



AMENDED CERTIFICATE OF APPROVAL
INDUSTRIAL SEWAGE WORKS
 NUMBER 7979-8ASNAG
 Issue Date: November 10, 2010

Xstrata Canada Corporation
 Post Office Box, No. 190
 Ignace, Ontario
 P0T 1T0

Site Location: Mattabi Mine
 Parts 1, 2, 4 through 6, 10, and 12 through 15 on Reference Plan 23R-3172, Part 3 on Reference Plan 23R-9854, Parts 3, 7 through 9, and 11 on Reference Plan 55R-1473, and Part 1 on Reference Plan 55R-10765
 Grand Trunk Pacific Block 7, District of Kenora

You have applied in accordance with Section 53 of the Ontario Water Resources Act for approval of:

sewage works for the collection, transmission, treatment and disposal of acid mine/rock drainage, consisting of the following:

- a pumping facility and reservoir on lower Mine Creek between the Canadian National Railway spur line and the mine access road, the pumping facility being designed to collect and transfer existing Mine Creek effluent to the Mattabi Pit for temporary storage prior to treatment in the WTP, with the pumping facility and reservoir consisting of the following:

- ▶ two (2) excavated ponds, (Ponds #1 and #2) having an approximate combined volume of 10,000 cubic metres, equipped with a spillway;
- ▶ two (2) vertical pumps in the shaft or on a barge, with the pump operation being controlled by high/low level control switches;
- ▶ establishment of a pumping station and pipeline from "F" Group Pit to the Mattabi Pit to enable seasonal transfer of wastewater from the "F" Group Pit to the Mattabi Pit, with the pumping station and pipeline to consist of the following:
 - ▶ stainless steel submersible pump, having a design flow rate of 62.5 cubic metres per hour at a head of 59 metres;
 - ▶ piping consisting of 4,400 meters of 400 mm diameter high density polyethylene pipe and 800 meters of 150 mm diameter rigid pipe;
 - ▶ air release valves at high points, drainage valves at low points and appurtenances.

- a high density sludge type lime treatment plant, for the treatment of acid rock drainage, collected and transmitted to the Mattabi Pit, from where the influent is pumped Pit through the Mattabi Shaft, at a maximum rate of 15 cubic meters per minute, to the treatment plant consisting of:

- ▶ two (2) 40 cubic metre lime slurry storage tanks, each equipped with an agitator and a slurry feed pump;
- ▶ one (1) 40 (approximate) cubic metre return sludge/lime mix tank with agitator;
- ▶ one (1) 675 (approximate) cubic metre lime reactor tank #2 with agitator;
- ▶ one 23 cubic metre flocculator tank with associated flocculant mixing system within-line static mixer;

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- ▶ one (1) clarifier / thickener of approximately 43 metres diameter and 4 metres liquid depth, including overflow weir, treated water effluent pumps and sludge underflow recycle pumps and sludge transfer pumps as listed below;
 - * two (2) treated water pumps to discharge clarifier overflow to the polishing pond;
 - * two (2) sludge recycle pumps to return clarifier underflow slurry to the sludge/lime mix tank;
 - * two (2) sludge tank feed pumps to pump clarifier underflow slurry to the sludge storage tank;

- ▶ an electronic Programmable Logic Control (PLC) system, enabling off-site monitoring with alarms enunciated over the telephone lines, to the Town of Ignace where respondents can monitor and correct problems remotely, which includes the capability for plant shut down;

- ▶ an automatic actuator valve on the treated water pipeline at the pit valve pumphouse to automatically divert low quality water back to the Mattabi Pit based on water quality parameters set out on the PLC;

- ▶ a lime mixing and feed system consisting of a hopper, screw feeder and paste slaker, the slurry from the slaker to be fed via an HDPE pipe to a lime slurry pump box, and the milk of lime is transferred by pumps via an HDPE pipe to the slurry storage tanks;

- ▶ relocation of the MCC room to the building extension;

- ▶ polymer preparation consisting of a hopper, screw feeder, blower, tanks, centrifugal pumps, dosing pumps and in-line static mixer;

- ▶ one (1) fresh water tank having a volumetric capacity of 64.0 cubic metres;

- ▶ one (1) pit dewatering pumping station to accommodate existing pumps;

- ▶ one (1) sludge storage tank with a volumetric capacity of 47.0 cubic metres for transfer of sludge from the clarifier / thickener;

- ▶ treated water to flow to a treated water pump box of approximately 90 cubic metres, pumps, and a 3,100 metres 400 mm diameter high density polyethylene pipeline to the existing polishing pond, with final discharge to Bell Creek;

- ▶ one final discharge flow measurement device, installed in the final effluent discharge spillway, to consist of an open channel primary flow device, and a secondary level to flow transmitter/converter for an overall flow accuracy better than plus/minus fifteen (15) percent of actual flow;

- ▶ one continuous pH measurement device to be installed at the final discharge point;

- ▶ one (1) sludge winter storage pond (Sunset Pond) with a total effective volume of 17,200 cubic metres, including rockfilled dyke around discharge pipes and tailings pile till berm;

- ▶ one (1) sludge storage pond (Cell #1 - Tertiary Pond) located in the northeast corner of the tailings area with a total effective volume of 41,500 cubic metres, including rockfilled dyke and discharge pipe;

- ▶ one (1) sludge storage cell (Cell #2) to be located west of Cell #1, in the south portion of the tailings area, with a total effective volume of approximately 8,500 cubic metres, including rockfilled dyke and discharge pipe;

- ▶ additional sludge storage cells, as required, to be located adjacent to and west of existing filled cells, in the north portion of the tailings area, having similar dyke dimensions as Cells #1 and #2, with the south dyke toe not to extend below the elevation of 441.0, including rockfilled dyke and discharge pipe;

- one (1) Lower Mine Creek Pond located south of the railway embankment, with a total effective storage volume of approximately 130,000 cubic metres, with an emergency spillway complete with cutoff between Lower Mine Creek Pond and Ponds #1 and #2, designed to contain the 1:100 year spring run-off event;

- two (2) stainless steel pumps each rated at 2500 USGPM to transfer collected water from Lower Mine Creek Pond to the

open pit;

- one (1) stainless steel pump, rated at 1,000 USGPM, to transfer collected water from Ponds #1 and #2 to Lower Mine Creek Pond;

- a diversion ditch along the south and west sides of the Lower Creek Pond basin to intercept and divert unaffected run-off directly to Sturgeon Lake;

- a 120 metres long seepage collection trench, located downstream of the portal dyke to collect seepage from the toe of the dyke, with 200 millimetre diameter perforated collection piping draining to a pumping chamber, equipped with a pump rated at 19.6 litres per second, discharging to Decline #1, including float switches, high level alarm and mag tube flow meter;

So all other controls, electrical equipment, instruments, piping, pumps, valves, and appurtenances essential for the proper operation of the aforementioned sewage works;

all in accordance with the following supporting documents:

1. Application dated March 1, 1971 plans, correspondences, job description and supporting information;
2. Application dated May 30, 1989 and supporting information;
3. Applications, dated May 23, 1990, and supporting information;
4. Letter of September 29, 1992 to the Approvals Branch and the Kenora District Office of the Ontario Ministry of the Environment, signed by Mr. Al Scott, Project Manager, Mattabi Mines Limited;
5. Application for Approval of Industrial Sewage works, dated September 29, 1992, signed by Mr. Al Scott, Project Manager, Mattabi Mines Limited;
6. Mattabi Mines Limited Certificate of Incumbency, dated July 15, 1991, signed by William M. O'Henly, Secretary, Mattabi Mines Limited;
7. Report entitled, "Preliminary Characterization Study for Acid Mine Drainage Treatment from Samples Submitted by Mattabi Mines Limited. Progress Report No. 1", by Lakefield Research A Division of Falconbridge Limited, dated August 8, 1991;
8. Report entitled, "Feasibility Report for the Water Treatment Project - Mattabi Mines Limited", by Cominco Engineering Services Limited, dated September 11, 1992;
9. Letter from Approvals Branch to Mattabi Mines Limited, dated October 14, 1992;
10. Letter from Mattabi Mines Limited to Approvals Branch dated October 16, 1992;
11. Application for the Approval of Industrial Sewage Works submitted by Mr. Allan Scott of Mattabi Mines Limited dated April 28, 1993;
12. Letter and attached drawings dated April 21, 1993 from T.D. Lee, P. Eng. of Cominco Engineering Services Ltd. to Mr. J. Barr of the Ministry of Environment and Energy;
13. Information Memo and attachments dated April 21, 1993 from Centre de Technologie Noranda regarding Lime Neutralization of Mattabi Mine Water;
14. Letter and attachments dated March 29, 1993 from Al Scott of Mattabi Mines Limited to Mr. John Barr of the Ministry of Environment and Energy;
15. Application for Approval of Industrial of Sewage Works, received by fax on September 14, 1994;

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16. Two page letter from Mattabi Mines Ltd. to MOEE Approvals Branch dated July 27, 1994, along with attached Slaker Installation Flowsheet;
17. Letter dated February 26, 1977 from Mr. Al Scott, Project Manager of Mattabi Mines Ltd., Ignace, Ontario to MOEE Approvals Branch;
18. Application for Approval of Industrial Sewage Works dated April 3, 1997, from Mr. Al Scott of Mattabi Mines Ltd. along with supporting documents;
19. Application for Approval of Industrial Sewage Works dated November 20, 2002 and signed by Al Scott, Regional Reclamation Manager, Noranda Inc., and all supporting information;
20. Application for Approval of Industrial Sewage Works dated September 16, 2003 and signed by Mr. Ron Kennedy, Site Manager, Mattabi Mine Ltd., and all supporting information;
21. Application for Approval of Industrial Sewage Works submitted by Ron Kennedy of Xstrata Zinc - Mattabi Ltd. dated December 14, 2006;
22. Mattabi Mines - Water Treatment Plant Discharge Relocation & Portal Dyke Seepage Pumping Station - Design brief & Detailed Description of Works prepared by Cook Engineering, dated November 24, 2006. and
23. Application for Approval of Industrial Sewage Works submitted by Aaron MacDonell of Xstrata Canada dated March 12, 2010.

For the purpose of this Certificate of Approval and the terms and conditions specified below, the following definitions apply:

"Certificate" means this entire certificate of approval document, issued in accordance with Section 53 of the *Ontario Water Resources Act*, and includes any schedules;

"Director" means any Ministry employee appointed by the Minister pursuant to section 5 of the *Ontario Water Resources Act*;

"District Manager" means the District Manager of the Thunder Bay/Kenora District Office of the Ministry;

"Kenora Area Office" means the Office of the Ministry in Kenora;

"Ministry" means the Ontario Ministry of the Environment;

"Regional Director" means the Regional Director of the Northern Region of the Ministry;

"Owner" means Xstrata Canada Corporation and includes its successors and assignees; and

"works" means the sewage works described in the Owner's application, this certificate and in the supporting documentation referred to herein, to the extent approved by this certificate;

"Final Effluent from the sewage works" means the effluent from the tailings management area (Polishing Pond) spillway discharging to Bell Creek;

"mg/L" means milligrams per litre;

"maximum concentration" means the maximum concentration of a contaminant in a discharge sampled or measured, or both;

"composite sample" means a volume of effluent made up of three or more sub-samples that have been collected at equal intervals over an eight hour period, combined automatically or manually or obtained from a slip-stream into an on-line analyzer;

the following are abbreviations for the frequencies indicated:

- “C” means continuously
- “D” means once per day
- “W” means once per week
- “M” means once per month
- “Q” means once per quarter
- "A" means once per year.

You are hereby notified that this approval is issued to you subject to the terms and conditions outlined below:

TERMS AND CONDITIONS

1. GENERAL CONDITION

(1) Except as otherwise provided by these Conditions, the Owner shall design, build, install, operate and maintain the works in accordance with the description given in this Certificate, the application for approval of the works and the submitted supporting documents and plans and specifications as listed in this Certificate.

(2) Where there is a conflict between a provision of any submitted document referred to in this Certificate and the Conditions of this Certificate, the Conditions in this Certificate shall take precedence, and where there is a conflict between the listed submitted documents, the document bearing the most recent date shall prevail.

2. EFFLUENT OBJECTIVES

(1) The Owner shall use best efforts to design, construct and operate the works with the objective that the concentrations of the materials named below as effluent parameters are not exceeded in the effluent from the clarifier.

Table 1 - Effluent Objectives	
Effluent Parameter	Concentration Objective (milligrams per litre unless otherwise indicated)
Copper	0.013
Lead	0.003
Nickel	0.005
Zinc	0.117
Arsenic	0.005
Iron	0.5

(2) As a further effluent objective, the Owner shall use best efforts to maintain the pH of the effluent from the works within the range of 6.5 to 9.0, inclusive, at all times.

(3) The Owner shall include in all reports submitted in accordance with Condition 9 a summary of the efforts made and results achieved under this Condition.

3. EFFLUENT LIMITS

(1) Notwithstanding Condition 2, the Owner shall design, construct and operate the sewage works such that the concentrations of the materials named below as effluent parameters are not exceeded in the effluent from the clarifier, calculated in accordance with subsection (3).

Table 2 - Effluent Limits		
Effluent Parameters	Daily Concentration Limit (mg/L)	Monthly Average Concentration Limit (mg/L)
Total Suspended Solids	30	15
Copper	0.6	0.3
Lead	0.4	0.2
Nickel	1.0	0.5
Zinc	1.0	0.5
Arsenic	1.0	0.5

(2) The pH of the final effluent from the sewage works shall be maintained between 6.0 and 9.5 at all times.

(3) For the purposes of determining compliance with and enforcing subsection (1):

(a) Exceedance of a maximum monthly average concentration is deemed to have occurred when the arithmetic mean of all the samples taken during any calendar month, analyzed for a parameter named in subsection (1) is greater than the corresponding maximum concentration set out in subsection (1);

(b) Exceedance of a maximum daily concentration is deemed to have occurred when any daily sample taken during any calendar month, analyzed for a parameter named in subsection (1) is greater than the corresponding maximum concentration set out in subsection (1), and the sample represents a day when discharge of effluent to Bell Creek occurred;

(c) Any exceedance of the effluent limits shall be reported to the Kenora Area Office, verbally as soon as reasonably possible, and in writing within seven (7) days of the exceedance. Such occurrences shall be recorded in the operations logbook on the date of occurrence.

(4) Further to the requirements outlined in subsection (1) and (2), the Owner shall design, construct and operate the sewage works such that the effluent from the clarifier is not acutely lethal to Rainbow Trout or *Daphnia magna*. The effluent is considered to be acutely lethal if there is more than 50% mortality of any of the test organisms in the undiluted effluent sample.

(5) Any discharges to the natural environment from the Tailings Impoundment System, the Middle Mine Creek System, the Mine Creek System, the F-Group system, the “D” Ditch and Gossan Pile “A” System or the Mattabi Pit shall be considered a spill within the meaning of Part X of the *Environmental Protection Act*.

4. EFFLUENT MONITORING

The Owner shall carry out and maintain the following monitoring program:

(1) The sampling locations as set out in subsection (2) may not be changed or abandoned and new locations may added unless with the written concurrence of the District Manager.

(2) The effluent streams named below shall be sampled at the sampling points named below, in accordance with the measurement frequency and sample type specified for each parameter named below:

Table 3 - Effluent Monitoring		
Sampling Location: Discharge Outfall from Polishing Pond to Bell Creek		
Effluent Parameters	Measurement Frequency	Sample Type
pH	W	Continuous
Flow Rate	C	Continuous
Total Suspended Solids	W	Composite
Copper, Zinc	W	Composite
Total Dissolved Solids	M ^(a)	Composite
Hardness (as CaCO ₃)	M ^(a)	Composite
Conductivity	M ^(a)	Composite
Alkalinity (as CaCO ₃)	M ^(a)	Composite
Chloride	M ^(a)	Composite
Sulphate	M ^(a)	Composite
Calcium, Potassium, Magnesium, Sodium	M ^(a)	Composite
Total and Dissolved Metals	M ^(a)	Composite
Acute Lethality (LC50 - Rainbow Trout)	Q ^{(b)(c)}	Grab
Acute Lethality (LC50 - Daphnia magna)	Q ^{(b)(c)}	Grab

(a) Sampling to be conducted during each month that the treatment plant is operating for 10 days, with a minimum of 4 samples per year.

(b) In the event that an acute lethality test results in mortality of more than 50 percent of the test organisms (i.e. failure), the frequency of sampling shall be increased to weekly, until tests indicate that the effluent is no longer acutely lethal (i.e. mortality does not exceed 50 percent of the test population).

(c) Samples shall be collected during each annual quarter in which the treatment plan is operating for 15 days. A minimum of 2 samples shall be collected each year.

Table 4 - Influent Monitoring	
Sampling Location: Wastewater Treatment Plant Influent	
Frequency	Annually
Sample Type	Grab
Parameters	pH, Total Suspended Solids, Total Dissolved Solids, Hardness (as CaCO ₃), Conductivity, Alkalinity (as CaCO ₃), Chloride, Sulphate, Calcium, Potassium, Magnesium, Sodium, Total and Dissolved Metals

(3) The time interval between consecutive weekly, monthly and quarterly samples shall be, at least 4, 15, and 45 days respectively.

(4) The methods and protocols for sampling, analysis, toxicity testing, and recording shall conform, in order or precedence, to the methods and protocols specified in the following:

- (a) the Ministry's publication "Protocol for the Sampling and Analysis of Industrial/Municipal Wastewater" (January 1999), as amended from time to time by more recently published editions;
- (b) the publication "Standard Methods for the Examination of Water and Wastewater" (21st edition) as

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amended from time to time by more recently published editions; and,

(c) the Environment Canada publications “Reference Method for Determining Acute Lethality of Effluents to Rainbow Trout”(July 1990) and “Reference Method for Determining Acute Lethality of Effluents to Daphnia magna” (July 1990);

(d) in respect of any parameters not mentioned in (a) - (c), the written approval of the District Manager, which approval shall be obtained prior to sampling.

(5) The requirements outlined in this condition are minimum requirements which may be modified by the District Manager in writing from time to time.

(6) Runoff intercepted by the diversion ditch at the Lower Mine Creek Pond shall not be diverted to Sturgeon Lake unless:

(a) it can be demonstrated through sampling that water quality meets Provincial Water Quality Objectives;

(b) a detailed report, containing appropriate supporting monitoring information is submitted to the District Manager prior to any discharge from the ditch to Sturgeon Lake; and

(c) the District Manager has provided a written concurrence for the discharge to Sturgeon Lake.

(7) The Owner shall install, maintain and operate instantaneous flow measuring devices, to measure flow during any discharge, with totalizers to obtain cumulative flows over a stipulated time period,

(a) Flow monitoring locations as set out in subsection (2) shall be established to the satisfaction of the District Manager prior to the commencement of operations of the sewage works. Any of these flow monitoring locations may be changed or abandoned and new locations may be added following commencement of operation if, in the opinion of the District Manager, it is necessary to do so to ensure representative flows are being measured.

(b) Prior to commencement of operations of the Wastewater Treatment Plant, the Owner shall install, maintain and operate flow measuring devices, with totalizers to obtain cumulative flows, at the final effluent discharge point and the Mine Creek spillway.

5. SURFACE WATER MONITORING

The Owner shall carry out and maintain the following surface water monitoring program:

(1) The sampling locations as set out in subsection (2) may not be changed or abandoned and new locations may added unless with the written concurrence of the District Manager.

(2) The surface waters named below shall be sampled at the sampling points named below, in accordance with the measurement frequency and sample type specified for each parameter named below:

Table 5 - Surface Water Monitoring Consolidated Surface Water Quality Monitoring Program		
Station	Monitoring Frequency ^(a)	Parameters (From Table 6 Below)
MATTABI SITE		
Darkwater Lake (at discharge)	Annually	Column I, Column II
Tailings Pond Decant	Semi-annually	Column I
Lower Mine Creek Pond	Monthly	Column I
Mine Creek Diversion Ditch	Monthly	Column I
Lyon Lake Access Road • at Culverts 1, 4	Annually	Column I
Lyon Lake Access Road • at Culverts 1, 4	Annually	Column I
Cedarclump Lake (at mid-depth)	Annually	Column I, Column II
Wattle Lake (at mid-depth)	Once Every 3 Years	Column I, Column II
No Name Lake (at middle & outlet)	Monthly	Column I, Column II
Upper Bell Creek	Monthly	Column I, Column II
Lower Bell Creek	Monthly	Column I, Column II
F-GROUP MINE SITE		
Jackpot Lake	Annually	Column I, Column II
Sturgeon Lake • at 3 stations north of former mine site	Semi-annually	Column I, Column II
LYONLAKE MINE SITE		
Lyon Creek (at LC37 & LC#11)	Annually	Column I, Column II

(a) Monitoring conducted on a semi-annual or less frequent basis should be conducted at the same time each year in order to allow comparison of data across years. Worst-case conditions for parameters of concern should be targeted.

Table 6 - Surface Water Monitoring Surface Water Monitoring Parameters	
Column I	pH, Conductivity, Total Suspended Solids, Total Dissolved Solids, Alkalinity (as CaCO ₃), Hardness (as CaCO ₃), Sulphate, Chloride, Calcium, Potassium, Magnesium, Sodium, Total Phosphorous, Total and Dissolved Metals ^(a)
Column II	Dissolved Organic Carbon

(a) Total and Dissolved Metals should include the full suite of metals and metalloids (including arsenic, mercury, aluminium, molybdenum etc.).

(3) The methods and protocols for sampling, analysis, and recording shall conform to those outlined in Condition 4(4).

(4) A flow monitoring station shall be established in Bell Creek, to record stream flows during the monthly sampling

events. From the recorded data, a staged discharge curve shall be developed to permit estimating stream flows.

(5) The requirements outlined in this condition are minimum requirements which may be modified by the District Manager in writing from time to time.

6. AQUATIC SURVEYS

(1) Commencing in 2011 and at **five (5) year** intervals thereafter, the Owner shall undertake aquatic surveys which include sampling of water, sediment, and aquatic biota at the proposed locations in Bell Creek and Sturgeon Lake and as well as at other locations identified in former assessments, including but not limited to Mine Creek Bay, No Name Lake, Cedarclump Lake, Wattle Lake, Darkwater Lake, Sturgeon Lake near F-Group Mine, Darkwater Creek, Jackpot Lake, Beidelman Bay and Lyon Lake.

(2) Prior to commencement of the aquatic surveys, the Owner shall submit to the District Manager a Terms of Reference for the proposed aquatic surveys with details on the monitoring locations and survey methodology and obtain a written approval to proceed with the proposed aquatic surveys.

7. GROUNDWATER MONITORING

The Owner shall carry out and maintain the following groundwater monitoring program:

(1) The sampling locations as set out in subsection (2) may not be changed or abandoned and new locations may added unless with the written concurrence of the District Manager.

(2) The Owner shall conduct a groundwater sampling from the sampling points named below, in accordance with the measurement frequency and sample type specified for each parameter named below:

Table 7 Groundwater Monitoring	
Sampling Locations	MT9-1, MW90.3-1, MT11, T-3, MW91.1-1, MW-91.1-2, W91.5-1, MW91.5-2, M4-1, MW90.8-1, MW91.2-1, MW91.3-1, MW91.3-2, MT1-1, MT1-3, MT6-1, MT6-2, MW90.5-1, MW90.5-2, MW90.6-1, MW90.6-3, MW90.7-1, MW90.7-2C, MW91.7-1, MW91.7-3, MW91.8-1, MW91.8-2, MW91.9-1, MW91.9-2, FP11-1, FP11-2, FP11-3, FP6-1, and FP6-2
Frequency	Annually
Sample Type	Grab
Parameters	pH, Conductivity, Alkalinity, Acidity, Hardness, Cyanide, Ammonia, Sulphate, Aluminum, Arsenic, Cadmium, Calcium, Copper, Iron, Lead, Mercury, Molybdenum, Nickel and Zinc

(3) Within **sixty (60) days** of issuance of this Certificate, the Owner shall submit to the District Manager, Thunder Bay District, a sampling protocol which specifies sampling methodologies, field measurements and quality assurance and quality control measures to be undertaken in the groundwater monitoring program.

(4) The Owner shall ensure that collected groundwater samples are analyzed at a CALA certified laboratory for the parameters specified by Ministry of Northern Development and Mines for mine closure monitoring.

(5) The Owner shall submit a stand alone groundwater monitoring report every five years, with the first report due **March 31, 2011**, prepared by a licensed independent Professional Geoscientist or Professional Engineer qualified in the field of hydrogeology. The groundwater monitoring report shall at a minimum contain the following information:

- (a) A scale site plan or plans of the entire site illustrating significant site features such as rivers, seeps, ponds, ditches, collection and treatment facilities, and roadways, as well as all of the sampling locations;

- (b) A scale location map illustrating the site relative to nearby potentially sensitive groundwater/surface water features (i.e., lakes, streams, wells);
- (c) A water table contour map;
- (d) Stratigraphic cross-sections which clearly illustrate the subsurface distribution of geological materials;
- (e) Borehole logs for all monitoring wells;
- (f) Tables illustrating historical water chemistry and water level data;
- (g) Graphs illustrating historical water quality trends with time for the key analytical parameters ;
- (h) An assessment of monitoring data with respect to appropriate assessment criteria;
- (i) Recommendations for future monitoring and/or remedial actions;
- (j) A section detailing the field sampling protocols and QA/QC measures.

(6) The requirements outlined in this condition are minimum requirements which may be modified by the District Manager in writing from time to time.

8. REPORTING

(1) The Owner shall report to the Kenora Area Office, any exceedance of any parameter specified in Condition 2, Table 1, verbally as soon as reasonably possible, and in writing within **seven (7) days** of the exceedance. Such occurrences shall be recorded in the operations logbook on the date of occurrence.

(2) The Owner shall prepare and submit an annual performance report to the Kenora Area Office on or before **January 31** of each year for the previous calendar year. The report shall contain the twelve monthly activity reports, complete with the following information in a format acceptable to the Environmental Officer:

- (a) A summary of the monitoring and analytical data collected during the year including a statistical evaluation (average, maximum and minimum) with a suitable graphical presentation;
- (b) A description of any operating problems encountered and corrective actions taken;
- (c) A summary of all maintenance carried out on any major structure, equipment, apparatus, mechanism or thing forming part of the sewage works;
- (d) A summary of any effluent quality assurance or control measures undertaken in the reporting period;
- (e) A summary of the calibration and maintenance carried out on all effluent monitoring equipment; and
- (f) A description of efforts made and results achieved in meeting the Effluent Objectives of Condition 2.

(3) Once every **five (5) years**, the Owner shall prepare comprehensive performance evaluation reports. The reports shall be submitted to the District Manager by **March 31st** of the year following each five year reporting period. The first report shall be submitted on or before **March 31, 2011**. Each report shall include but not be limited to the following information:

- (a) a summary and interpretation of all monitoring data collected during the previous five-year reporting period, including results associated with effluent, surface water and groundwater monitoring, and aquatic surveys;
- (b) a basic statistical evaluation and graphical presentation of the monitoring data, as well as trend analysis

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which extends beyond the reporting period;

(c) a description of any operating problems encountered and corrective actions taken;

(d) a summary of all maintenance carried out on any major structure, equipment, apparatus, mechanism or thing forming part of the sewage works;

(e) a description of efforts made and results achieved in meeting the Effluent Objectives of Condition 2;

(f) an assessment of loadings/impacts on local groundwater and surface water courses from the effluent discharge as well as non-point contaminant sources; and,

(g) an evaluation of the success of closure measures in attaining water quality targets established in Section 12.0 of the Closure Plan Document, "Mattabi Rehabilitation Project (Mattabi Mines Limited, Ignace Ontario) Closure Plan Document", September 1993, prepared by GEOCON.

(4) The following information shall be retained by the Owner for a period of at least three (3) years from the data of creation:

(a) Laboratory analytical results of the samples taken pursuant to the sampling programs set out in this Certificate; and

(b) Sewage works operation, performance and maintenance results including log books associated with the operation, performance and maintenance of the sewage works.

9. CHANGE OF OWNER

(1) The Owner shall notify the District Manager and the Director, in writing, of any of the following changes within **thirty (30) days** of the change occurring:

(a) change of Owner or operating authority, or both;

(b) change of address of Owner or operating authority or address of new owner or operating authority;

(c) change of partners where the Owner or operating authority is or at any time becomes a partnership, and a copy of the most recent declaration filed under the *Partnerships Registration Act*;

(d) change of name of the corporation where the Owner or operator is or at any time becomes a corporation, and a copy of the most current "Initial Notice or Notice of Change" (Form 1, 2 or 3 of O. Reg. 189, R.R.O. 1980, as amended from time to time), filed under the *Corporations Information Act* shall be included in the notification to the District Manager;

(2) In the event of any change in ownership of the works, the Owner shall notify in writing the succeeding owner of the existence of this certificate, and a copy of such notice shall be forwarded to the District Manager.

(3) The Owner shall ensure that all communications made pursuant to this condition will refer to this certificate's number.

10. NOTIFICATION OF CHANGES IN PROCESSES OR PROCESS MATERIALS

After the commencement of operation of the sewage works the owner shall give written notice to the Director of any plans to change the processes or process materials forming a part of the sewage works where the change may materially alter

the quantity or quality of the influent to or effluent from the sewage works, and no such change(s) shall be made unless and until the owner applies for and receives the written approval of the Director pursuant to section 53 of the *Ontario Water Resources Act*.

11. OPERATION AND MAINTENANCE

(1) The owner shall ensure that at all times, the sewage works and related equipment and appurtenances which are installed or used to achieve compliance with this certificate are properly operated and maintained.

(2) In furtherance of, but without limiting the generality of, the obligation imposed by subsection (1) the owner shall ensure that:

- (a) funding, staffing, training of staff, laboratory and process controls, quality assurance and quality control procedures of or in relation to the sewage works are adequate to achieve compliance with this certificate; and,
- (b) equipment and material are kept on hand and in good repair for immediate use in the event of:
 - (i) upset;
 - (ii) bypass;
 - (iii) abnormal loss of any product, by-product, intermediate product, oil, solvent, waste material or any other polluting substance into the environment or interior of any building; or,
 - (iv) spill within the meaning of Part X of the *Environmental Protection Act*, and staff are trained in the use of said equipment and material and in the methods and procedures to be employed upon the occurrence of such an event.

12. OPERATIONS MANUAL

(1) The Owner shall prepare an operations manual prior to the commencement of operation of the sewage works, that includes, but not necessarily limited to, the following information:

- (a) operating procedures for routine operation of the works;
- (b) inspection programs, including frequency of inspection, for the works and the methods or tests employed to detect when maintenance is necessary;
- (c) repair and maintenance programs, including the frequency of repair and maintenance for the works;
- (d) contingency plans and procedures for dealing with potential spill, bypasses and any other abnormal situations and for notifying the District Manager; and
- (e) complaint procedures for receiving and responding to public complaints.

(2) The Owner shall maintain the operations manual up to date through revisions undertaken from time to time and retain a copy at the location of the sewage works. Upon request, the Owner shall make the manual available for inspection and copying by Ministry personnel.

The reasons for the imposition of these terms and conditions are as follows:

1. Condition 1 is imposed to ensure that the works are built and operated in the manner in which they were described for review and upon which approval was granted. This condition is also included to emphasize the precedence of Conditions in the Certificate and the practice that the Approval is based on the most current document, if several conflicting documents are submitted for review.

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2. Condition 2 is imposed to establish non-enforceable effluent quality objectives which the owner is obligated to use bests to strive towards on an ongoing basis. It is the Ministry's experience that the setting of such objectives coupled with the bona fide efforts of an owner to achieve them tends to assist an owner in complying with the generally less stringent effluent requirements contained in Condition 3, thereby serving the environmental goals set out in the reason for the latter condition.
3. Condition 3 is imposed to ensure that the effluent discharged from the works to Sturgeon Lake meets the Ministry's effluent quality requirements thus minimizing environmental impact on the receiver.
4. Conditions 4 and 5 are included to require the owner to demonstrate on a continual basis that the quality and quantity of the effluent from the approved sewage works is consistent with the design objectives and effluent limits specified in the certificate and that the approved sewage works does not cause any impairment to the receiving watercourse.
5. Condition 6 is included to assess the condition of the receiving surface water (Bell Creek and various other locations) and ensure that adequate measures are in place to protect the environment.
6. Condition 7 is included to require the owner to demonstrate on a continual basis that the approved sewage works does not cause any impairment to the groundwater.
7. Condition 8 is included to provide a performance record for future references and to ensure that the Ministry is made aware of problems as they arise, so that the Ministry can work with the Owner in resolving the problems in a timely manner.
8. Condition 9 is included to ensure that the Ministry records are kept accurate and current with respect to approved sewage works and to ensure that subsequent owners of the sewage works are made aware of the certificate and continue to operate the sewage works in compliance with it.
9. Condition 10 is included to ensure that the sewage works is operated in accordance with information submitted by the owner relating to process and materials which formed the basis of the approval, and to ensure that any contemplated changes in them potentially affecting the characteristics of effluent from the sewage works will be properly reviewed and approved.
10. Condition 11 is included to ensure that the sewage works will be operated, maintained, funded, staffed and equipped in a manner enabling compliance with the terms and conditions of this certificate, such that the environment is protected and deterioration, loss, injury or damage to any person or property is prevented.
11. Condition 12 is included to ensure that a comprehensive operations manual governing all significant areas of operation, maintenance and repair is prepared, implemented and kept up-to-date by the owner and made available to the Ministry. Such a manual is an integral part of the operation of the sewage works. Its compilation and use should assist the owner in staff training, in proper plant operation and in identifying and planning for contingencies during possible abnormal conditions. The manual will also act as a benchmark for Ministry staff when reviewing the owner's operation of the sewage works. This manual is required for approval prior to the commencement of operation of the sewage works.

This Certificate of Approval revokes and replaces Certificate(s) of Approval No. 0319-86JJKC issued on July 27, 2010

In accordance with Section 100 of the Ontario Water Resources Act, R.S.O. 1990, Chapter 0.40, as amended, you may by written notice served upon me and the Environmental Review Tribunal within 15 days after receipt of this Notice, require a hearing by the Tribunal. Section 101 of the Ontario Water Resources Act, R.S.O. 1990, Chapter 0.40, provides that the Notice requiring the hearing shall state:

1. The portions of the approval or each term or condition in the approval in respect of which the hearing is required, and;
2. The grounds on which you intend to rely at the hearing in relation to each portion appealed.

The Notice should also include:

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3. The name of the appellant;
4. The address of the appellant;
5. The Certificate of Approval number;
6. The date of the Certificate of Approval;
7. The name of the Director;
8. The municipality within which the works are located;

And the Notice should be signed and dated by the appellant.

This Notice must be served upon:

The Secretary*
Environmental Review Tribunal
655 Bay Street, 15th Floor
Toronto, Ontario
M5G 1E5

AND

The Director
Section 53, *Ontario Water Resources Act*
Ministry of the Environment
2 St. Clair Avenue West, Floor 12A
Toronto, Ontario
M4V 1L5

*** Further information on the Environmental Review Tribunal's requirements for an appeal can be obtained directly from the Tribunal at: Tel: (416) 314-4600, Fax: (416) 314-4506 or www.ert.gov.on.ca**

The above noted sewage works are approved under Section 53 of the Ontario Water Resources Act.

DATED AT TORONTO this 10th day of November, 2010

Ian Parrott, P.Eng.
Director
Section 53, *Ontario Water Resources Act*

SH/
c: District Manager, MOE Kenora
Alan J. Burt, EcoMetrix Incorporated