

**DRAFT 11/27/2007**

IN THE MATTER OF

VERSO PAPER (formerly International Paper)	)	MAINE POLLUTANT DISCHARGE
Jay, Franklin County	)	ELIMINATION SYSTEM PERMIT
	)	AND
	)	WASTE DISCHARGE LICENSE
PULP & PAPER MANUFACTURING FACILITY	)	FINDINGS OF FACT AND ORDER
#ME0001937 and #W000623-5N-F-R	)	ON APPEAL

Pursuant to the provisions of 38 M.R.S.A. Section 341-D and *Rules Concerning the Processing of Applications and Other Matters*, 06-096 CMR 2 (effective April 1, 2003), the Board of Environmental Protection has considered the appeals of (a) VERSO PAPER (formerly International Paper), (b) FPL ENERGY MAINE HYDRO LLC, (c) CONSERVATION LAW FOUNDATION, MAINE RIVERS, ANDROSCOGGIN RIVER ALLIANCE, and ANDROSCOGGIN LAKE IMPROVEMENT ASSOCIATION, and (d) NATURAL RESOURCES COUNCIL OF MAINE of the Department's Order of September 21, 2005 issuing a combined waste discharge license and Maine Pollutant Discharge Elimination System permit, with conditions, for the discharge of treated industrial process and other wastewaters to the Androscoggin River from a kraft pulp and paper mill. Based on a review of the materials submitted by the appellants and the applicant, the record of the Board's public hearings on this and related appeals, and other related materials on file, the Board makes the following findings of fact, conclusions, and decision.

1. INTRODUCTION

The Androscoggin (or Jay) Mill, located in Jay, Franklin County, Maine, is an integrated pulp and paper mill that manufactures bleached kraft pulp and fine coated and specialty papers. Process waste waters and other waste waters associated with the facility receive primary clarification, biological treatment, and secondary clarification at an on-site waste water treatment plant. The treatment plant also receives and treats waste waters from three other industrial facilities, consisting of the Wausau-Mosinee paper facility in Jay, an on-site specialty minerals (precipitated calcium carbonate) plant, and an on-site cogeneration power plant.

By Order #W000623-5N-F-R and #ME0001937 dated September 21, 2005, the Department issued a combined waste discharge license and Maine Pollutant Discharge Elimination System permit (hereinafter "permit") for the discharge of up to a monthly average of 51 million gallons per day of treated industrial process and other waste waters to the Androscoggin River from the Jay mill, subject to a number of conditions. These conditions included, among other things: specified limitations on the discharge of various pollutants (including biochemical oxygen demand, total suspended solids, total phosphorus, and ortho-phosphorus); and the injection of specified amounts of additional oxygen into Gulf Island

Pond, or other equivalent measures. These conditions were imposed so that the discharge from the mill, either by itself or in combination with other discharges, will not lower the quality of the Androscoggin River below its assigned Class C water quality standards.<sup>1</sup>

At the time, the Jay pulp and paper mill was owned and operated by International Paper (“IP”) but is now owned and operated by Verso Paper (“Verso”).

On October 21, 2005, timely appeals of the Department’s September 21, 2005 decision were filed by IP (now Verso), by the Natural Resource Council of Maine (“NRCM”), by the Conservation Law Foundation, Maine Rivers, Androscoggin River Alliance, and Androscoggin Lake Improvement Association (collectively, “CLF et al.”), and by FPL Energy Maine Hydro LLC (“FPLE”).<sup>2</sup>

On May 11, 2006, the Department circulated for public comment a draft modification to the permit that would incorporate more stringent limits for several pollutants and correspondingly reduced oxygen injection requirements, and would shorten the schedules of compliance for several pollutants.<sup>3</sup>

By letter dated November 13, 2006, Verso submitted a response to the issues raised on appeal by NRCM, CLF et al., and FPLE.

## 2. APPLICABLE STANDARDS OF APPEAL

Title 38 M.R.S.A. Section 341-D(4) provides that, in acting on an appeal, “the Board is not bound by the Commissioner’s findings of fact or conclusions of law but may adopt, modify or reverse findings of fact or conclusions of law established by the Commissioner.” The Board is required to make its own findings and draw its own conclusions based upon the record before it, as well as its interpretation and application of the relevant law. Section 24(B)(7) of the Department’s Chapter 2 Rules provides that “the Board shall, as expeditiously as possible, affirm all or part, affirm with conditions, order a public hearing to be held as expeditiously as possible, or reverse all or part of the decision” that has been appealed to the Board.

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<sup>1</sup> In its September 21, 2005 order, the Department found Gulf Island Pond to be in non-attainment of Class C water quality standards for dissolved oxygen and for the designated use of recreation in and on the water. The Department also found the Livermore Falls impoundment to be in non-attainment of Class C water quality standards for aquatic life.

<sup>2</sup> A summary of the appeals and appeal proceedings is appended hereto and incorporated herein.

<sup>3</sup> In a First Procedural Order dated July 10, 2006, the Board’s Presiding Officer for the consolidated Androscoggin River appeals ruled that the Board would consider the Department’s proposed modifications of the Verso license as the Department’s new recommendations on the pending appeals of that license. See attached summary of appeals and appeal proceedings, page 17.

### 3. STANDING

Appellant Verso is the licensee and owner of the waste water treatment plant that is subject to the Department's September 21, 2005 licensing decision for the Jay mill. Verso is thus an aggrieved person as defined by the Department's Chapter 2 *Rules Concerning the Processing of Applications and Other Matters* and has standing to bring an appeal before the Board.

Appellant NRCM is a non-profit corporation whose members may suffer particularized injury as a result of the Department's September 21, 2005 licensing decision for the Jay mill. NRCM's mission is protecting, conserving, and restoring Maine's environment, now and for future generations. NRCM is thus an aggrieved person as defined by the Department's Chapter 2 *Rules Concerning the Processing of Applications and Other Matters* and has standing to bring an appeal before the Board.

Appellants Conservation Law Foundation, Maine Rivers, Androscoggin River Alliance, and Androscoggin Lake Improvement Association (collectively, "CLF, et al.") are all non-profit corporations or associations whose members may suffer particularized injury as a result of the Department's September 21, 2005 decision for the Jay mill. Conservation Law Foundation's mission is to conserve natural resources, protect public health and promote vital communities in New England. Maine Rivers' mission is to preserve and enhance the quality of all Maine rivers. Androscoggin River Alliance and Androscoggin Lake Improvement Association are organized to improve and protect the environmental quality of the Androscoggin River. Each of these organizations is thus an aggrieved person as defined by the Department's Chapter 2 *Rules Concerning the Processing of Applications and Other Matters* and has standing to bring an appeal before the Board.

Finally, Appellant FPLE is the licensee and owner of the hydropower project that creates Gulf Island Pond, which receives waste water from the Verso mill. FPLE may suffer particularized injury as a result of the Department's September 21, 2005 licensing decision for the Jay mill, in that FPLE is also being required to inject supplemental oxygen into Gulf Island Pond under the terms of the Department's September 21, 2005 water quality certification for the Gulf Island-Deer Rips Hydro Project. FPLE is thus an aggrieved person as defined by the Department's Chapter 2 *Rules Concerning the Processing of Applications and Other Matters* and has standing to bring an appeal before the Board.

### 4. BASIS OF THE VERSO APPEAL

Appellant Verso argues that the Department's Total Maximum Daily Load (TMDL)<sup>4</sup> the analysis on which the license limits are based, is fundamentally flawed, as it is based on insufficient data, relies on a model that is inaccurate and that fails to properly account for the hydrodynamics of Gulf Island Pond, fails to establish a reasonable measure for algae blooms,

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<sup>4</sup> A TMDL establishes the allowable pollutant loadings and other quantifiable parameters for a waterbody and thereby provides the basis for the establishment of effluent discharge limits and other control necessary for that waterbody to meet water quality standards. See "Guidance for Water Quality-based Decisions: The TMDL Process," EPA 440/4-91-000 (April, 1991).

fails to consider the impact of non-point source pollution on phosphorus levels in Gulf Island Pond, inappropriately considers the Livermore Falls impoundment a water quality impaired water, and uses an unnecessarily conservative margin of safety.

Appellant Verso further argues that because the TMDL is flawed, the effluent limits established by the Department for biochemical oxygen demand (BOD), total suspended solids (TSS), total phosphorus and ortho-phosphorus, as well as the requirement that Verso inject additional oxygen into Gulf Island Pond, are arbitrary and capricious and should be modified or removed from the license.

Appellant Verso also argues that the compliance dates establishing seasonal time frames for BOD and TSS are overly stringent.

Appellant Verso further argues that the ambient water quality monitoring required by the Department is an unreasonable and overly burdensome condition of the license and that this monitoring is the obligation of the State not the mills.

Appellant Verso also argues that the requirement to conduct a biological monitoring program to determine the health of the bald eagle is unnecessary.

Appellant Verso further argues that the requirement that Verso participate in the State's Fish Advisory Program should be deleted as the mill is in compliance with State law, 38 M.R.S.A., §420-A.

Appellant Verso requests that the Board remand the permit for the Jay mill to the Department for issuance of a revised order.

## 5. BASIS OF THE NRCM APPEAL

Appellant NRCM argues that the September 21, 2005 permit issued by the Department for the Jay mill allows unacceptable levels of pollution to continue to be discharged and will not bring the Androscoggin River into attainment with minimum water quality standards as required by state law and the federal Clean Water Act.

Appellant NRCM requests that the Board modify the permit to require that:

- Verso comply with all final effluent limits in no more than three years;
- TSS limits be reduced to a level that will not result in a visible plume;
- BOD discharges be reduced as much as possible before requiring additional instream oxygen injection and should not exceed the limits requested by Verso in its application (a daily maximum of 8,000 pounds per day and a monthly average of 4,500 pounds per day); and

- BOD limits be based on a 30-day dissolved oxygen standard that is protective of indigenous coldwater fish.<sup>5</sup>

#### 6. BASIS OF THE CLF, et al. APPEAL

Appellant CLF, et al. argues that the ten year schedule of compliance for final effluent limitations for various pollutants (including total phosphorus, ortho-phosphorus, summertime TSS, and annual TSS), as well as the five year schedule of compliance for the oxygenation injection system imposed in the September 21, 2005 permit violates state and federal law. Specifically, and in summary, CLF, et al. contends that: (1) state and federal law prohibit the use of a compliance schedule when setting final effluent limitations that are necessary to attain the pre-July 1, 1977 dissolved oxygen standard of 5 parts per million, and that this prohibition extends to the oxygenation system requirement because oxygenation is being used to achieve compliance with the dissolved oxygen standard; (2) the approved compliance schedules violate the requirement of state law that schedules of compliance must be as short as possible, based on consideration of the technological, economic and environmental impact of the steps necessary to attain water quality standards; and (3) the approved compliance schedules violate the requirement of the Department's rules that schedules of compliance exceeding one year must include interim requirements and the dates for their achievement.

Appellant CLF, et al. requests that the Board modify the permit approved by the Department to require immediate attainment of all final effluent limitations and immediate completion of the additional oxygen injection system or, if the Board determines that a compliance schedule for additional oxygen injection is legal, to require attainment of water quality standards in as short a time as possible and to impose specific interim enforceable requirements.

#### 7. BASIS OF THE FPLE APPEAL

Appellant FPLE argues that the provisions of the Department's decision regarding the allocation of responsibility to Verso for additional oxygen injection into Gulf Island Pond are legally and factually erroneous, and incorporates by reference its appeal of the water quality certification for the Gulf Island-Deer Rips Project. Specifically, FPLE contends that Verso and the other point sources discharging into Gulf Island Pond are responsible for bearing the burden of additional oxygen injection.

In its appeal of the water quality certification for the Gulf Island-Deer Rips Hydro Project, Appellant FPLE requests that the Board eliminate the requirement for FPLE to inject additional oxygen into Gulf Island Pond, and further requests that the Board reallocate this responsibility to Verso and other appropriate parties.

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<sup>5</sup> In its post-hearing brief, NRCM requested that the Board impose monthly average and daily maximum limits for BOD of 2,300 pounds per day and 4,000 pounds per day, respectively; monthly average and daily maximum limits for TSS of 7,700 pounds per day and 14,000 pounds per day, respectively; and monthly average limits for total phosphorus and ortho-phosphorus of 130 pounds per day and 22 pounds per day, respectively.

## 8. RESPONSE TO APPEALS

In response to the appeals filed by NRCM, CLF, et al. and FPLE, Verso argues that:

- The use of a temperature of 22 degrees Celsius to determine compliance with the 30-day average Class C dissolved oxygen standard has been enacted by the Legislature and approved by EPA;
- The effluent limits established on the basis of the Department's TMDL, which has been approved by EPA, are intended to ensure compliance with applicable water quality standards;
- Schedules of compliance are expressly authorized by state law, can be for periods greater than five years, and are lawful in this case;
- Oxygen injection is permissible to meet standards; however, the Department's TMDL is flawed and there may be no need for additional oxygen injection, and a use attainability analysis may be an appropriate mechanism to change applicable Class C dissolved oxygen standards and to avoid additional oxygen injection; and
- FPLE's allocation of responsibility for additional oxygen injection should be based on the Department's determination of FPLE's percentage of contribution to the dissolved oxygen problem in Gulf Island Pond.

## 9. PROCEDURAL HISTORY

On August 3, 2006, the Board voted to schedule a consolidated public hearing on the pending appeals of the permit for Verso's Jay pulp and paper mill and the related appeals of the water quality certification for FPLE's Gulf Island-Deer Rips Hydro Project<sup>6</sup> and the permit for Rumford Paper Company's Rumford pulp and paper mill.<sup>7</sup>

An adjudicatory hearing to receive testimony from the parties and the general public on whether the legal standards for wastewater discharge licenses and for water quality certification, as set forth in federal and state law and applicable regulations, have been met was held on May 2, 3, 4, 8 and 9, 2007 in Auburn and on May 10 in Augusta. Daytime sessions were devoted to testimony from and cross-examination of witnesses called by the

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<sup>6</sup> By Order #L-17100-33-O-N dated September 21, 2005, the Department issued water quality certification for the continued operation of the Gulf Island-Deer Rips Hydro Project, located on the Androscoggin River in Lewiston, Auburn, Turner, Greene, Leeds and Livermore, Maine. Appeals of this decision were filed by FPLE and CLF, et al. An additional appeal filed by the Towns of Livermore and Jay was subsequently withdrawn pursuant to a Stipulation and Consent Order approved by the Board on May 2, 2007.

<sup>7</sup> By Order #W000955-5N-G-R and #ME0002054 dated September 21, 2005, the Department issued a combined waste discharge license and Maine Pollutant Discharge Elimination System Permit for the discharge of treated waste waters to the Androscoggin River from a kraft pulp and paper mill in Rumford, Maine. Appeals of this decision were filed by Rumford Paper Company ("RPC," licensee), FPLE, and CLF, et al.

parties. Evening sessions on May 3 and 8 were devoted to receiving testimony from members of the general public.

## 10. DISCUSSION OF VERSO APPEAL

### a. Model Corrections and Additional Modeling

Appellant Verso argues that the Department's TMDL, and the water quality model on which it is based, is flawed and must be corrected before being used to establish effluent limits or any requirements for additional oxygenation. Specifically, Verso contends that the Department failed to use a proper hydrodynamic model to determine transport and mixing within Gulf Island Pond and made numerous errors in its assumptions regarding the relationship between pollutant loads and water quality in the pond. Verso further contends that these errors have resulted in the TMDL overstating the point source pollutant reductions and additional oxygen injection needed to bring Gulf Island Pond into compliance with Class C water quality standards.

Other appellants in the related proceedings have argued that the Department's TMDL and water quality model are flawed in other respects, and one appellant (NRCM) has argued that a TMDL is simply not needed.

The Board is persuaded that a TMDL is an appropriate and perhaps a necessary legal basis for any decision in this case to impose effluent limits on point source dischargers and oxygen injection requirements on these dischargers and FPLE. In this complex case, which involves the impacts of non-point source pollution, multiple point source discharges at various locations on the river, and a large dam and impoundment, all the evidence points to the need for a water quality model to predict dissolved oxygen levels in Gulf Island Pond and a TMDL to define the combination of pollutant loadings and oxygen injection needed to bring about compliance with Class C water quality standards. The Board finds that NRCM's arguments that effluent limits can be established solely by extrapolating from past mill performance are not persuasive.

The Board is further persuaded that the current TMDL, which has been approved by EPA, is sufficient to make regulatory decisions. Many of the "flaws" identified by the appellants relate to differences of opinion among experts regarding various assumptions made in the underlying model, as opposed to actual errors in the model. The Board finds that the nature of water quality modeling makes any complex model, such as the one developed and relied upon by the Department here, susceptible to some degree of criticism from other modelers. However, the Board finds that the Department's modeling assumptions are well grounded in science and are reasonable. Specifically, the Board finds the testimony of former DEP modeler Paul Mitnik regarding the development of the model used by the Department to be credible and convincing. [see Paul Mitnik's hearing testimony at Transcript pp. 782-1001]. The Board also finds that, after more than twenty years of study, there is ample technical information upon which to base the necessary

regulatory decisions, and the time has come to take the actions needed to bring Gulf Island Pond into compliance with water quality standards.

However, as discussed below, the Board is persuaded by the preponderance of the evidence that there are two revisions that should be made to the model.

The first model revision is the re-calibration of the model following the correction of a dispersive mixing error. FPLE witness David Dilks provided compelling evidence that the original DEP model incorrectly assumed that water was flowing upstream through Gulf Island Dam and that, while the DEP recognized and corrected this error in the final TMDL, the DEP did not re-calibrate the model to ensure that model results still accurately predicted the observed dissolved oxygen levels in Gulf Island Pond.<sup>8</sup> This re-calibration may reduce the model prediction of the amount of oxygen injection needed to meet standards and may reduce the amount of oxygen that entities would be responsible for injecting into Gulf Island Pond.<sup>9</sup>

The second model revision is the recalculation of the area of sediment in contact with various segments of the pond. Verso witness John Connolly provided convincing evidence that, in specifying the amount of phosphorus coming from the sediment underlying each model segment of Gulf Island Pond, the DEP model incorrectly assumed that the full width of the bottom of every segment, not just the bottom segments, was in contact with the sediment and that the DEP needs to recalculate the sediment area that is contributing phosphorus to the pond.<sup>10</sup> This recalculation may reduce the model's prediction of the total sediment phosphorus loading to the pond and thus may increase the amount of phosphorus that the model predicts can be discharged to the pond from point sources while still attaining water quality standards.<sup>11</sup>

Therefore, the Board directs the Department to make the revisions to the model discussed above and, if necessary, revise the TMDL accordingly. The Board further directs the Department to determine, as soon as practical, final additional oxygen injection requirements and final point source effluent limits for phosphorus based on the revised model and any subsequent revisions to the TMDL.

Finally, Verso witness John Connolly provided persuasive evidence that the development and use of a hydro-dynamic model to determine mixing and transport within Gulf Island Pond may more accurately predict water quality conditions than does the Department's

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<sup>8</sup> See Dr. Dilks' pre-filed direct testimony at FPLE Tab 5, and Dr. Dilks' hearing testimony at Transcript pp. 1063-1089.

<sup>9</sup> Dr. Dilks states that he ran the Department's model following re-calibration and determined that the oxygen needed from the existing GIPOP facility to meet standards with the point source discharges removed (and thus with unknown sediment oxygen demand and non-point source impacts remaining) dropped from 105,000 pounds per day to 52,800 pounds per day under critical conditions. See Exhibit FPLE 51.

<sup>10</sup> See Dr. Connolly's prefiled direct testimony, and Dr. Connolly's hearing testimony at Transcript pp. 413-441.

<sup>11</sup> Dr. Connolly states that he made such a correction for the sediment area and determined that the total sediment phosphorus load dropped from 49 kilograms per day to 21 kilograms per day. See Connolly pre-filed direct testimony at page 39.

current model.<sup>12</sup> Using such a model may change point source pollutant loadings and the amount of oxygen injection needed to meet standards in the pond. However, in keeping with recent legislation,<sup>13</sup> the development of an additional model should be paid for by Verso, either independently or in cooperation with other point source dischargers. Also, the hydro-dynamic model used must be supported by the Environmental Protection Agency.

While a future hydro-dynamic model could eventually support amended effluent limitations or oxygen injection requirements, it is the Board's considered judgment that it is neither necessary nor prudent to wait for the development of such a model, and that the Department's existing modeling provides a sound basis for the Board's action today.

b. BOD Limits

Appellant Verso argues that the BOD limits for the mill established in the Department's September 21, 2005 permit are arbitrary and capricious and should be increased.

With respect to final effluent limits for BOD, the Department made the following findings in its September 21, 2005 decision:

"Beginning upon issuance of the permit, the summertime (June 1 – September 30) monthly average water quality based BOD limit of 7,400 lbs/day as recommended in the May 2005 TMDL is being established to maintain compliance with the 30-day rolling average dissolved oxygen criteria of 6.5 mg/l<sup>14</sup> at 22° C. The weekly average and daily maximum water quality based limits of 11,100 lbs/day and 13,875 lbs/day, respectively, as recommended in the May 2005 TMDL are being established to maintain compliance with the minimum dissolved oxygen standard of 5.0 mg/l. The daily maximum limitation of 13,875 lbs/day was derived by multiplying the recommended weekly average [limitation] of 11,100 lbs/day... by a statistically derived factor of 1.25. This factor was derived based on a statistical evaluation of the mill[s] historic effluent variability. The non-summer monthly average and daily maximum limitations of 17,700 lbs/day and 34,050 lbs/day respectively are being carried forward from the previous licensing action pursuant to anti-backsliding provisions of Department rule (Chapter 523 §5(1)) and federal regulation (USC §1342(o))."<sup>15</sup>

However, in its May 11, 2006 draft modification of the permit for the Jay mill, the Department found that "[a] review of the Department's files for the [Verso] facility indicates [Verso] repeatedly requested more stringent monthly average and daily maximum limits for BOD<sub>5</sub>." The Department further found that, on several occasions,

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<sup>12</sup> See Dr. Connolly's pre-filed direct testimony, and Dr. Connolly's hearing testimony at Transcript pp. 413-425.

<sup>13</sup> P.L. 2005, Chapter 409, "An Act To Amend Water Quality Standards," (L.D. 1450).

<sup>14</sup> Milligrams per liter (mg/l) is equivalent to parts per million (ppm), which is the unit of measurement used in statute. [footnote added]

<sup>15</sup> See page 29 of Fact Sheet prepared for and accompanying the September 21, 2005 permit.

including in the cover letter attached to its January 8, 1999 application for permit renewal, Verso requested monthly average and daily maximum BOD limits of 4,500 lbs/day and 8,000 lbs/day, respectively, and that it was the Department's understanding Verso proposed these values based on a statistical evaluation of its historic BOD discharge data.<sup>16</sup> Finally, the Department found that the September 21, 2005 permit was in error in establishing less stringent BOD limits than requested by Verso and that the Department also failed to give adequate consideration to Verso's historic BOD discharge data.<sup>17</sup>

Based on these findings, in its May 11, 2006 draft modification of the permit for the Jay mill, the Department proposed that the more stringent monthly average and daily maximum BOD limits of 4,500 lbs/day and 8,000 lbs/day, respectively, as requested by Verso, be established for the Jay mill, along with the more stringent statistically-derived weekly average limit of 6,400 lbs/day, and that these more stringent limits be in effect year-round. In proposing these reduced limits, the Department found that "[Verso] has demonstrated the limitations established in this permit modification are achievable through proper operation of its waste water treatment facility."<sup>18</sup>

Finally, in its May 11, 2006 draft modification of the permit for the Jay mill, the Department found that the proposed reduction in the weekly average BOD limit would reduce [Verso's] requirement for additional oxygen injection by 10,000 lbs/day.<sup>19</sup>

The Board is persuaded by the evidence in the record that the more stringent final limits for BOD discharges proposed by the Department in its draft modification are appropriate and achievable, at least during the critical summer months,<sup>20</sup> and that these limits will correspondingly reduce Verso's requirement for additional oxygenation. However, the evidence in the record indicates that biological wastewater treatment facilities, such as the one at the Jay mill, tend not to perform as efficiently during the non-summer months. Therefore, the Board is persuaded that non-summer BOD limits should not be as stringent as summertime limits, and that the BOD limits established in the September 21, 2005 permit for the summertime are appropriate and achievable for the non-summer months.

c. TSS Limits

Appellant Verso argues that the Livermore Falls impoundment currently attains Class C aquatic life criteria and that, as a consequence, the TSS limits imposed in the Department's September 21, 2005 permit are unwarranted.

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<sup>16</sup> Verso's analysis showed that the highest monthly average and highest daily maximum BOD discharges from the mill were less than its proposed limits for a full year.

<sup>17</sup> See page 5 of Fact Sheet prepared for and accompanying the draft May 11, 2006 permit modification.

<sup>18</sup> See pages 5-6 of Fact Sheet prepared for and accompanying the draft May 11, 2006 permit modification.

<sup>19</sup> See page 7 of Fact Sheet prepared for and accompanying the draft May 11, 2006 permit modification.

<sup>20</sup> See Department memorandum to Board dated August 16, 2007 with accompanying graphs of Verso Paper pollutant discharge limits and actual discharges, based on monthly discharge monitoring reports submitted to the Department by Verso.

With respect to final effluent limits for TSS, the Department made the following findings in its September 21, 2005 decision:

“The final summertime monthly average limit of 12,000 lbs/day is based on a May 1998 Section 401 water quality certification for [Verso’s] hydro[power] facilities and is consistent with the Town of Jay’s Permit #5. The final non-summertime monthly average limitation of 25,000 lbs/day is being carried forward from the previous licensing action pursuant to the anti-backsliding provisions of Department rule (Chapter 523 §5(1)) and federal regulations (USC §1342(o)).

“The final summertime 60-day average (June 1 - September 30) limitation of 10,000 lbs/day...is being established as a TMDL recommended limit to mitigate the adverse affects of settleable solids on the macro-invertebrate community in the Livermore Falls impoundment...

“The final summertime and non-summertime daily maximum limitations of 22,300 lbs/day and 44,600 lbs/day, respectively, are based on a May 1998 Section 401 water quality certification for [Verso’s] hydro[power] facilities and is [sic] consistent with the Town of Jay’s Permit #5...

“The final annual average limitation of 14,738 lbs/day is TMDL recommended limit and is being established to reduce the contribution of sediment oxygen demand to non-compliance in [Gulf Island Pond]...”<sup>21</sup>

For the reasons discussed below, the Board finds that Appellant Verso has not presented persuasive evidence calling into question the Department’s determinations regarding final effluent limits for TSS.

First, the final summer and non-summer monthly average and daily maximum limits for TSS have either been previously agreed-to by IP, and have since been accepted by Verso as the transferee of the IP permit, or are required to meet the anti-backsliding provisions of state and federal regulations. These limits will therefore not be increased at this time.

Second, the evidence in the record indicates that the final effluent limits for TSS established by the Department are appropriate and achievable.<sup>22</sup> Verso also provided testimony that it is currently pursuing several projects to reduce coating losses and flow to the wastewater treatment facility. These projects are expected to further reduce future TSS discharges to the river and to improve or eliminate the occurrence of a visible plume in the mill discharge. [see pre-filed rebuttal testimony of Verso witness Michael

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<sup>21</sup> See page 30 of Fact Sheet prepared for and accompanying the September 21, 2005 permit.

<sup>22</sup> See Department memorandum to Board dated August 16, 2007 with accompanying graphs of Verso Paper pollutant discharge limits and actual discharges, based on monthly discharge monitoring reports submitted to the Department by Verso.

Rowland, and hearing testimony of Mr. Rowland and Verso witness Steve Woodard at Transcript pp. 1999-2004].

Third, in its May 2005 TMDL, the Department stated that TSS discharges have contributed to past non-attainment of aquatic life standards in the Livermore Falls impoundment and concluded that reductions in summer 60-day average TSS discharges from the upstream paper mills<sup>23</sup> are needed to achieve attainment. The Department also stated that a phased implementation of final 60-day average TSS limits would be used to allow for the collection of additional monitoring data in the impoundment with interim limits in effect to determine compliance with aquatic life standards under low flow conditions.<sup>24</sup> Verso witness Paul Leeper provided evidence that aquatic life standards have been met in the Livermore Falls impoundment since 2003, during a time when substantial reductions in summer TSS discharges were made from the Verso and RPC mills. [see Mr. Leeper's pre-filed direct testimony and his hearing testimony at Transcript pp. 382-394]. This empirical evidence supports the Department's conclusion that TSS reductions were needed. However, it is premature to conclude that the Livermore Falls impoundment will remain in attainment of Class C aquatic life standards since the evidence in the record also indicates that river flows during these summers did not represent worst case conditions. Therefore, the Board finds that those years cannot be taken as evidence that summer TSS discharges from the mills do not need to be reduced further.

Finally, the evidence in the record clearly establishes a connection between TSS discharges from the upstream paper mills and sediment oxygen demand, and in turn dissolved oxygen levels, in Gulf Island Pond. In fact, all parties agree that sediment oxygen demand is the primary driver of low dissolved oxygen concentrations in the pond. While Appellant Verso has argued that a larger percentage of the TSS entering Gulf Island Pond should be attributed to non-point sources, Verso has not presented any convincing evidence that (1) TSS discharges from its Jay mill do not contribute to sediment oxygen demand in Gulf Island Pond, or that (2) reductions in TSS discharges from the Jay mill are not needed to meet dissolved oxygen standards in the pond.

The Board therefore adopts the Department's findings with respect to final effluent limits for TSS, as cited above.

d. Phosphorus Limits

Appellant Verso argues that the Department's September 21, 2005 decision fails to establish a reasonable measure for algae blooms, that the correlation between chlorophyll-a, algae blooms and phosphorus assumed by the Department is scientifically

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<sup>23</sup> In its permit, RPC also received—and has accepted—a summer 60-day average TSS limit to mitigate the adverse effects of its settleable solids discharges on the macro-invertebrate community in the Livermore Falls impoundment.

<sup>24</sup> See May 2005 Androscoggin River Total Maximum Daily Load (TMDL) Report, pages 54-56. A 60-day average limit is imposed because the "rock baskets" used to monitor the aquatic macro-invertebrate community are placed in the river for a 60-day colonization period.

unsupported, and that the Department failed to properly consider and take actions to control the impact of non-point source pollution on phosphorus levels in Gulf Island Pond. Verso contends that, based on these arguments, the phosphorus limits established for the mill are too low.

In its May 2005 TMDL, the Department stated that algae blooms have occurred regularly in Gulf Island Pond, and concluded that reductions in phosphorus discharges from the upstream paper mills are needed to control these blooms. The Department further concluded that, based on the available monitoring data, a pond-averaged chlorophyll-a concentration of 10 ppb appeared to be a good predictor of bloom conditions. Finally, the Department presented the results of the model runs used to establish loading limits to the pond for total phosphorus and ortho-phosphorus.<sup>25</sup>

Verso witness John Connolly and NRCM witness John Lichter both testified that phosphorus is generally the limiting nutrient for algae growth in freshwater systems such as Gulf Island Pond. [see hearing testimony of John Lichter at Transcript pp. 92-95, and testimony of John Connolly at Transcript pp. 431-432, 450-453]. This means that, generally speaking, the more phosphorus there is in the pond, the more algae will grow in the pond.

The Board finds that Appellant Verso has not presented persuasive evidence calling into question the Department's rationale for establishing loading limits to Gulf Island Pond for phosphorus in order to eliminate algae blooms. In its May 2005 TMDL, the Department acknowledged that "there is uncertainty in the determination of the water quality target of chlorophyll-a levels used to describe the threshold level of an algae bloom that are specific to Gulf Island Pond." (TMDL summary, page 6) However, Verso witness John Connolly provided evidence that there were no recorded algae blooms in the pond during 2005 and 2006, during a time when substantial reductions in phosphorus discharges were made from the Verso and RPC mills. [see Dr. Connolly's pre-filed direct testimony and his hearing testimony at Transcript pp. 430-435]. This empirical evidence supports the Department's rationale.<sup>26</sup> However, it is premature to conclude that Gulf Island Pond will remain suitable for the designated use of recreation in and on the water since the evidence in the record also indicates that river flows during the summers of 2005 and 2006 did not represent worst case conditions. Therefore, the Board finds that those years cannot be taken as evidence that phosphorus discharges from the mills do not need to be reduced further.

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<sup>25</sup> See May 2005 Androscoggin River Total Maximum Daily Load (TMDL) Report, pages 1-27.

<sup>26</sup> The May 2005 TMDL goes on to state that, because of the uncertainty in the chlorophyll-a target levels for algae blooms in Gulf Island Pond, "it is recommended that the TMDL be implemented in phases of two or three step reductions with required ambient monitoring for point sources in cooperation with MDEP." (TMDL summary, pages 6-7). The TMDL further states that "[t]he chlorophyll-a threshold for defining an algae bloom should be re-evaluated yearly with data that will be collected in the future with a goal of refining the threshold specific to Gulf Island Pond." (page 5) The Board finds this approach is reasonable, in light of the evidence presented.

In making this finding, the Board also considered the fact that, in its July 18, 2005 notification of approval of the Department's TMDL, EPA stated that it "believes the ME DEP's establishment of a chlorophyll-a target of 10 ppb was reasonable in light of [the] available information." (page 6) Appellant Verso has not presented a persuasive argument for a higher chlorophyll-a target level. [see prefiled direct testimony of Verso witness John Connolly, and Dr. Connolly's hearing testimony at Transcript pp. 445-518].

However, with respect to interim limits for phosphorus discharges, in its May 11, 2006 draft modification of the permit for the Jay mill, the Department concluded that, taking into consideration historic effluent data and the technological, economic and environmental impact of the steps necessary to attain the more stringent water-quality-based numeric standards for the discharge of phosphorus from the Jay mill imposed by the September 21, 2005 permit, the interim effluent limits for total phosphorus and ortho-phosphorus should be more stringent, with monthly average total phosphorus limits reduced from 193 to 150 pounds per day, effective upon permit issuance, and monthly average ortho-phosphorus limits reduced from 44 to 33 pounds per day, effective upon permit issuance.

The Board is persuaded by the evidence in the record that the more stringent interim limits for phosphorus discharges proposed by the Department are appropriate and achievable. Verso also testified that it is currently pursuing several projects to reduce coating losses and flow to the wastewater treatment facility which are expected to further reduce future phosphorus discharges to the river. [see pre-filed rebuttal testimony of Verso witness Michael Rowland, and hearing testimony of Mr. Rowland and Verso witness Steve Woodard at Transcript pp. 1999-2004].

With respect to the impacts of non-point source pollution on water quality in Gulf Island Pond, the evidence is insufficient for the Board to make specific findings as to the portion of the non-point source pollution that is attributable to human activity, and thus may be controllable, and the portion attributable to natural background sources, and thus is uncontrollable. The evidence is that the watershed above Gulf Island Pond is large and mostly forested, with limited residential, commercial and agricultural land uses.

There are currently several State statutory and regulatory schemes in place which control non-point source pollution from various human activities. The Site Location of Development Law and the Stormwater Control Law regulate runoff from commercial and residential developments. The Natural Resources Protection Act and the Erosion and Sedimentation Control Law prohibit activities conducted in a manner which may result in runoff into waterbodies and wetlands. The Nutrient Management Act further regulates non-point source pollutions from agricultural activities. The Shoreland Zoning Law regulates development in the shoreland zone. The Forest Practices Act regulates silvicultural activities in areas adjacent to rivers and streams. The Municipal Subdivision Law regulates the impacts of subdivisions on surface water. Taken as a whole, these laws have significantly reduced non-point source pollution from human activities in this

and other watersheds. While more reductions can be achieved, these additional reductions will be more difficult to accomplish.

The Board finds that, given the largely undeveloped nature of the watershed and the resulting limited opportunities for further control of non-point source pollution, it cannot rely on increased regulation or control of non-point source pollution to have a significant impact on the water quality of Gulf Island Pond.

In its May 2005 TMDL, the Department concluded that “[t]here are limited opportunities for the control of significant amounts of non-point pollution given the relatively undeveloped nature of this large watershed” (page 1) and that “control of non-point source pollution is not a feasible solution to address the non-attainment of DO criteria attributable to sediment oxygen demand” in Gulf Island Pond (page 28). In its July 18, 2005 notification of approval of the Department’s TMDL, EPA concurred with the Department’s conclusions, stating that “[t]he huge size of the mostly forested watershed, the sporadic and diffuse occurrence of NPS runoff, and pollutant assimilation prior to reaching the mainstem river, all support ME DEP’s conclusion that NPS controls would have an insignificant impact on the mainstem Androscoggin River or [Gulf Island Pond]...” (page 12). No persuasive evidence has been offered that calls the Department’s conclusion regarding control of non-point source pollution into question.

The Board is persuaded that the use of Best Management Practices (“BMPs”) to control non-point source pollution will likely be of limited value in increasing dissolved oxygen levels in Gulf Island Pond; as a result, any future reductions in non-point source pollution cannot be relied upon to provide a reasonable assurance that water quality standards will be met. Nonetheless, the Board encourages the Department to further evaluate the sources and control of non-point source pollution to Gulf Island Pond, and to pursue any control strategies that it concludes are feasible and worthwhile.

e. Wausau-Mosinee Wastewater

The Wausau-Mosinee papermaking facility<sup>27</sup> is located approximately 5 miles downstream of Verso’s Androscoggin mill and produces approximately 220 tons/day of paper from purchased pulp. The Wausau-Mosinee facility does not have its own waste water treatment facility so process waste waters from the mill are conveyed to Verso’s waste water treatment facility via a pipeline and co-mingled with Verso’s waste streams for treatment.

In a letter dated December 16, 2005 from Verso to Wausau-Mosinee, Verso provided official written notice of termination of the Waste Treatment Agreement between the two parties. The letter indicated the termination was December 16, 2010.”<sup>28</sup>

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<sup>27</sup> Commonly referred to as the Otis mill.

<sup>28</sup> See page 20 of Fact Sheet prepared for and accompanying the draft May 11, 2006 permit modification.

Verso has confirmed that its contract for the treatment of Wausau-Mosinee's wastewater has a five-year termination clause and that the contract will be cancelled in December of 2010 if Verso cannot ensure that it can treat the Otis mill effluent and remain in compliance with the terms of its permit. [see hearing testimony of Verso witness Michael Rowland at Transcript pp. 1951-1952, 2060-2061, and 2083-2085.]

In its May 11, 2006 draft modification of the permit for the Jay mill, the Department determined the influent loadings from the Otis mill as a percentage of total influent loading to the Verso wastewater treatment facility, and proposed that the Jay mill receive lower effluent limits for BOD, TSS, total phosphorus and ortho-phosphorus in the event that Wausau-Mosinee's wastewater is no longer treated at the Jay mill's treatment facility.<sup>29</sup>

The Board concurs with the Department's proposal for reduced effluent limits for the Jay mill in the event that Wausau-Mosinee's wastewater is no longer treated at Verso's treatment facility. When the Department established discharge limits for the Verso mill, those limits took into consideration the fact that Verso accepts wastewater from the Otis mill for treatment. If Verso cancels its contract to treat the wastewater from the Otis mill, in order for the Otis mill to remain in operation, Wausau-Mosinee will either have to treat and discharge its own wastewater or send its wastewater to another facility (e.g., the Livermore Falls wastewater treatment facility) for treatment and discharge. In either event, Wausau-Mosinee will have to seek Department approval to discharge, either through issuance of a new permit for a new treatment facility or an amended permit for another existing treatment facility. However, Gulf Island Pond is already a water quality limited water body that does not meet Class C standards under existing loading conditions. This means that no additional point source loading to the pond can be approved.<sup>30</sup> Therefore, the effluent limits for the Jay mill should be reduced to reflect the removal of the Wausau-Mosinee wastewater loading to the Verso treatment plant, if that were to occur, in order to make "room" in the river for the discharge of the Wausau-Mosinee wastewater from another facility. The Board finds that the Verso treatment facility should be able to meet these reduced effluent limits since it will no longer be called upon to treat the additional wastewater from the Otis mill.

f. Compliance Monitoring

The Board is persuaded by the evidence that accurately determining the point of thermal stratification is critical to the determination of future non-attainment of dissolved oxygen standards in Gulf Island Pond. [see pre-filed direct testimony of FPLE witness F. Allen Wiley at Tab 3, and pre-filed direct testimony of Verso witness John Connolly].

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<sup>29</sup> See page 20-22 of Fact Sheet prepared for and accompanying the draft May 11, 2006 permit modification.

<sup>30</sup> Even under the effluent limits and additional oxygen injection imposed by the Department in its September 21, 2005 decisions or by the Board's action in this and related appeals, there is no remaining assimilative capacity in Gulf Island Pond.

The Board notes that, in a letter to the principals of the GIPOP Partnership dated January 23, 2007, the Department stated that, in order to satisfy the requirements of state law,<sup>31</sup> it considers the point of thermal stratification in Gulf Island Pond to be the bottom of the first meter segment in the thermal profiling data where the temperature gradient is one degree Celsius or greater per meter. The Department further stated that it will only be able to determine this point when it has access to thermal profiling data in one meter increments, instead of in 5-foot increments as currently collected in Gulf Island Pond by the GIPOP Partnership.

The Board is persuaded by the evidence in the record that additional water quality monitoring data is needed in order to more accurately determine compliance with Class C dissolved oxygen standards in Gulf Island Pond, as defined by law.

g. Other Issues on Appeal

Appellant Verso argues that the requirements of the Department's September 21, 2005 permit that Verso conduct biological monitoring of eagles and participate in the State's dioxin monitoring are unnecessary. However, the Board finds that Appellant Verso has not presented any convincing evidence that these requirements are unnecessary.

The Board finds that Verso has not raised any other issues on appeal that require a response.

## 11. DISCUSSION OF NRCM APPEAL

NRCM essentially argues (1) that effluent discharges from the Verso Jay mill are the primary cause of the failure of Gulf Island Pond to meet water quality standards, (2) that the mill can and should meet significantly lower effluent limits than are required in the September 21, 2005 permit, and (3) that the Board should impose lower effluent limits before requiring additional oxygen injection. As discussed below, the Board finds NRCM's arguments unconvincing, except to the extent that the Board agrees that final BOD limits and interim total phosphorus and ortho-phosphorus limits should be reduced.

Based on the evidence in the record, the Board finds that, with the exception of TSS, actual historic discharges from the Verso mill are comparable to, or lower than, those from the Rumford mill, and that recent discharges of TSS from the Verso mill are significantly lower than historic levels.<sup>32</sup> However, the Board finds that, due to its closer location to Gulf Island Pond and the reduced opportunity for in-stream assimilation, the discharges from the Verso mill have a greater impact on water quality problems in the pond than do the discharges from

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<sup>31</sup> 38 M.R.S.A. Section 464(13), enacted as Public Law 2003, Chapter 257. This law specifies that compliance with dissolved oxygen standards in riverine impoundments such as Gulf Island Pond is not measured below the point of thermal stratification when such stratification occurs.

<sup>32</sup> See Department memorandum to Board dated August 16, 2007 with accompanying graphs of Verso Paper and Rumford Paper pollutant discharge limits and actual discharges, based on monthly discharge monitoring reports submitted to the Department by Verso.

the Rumford mill, and that this fact provides the only basis for imposing more stringent effluent limits on Verso than on RPC.

With respect to effluent limits generally, the evidence in the record indicates that, in order to address water quality problems in Gulf Island Pond, the Department developed a water quality model to predict water quality in the pond under summer low flow and high water temperature conditions.<sup>33</sup> The Department next made iterative runs of the model to determine the point source loadings and additional oxygen injection that would, given current estimated non-point source loadings, result in attainment of water quality standards in Gulf Island Pond.<sup>34</sup> Finally, in its September, 2005 permits for the Verso and RPC mills and water quality certification for FPLE's Gulf Island Dam, the Department imposed effluent limitations and additional oxygen injections requirements sufficient to meet water quality standards in Gulf Island Pond.

The Board finds that Appellant NRCM has not presented any credible evidence that water quality standards will not be met in Gulf Island Pond under the loading conditions specified in the Department's TMDL or at the effluent limits and oxygen injection levels imposed in the Department's September 21, 2005 decisions.

The Board further finds that Appellant NRCM has not presented convincing evidence to support its allegation that the existing wastewater treatment system at the Verso Jay mill is an "environmental time bomb" that cannot, without significant improvements, consistently meet required effluent limits.<sup>35</sup> Specifically, the Board finds that, due to limited access to the mill, NRCM's expert witness, Neil McCubbin, does not have intimate knowledge of the Verso mill and its wastewater treatment facility. Also, based on the evidence in the record, Mr. McCubbin's recommendations regarding the treatment of wastewater at the mill have been inconsistent over time. [see Mr. McCubbin's hearing testimony at transcript pp. 1776-1874]. The Board further finds the responsive testimony provided by Verso witness Steve Woodard regarding the efficacy of Verso's treatment plant to be credible and convincing. [see pre-filed rebuttal testimony of Verso witness Steve Woodard, and Mr. Woodard's hearing testimony at Transcript pp. 1969-1974].

The Board finds that Appellant NRCM has not presented a sufficient scientific basis for its proposed effluent limits, especially in view of its contention that the Department's model and TMDL—which form the basis for the effluent limits imposed by the Department's September 21, 2005 permit—are seriously flawed and cannot be used to predict dissolved

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<sup>33</sup> In order to ensure that dissolved oxygen standards are met at all times, water quality modeling is done under "worst case" conditions of low river flows, when in-stream dilution is low, and high water temperatures, when DO saturation is low and BOD decay and SOD are high. See June 2002 Androscoggin River Modeling Report and Alternative Analysis, page 52.

<sup>34</sup> See May 2005 Androscoggin River Total Maximum Daily Load (TMDL) Report, "TMDL for Gulf Island Pond in PPD" (summary page 3), and Figures 16-19 (pages 40-43). See also hearing testimony of former DEP modeler Paul Mitnik at Transcript pp. 782-1001.

<sup>35</sup> Pre-filed direct testimony of NRCM witness Neil McCubbin, and Mr. McCubbin's hearing testimony at Transcript pp. 1756-1761.

oxygen levels in Gulf Island Pond under different loading conditions.<sup>36</sup> In the absence of a technically sound alternative water quality model supporting NRCM's proposed effluent limits, the Board finds no basis to order such limits.

Finally, with respect to the relationship between effluent limits and oxygen injection, the Department made the following findings in its September 21, 2005 decision, which the Board hereby adopts:

“Current modeling indicates that no degree of BOD removal by the upstream users will completely satisfy the DO standard throughout [Gulf Island Pond] as a significant deficit in DO is due to existing oxygen demand from sediment trapped by the [Gulf Island Pond] dam. The model predicts that even without BOD discharges from the three mills,<sup>37</sup> the [Gulf Island Pond] impoundment would not fully meet State DO requirements during critical flow and temperature periods.”<sup>38</sup>

The Board finds that Appellant NRCM has not presented persuasive evidence or argument for imposing lower effluent limits on the Jay mill before requiring additional oxygen injection. There is no legal requirement in State law or the federal Clean Water Act that, in this case, water-quality-based effluent limits be further reduced, or that effluent discharges be eliminated, before oxygen injection is increased so that water quality standards are met. In its July 18, 2005 notification of approval of the Department's TMDL, EPA supported the Department's findings, stating that:

- “The loading capacities assume that a certain amount of oxygen will be injected into [Gulf Island Pond]. This is a reasonable basis for establishing loading capacities, in light of modeling that predicts non-attainment of DO criteria at actual loads from the mills in conjunction with the existing aerator at full capacity, and even in the absence of any point source discharges.” (page 10); and
- “For purposes of this TMDL approval, we agree that oxygen injection will be needed under any scenario, and we also believe it was reasonable for DEP to determine that the point source discharges would not be eliminated and that the dam would not be removed. Under those circumstances, DEP struck a reasonable balance between the general use of oxygen injection and [waste load allocations].” (page 16)

However, while the record does not support the specific discharge limits advocated by NRCM, the Board is persuaded by the evidence that stricter final discharge limits on BOD and stricter interim limits on total phosphorus and ortho-phosphorus from the Verso Jay mill are appropriate and achievable, as discussed in Section 10 above.

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<sup>36</sup>Pre-filed direct and rebuttal testimony of NRCM witness Deborah French McCay, and Dr. McCay's hearing testimony at Transcript pp. 139-166.

<sup>37</sup> The three mills being the Verso mill in Jay, the RPC mill in Rumford, and the Fraser mill in Berlin, N.H.  
[footnote added]

<sup>38</sup> See page 20 of Fact Sheet prepared for and accompanying the September 21, 2005 permit.

Finally, the Board finds that NRCM has not raised any other issues on appeal that require a response.

## 12. DISCUSSION OF CLF, et al. APPEAL

Appellant CLF, et al. argues that any compliance schedules for final effluent limitations and for additional oxygen injection are illegal as a matter of state and federal law. Alternatively, CLF, et al. argues that, if legal, any compliance schedules must be as short as possible and must include interim enforceable requirements. CLF, et al. further argues that a compliance schedule may not exceed the term of a permit. As discussed below, the Board rejects CLF, et al.'s arguments that compliance schedules are impermissible in the context of this waste discharge permit, but agrees that compliance schedules should be as short as possible.

Both state law, at 38 M.R.S.A. Section 414-A(2), and the federal Clean Water Act, at Section 301(b), authorize the use of compliance schedules in the issuance of permits. However, state law specifies that compliance schedules can only be used for "a final effluent limitation based on a water quality standard adopted after July 1, 1977," and that such schedules "must be as short as possible, based on consideration of the technological, economic and environmental impact of the steps necessary to attain those standards."<sup>39</sup>

With respect to compliance schedules for final effluent limitations for TSS, the Department made the following findings in its September 21, 2005 decision:

"The permit establishes new and more stringent limits for TSS. These are based on new information regarding the effects of TSS on the biological community and dissolved oxygen levels. TSS can have the effect of smothering small aquatic organisms on the bottom, resulting in the loss of structure and function of the aquatic community, as has been the case in the Livermore impoundment. The ability to definitively evaluate such effects now relies on the biocriteria rule adopted in 2003.<sup>40</sup> To make effluent limits consistent with actual in-stream monitoring, TSS is regulated using a 60-day average for the purpose of protecting aquatic life. Additionally, TSS can settle to the river bottom[,] decay and contribute to [sediment oxygen demand] that in turn reduces dissolved oxygen in the river. This contribution was defined in the TMDL and is used as the basis for new effluent limits regulating TSS as an annual average for the first time."<sup>41</sup>

The Board agrees with the Department's findings and concludes that compliance schedules may be utilized here for final TSS discharge limits.

With respect to compliance schedules for final effluent limits for total phosphorus and ortho-phosphorus, the Department made the following findings in its September 21, 2005 decision:

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<sup>39</sup> 38 M.R.S.A. Section 414-A(2).

<sup>40</sup> *Classification Attainment Evaluation Using Biological Criteria for Rivers and Streams*, 06-096 CMR 579 (effective May 27, 2003). [footnote added]

<sup>41</sup> See page 62 of Fact Sheet prepared for and accompanying the September 21, 2005 permit.

“The permit also sets new limits for phosphorus base[d] on new information. Phosphorus limits are important for two related reasons. First, phosphorus is a critical factor in promoting excess growth of algae, and these growths can cause objectionable blooms that impair uses such as swimming. The designated use of swimming in Class C waters was added after 1977. Historically, the transmission of sunlight through the water column was hindered by highly colored water, thus preventing the growth of algae, notwithstanding available phosphorus concentrations. Legislation requiring color reductions in pulp mill discharges was enacted in 1989 and the resulting reduced color in the river allowed the growth of objectionable levels of algae that periodically impair swimming as a designated use. From information in the TMDL, the Department has determined that algae blooms may occur when the chlorophyll-a concentration exceeds 10 ppb. Second, as algae dies, it can sink to the bottom and decay, causing the depletion of oxygen at a later time as part of the sediment oxygen demand. Through the TMDL, the contribution of algae to SOD is now better understood. As discussed above, additional growth of algae due to reduced color has added to the SOD load. This has contributed to non-attainment of dissolved oxygen levels for protection of salmonid fish first proposed by EPA in 1986. [T]his constitutes a new interpretation of the narrative standard.”<sup>42</sup>

The Board agrees with the Department’s findings and concludes that compliance schedules may be utilized here for final phosphorus discharge limits.

With respect to oxygen injection, it takes time to fund, design, and construct an oxygen injection system. Given this, and given the fact that changes to the water quality model used by the Department may reduce the amount of additional oxygen injection needed to meet water quality standards in Gulf Island Pond, a compliance schedule for additional oxygen injection is both necessary and appropriate. The Board finds that it is not realistic to mandate immediate compliance with an additional oxygen injection requirement when such a requirement cannot possibly be met. The Board further finds that it is not appropriate to require that an expensive oxygen injection system be built now when the need for and size of the system may change significantly.

Finally, in recognition of the uncertainties inherent in any model and especially in complex situations such as exist in Gulf Island Pond, EPA guidance and the EPA approved TMDL clearly embrace the concept of phased implementation,<sup>43</sup> in which reductions in pollutant loadings and other water quality improvement measures are “phased in” over time in a step-wise fashion while on-going monitoring is used to evaluate the effectiveness of the measures taken before further actions are implemented, as envisioned in the Department’s TMDL.<sup>44</sup> Schedules of compliance are inherent in the concept of phased implementation.

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<sup>42</sup> See pages 62-63 of the Fact Sheet prepared for and accompanying the September 21, 2005 permit.

<sup>43</sup> See “Guidance for Water Quality-based Decisions: The TMDL Process,” EPA 440/4-91-000 (April, 1991).

<sup>44</sup> “There is some uncertainty in water quality modeling and the assignment of various parameter rates. In addition, there is uncertainty involved in the determination of the water quality target of chlorophyll-a levels used to describe the threshold level of an algae bloom that are specific to Gulf Island Pond...For this reason, it is recommended that the TMDL be implemented in phases of two or three step reductions with required ambient monitoring for point

The Board finds that Appellant CLF, et al. has not presented persuasive evidence calling into question the Department's determination that the use of compliance schedules in the waste discharge permit for the Jay mill for final effluent limits for TSS, total phosphorus, ortho-phosphorus and additional oxygen injection is appropriate and necessary. The Board agrees with the Department that a new interpretation of a narrative standard, deriving a more stringent water-quality-based numeric standard for a particular facility, essentially results in a newly adopted standard for which the use of a compliance schedule is authorized by law.<sup>45</sup>

However, the Board is sensitive to the fact that it is time to bring Gulf Island Pond into compliance with water quality standards. The question, therefore, is whether the compliance schedules for final effluent limits imposed by the September 21, 2005 permit are "as short as possible."

In its May 11, 2006 draft modification of the permit for the Jay mill, the Department concluded that, taking into consideration historic effluent data and the technological, economic and environmental impact of the steps necessary to attain the more stringent water-quality-based numeric standards for the discharge of phosphorus from the Jay mill imposed by the September 21, 2005 permit, the compliance schedules for final effluent limits for TSS should be shortened, with compliance due by 2010 instead of by 2015. The Department also concluded, for similar reasons, that the compliance schedules for final effluent limits for total phosphorus and ortho-phosphorus should be shortened, with compliance due by 2008 instead of by 2015.<sup>46</sup>

The Board is persuaded by the evidence that shortened compliance schedules for final effluent limits for TSS, total phosphorus and ortho-phosphorus are both achievable and as short as possible. In particular, the Board relies on CLF, et al. Exhibit CLF-DD that charts Verso's actual discharge levels for BOD, TSS and phosphorus for the past 7-12 years in comparison to the discharge limits established in the September 21, 2005 permit and the May 11, 2006 draft modification. This exhibit indicates that Verso has demonstrated its ability, with limited exceptions, to comply with the new limits. Therefore, the Board concurs with the shortened compliance schedules for TSS proposed by the Department. However, the Board is persuaded by the evidence in the record that Verso needs more time than proposed by the Department to meet final effluent limits for phosphorus while simultaneously meeting more stringent limits for BOD and TSS. In particular, the Board found persuasive the testimony of Verso witnesses Michael Rowland and Steve Woodard that long-term consistent compliance with final phosphorus limits would be technically challenging and that time is needed to implement changes to mill production and wastewater treatment processes to ensure future compliance. [see pre-filed direct testimony of Verso witness Michael Rowland and pre-filed rebuttal testimony of Verso witness Steve Woodard; see also Verso witness

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sources in cooperation with MDEP." May 2005 TMDL, pages 6-7. In its July 18, 2005 notification of approval of the Department's TMDL, EPA stated: "EPA recognizes that where immediate compliance is not possible, phased implementation is a reasonable approach." (page 19)

<sup>45</sup> See page 62 of Fact Sheet prepared for and accompanying the September 21, 2005 permit.

<sup>46</sup> See pages 7-15 of Fact Sheet prepared for and accompanying the draft May 11, 2006 permit modification.

Steve Woodard's hearing testimony at Transcript pp. 1969-1974]. The Board finds that a compliance schedule of 2010 for final effluent limits for total phosphorus and ortho-phosphorus is appropriate and achievable. These shortened schedules will bring the Jay mill into compliance with all final effluent limits within the 5-year term of the current permit.

Finally, the Board is persuaded by the evidence in the record that the efficiency of the existing 20-year-old oxygenation system in transferring oxygen into Gulf Island Pond, and thus increasing dissolved oxygen levels in the pond, could be greatly improved by upgrading the system. In particular, RPC witness Mark Mobley testified that dissolved oxygen enhancement systems are routinely used at hydropower facilities to improve water quality, and that the oxygen transfer efficiency of the existing system in Gulf Island Pond could be significantly improved in a cost-effective manner. [see pre-filed direct testimony of RPC witness Mark Mobley, and Mr. Mobley's hearing testimony at Transcript pages 1494-1497, 1658-1663]. This is expected to cost less than any additional oxygen injection system and should be able to be funded, designed and installed in less time than an additional system. Given this, and in keeping with the phased implementation approach recommended in the TMDL, it is appropriate to require upgrades to the existing oxygenation system now while providing a compliance schedule that delays installation of an additional oxygen injection system until further monitoring has been undertaken to determine the benefit to dissolved oxygen levels from these upgrades.

### 13. DISCUSSION OF FPLE APPEAL

Appellant FPLE argues that Verso and the other point sources discharging into Gulf Island Pond are responsible for bearing the burden of any additional oxygen injection.

As more fully discussed in the Board's order of this date on the related appeal of the water quality certification for FPLE's Gulf Island-Deer Rips Hydro Project, Appellant FPLE has not presented persuasive evidence calling into question the Department's determinations that Gulf Island Dam causes or contributes to the violation of dissolved oxygen standards in Gulf Island Pond, and that FPLE should be responsible for injecting oxygen or taking other equivalent measures to mitigate the impact of Gulf Island Dam on dissolved oxygen levels in Gulf Island Pond. Furthermore, Appellant FPLE has not presented persuasive evidence calling into question the Department's methodology for determining FPLE's level of responsibility for mitigating the impact of Gulf Island Dam on dissolved oxygen levels in Gulf Island Pond.

The evidence in the record indicates that, in order to address water quality problems in Gulf Island Pond, the Department developed a model to predict water quality in the pond under different pollutant loading and oxygen injection conditions. The Department then ran the model with upstream point source discharges set at zero. The model predicted that, absent any oxygen injection, and under summer low flow and high water temperature conditions, there would be significant non-attainment of minimum Class C dissolved oxygen standards

in Gulf Island Pond below depths of 20 feet.<sup>47</sup> The Department next made iterative runs of the model while providing increased amounts of oxygen injection into the pond. The model predicted that the injection of 105,000 pounds per day of oxygen at Upper Narrows (the location of the current GIPOP facility, about 5 miles upstream from Gulf Island Dam), or the injection of 65,000 pounds per day of oxygen at Lower Narrows (about 3 miles upstream from the dam), at an existing oxygen efficiency transfer rate of 33%, would be needed to meet dissolved oxygen standards.<sup>48</sup> In its September 21, 2005 water quality certification, the Department imposed a condition requiring that FPLE inject an amount of oxygen at Upper Narrows and Lower Narrows, or take other equivalent measures, sufficient to meet dissolved oxygen standards under critical conditions and in the absence of point source discharges.<sup>49</sup>

At its core, FPLE's argument is that it should not be responsible for anything more than is required of it under the existing GIPOP Partnership Agreement, which amounts to 14% of annual GIPOP operating and maintenance costs. Thus, under that agreement, FPLE would only be responsible to pay for 14,700 pounds per day of 105,000 pounds per day of oxygen injection from the existing GIPOP facility. However, this is clearly an insufficient amount of oxygen to meet dissolved oxygen standards in Gulf Island Pond in the absence of point source discharges. As stated in the Department's Total Maximum Daily Load (TMDL):<sup>50</sup> "The amount of dissolved oxygen non-attainment predicted by the model with point sources at zero discharge can be considered to be the impact related to the dam."<sup>51</sup> FPLE has not presented any persuasive evidence to the contrary. Therefore, the Board is persuaded that FPLE is only being held accountable for its fair share of the non-attainment problem, while the same is true of Verso.

BASED on the above Findings of Fact as well as the Findings of Fact in the Department's Order of September 21, 2005 which the Board adopts as its own, except as otherwise discussed above, the Board concludes that:

1. The appellants are aggrieved and have filed timely appeals.
2. Appellant Verso has not presented persuasive evidence that would support overturning or modifying the Department's September 21, 2005 permit for the Jay pulp and paper mill, insofar as this decision imposes new and reduced effluent limits and additional oxygen injection requirements.

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<sup>47</sup> See May 2005 Androscoggin River Total Maximum Daily Load (TMDL) Report, Figures 22 and 23 (pages 47-48).

<sup>48</sup> Ibid, Figures 24-27, pages 48-52.

<sup>49</sup> In its condition, the Department assumed that FPLE would continue to be responsible for 14% of the oxygen injected at Upper Narrows under the terms of the existing GIPOP Partnership Agreement.

<sup>50</sup> A TMDL establishes the allowable pollutant loadings or other quantifiable parameters for a waterbody and thereby provides the basis for the establishment of effluent discharge limits and other controls necessary for that waterbody to meet water quality standards. See "Guidance for Water Quality-based Decisions: The TMDL Process," EPA 440/4-91-000 (April, 1991).

<sup>51</sup> 2005 TMDL, page 28.

However, the Board concludes that the water quality model used by the Department miscalculates the area of sediment in contact with various segments of Gulf Island Pond and that, as a consequence, the Department's Total Maximum Daily Load (TMDL) Report may overstate the amount of point source phosphorus reductions needed to meet water quality standards in the pond. Additionally, the Board concludes that the Department's model was not re-calibrated following the correction of an error relating to dispersive mixing and that, as a consequence, the Department's TMDL Report may overstate the amount of additional oxygen injection needed to meet water quality standards in Gulf Island Pond.

The Board also concludes that the development and use of a hydrodynamic model to determine mixing and transport within Gulf Island Pond may more accurately predict water quality conditions than does the Department's current model, and may result in changes in the effluent limits and additional oxygen injection needed to meet water quality standards in the pond.

The Board further concludes that lower discharge limits for BOD, TSS, total phosphorus and ortho-phosphorus are appropriate in the event that the wastewater from the Wausau-Mosinee Otis paper mill is no longer treated at the Jay mill's wastewater treatment facility.

Finally, the Board concludes that additional water quality monitoring is needed to more accurately determine compliance with dissolved oxygen standards in Gulf Island Pond.

3. Appellant NRCM has not presented persuasive evidence that would support overturning or modifying the Department's September 21, 2005 permit for the Jay pulp and paper mill, insofar as this decision was based on the Department's existing TMDL and does not impose stricter discharge limits on TSS.

However, the Board concludes that more stringent final discharge limits on BOD are appropriate and achievable and would reduce Verso's requirement for additional oxygen injection. Specifically, the Board concludes that:

- Final summertime monthly average limits for BOD should be reduced from 7,400 to 4,500 pounds per day, effective immediately;
- Final summertime weekly average limits for BOD should be reduced from 11,100 to 6,400 pounds per day, effective immediately;
- Final summertime daily maximum limits for BOD should be reduced from 13,875 to 8,000 pounds per day, effective immediately;
- Final non-summer monthly average limits for BOD should be reduced from 17,700 to 7,400 pounds per day, effective immediately;
- Final non-summer daily maximum limits for BOD should be reduced from 34,050 to 13,875 pounds per day, effective immediately; and

- Verso's requirement for additional oxygen injection should be reduced by 10,000 pounds per day.

The Board also concludes that more stringent interim limits on total phosphorus and ortho-phosphorus are appropriate and achievable. Specifically, the Board concludes that:

- Interim monthly average limits for total phosphorus should be reduced from 193 to 150 pounds per day, effective immediately; and
  - Interim monthly average limits for ortho-phosphorus should be reduced from 44 to 33 pounds per day, effective immediately.
4. Appellant CLF, et al has not submitted persuasive evidence that would support overturning or modifying the Department's September 21, 2005 permit for the Jay pulp and paper mill, insofar as this decision approves compliance schedules for final effluent limitations for various pollutants and for additional oxygen injection.

However, the Board concludes that shorter compliance schedules for final discharge limits on total phosphorus, ortho-phosphorus and total suspended solids are appropriate and achievable. Specifically, the Board concludes that:

- The compliance schedule for final limits for total phosphorus and ortho-phosphorus should be reduced from June 1, 2015 to June 1, 2010;
- The compliance schedule for final summertime limits for TSS should be reduced from June 1, 2015 to June 1, 2010; and
- The compliance schedule for final average annual limits for TSS should be reduced from January 1, 2015 to January 1, 2010.

The Board also concludes that upgrading the existing oxygen injection system to increase dissolved oxygen levels in Gulf Island Pond is economically and technically feasible and is an appropriate measure to improve water quality in the pond in the near-term.

5. Appellant FPLE has not presented persuasive evidence that would support overturning or modifying the Department's September 21, 2005 permit for the Jay pulp and paper mill, insofar as this decision does not hold Verso and other point source discharges responsible for all additional oxygen injection requirements. However, as discussed above, the Board concludes that the water quality model used by the Department was not re-calibrated following the correction of an error relating to dispersive mixing and that, as a consequence, the Department's TMDL Report may overstate the amount of additional oxygen injection needed to meet water quality standards in Gulf Island Pond.

THEREFORE, the Board PARTIALLY GRANTS the appeals of (a) VERSO PAPER (formerly International Paper), (b) FPL ENERGY MAINE HYDRO LLC, (c) CONSERVATION LAW FOUNDATION, MAINE RIVERS, ANDROSCOGGIN RIVER ALLIANCE, and ANDROSCOGGIN LAKE IMPROVEMENT ASSOCIATION, and (d) NATURAL RESOURCES COUNCIL OF MAINE and MODIFIES Department Order #W000623-5N-F-R and #ME0001937 dated September 21, 2005, approving a combined waste discharge license and Maine Pollutant Discharge Elimination System permit for the discharge of treated wastewater from a kraft pulp and paper mill in Jay, Maine, as follows:

1. Monthly average, weekly average and daily maximum mass limitations for biochemical oxygen demand (BOD), with and without the treatment of Wausau-Mosinee's wastewater, as established in Special Condition A, are reduced to the levels shown in Attachment A of this Order.
2. The schedule for compliance with the final 60-day rolling average and annual average mass limitations for total suspended solids (TSS), with and without treatment of Wausau-Mosinee's wastewater, as established in Special Condition A, are shortened to the times shown in Attachment A of this Order.
3. Interim monthly average mass limitations for total phosphorus and ortho-phosphorus, with and without the treatment of Wausau-Mosinee's wastewater, as established in Special Condition A, are reduced to the levels shown in Attachment A of this Order.
4. The schedule for compliance with final mass limitations for total phosphorus and ortho-phosphorus, with and without treatment of Wausau-Mosinee's wastewater, as established in Special Condition A, are shortened to the times shown in Attachment A of this Order.
5. Special Condition K ("GULF ISLAND POND OXYGENATION INJECTION OPERATION") is modified to read:
  - a. The permittee shall, independently or in cooperation with the other members of the Gulf Island Pond Oxygenation Project Partnership, operate an upgraded oxygen injection system at Upper Narrows and an additional oxygen injection system at Lower Narrows in Gulf Island Pond, according to a plan approved by the Department.
  - b. By June 1, 2008, the permittee shall, independently or in cooperation with the other members of the Gulf Island Pond Oxygenation Project Partnership, submit a plan and schedule for upgrading the existing Gulf Island Pond oxygen injection system to increase the oxygen transfer efficiency of the system and thereby increase dissolved oxygen levels in the pond. The upgraded oxygen injection system shall be operational no later than June 1, 2009. The plan and schedule shall be reviewed by and must receive the approval of the Department.
  - c. By June 1, 2009, the permittee shall, independently or in cooperation with the other members of the Gulf Island Pond Oxygenation Project Partnership, submit a plan and

schedule for injecting sufficient oxygen into Gulf Island Pond to mitigate the impact of the permittee's wastewater discharge on dissolved oxygen levels in the pond. The plan shall provide that, beginning no later than June 1, 2010, the permittee shall inject oxygen at the rate of up to 39,900 pounds per day at Upper Narrows in Gulf Island Pond and up to 14,891 pounds per day at Lower Narrows in Gulf Island Pond, at an oxygen transfer efficiency of 33%, or equivalent rates at higher transfer efficiencies and/or locations, or take other equivalent measures as may be approved by the Department. The plan and schedule for injecting oxygen onto Gulf Island Pond shall be reviewed by and must receive the approval of the Department.

After re-calibration of the water quality model for Gulf Island Pond following the correction of an error relating to dispersive mixing, as well as any other future modifications to the model and revisions to the Department's May 2005 Androscoggin River Total Daily Maximum Load (TMDL) Report, and after notice to the permittee and opportunity for hearing, the Department reserves the right to re-open and modify the terms of this permit to change the rates of oxygen injection specified above.

- d. The permittee shall be responsible for taking such actions as are needed to meet Class C dissolved oxygen standards in Gulf Island Pond, insofar as the permittee's wastewater discharge causes or contributes to a violation of these standards. After reviewing the results of monitoring following the implementation of all additional oxygen injection or other equivalent measures and all reductions in point source discharges required pursuant to the Department's May 2005 Androscoggin River Total Daily Maximum Load (TMDL) Report and any future revisions thereto, and after notice to the applicant and opportunity for hearing, the Department reserves the right to reopen and modify the terms of this Order to require reduced effluent limitations and/or reasonable changes in oxygen injection system(s) and/or oxygen injection rates, or changes in other equivalent measures, as may be deemed necessary to ensure that permittee's wastewater discharge, either by itself or in combination with other discharges, does not cause or contribute to the violation of Class C water quality standards in Gulf Island Pond.

6. Special Condition M ("AMBIENT WATER QUALITY MONITORING") is modified to read:

By March 1, 2008, the permittee shall, independently or in cooperation with the other members of the Gulf Island Pond Oxygenation Project Partnership, submit a plan for conducting ambient water quality monitoring to determine compliance with Class C dissolved oxygen standards in Gulf Island Pond under current and future conditions. This monitoring shall provide sufficient data to determine the point of thermal stratification in the pond and shall begin no later than June 1, 2008. This plan shall be reviewed by and must receive the approval of the Department.

7. Paragraphs 8 through 13 of Special Condition N ("SCHEDULE OF COMPLIANCE") are deleted.

8. Special Condition P (“REOPENING OF PERMIT FOR MODIFICATION”) is modified to add the following paragraph:

After revision of the water quality model for Gulf Island Pond to recalculate the area of sediment in contact with the pond, as well as any other future modifications to the model and revisions to the Department’s May 2005 Androscoggin River Total Maximum Daily Load (TMDL) Report, and after notice to the permittee and opportunity for hearing, the Department reserves the right to re-open and modify the terms of this permit to change the final effluent limitations for total phosphorus and/or ortho-phosphorus specified in this permit.

9. Special Condition R is added to read:

#### HYDRO-DYNAMIC MODELING

By March 1, 2008, the permittee may, independently or in cooperation with other parties, provide sufficient funding to the Department for the development and use of a hydro-dynamic model to determine mixing and transport within Gulf Island Pond. This model shall be developed by the Department or by a third party under contract to the Department and must be supported by the Environmental Protection Agency. A final modeling report must be provided to the permittee and other interested parties no later than November 1, 2009. After reviewing the report on the results of any hydro-dynamic model developed for Gulf Island Pond, and after notice to the permittee and opportunity for public hearing, the Department reserves the right to re-open and modify the terms of this permit to require changes in final effluent limitations and/or changes in oxygen injections system(s) and/or oxygen injection rates, or changes in other equivalent measures, as may be deemed necessary to ensure that permittee’s wastewater discharge, either by itself or in combination with other discharges, does not cause or contribute to the violation of Class C water quality standards in Gulf Island Pond.

10. Special Condition S is added to read:

#### CESSATION OF WAUSAU-MOSINEE WASTEWATER TREATMENT

Within 5 days of cessation of receiving wastewater flows from the Wausau-Mosinee (WM) facility, the permittee shall notify the Department in writing and provide the Department with the status of receiving wastewaters from the WM facility in the future. Should the status result in WM’s wastewaters not being conveyed to the permittee’s wastewater treatment facility permanently, then the limitations in Special Condition A(2) of this permit will become effective at the beginning of the next month of the Discharge Monitoring Report (DMR) period.

VERSO PAPER (formerly International Paper) )  
PULP & PAPER MANUFACTURING FACILITY )  
#ME0001937 and #W000623-5N-F-R )

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FINDINGS OF FACT AND ORDER  
ON APPEAL

FINALLY, the findings, conclusions and conditions of Department Order #W000623-5N-F-R and #ME0001937, dated September 21, 2005, are adopted by the Board and incorporated herein, except as otherwise modified above.

DONE AND DATED AT AUGUSTA, MAINE, THIS \_\_\_\_ DAY OF \_\_\_\_\_, 2007.

BOARD OF ENVIRONMENTAL PROTECTION

BY: \_\_\_\_\_  
VIRGINIA PLUMMER, Chair

**SPECIAL CONDITIONS**

**A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS**

- During the period beginning with the effective date of this permit and lasting through permit expiration, the permittee is authorized to discharge treated process wastewaters, treated sanitary wastewaters, treated landfill leachate, general housekeeping wastewaters, storm water, contact and non-contact cooling waters from **Outfall #001** and bleach plant effluents (internal waste streams consisting of three points, the 15, 35 and 45 stages in each bleach plant) from **Outfall #100 and Outfall #200**, to the Androscoggin River. Such discharges shall be limited and monitored by the permittee as specified below. [The *italicized* numeric values in brackets in the table below and the tables that follow are not limitations but are code numbers used by Department personnel to code Discharge Monitoring Reports (DMR's).]

**OUTFALL #001A & #001B<sup>(1)</sup>** – Secondary treated waste waters with Wausau-Mosinee’s wastewater contribution.

Effluent Characteristic	Discharge Limitations					Monitoring Requirements		
	Monthly Average as specified	Weekly Average as specified	Daily Maximum as specified	Monthly Average as specified	Weekly Average as specified	Daily Maximum as specified	Measurement Frequency as specified	Sample Type as specified
Flow [50050]	Report MGD [03]	---	51 MGD[03]	---	---	---	Continuous [99/99]	Recorder [RC]
BOD <sub>5</sub> [00310] (June 1 – September 30) (October 1 – May 31)	4,500 #/day	6,400 #/day	8,000 #/day	---	---	---	1/Day	Composite
	7,400 #/day [26]	11,100 #/day [26]	13,875 #/day [26]	---	---	---	1/Day [01/01]	Composite [26]

**Footnotes:**

- Outfall #001 - Outfall 001A is a 36" diameter pipe which is normally utilized to convey the treated process wastewaters from the wastewater treatment plant from the mill to the Androscoggin River. During periods of high storm water runoff events due to precipitation or snow melt events, most common in the spring and fall, discharges from Outfall 001A are hydraulically limited. As a result, the wastewater treatment facility experiences hydraulic limitations and best practicable treatment of the wastewater is jeopardized. This permit authorizes the facility to discharge from Outfall 001B, a 14" diameter pipe located adjacent to Outfall 001A. The discharges from Outfall 001B will receive the same degree of treatment as discharges from Outfall 001A and all flows discharged through the secondary outfall are measured and included in analysis for all effluent samples and calculations for compliance purpose.

**SPECIAL CONDITIONS**

**A(1) EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (cont'd)**

**OUTFALL #001A & #001B** – Secondary treated wastewaters with Wausau-Mosinee’s wastewater contribution.

Effluent Characteristic	Discharge Limitations					Monitoring Requirements			
	Monthly Average as specified	Weekly Average as specified	Daily Maximum as specified	Monthly Average as specified	Weekly Average as specified	Daily Maximum as specified	Measurement Frequency as specified	Sample Type as specified	
ISS, [00530] (June 1 – Sept 30)	12,000 #/day	---	22,300 #/day	---	---	---	1/Day [01/01]	Composite [24]	
	12,000 #/day <sup>(2)</sup>	---	---	---	---	---	1/Day [01/01]	Calculate [CA]	
	25,000 #/day	---	44,600 #/day [26]	---	---	---	5/Week [05/07]	Composite [24]	
	17,557 #/day <sup>(3a)</sup> [26]	---	---	---	---	---	1/Year [01/YR]	Calculate [CA]	
ISS, [00530] (June 1 – Sept 30) <b>Beginning June 1, 2010</b>	12,000 #/day	---	22,300 #/day	---	---	---	1/Day [01/01]	Composite [24]	
	10,000 #/day <sup>(2)</sup>	---	---	---	---	---	1/Day [01/01]	Calculate [CA]	
	25,000 #/day	---	44,600 #/day [26]	---	---	---	5/Week [05/07]	Composite [24]	
	14,738 #/day <sup>(3b)</sup> [26]	---	---	---	---	---	1/Year [01/YR]	Calculate [CA]	

**SPECIAL CONDITIONS**

**A(1) EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (cont'd)**

**OUTFALL #001A & #001B** – Secondary treated wastewaters with Wausua-Mosinee’s wastewater contribution.

Characteristic	Discharge Limitations						Monitoring Requirements		
	Monthly Average as specified	Weekly Average as specified	Daily Maximum as specified	Monthly Average as specified	Weekly Average as specified	Daily Maximum as specified	Measurement Frequency as specified	Sample Type as specified	
Total Phosphorus [00665] (June 1 – September 30) <b>Beginning June 1, 2008</b>	150 #/day	---	Report #/day	Report mg/L <sup>(4)</sup>	---	Report mg/L <sup>(4)</sup>	3/Week	Composite	
<b>Beginning June 1, 2010</b>	130 #/day [26]	---	Report #/day [26]	Report mg/L <sup>(4)</sup>	---	Report mg/L <sup>(4)</sup> [19]	3/Week [03/07]	Composite [24]	
Ortho-phosphorus [70507] (June 1 – September 30) <b>Beginning June 1, 2008</b>	33 #/day	---	Report #/day	Report mg/L <sup>(4)</sup>	---	Report mg/L <sup>(4)</sup>	3/Week	Composite	
<b>Beginning June 1, 2010</b>	22 #/day [26]	---	Report #/day [26]	Report mg/L <sup>(4)</sup>	---	Report mg/L <sup>(4)</sup> [19]	3/Week [03/07]	Composite [24]	
Oxygen Injection (June 1 – Sept. 30) <b>Upon issuance</b>	---	---	Report #/day <sup>(5)</sup>	---	---	---	1/Day	Record	
<b>Beginning June 1, 2010</b>	---	---	39,900 #/day <sup>(6)</sup>	---	---	---	1/Day	Record	
	---	---	14,891 #/day <sup>(7)</sup> [26]	---	---	---	1/Day [01/01]	Record [RC]	

**Footnotes:**

- (2) 60-day rolling average defined as the average of sixty consecutive daily TSS discharges between June 1<sup>st</sup> and September 30<sup>th</sup> to be reported in the July, August, and September DMRs. The 60-day rolling average limit of 12,000 lbs/day becomes effective on June 1, 2006.
- (3a) Annual average defined as January 1<sup>st</sup> – December 31<sup>st</sup> of each year beginning calendar year 2006.
- (3b) Annual average defined as January 1<sup>st</sup> – December 31<sup>st</sup> of each year beginning calendar year 2010.
- (4) Report two (2) significant figures.
- (5) Injected at Upper Narrows. See Special Condition K, *Gulf Island Pond Oxygen Injection Operation*.
- (6) At Upper Narrows. Assumes oxygen transfer efficiency of 33% at this location. See Special Condition K for allowable alternative measures.
- (7) At Lower Narrows. Assumes oxygen transfer efficiency of 33% at this location. See Special Condition K for allowable alternative measures.

**SPECIAL CONDITIONS**

**A EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS**

- During the period beginning with the effective date of this permit and lasting through permit expiration, the permittee is authorized to discharge treated process waste waters, treated sanitary wastewaters, treated landfill leachate, general housekeeping wastewaters, storm water, contact and non-contact cooling waters from **Outfall #001** to the Androscoggin River. The limitations in the table below and tables that follow become effective upon permanent cessation of process wastewater generated by the (N/F) Wausau – Mosinee facility being conveyed to and treated by the permittee’s waste water treatment facility [see Special Condition S of this permit]. Such discharges shall be limited and monitored by the permittee as specified below.

**OUTFALL #001A & #001B<sup>(1)</sup>** – Secondary treated waste waters **without** Wausau-Mosinee’s wastewater contribution.

Effluent Characteristic	Discharge Limitations				Monitoring Requirements			
	Monthly Average as specified	Weekly Average as specified	Daily Maximum as specified	Monthly Average as specified	Weekly Average as specified	Daily Maximum as specified	Measurement Frequency as specified	Sample Type as specified
Flow [50050]	Report MGD [03]	---	51 MGD[03]	---	---	---	Continuous [99/99]	Recorder [RC]
BOD <sub>5</sub> [00310] (June 1 – September 30) (October 1 – May 31)	4,150 #/day	5,900 #/day	7,376 #/day	---	---	---	1/Day	Composite
	6,823 #/day [26]	10,234 #/day [26]	12,793 #/day [26]	---	---	---	1/Day [01/01]	Composite [24]

**Footnotes:**

- Outfall #001 - Outfall 001A is a 36" diameter pipe which is normally utilized to convey the treated process wastewaters from the wastewater treatment plant from the mill to the Androscoggin River. During periods of high storm water runoff events due to precipitation or snow melt events, most common in the spring and fall, discharges from Outfall 001A are hydraulically limited. As a result, the wastewater treatment facility experiences hydraulic limitations and best practicable treatment of the wastewater is jeopardized. This permit authorizes the facility to discharge from Outfall 001B, a 14" diameter pipe located adjacent to Outfall 001A. The discharges from Outfall 001B will receive the same degree of treatment as discharges from Outfall 001A and all flows discharged through the secondary outfall are measured and included in analysis for all effluent samples and calculations for compliance purpose.

SPECIAL CONDITIONS

A(2) EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (cont'd)

**OUTFALL #001A & #001B** – Secondary treated waste waters without Wausau-Mosinee’s wastewater contribution

Effluent Characteristic	Discharge Limitations						Monitoring Requirements		
	Monthly Average as specified	Weekly Average as specified	Daily Maximum as specified	Monthly Average as specified	Weekly Average as specified	Daily Maximum as specified	Measurement Frequency as specified	Sample Type as specified	
<i>Upon cessation</i> ISS [00530] (June 1 – Sept 30)	11,580 #/day	---	21,520 #/day	---	---	---	1/Day [01/01]	Composite [24]	
	11,580 #/day <sup>(2)</sup>	---	---	---	---	---	1/Day [01/01]	Calculate [CA]	
	24,125 #/day	---	43,039 #/day [26]	---	---	---	5Week [05/07]	Composite [24]	
	16,942 #/day <sup>(3a)</sup> [26]	---	---	---	---	---	1/Year [01/YR]	Calculate [CA]	
<i>Beginning June 1, 2010</i> ISS [00530] (June 1 – Sept 30)	11,580 #/day	---	21,520 #/day	---	---	---	1/Day [01/01]	Composite [24]	
	9,650 #/day <sup>(2)</sup>	---	---	---	---	---	1/Day [01/01]	Calculate [CA]	
	24,125 #/day	---	43,039 #/day [26]	---	---	---	5Week [05/07]	Composite [24]	
	14,222 #/day <sup>(3b)</sup> [26]	---	---	---	---	---	1/Year [01/YR]	Calculate [CA]	

**SPECIAL CONDITIONS**

**A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (cont'd)**

**OUTFALL #001A & #001B** – Secondary treated waste waters without Wausau-Mosinee’s wastewater contribution

Effluent Characteristic	Discharge Limitations					Minimum Monitoring Requirements		
	Monthly Average as specified	Weekly Average as specified	Daily Maximum as specified	Monthly Average as specified	Weekly Average as specified	Daily Maximum as specified	Measurement Frequency as specified	Sample Type as specified
<u>Total Phosphorus</u> [00665] (June 1 – September 30)								
<b>Beginning June 1, 2008</b>	148 #/day	---	Report #/day	Report mg/L <sup>(4)</sup>	---	Report mg/L <sup>(4)</sup>	3/Week	Composite
<b>Beginning June 1, 2010</b>	128 #/day [26]	---	Report #/day [26]	Report mg/L <sup>(4)</sup>	---	Report mg/L <sup>(4)</sup> [19]	3/Week [03/07]	Composite [24]
<u>Ortho-phosphorus</u> [70507] (June 1 – September 30)								
<b>Beginning June 1, 2008</b>	33 #/day	---	Report #/day	Report mg/L <sup>(4)</sup>	---	Report mg/L <sup>(4)</sup>	3/Week	Composite
<b>Beginning June 1, 2010</b>	22 #/day [26]	---	Report #/day [26]	Report mg/L <sup>(4)</sup>	---	Report mg/L <sup>(4)</sup> [19]	3/Week [03/07]	Composite [24]
<u>Oxygen Injection</u> (June 1 – Sept. 30) <b>Upon cessation</b>								
<b>Beginning June 1, 2010</b>	---	---	Report #/day <sup>(5)</sup>	---	---	---	1/Day	Record
	---	---	39,900 #/day <sup>(6)</sup>	---	---	---	1/Day	Record
	---	---	14,891 #/day <sup>(7)</sup> [26]	---	---	---	1/Day [01/01]	Record [RC]

**Footnotes:**

- (2) 60-day rolling average defined as the average of sixty consecutive daily TSS discharges between June 1<sup>st</sup> and September 30<sup>th</sup> to be reported in the July, August, and September DMRs. The 60-day rolling average limit of 11,580 lbs/day becomes effective on June 1, 2006.
- (3a) Annual average defined as January 1<sup>st</sup> – December 31<sup>st</sup> of each year beginning calendar year 2006.
- (3b) Annual average defined as January 1<sup>st</sup> – December 31<sup>st</sup> of each year beginning calendar year 2010.
- (4) Report two (2) significant figures.
- (5) Injected at Upper Narrows. See Special Condition K, *Gulf Island Pond Oxygen Injection Operation*.
- (6) At Upper Narrows. Assumes oxygen transfer efficiency of 33% at this location. See Special Condition K for allowable alternative measures.
- (7) At Lower Narrows. Assumes oxygen transfer efficiency of 33% at this location. See Special Condition K for allowable alternative measures.