



Thunder Bay Operations

EFFLUENT SUMMARY REPORT 2025



**For More Information:
Thunder Bay Pulp and Paper Inc.
ENVIRONMENTAL AFFAIRS DEPARTMENT
2001 NEEBING AVE.
THUNDER BAY, ONTARIO
P7E 6S3
(807) 475-2400**

EFFLUENT TREATMENT SUMMARY

The Thunder Bay Operations is an integrated pulp and paper facility, consisting of one Kraft Mill, one newsprint machine and a thermo-mechanical pulp plant producing on average about 1500 tonnes of finished product a day. The mill is located on 300 acres of land along the Kaministiquia River in the City of Thunder Bay.

The facility currently treats process water (or effluent) by means of primary and secondary treatment. The Kraft Mill effluent and Newsprint Mill effluent are treated by two separate systems.

Kraft effluent is pumped to the oxygen activated sludge secondary treatment system. This system consists of a two-train oxygen reactor where effluent is mixed with pure oxygen and micro-organisms, which break down the components of the process water. From the reactor, the effluent is pumped into two 225-foot diameter secondary clarifiers, where the biological solids are allowed to settle. The clarified effluent is drawn off the top and discharged into the Kaministiquia River through a monitored outfall station.

The News effluent undergoes primary treatment via two primary clarifiers that are 150 feet in diameter. As of November 1995, the News effluent undergoes secondary treatment. From the primary clarifiers, the effluent is pumped to one of the trains of the oxygen reactor, where it undergoes secondary treatment similar to the Kraft effluent. From the reactor, the effluent is pumped into a 265-foot diameter secondary clarifier, where it is then mixed with the Kraft effluent and discharged into the Kaministiquia River.

EFFLUENT SUMMARY – 2025

Throughout 2025, there were no excursions or exceedances at the News Clean Water Outfall (NCWO). However, TBPP did experience one daphnia toxicity test failure at the Kraft Clean Water Outfall (KCWO) on November 17th. Furthermore, a TSS discharge exceedance was recorded at the Combined Mill Outfall (CMO) daily composite sample on February 6th. In addition, during one effluent treatment system upset event, three BOD₅ exceedances were recorded on August 20th, 21st, and 22nd as well as one daphnia toxicity test failure on August 25th and trout toxicity test failures on August 25th, 26th, and 27th at the CMO.

FEBRUARY 6, 2025 – COMBINED MILL OUTFALL ELEVATED TSS

On February 7, 2025 at approximately 4:00 PM, TBPP received the ALS (third party CALA certified laboratory) results for the February 6 CMO composite and noted that the TSS results were much higher than normal, at a value of 364 mg/L. As such, TBPP contacted the ALS lab to inquire if a data entry error was made and for a retest to be conducted. ALS confirmed no entry errors were committed and a duplicate test was run already, with the duplicate TSS result at 357.6 mg/L. Following this result, the Spills Action Centre was notified as per section 33 (3) of O. Reg 760/93. TBPP immediately began an investigation into the cause of the high TSS numbers at the CMO for February 6, 2025.

Table 1 – CMO Effluent Results from January 30 – February 7, 2025

	Jan 30, 2025	Jan 31, 2025	Feb 1, 2025	Feb 2, 2025	Feb 3, 2025	Feb 4, 2025	Feb 5, 2025	Feb 6, 2025	Feb 7, 2025
BOD ₅ (t/d)	0.88	0.88	0.91	0.91	1.2	0.77	0.84	2.21	0.87
COD (mg/L) Normal range: 300 - 700	442	424	416	544	596	419	473	496	437
pH Average	6.55	6.58	6.53	6.56	6.58	6.62	6.58	6.77	6.75
Total Suspended Solids (t/d) – Normal range: 1.5 – 6 t/d	1.78	1.60	2.24	1.75	2.96	1.26	2.75	29.101	1.73
TSS (mg/l) – ALS Labs	20.5	17.2	24.7	19.1	32.1	15	27.8	364	17.9
Conductivity Avg. (um/sc) Normal range 1800 - 3200	1725	1641	1629	1799	1903	1914	1553	1444	1497
Daily Flow at CMO (m3)	87,188	92,999	90,633	91,647	92,403	84,004	98,857	79,948	96,504

As outlined in Table 1, the treatment plant was operating normally on the previous 7 days leading up to the day of the testing on February 6, 2025 and continues to operate within expected parameters.

AUGUST 20, 2025 – EFFLUENT TREATMENT PLANT UPSET

Thunder Bay Pulp and Paper (TBPP) can advise that it experienced an upset condition to its effluent treatment plant beginning on approximately August 20, 2025. Such upset condition (and the resulting change in the plant's effluent) is attributed with causing reported aquatic impacts. TBPP has actively worked to prevent impacts arising from its altered effluent by reducing the function of the plant to the extent possible and restoring the overall performance of the plant through a multi-pronged approach. Significant correspondence between TBPP and MECP has occurred surrounding the details of this event.

NOVEMBER 17, 2025 – KRAFT CLEAN WATER OUTFALL SUSPECTED DAPHNIA TOXICITY

Thunder Bay Pulp and Paper (TBPP) made an initial report to Spills Action Centre (SAC) on November 19, 2025 (SAC Ref # 1-PT0HVZ) of a suspected daphnia toxicity failure in the Kraft Clean Water Outfall (KCWO) sample collected on November 17, 2025.

The KCWO is TBPP's non-contact cooling water outfall, which is fully monitored prior to discharge back into the Kamistiquia River.

On the afternoon of November 19, TBPP was contacted by the CALA certified lab that conducts TBPP's regulatory toxicity tests that the November 17th KCWO daphnia test for the had failed. Upon receiving the notification, TBPP arranged for the additional November 17th KCWO effluent sample to be re-analyzed. The sample passed upon retesting. In accordance with ECA# A-500-7241223829, an additional set of samples were immediately collected on November 19 and tested for daphnia and rainbow trout toxicity, which both passed.

Following notification of the event, TBPP conducted a thorough incident investigation of all process parameters and inputs associated with the KCWO. To date, TBPP has been unable to identify the cause for the daphnia mortality and is working closely with the third party lab to review all results and organisms associated with the test

EFFLUENT SUMMARY – LOW FLOW & TEMPERATURE ON KAM RIVER

In 2025, the Mill did not experience any low flow, high river temperature conditions which would have resulted in a lower BOD₅ limit. There were no days of low flow recorded below 17 CMS at the Kakabeka Falls Generating Station between May 1 and October 15. During this time the lowest flow recorded was 18.1 CMS on October 12th, 2025. The highest hourly river temperature that was recorded from May 1st to October 15th occurred on August 12th, 2025 and was recorded as 24.594 °C. *Appendix A* contains a daily summary of the flows from Kakabeka Falls.