84
Dissolved Oxygen (§3-04.B.2), min	>6 mg/L and 70% saturation	8.6 (88%)	-
Aquatic biota, based on macroinvertebrates, (§3-04-B.4), also see Table 2.	Attaining an assessment of good, or better.	NA	Meets WQS (2009)

Whole Effluent Toxicity (WET) and Priority Pollutant Testing:

40 C.F.R. § 122.44(d)(1) requires the Agency to assess whether the discharge causes or has the reasonable potential to cause or contribute to an excursion above any narrative or numeric water quality criteria. The goal of the Vermont Toxic Discharge Control Strategy is to assure that the state water quality standards and receiving water classification criteria are maintained. Previous WET Testing results from 2014 – 2016 have indicated toxicity. The 48-hour LC50 for C. dubia results have been 6 - 8%, indicating that these effluent concentrations caused mortality of 50% of the test organisms. WestRock has been proactive in evaluating the cause of this toxicity and has tested specific polymers used to remove TP in the dissolved air floatation clarifier to help identify the toxicity. The pollutant causing this toxicity has not yet been identified; fortunately, the available dilution within the receiving water at 7Q10 conditions (IWC 2.3%) is sufficient such that this discharge will not pose a risk to aquatic resources.

The 2018 draft permit requires a two-species modified acute/chronic WET tests (48-hour acute endpoints within a 7-day chronic test) on a composite effluent sample be conducted annually in even numbered years beginning in August or September 2020 and in odd numbered years beginning in January or February 2019. If the results of this test indicate a reasonable potential to cause an instream toxic impact, the Department may require additional WET testing, establish a WET limit, or require a Toxicity Reduction Evaluation.

Ammonia Monitoring:
Ammonia data from June 2016 is available from WET Testing conducted. Ammonia concentrations ranged (n=4) from 0.2 – 0.37 mg/L-TAN. Using the highest effluent ammonia concentration of 0.37 mg/L TAN observed the receiving water concentration (RWC) at 7Q10 instream waste concentration (IWC) of 2.3% used for implementing the criteria would be 0.0085 mg TAN/L (7Q10 IWC .023 X 0.37 mg/L-TAN). This value is below both the chronic and acute ammonia criteria, for a receiving water pH of 7.8 for all temperatures, illustrating that there is not a reasonable potential for VWQS excursion.

Sediment, Hardness and Metals:
Instream total suspended solids were calculated using the 7Q10 of 96 CFS at design flow of 2.32 CFS (1.5 MGD), assuming the maximum permitted daily concentration of 196 mg/L. The calculated suspended sediment concentration at these conditions was 4.5 mg/l.

The hardness of the Missisquoi River below the WestRock Facility (RM 21.7) was recorded to be 56 mg/l CaCO3 on 9/25/2017 (Table 1). Hardness data is utilized to determine compliance with Vermont's aquatic biota-based metals criteria as specified in § 29A-303(7) and Appendix C of the Vermont Water Quality Standards. Vermont DEC priority metal chemistry data below the outfall (Table 4) did not detect any exceedances and were below detection for all priority metals.

Table 4. Missisquoi River Metals Water Chemistry – above and below the WestRock Facility outfall at RM 26.8 & RM 21.7

Date	**9/30/2013**	**9/25/2017**
Site	**Missisquoi River (Abv RM 26.8)**	**Missisquoi River (Blw RM 21.7)**
Total Aluminum (µg/l)	126	45.4
Total Antimony (µg/l)	-	<10
Total Arsenic (µg/l)	<1	< 1
Total Beryllium (µg/l)	-	<1
Total Cadmium (µg/l)	<1	< 1
Total Chromium (µg/l)	<5	< 5
Total Copper (µg/l)	<10	< 10
Total Iron (µg/l)	363	152
Total Lead (µg/l)	<1	< 1
Total Manganese (µg/l)	43.7	53.4
Total Molybdenum (µg/l)	-	<5
Total Nickel (µg/l)	-	< 5
Total Silver (µg/l)	-	<1
Total Zinc (µg/l)	<50	< 50

Recommended Biological and Water Quality Monitoring:
In light of the fact that biological monitoring results indicate attainment of all thresholds, and the stream complies with VWQS for all identified response variables, and that the narrative standard presented in §29A-302(2)(A) of the VWQS is supported (Table 3), MAPP does not recommend biomonitoring be included in the permit. To better assess compliance with the 2014 nutrient criteria at the next permit issuance, MAPP does support the effluent monitoring required by the permit which includes monthly effluent monitoring for TP.

Conclusion:
The available data indicate this discharge does not cause, have a reasonable potential to cause, or contribute to an instream toxic impact or instream excursion above the water quality criteria. As such, the development of WQBELs will not be necessary.