



Conservation and Water Stewardship

Environmental Stewardship Division
Environmental Approvals Branch
123 Main Street, Suite 160, Winnipeg, Manitoba R3C 1A5
T 204 945-8321 F 204 945-5229
www.gov.mb.ca/conservation/eal

CLIENT FILE NO.: 5583.00

March 20, 2014

Jay Cooper
Hudson Bay Mining and Smelting Co., Limited
P.O. Box 1500
Flin Flon, MB R8A 1N9

Dear Mr. Cooper:

Enclosed is **Environment Act Licence No. 3096** dated March 20, 2014 issued to **Hudson Bay Mining and Smelting Co., Limited** for the construction and operation of the Lalor Mine, a 4,500 tonnes/day underground copper-zinc-gold mine and its supporting surface infrastructure. The mine site is located approximately eight kilometers west of the Town of Snow Lake within the Town of Snow Lake municipal boundary. The treated sewage effluent from a 38 m³/day sewage treatment plant, mine water and discharge water from the water treatment plant will be pumped via pipeline to the Chisel Open Pit for additional treatment at the Chisel North Water Treatment Plant, which discharges to Woosey Creek and Morgan Lake. All ore from the mine will be transported to the Stall Lake Concentrator for processing in accordance with the Proposal dated May 7, 2012 and subsequent information dated May 15, 2012, December 17, 2012, December 4, 2013, January 17, 2014 and February 3, 2014.

In addition to the enclosed Licence requirements, please be informed that all other applicable federal, provincial and municipal regulations and by-laws must be complied with. A Notice of Alteration must be filed with the Director for approval prior to any alteration to the Development as licensed.

The Environmental Approvals Branch encourages Hudson Bay Mining and Smelting Co., Limited to continue communications with potentially affected aboriginal communities with respect to this development.

For further information on the administration and application of the Licence, please feel free to contact Jennifer Winsor, Environmental Engineer at 204-945-7012.

Pursuant to Section 27 of *The Environment Act*, this licensing decision may be appealed by any person who is affected by the issuance of this Licence to the Minister of Conservation and Water Stewardship within 30 days of the date of the Licence.

Yours truly,

“original signed by”

Tracey Braun, M.Sc.
Director
Environment Act

c: Don Labossiere, Director, Environmental Compliance and Enforcement
Chris Beaumont-Smith, Director, Innovation, Energy and Mines
Public Registries

NOTE: Confirmation of Receipt of this Licence No. 3096 (by the Licensee only) is required by the Director of Environmental Approvals. Please acknowledge receipt by signing in the space provided below and faxing a copy (letter only) to the Department by April 3, 2014.

On behalf of Hudson Bay Mining and Smelting Co., Limited

Date

LICENCE

Licence No. / Licence n° 3096

Issue Date / Date de délivrance March 20, 2014

In accordance with *The Environment Act* (C.C.S.M. c. E125)
Conformément à la *Loi sur l'environnement* (C.P.L.M. c. E125)

Pursuant to Section 11(1) / Conformément au Paragraphe 11(1)

THIS LICENCE IS ISSUED TO: / CETTE LICENCE EST DONNÉE À:

HUDSON BAY MINING AND SMELTING CO., LIMITED;
“the Licencee”

for the construction and operation of the Lalor Mine, 4,500 tonnes/day underground copper-zinc-gold mine and supporting surface infrastructure located approximately eight kilometers west of the Town of Snow Lake within the Town of Snow Lake municipal boundary with treated sewage effluent from a 38 m³/day sewage treatment plant, mine water and discharge water from the water treatment plant pumped via pipeline to the Chisel Open Pit for additional treatment at the Chisel North Water Treatment Plant which discharges to Woosey Creek and Morgan Lake and with all ore transported to the Stall Lake Concentrator for processing in accordance with the Proposal dated May 7, 2012 and subsequent information dated May 15, 2012, December 17, 2012, December 4, 2013, January 17, 2014 and February 3, 2014 and subject to the following specifications, limits, terms and conditions:

DEFINITIONS

In this Licence,

“**accredited laboratory**” means an analytical facility accredited by the Standard Council of Canada (SCC), or accredited by another accrediting agency recognized by Manitoba Conservation and Water Stewardship to be equivalent to the SCC, or be able to demonstrate, upon request, that it has the quality assurance/quality control (QA/QC) procedures in place equivalent to accreditation based on the international standard ISO/IEC 17025, or otherwise approved by the Director;

“**affected area**” means a geographical area, excluding the property of the Development;

“**AP**” means the maximum acid-generation potential, expressed as tonnes of CaCO₃ per 1000 tonnes of a material tested, determined in accordance with a static Acid-Base Accounting method satisfactory to the Director;

“**approved**” means approved by the Director or assigned Environment Officer in writing;

“**as-built drawings**” means drawings complete with all dimensions which indicate all surface features of the Development as it has actually been built;

“**CCME**” means the Canadian Council of Ministers of the Environment;

“**composite sample**” means as defined in the federal *Metal Mining Effluent Regulations* (MMER);

“**contaminated soil**” means soil which contains contaminant concentrations in excess of the applicable remediation criteria cited in the CCME's “Canadian Environmental Quality Guidelines” report ISBN 896-997-34-1, update 5.0, 2006, or any future amendment thereof;

“**Chisel Open Pit**” means the Hudson Bay Mining and Smelting Co., Limited Development whereby the pit water is sent to the Chisel North Water Treatment Plant which operates in accordance with Environment Act Licence No. 1501 RR, or any revision thereto;

“**Director**” means an employee so designated pursuant to *The Environment Act*;

“**Director of Mines**” means the Director of Mines Branch of Innovation, Energy and Mines;

“**effluent**” means mine water released from the Development into the environment;

“**EEM**” means Environmental Effects Monitoring as defined in the federal *Metal Mining Effluent Regulations* (MMER);

“**Environmental Management System (EMS)**” means the part of the overall management system that includes organizational structure, planning activities, responsibilities, practices, procedures, processes, and resources for developing, implementing, achieving, reviewing and maintaining the environmental policy;

“**Environment Officer**” means an employee so appointed pursuant to *The Environment Act*;

“**final discharge point**” means an identifiable discharge point at the mine, beyond which the Licencee no longer exercises any further control over the quality of the effluent, which for the purposes of this Licence is the outlet from the effluent discharge cells located beneath the Water Treatment Plant Building;

“**fugitive emissions**” means particulate matter escaping from sources within the Development into the atmosphere other than through any of the emission stacks or vents;

“**grab sample**” means a grab sample as defined in the federal *Metal Mining Effluent Regulations* (MMER);

“Metal Mining Effluent Regulations (MMER)” means the *Metal Mining Effluent Regulations* (SOR/2002-222), or any future amendments thereto, promulgated under the federal *Fisheries Act*;

“mine” means any of the surface and sub-surface workings, overburden, waste rock and ore stockpiles, all ancillary buildings, wastewater treatment facilities, impoundment or control facilities, tailings management areas and such other on-site infrastructure as may be located on the mine site and associated with the Development;

“mine site” means the entire operational, disturbed or impacted surface area of land and water located within the boundaries of those surface rights acquired and held by the Licencee for the construction and operation of the Development;

“mine water” means water pumped to the surface from underground mine workings or from an open pit, or contaminated runoff or leachate from ore or waste rock stockpiles exposed to precipitation, or polluted mine site runoff, or any combination thereof, but excluding sewage;

“MSDS” means material safety data sheets;

“mothballed” means placed into a state of non use, or temporarily closed, while at the same time maintained in a state of readiness for potential re-use or re-opening;

“noise nuisance” means an unwanted sound, in an affected area, which is annoying, troublesome, or disagreeable to a person:

- a) residing in an affected area;
- b) working in an affected area; or
- c) present at a location in an affected area which is normally open to members of the public;

if the unwanted sound

- d) is the subject of at least 5 written complaints, received by the Director in a form satisfactory to the Director and within a 90-day period, from 5 different persons falling within clauses a), b), or c), who do not live in the same household; or
- e) is the subject of at least one written complaint, received by the Director in a form satisfactory to the Director, from a person falling within clauses a), b) or c) and the Director is of the opinion that if the unwanted sound had occurred in a more densely populated area there would have been at least 5 written complaints received within a 90-day period, from 5 different persons who do not live in the same household;

“non acid-generating” means having a NPR greater than 4, until or unless an appropriate alternate NPR cut-off value is determined, to the satisfaction of the Director, through detailed characterizations, evaluations and interpretations, or through kinetic testing, carried out on representative test material by qualified individuals;

“NP” means the maximum neutralizing potential, expressed as tonnes of CaCO₃ per 1,000 tonnes of material tested, determined in accordance with a static Acid-Base Accounting method satisfactory to the Director;

“**NPR**” means the neutralizing potential ratio as determined from the ratio of NP/AP;

“**odour nuisance**” means a continuous or repeated odour, smell or aroma, in an affected area, which is offensive, obnoxious, troublesome, annoying, unpleasant or disagreeable to a person:

- a) residing in an affected area;
 - b) working in an affected area; or
 - c) present at a location in an affected area which is normally open to members of the public;
- if the odour, smell or aroma
- d) is the subject of at least 5 written complaints, received by the Director in a form satisfactory to the Director and within a 90-day period, from 5 different persons falling within clauses a), b) or c), who do not live in the same household; or
 - e) is the subject of at least one written complaint, received by the Director in a form satisfactory to the Director, from a person falling within clauses a), b) or c) and the Director is of the opinion that if the odour, smell or aroma had occurred in a more densely populated area there would have been at least 5 written complaints received within a 90-day period, from 5 different persons who do not live in the same household;

“**ore**” means mineralized rock containing sufficient mineral value for the purposes of this Development;

“**PAG**” means potentially-acid generating;

“**particulate matter**” means any finely divided liquid or solid matter other than water droplets;

“**polishing pond**” means a constructed pond at the mine site which receives mine water;

“**pollutant**” means a pollutant as defined in *The Environment Act*;

“**potentially acid-generating**” means having the potential or uncertain ability to generate acid as indicated by a NPR of 4 or less, until or unless an appropriate alternate NPR cut-off value is determined, to the satisfaction of the Director, through detailed characterizations, evaluations and interpretations, or through kinetic testing, carried out on representative test material by qualified individuals;

“**sewage**” means human body, toilet, liquid, waterbourne culinary, sink or laundry waste;

“**solid waste**” means solid waste as defined in *Manitoba Regulation 150/91*, or any future amendments thereto, respecting waste disposal grounds, excluding waste rock;

“**Stall Lake Concentrator**” means the Hudson Bay Mining and Smelting Co., Limited Development operating under Environment Act Licence No. 765, or any revision thereto;

“**Standard Methods for the Examination of Water and Wastewater**” means the most recent edition of Standard Methods for the Examination of Water and Wastewater published jointly by the

American Public Health Association, the American Waterworks Association and the Water Environment Federation;

“undiluted” means free of extraneous unpolluted sources of water which could feasibly be prevented from mixing with the mine water or effluent prior to its discharge at a designated final discharge point(s), and not having water added for the purpose of meeting any effluent quality limits specified in this Licence or in the MMER;

“waste disposal ground” means an area of land designated by a person, municipality, provincial government agency, or crown corporation for the disposal of waste and approved for use in accordance with *Manitoba Regulation 150/91*, or any future amendments thereto, or a Licence issued pursuant to *The Environment Act*;

“waste rock” means rock containing insufficient mineral value to the Development, excepting such rock which is inadvertently present in mined ore;

“water treatment plant” means the portion of water treatment works intended specifically for water treatment; may include, among other operations, sedimentation, chemical coagulation, filtration and chlorination; and

“WHMIS” means Workplace Hazardous Materials Information System.

GENERAL TERMS AND CONDITIONS

Note: Notwithstanding this Environment Act Licence, this Development is also subject to the federal *Metal Mining Effluent Regulations*. If any specification, limit, term or condition prescribed in this Licence or in any subsequent revision thereto, results in a contradiction of one or more requirements of the federal *Metal Mining Effluent Regulations*, then the most stringent limit, term, or condition shall apply.

This Section of the Licence contains requirements intended to provide guidance to the Licencee in implementing practices to ensure that the environment is maintained in such a manner as to sustain a high quality of life, including social and economic development, recreation and leisure for present and future Manitobans.

Future Sampling

1. In addition to any of the limits, terms and conditions specified in this Licence, the Licencee shall, upon the request of the Director:
 - a) sample, monitor, analyze or investigate specific areas of concern regarding any segment, component or aspect of pollutant storage, containment, treatment, handling, disposal or emission systems, for such pollutants, ambient quality, aquatic toxicity, leachate characteristics and discharge or emission rates, and for such duration and at such frequencies as may be specified;

- b) determine the environmental impact associated with the release of any pollutant(s) from the Development; or
- c) provide the Director, within such time as may be specified, with such reports, drawings, specifications, analytical data, descriptions of sampling and analytical procedures being used, bioassay data, flow rate measurements and such other information as may from time to time be requested.

Sampling Methods

- 2. The Licencee shall, unless otherwise specified in this Licence:
 - a) carry out all preservations and analyses on liquid samples in accordance with the methods prescribed in the most current edition of Standard Methods for the Examination of Water and Wastewater or in accordance with equivalent preservation and analytical methodologies approved by the Director;
 - b) carry out all sampling of, and preservation and analyses on, soil and air samples in accordance with methodologies approved by the Director;
 - c) have all analytical determinations undertaken by an accredited laboratory; and
 - d) report the results to the Director, in writing and in an electronic format acceptable to the Director, within 60 days of the samples being taken.

Reporting Format

- 3. The Licencee shall submit all information required to be provided to the Director or Environment Officer under this Licence, in writing, in such form (including number of copies) and of such content as may be specified by the Director or Environment Officer, and each submission shall be clearly labeled with the Licence Number and Client File Number associated with this Licence.

Equipment Breakdown

- 4. The Licencee shall, in the case of physical or mechanical equipment breakdown or process upset where such breakdown or process upset results or may result in the release of a pollutant in an amount or concentration, or at a level or rate of release, that causes or may cause a significant adverse effect, immediately report the event by calling 204-944-4888 (toll-free 1-855-944-4888). The report shall indicate the nature of the event, the time and estimated duration of the event and the reason for the event.
- 5. The Licencee shall, following the reporting of an event pursuant to Clause 4:
 - a) identify the repairs required to the mechanical equipment;
 - b) undertake all repairs to minimize unauthorized discharges of a pollutant;
 - c) complete the repairs in accordance with any written instructions of the Director; and
 - d) submit a report to the Director about the causes of breakdown and measures taken, within one week of the repairs being done.

Future Studies

6. The Licencee shall actively participate in any future watershed and/or aquifer based management study, plan and/or nutrient reduction program, approved by the Director.
7. The Licencee shall actively participate in woodland caribou research, studies and/or monitoring activities in such a manner and within a geographical region that is acceptable to the Director.

Approvals and Permits

8. The Licencee shall obtain all necessary federal, provincial and/or municipal licences, authorizations, permits and/or approvals for construction of relevant components of the Development prior to commencement of any construction.

Safety and Security

9. The Licencee shall continually maintain an up-to-date inventory of any process and cleaning chemicals used and/or stored on-site that would be captured by any applicable federal/provincial WHMIS regulations and protocols, and make this information and applicable MSDS sheets available to an Environment Officer upon request.
10. The Licencee shall prepare and maintain an emergency response contingency plan in accordance with the Canadian Centre for Occupational Health and Safety "Emergency Response Planning Guide" or other emergency planning guidelines acceptable to the Director.
11. The Licencee shall implement and continually maintain in current status, an Environmental Management System (EMS) for the Development which is acceptable to the Director.

As-Built Drawings

12. The Licencee shall:
 - a) prepare "as-built drawings" for the surface components of the Development and shall label the drawings "As-Built Drawings"; and
 - b) provide to the Director, not later than six months after the date of issuance of this Licence, two electronic copies of the "as-built drawings" of the Development.

SPECIFICATIONS, LIMITS, TERMS AND CONDITIONS

Operation of the Mine Site

13. The Licencee shall restrict construction and operational activities to only such lands to which the Licencee possesses the mineral rights, surface rights or complete ownership, or which the Licencee has leased from another owner, wherein the leasing agreement clearly identifies the

party which accepts full responsibility for any environmental liabilities incurred by the activities of the Licencee.

14. The Licencee shall not locate any petroleum storage tank within 100 metres of the shoreline of any waterway or water body.
15. The Licencee shall with respect to on-site earthen construction works, construct and maintain silt fences in the drainage routes transporting surface runoff off the property of the Development until vegetation has been re-established on the disturbed areas.
16. The Licencee shall wherever practical, minimize the net amount of mine water effluent pumped to the Chisel Open Pit.

Operation of the Sewage Treatment Plant

17. The Licencee shall operate the sewage collection system and sewage treatment plant located at the Development in accordance with the Lalor Mine Environment Act Proposal Report dated May 4, 2012 and additional information dated December 4, 2013, January 17, 2014 and February 3, 2014 and in accordance with the specifications, limits, terms and conditions prescribed under Appendix A of this Licence.

Mine Water

18. The Licencee shall, upon beginning the mine production stage, not direct mine water to the polishing pond as shown in Appendix B.
19. The Licencee shall direct all mine water pumped to the surface from the underground mine workings at the Development into the effluent discharge cells located beneath the Water Treatment Plant Building as shown in Appendix B.
20. The Licencee shall not discharge, or cause or allow the release of, any mine water from the Development into the aqueous environment except via pipeline to the Chisel Open Pit as shown in Appendix C.

Water Treatment Plant

21. The Licencee shall not use the treated water from the water treatment plant as potable drinking water.
22. The Licencee shall direct all backwash water and strained solids from the water treatment plant to the effluent discharge cells located beneath the Water Treatment Plant Building.

Solid Waste

23. The Licencee shall remove all non-recyclable solid waste resulting from demolition, upgrading and general operational activities at the mine site from the mine site as soon as practical, and deposit such solid waste into a waste disposal ground operating under the authority of:
 - a) a permit issued pursuant to the *Manitoba Waste Disposal Grounds Regulation 150/91*, or any future amendment thereto; or
 - b) an Environment Act Licence issued pursuant to *The Environment Act*.
24. The Licencee shall not deposit bulky metallic wastes, used tires, used oil or other fluid lubricants, hydraulic fluids, and any other class of recyclable waste substances as may be specified by the Director, into the environment except to:
 - a) a facility or infrastructure which accepts such materials for recycling; or
 - b) a waste disposal ground where these recyclable substances are kept distinctly segregated from each other and are not buried, unless otherwise specified by the Director, so as to readily facilitate their recycling.

Dangerous Goods or Hazardous Waste

25. The Licencee shall not release dangerous goods or hazardous wastes into the sewage collection system or mine water collection system.
26. The Licencee shall comply with all the applicable requirements of:
 - a) the *Manitoba Dangerous Goods Handling and Transportation Act*, and regulations issued thereunder, respecting the handling, transport, storage and disposal of any dangerous goods brought onto or generated at the Development; and
 - b) *Manitoba Storage and Handling of Petroleum Products and Allied Products Regulation 188/2001*, or any future amendments thereto.
27. The Licencee shall collect, transport and store used oil or hydraulic fluids removed from on-site machinery in secure, properly labeled, non-leaking containers and shall regularly send them to a recycling or disposal facility approved to accept hazardous wastes.
28. The Licencee shall install and maintain spill recovery equipment at the Development at all times.

Air Emissions

29. The Licencee shall limit fugitive emissions from any source within the mine site such that:
 - a) distinct plume forming fugitive emissions do not exceed an opacity of 5%; and
 - b) non plume forming fugitive emissions are not visible at any time;when measured or viewed in the atmosphere at any point beyond the mine site in an area zoned commercial or residential.

30. The Licencee shall not cause or permit an odour nuisance to be created as a result of the construction, operation or alteration of the Development, and shall take such steps as the Director may require to eliminate or mitigate an odour nuisance.
31. The Licencee shall not cause or permit a noise nuisance to be created as a result of the construction, operation or alteration of the Development, and shall take such steps as the Director may require to eliminate or mitigate a noise nuisance.

Waste Rock

32. The Licencee shall treat all waste rock brought to the surface as potentially acid-generating rock.
33. The Licencee shall not, other than in the waste rock bin, temporarily store waste rock at the mine site.
34. The Licencee shall, unless otherwise specified by the Director, dispose of all waste rock brought to surface at this Development by:
 - a) transporting to the Chisel Open Pit; and
 - b) utilizing as backfill for the underground operations, as necessary.
35. The Licencee shall:
 - a) not use, nor release to any person, any contaminated soil, or potentially acid-generating rock/materials, as a construction material; and
 - b) undertake such remedial work as may be specified by the Director should any of the construction materials used by the Licencee in the course of constructing or altering this Development be determined to be contaminated soil or acid generating rock/material.

Ore

36. The Licencee shall not temporarily or permanently store ore brought to the surface of the Development at the mine site.
37. The Licencee shall, unless otherwise specified by the Director, transport all ore brought to the surface at the mine site to the Stall Lake Concentrator or other facility operating under the authority of an Environment Act Licence issued pursuant to *The Environment Act*.

MONITORING AND REPORTING REQUIREMENTS

Effluent Discharge Cells

38. The Licencee shall, in accordance with the MMER, and upon the commencement of mining:

- a) install, operate, maintain and annually calibrate a continuous flow measuring device, for the purpose of measuring the inputs to the effluent discharge cells located beneath the Water Treatment Plant Building, rated to an accuracy within $\pm 15\%$; and
- b) measure and record each monthly volume (in cubic metres) of mine water pumped to the effluent discharge cells located beneath the Water Treatment Plant Building for release at the pipeline outfall at the Chisel Open Pit.

Environmental Effects Monitoring

39. The Licencee shall:
- a) carry out the environmental effects monitoring program, as required by the federal *Metal Mining Effluent Regulations*, in consultation with the Water Science and Management Branch of Manitoba Conservation and Water Stewardship, and incorporate such additional monitoring requirements as may be requested in writing by the Director; and
 - b) submit to the Director a copy of each environmental effects monitoring report, submitted by the Licencee to Environment Canada in accordance with the federal *Metal Mining Effluent Regulations*, at the same time as each such report is submitted to the federal authorization officer.

Annual Reporting

40. The Licencee shall submit an annual report to the Director which summarizes the following:
- a) the total volume (expressed as cubic metres) of wastewater effluent pumped to the Chisel Open Pit;
 - b) the monthly average and peak mining production rates (expressed as tonnes/day) at the Development; and
 - c) mine site operational activities directly related to this Licence.

Mine Closure Reporting

41. The Licencee shall:
- a) provide the Director with:
 - i) written notice three months in advance of any imminent permanent closure of this Development; or
 - ii) provide the Director with an immediate notice of any sudden decision to temporarily close this Development whereby the Development would be placed in a mothballed state for re-opening in the foreseeable future;
 - b) comply with *Manitoba Regulation 67/99*, or any future amendment thereto, issued under *The Mines and Minerals Act*, respecting closure plans for mining developments, particularly in regards to addressing environmental issues including, but not necessarily limited to:
 - i) the decommissioning of the underground workings and surface infrastructure associated with the Development;
 - ii) the decommissioning of access roads and stream crossings used to access the mine site;

- iii) the containment, control or treatment of pollutants originating from the mine site of the Development;
 - iv) the rehabilitation of the mine site area disturbed by the Development;
 - v) the restoration or replacement of fish habitats disturbed, adversely affected or lost as a result of the Development; and
 - vi) the strategy, scope, frequency and duration of post-closure environmental monitoring activities at the mine site; where applicable; and
- c) in the course of progressive rehabilitation, as well as upon permanent or temporary closure of this Development, implement the environmentally related aspects of the Closure Plan approved pursuant to *Manitoba Regulation 67/99*, or any future amendment thereto, to the satisfaction of the Director.

REVIEW AND REVOCATION

- A. If, in the opinion of the Director, the Licencee has exceeded or is exceeding or has or is failing to meet the specifications, limits, terms, or conditions set out in this Licence, the Director may, temporarily or permanently, revoke this Licence.
- B. If, in the opinion of the Director, new evidence warrants a change in the specifications, limits, terms or conditions of this Licence, the Director may require the filing of a new proposal pursuant to Section 11 of *The Environment Act*.

“original signed by”

Tracey Braun, M.Sc.
Director
Environment Act

File: 5583.00

APPENDIX A TO ENVIRONMENT ACT LICENCE NO. 3096

Pursuant to Clause 17

In this Appendix,

DEFINITIONS

"accredited laboratory" means an analytical facility accredited by the Standard Council of Canada (SCC), or accredited by another accrediting agency recognized by Manitoba Conservation to be equivalent to the SCC, or able to demonstrate, upon request, that it has the quality assurance/quality control (QA/QC) procedures in place equivalent to accreditation based on the international standard ISO/IEC 17025, or otherwise approved by the Director;

"approved" means approved by the Director in writing;

"as constructed drawings" means engineering drawings complete with all dimensions which indicate all features of the sewage collection system and sewage treatment plant as they have actually been built;

"appurtenances" means machinery, appliances, or auxiliary structures attached to a main structure to enable it to function, but not considered an integral part of it;

"bioassay" means a method of determining toxic effects of industrial wastes and other wastewaters by using viable organisms;

"composite sample" means a quantity of sewage consisting of a minimum of 10 equal volumes of effluent, or flow proportional volumes collected over a 24-hour period, and may be collected manually or by means of an automatic sampling device;

"fecal coliform" means aerobic and facultative, Gram-negative, nonspore-forming, rod-shaped bacteria capable of growth at 44.5°C, and associated with fecal matter of warm-blooded animals;

"final discharge point" means the outlet of the UV disinfection system at which an effluent monitoring station is located;

"five-day biochemical oxygen demand (BOD₅)" means that part of oxygen usually associated with biochemical oxidation of organic material within 5 days at 20°C;

"five-day carbonaceous biochemical oxygen demand (CBOD₅)" means that part of oxygen demand usually associated with biochemical oxidation of carbonaceous organic material within 5 days at a temperature of 20°C, excluding the oxygen demand usually associated with biochemical oxidation of nitrogenous organic matter;

"grab sample" means a quantity of sewage taken at a given place and time;

"headworks" means the initial structures and devices of the sewage treatment plant;

"influent" means water, sewage, or other liquid flowing into the sewage treatment plant;

"MPN index" means the most probable number of coliform organisms in a given volume of sewage as determined by statistical estimation;

"sewage" means human body, toilet, liquid, waterborne culinary, sink or laundry waste;

"sewage effluent" means sewage after it has undergone at least one form of physical, or biological treatment, flowing or pumped out of the sewage treatment plant;

"sewage treatment plant" means the component of this development which consists of the central facility, of the wastewater treatment facilities, which contains all treatment processes exclusive of the sewage collection system;

"sludge" means accumulated solid material containing large amounts of entrained water which has separated from sewage during processing;

"sludge solids" means solids in sludge;

"Standard Methods for the Examination of Water and Wastewater" means the most recent edition of Standard Methods for the Examination of Water and Wastewater published jointly by the American Public Health Association, the American Waterworks Association and the Water Environment Federation;

"total coliform" means a group of aerobic and facultative anaerobic, gram-negative, non-spore forming, rod-shaped bacteria, that ferment lactose with gas and acid formation within 48 hours at 35°C and inhabit predominantly the intestines of man or animals, but are occasionally found elsewhere and include the sub-group of fecal coliform bacteria;

"UV disinfection" means a disinfection process for treating wastewater using ultraviolet radiation;

"UV germicidal dose" means the units of intensity of ultra violet light that is required to kill bacteria and viruses present in the sewage effluent; and

"sewage collection system" means the sewer and pumping system used for the collection and conveyance of domestic, commercial and industrial wastewater.

GENERAL SPECIFICATIONS

This Appendix to the Licence contains requirements intended to provide guidance to the Licencee in implementing practices to ensure that the environment is maintained in such a manner as

to sustain a high quality of life, including social and economic development, recreation and leisure for present and future Manitobans.

1. The Licencee shall operate the sewage treatment plant in such a manner that:
 - a) all sewage generated at the Lalor Mine site is directed toward the sewage treatment plant or other approved sewage treatment facilities;
 - b) only sewage as defined in this Licence is discharged into the sewage treatment plant;
 - c) sludge solids are disposed of at the Department of Northern Affairs/Setting Lake Cottage Association wastewater treatment lagoon operated under Environment Act Licence No. 2245 S1 R or any revision thereto, or other approved sewage treatment facility; and
 - d) sludge solids are transported in containers in such a manner to prevent loss of solids to the satisfaction of an Environment Officer.
2. The Licencee shall install, operate and maintain the sewage collection system and sewage treatment plant such that freezing of the effluent in the pipes is prevented.
3. The Licencee shall not spill, or allow to be spilled, sewage and/or sludge in the area around the sewage treatment plant.
4. The Licencee shall undertake a regular program of maintenance for the sewage treatment plant.
5. The Licencee shall obtain and maintain classification of the Development pursuant to *Manitoba Regulation 77/2003* respecting *Water and Wastewater Facility Operators* or any future amendment thereof and maintain compliance with all requirements of the regulation including, but not limited to, the preparation and maintenance of a Table of Organization, Emergency Response Plan and Standard Operating Procedures.
6. The Licencee shall carry out the operation of the Development with individuals properly certified to do so pursuant to *Manitoba Regulation 77/2003* respecting *Water and Wastewater Facility Operators* or any future amendment thereof.
7. The Licencee shall have adequate instrumentation installed to provide constant monitoring of the UV process to ensure compliance with the disinfection requirements. Such instrumentation shall include but not be limited to the following:
 - a) an UV sensor to monitor lamp intensity;
 - b) an appropriate alarm and shutdown systems;
 - c) a lamp monitoring system to identify the location of individual lamp failures;
 - d) an hour meter which cannot be reset to display actual hours of UV lamp operation; and
 - e) protective circuits for overcurrent and ground current leakage detection.

SPECIFICATIONS, LIMITS, TERMS AND CONDITIONS

8. The Licencee shall operate and maintain the sewage treatment plant in such a manner that:

- a) the maximum daily flow rate is not in excess of 38 cubic metres over any 24-hour period; and
 - b) the organic loading is not in excess of 7 kilograms of five-day biochemical oxygen demand over any 24-hour period.
9. The Licencee shall utilize UV lamps that have a rated output of at least 254 nanometres (nm) capable of delivering a germicidal dose in excess of 30,000 microwatt seconds/sq cm.
10. The Licencee shall operate and maintain the UV units to give a germicidal dose of 80% or more of the design germicidal dose, at the end of the lamp life.
11. The Licencee shall not discharge effluent from the sewage treatment plant except to the effluent discharge cells located beneath the Water Treatment Plant Building with discharge via pipeline and pumping station to the outfall at the Chisel Open Pit as indicated in Appendix B and Appendix C.
12. The Licencee shall not discharge sewage effluent, as sampled at the monitoring station located after UV disinfection, where:
- a) the organic content of the effluent, as indicated by the five-day carbonaceous biochemical oxygen demand (CBOD₅), is in excess of 25 milligrams per litre;
 - b) the fecal coliform content of the effluent, as indicated by the MPN index, is in excess of 200 per 100 millilitres of sample;
 - c) the total coliform content of the effluent, as indicated by the MPN index, is in excess of 1500 per 100 millilitres of sample;
 - d) the total suspended solids content of the effluent, as indicated by the non-filterable residue is in excess of 25 milligrams per litre;
 - e) concentration of unionized ammonia in excess of 1.25 mg/L, expressed as nitrogen (N), at 15°C ± 1°C; and
 - f) if effluent is chlorinated, the total residual chlorine content of the effluent is in excess of 0.02 milligrams per litre.

MONITORING AND REPORTING SPECIFICATIONS

13. The Licencee shall monitor, and make the records of such monitoring available to the Director as may be requested, the sewage treatment process for the following parameters:
- a) total flow rate(s) into the sewage treatment plant;
 - b) pH, dissolved oxygen and temperature;
 - c) flow rates into and through the UV disinfection system; and
 - d) other process parameters approved or required by the Director.
14. The Licencee shall:
- a) construct and make available for use by an Environment Officer, a secured and heated effluent monitoring station, allowing direct access to the discharge pipeline following the UV disinfection;
 - b) have the monitoring station accessible to an Environment Officer at all times;

- c) install and maintain a flow measuring device at the monitoring station or at a location acceptable to the Director which is capable of measuring the volume of effluent with an accuracy of ± 2 percent;
 - d) have the flow measuring device re-calibrated every six months or on the request of an Environment Officer;
 - e) equip the monitoring station with a flow-proportional sampling device equipped to function with the flow measuring device and have the sampling device available on request for use by an Environment Officer; and
 - f) equip the monitoring station with an electrical power source of 15 amperes at 110 volts.
15. The Licencee shall arrange for the taking of samples of influent sewage at the headworks and treated sewage effluent at the final discharge point.
16. The Licencee shall:
- a) take one composite sample of effluent, from the effluent monitoring station during the discharge period once each month;
 - b) take three grab samples of the effluent from the effluent monitoring station during the discharge period once each month;
 - c) have the composite effluent sample analyzed for five-day carbonaceous biochemical oxygen demand, temperature, pH, ammonia, nitrate-nitrite, total Kjeldahl nitrogen, total suspended solids and total phosphorus;
 - d) have the grab samples analyzed for fecal coliform content and total coliform content;
 - e) notwithstanding Clause 2 c) of this Licence, if the results of the fecal coliform and/or total coliform analysis exceed the discharge criteria specified in Clause 12 of this Appendix, report the results to the Director within 48 hours of receipt of the results; and
 - f) submit the results of the effluent analysis of sub-clause c) and d) to the Director every 12 months in an annual report.
17. The Licencee shall:
- a) prepare "as constructed drawings" for the sewage treatment plant and shall label the drawings "as constructed"; and
 - b) provide to the Director, not later than six months after the issuance of this Licence, two sets of "as constructed drawings" of the sewage treatment plant.
18. The Licencee shall, during the first year of operation of the sewage treatment plant, obtain grab samples of the effluent which shall be analyzed and reported in accordance with Appendix "A-1" herein attached.

APPENDIX A-1 TO APPENDIX A

Initial Characterization of Wastewater

Facility Size: Very small (less than 500 m³/day)

Facility Type: Sewage Treatment Plant - Continuous discharge

Effluent Sampling:

During the first year of operation:

1. a grab sample shall be collected on a monthly basis; and
2. a grab sample shall be collected on a daily basis, if chlorine is used.

Effluent Analysis:

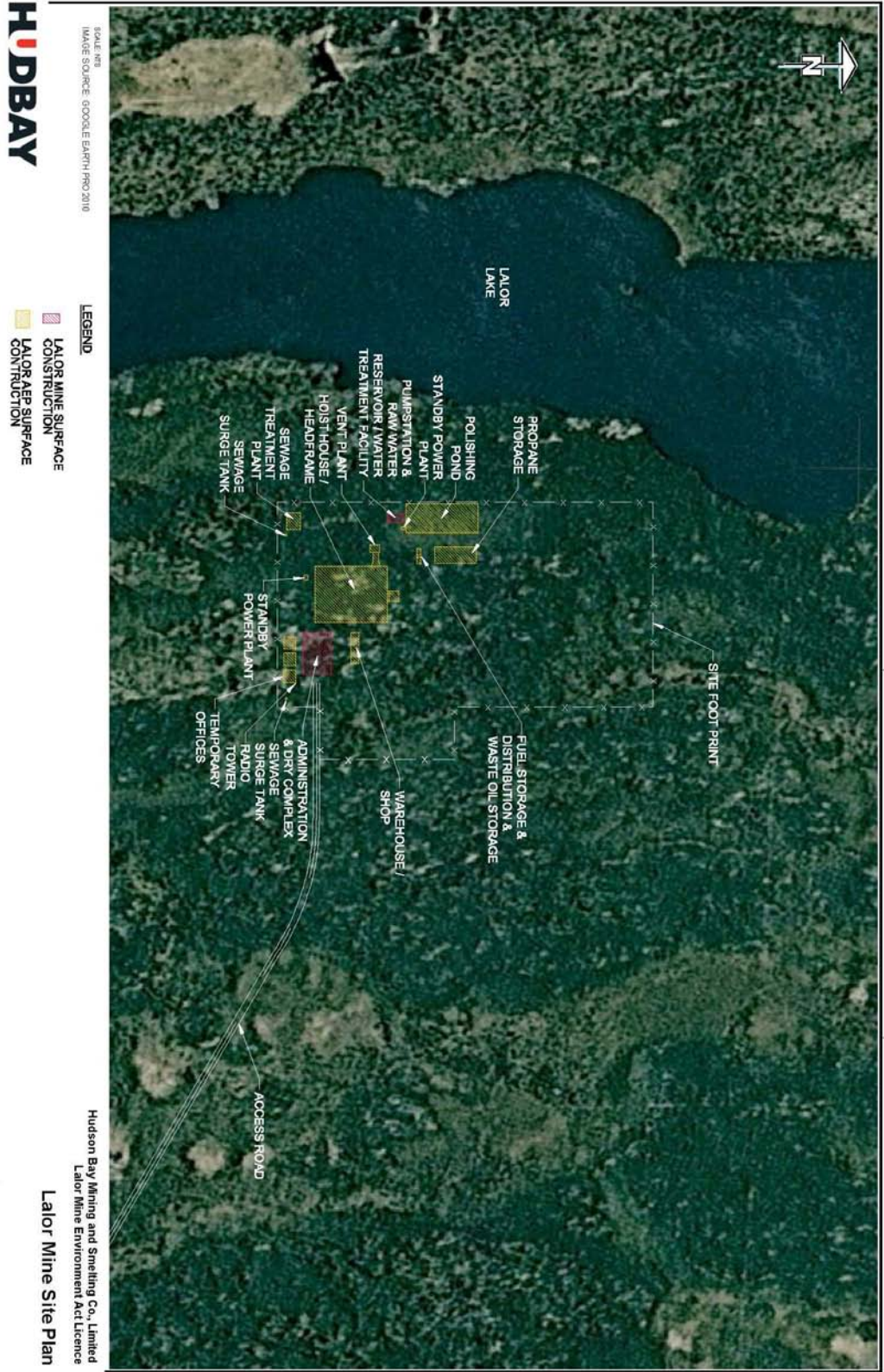
1. Have the monthly sample analyzed for:
 - a) the organic content as indicated by the five-day biochemical oxygen demand and expressed as milligrams per litre;
 - b) the organic content as indicated by the five-day carbonaceous biochemical oxygen demand and expressed as milligrams per litre;
 - c) the total suspended solids content expressed as milligrams per litre;
 - d) the *Esherichia coli* (*E. Coli*) content as indicted by the MPN index and expressed as MPN per 100 millilitres per sample;
 - e) the fecal coliform content as indicated by the MPN index and expressed as MPN per 100 millilitres per sample;
 - f) the total coliform content as indicated by the MPN index and expressed as MPN per 100 millilitres per sample;
 - g) total ammonia nitrogen expressed as milligrams per litre;
 - h) nitrate-nitrite nitrogen expressed as milligrams per litre;
 - i) total Kjeldahl nitrogen, TKN (ammonia + organic N) expressed as milligrams per litre;
 - j) dissolved phosphorus expressed as milligrams per litre;
 - k) total phosphorus expressed as milligrams per litre;
 - l) Temperature; and
 - m) pH.
2. Have the daily sample analyzed for Total Residual Chlorine (TRC), if required.

Effluent Reporting:

1. Report the results to the Director, in writing or in an electronic format acceptable to the Director within 60 days of the sampling date. The report shall include the sampling date, sample temperature, the dates of the effluent discharge, and copies of the laboratory analytical results of the sampled effluent.

APPENDIX B TO ENVIRONMENT ACT LICENCE NO. 3096

Pursuant to Licence Clauses 18 and 19 and Appendix A Clause 11



APPENDIX C TO ENVIRONMENT ACT LICENCE NO. 3096

Pursuant to Licence Clause 20 and Appendix A Clause 11

