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APPROVAL

Province of Nova Scotia
Environment Act, S.N.S. 1994-95, c.1 s.1

APPROVAL HOLDER: ATLANTIC MINING NS CORP.

SITE PID: 00437368, 00437699, 00437707, 00485193, 00485219, 00486134, 00514695, 00568006, 00642777, 00642819, 00642892, 00642926, 00642934, 00642942, 00642959, 00642967, 00642975, 00642983, 00642991, 00643007, 00643015, 00643023, 00643031, 00643049, 00643056, 00643064, 00643080, 00643098, 00643106, 00643114, 00643122, 00643130, 00643148, 00643155, 00643163, 00643171, 00643189, 00643197, 00643205, 00643213, 00643221, 00643239, 00643247, 00643254, 40307092, 40319543, 40338972, 40350050, 40350068, 40350076, 40449589, 40449597, 40500647, 40503468, 40524217, 40524225, 40524233, 40524241, 40535254, 40627218, 40627226, 40657363, 40747818, 41274606, 41280892, 41317108, 41334640, 41340621, 41346073, 41455510

APPROVAL NO: 2012-084244-05

EXPIRY DATE: March 28, 2024

Pursuant to Part V of the *Environment Act*, S.N.S. 1994-95, c.1 s.1 as amended from time to time, approval is granted to the Approval Holder subject to the Terms and Conditions attached to and forming part of this Approval, for the following activity:

Administrator: Kevin G Garroway

Effective Date: July 19, 2018

The Minister's powers and responsibilities under the Act with respect to this Approval have been delegated to the Administrator named above. Therefore, any information or notifications required to be provided to the Minister under this Approval can be provided to the Administrator unless otherwise advised in writing.

TERMS AND CONDITIONS OF APPROVAL

Nova Scotia Environment

Approval Holder: ATLANTIC MINING NS CORP.

Project: Touquoy Gold Project

Site:

PID	Civic #	Street Name	Street Type	Community	County
00437368				MOOSELAND	HALIFAX COUNTY
00437699				LONG LAKE	HALIFAX COUNTY
00437707				MOOSELAND	HALIFAX COUNTY
00485193				MOOSE RIVER GOLD MINES	HALIFAX COUNTY
00485219				MOOSE RIVER GOLD MINES	HALIFAX COUNTY
00486134				MOOSELAND	HALIFAX COUNTY
00514695	140	MOOSE RIVER GOLD MINES	RD.	MOOSE RIVER GOLD MINES	HALIFAX COUNTY
00568006				MOOSE RIVER GOLD MINES	HALIFAX COUNTY
00642777				MOOSE RIVER GOLD MINES	HALIFAX COUNTY
00642819				MOOSELAND	HALIFAX COUNTY
00642892				MOOSE RIVER GOLD MINES	HALIFAX COUNTY
00642926	6752	MOOSE RIVER	RD.	MOOSE RIVER GOLD MINES	HALIFAX COUNTY
00642934				MOOSE RIVER GOLD MINES	HALIFAX COUNTY
00642942				MOOSE RIVER GOLD MINES	HALIFAX COUNTY
00642959	6720	MOOSE RIVER	RD.	MOOSE RIVER GOLD MINES	HALIFAX COUNTY
00642967	6708	MOOSE RIVER	RD.	MOOSE RIVER GOLD MINES	HALIFAX COUNTY
00642975	6700	MOOSE RIVER	RD.	MOOSE RIVER	HALIFAX

00642983				GOLD MINES	COUNTY
00642991	6686	MOOSE RIVER	RD.	MOOSE RIVER GOLD MINES	HALIFAX COUNTY
00643007	6656	MOOSELAND	RD.	MOOSE RIVER GOLD MINES	HALIFAX COUNTY
00643015	6749	MOOSE RIVER	RD.	MOOSE RIVER GOLD MINES	HALIFAX COUNTY
00643023	6743	MOOSE RIVER	RD.	MOOSE RIVER GOLD MINES	HALIFAX COUNTY
00643031				MOOSE RIVER GOLD MINES	HALIFAX COUNTY
00643049				MOOSE RIVER GOLD MINES	HALIFAX COUNTY
00643056	10	MOOSE RIVER GOLD MINES	RD.	MOOSE RIVER GOLD MINES	HALIFAX COUNTY
00643064	4	MOOSE RIVER GOLD MINES	RD.	MOOSE RIVER GOLD MINES	HALIFAX COUNTY
00643080	20	MOOSE RIVER GOLD MINES	RD.	MOOSE RIVER GOLD MINES	HALIFAX COUNTY
00643098	24	MOOSE RIVER GOLD MINES	RD.	MOOSE RIVER GOLD MINES	HALIFAX COUNTY
00643106	32	MOOSE RIVER GOLD MINES	RD.	MOOSE RIVER GOLD MINES	HALIFAX COUNTY
00643114				MOOSE RIVER GOLD MINES	HALIFAX COUNTY
00643122	40	MOOSE RIVER GOLD MINES	RD.	MOOSE RIVER GOLD MINES	HALIFAX COUNTY
00643130	68	MOOSE RIVER GOLD MINES	RD.	MOOSE RIVER GOLD MINES	HALIFAX COUNTY
00643148				MOOSE RIVER GOLD MINES	HALIFAX COUNTY
00643155				MOOSE RIVER GOLD MINES	HALIFAX COUNTY
00643163	101	MOOSE RIVER GOLD MINES	RD.	MOOSE RIVER GOLD MINES	HALIFAX COUNTY
00643171				MOOSE RIVER GOLD MINES	HALIFAX COUNTY
00643189	85	MOOSE RIVER GOLD MINES	RD.	MOOSE RIVER GOLD MINES	HALIFAX COUNTY
00643197				MOOSE RIVER GOLD MINES	HALIFAX COUNTY

00643205	33	MOOSE RIVER GOLD MINES	RD.	MOOSE RIVER GOLD MINES	HALIFAX COUNTY
00643213	61	MOOSE RIVER GOLD MINES	RD.	MOOSE RIVER GOLD MINES	HALIFAX COUNTY
00643221	25	MOOSE RIVER GOLD MINES	RD.	MOOSE RIVER GOLD MINES	HALIFAX COUNTY
00643239				MOOSE RIVER GOLD MINES	HALIFAX COUNTY
00643247	83	MOOSE RIVER GOLD MINES	RD.	MOOSE RIVER GOLD MINES	HALIFAX COUNTY
00643254				MOOSE RIVER GOLD MINES	HALIFAX COUNTY
40307092				MOOSELAND	HALIFAX COUNTY
40319543				MOOSE RIVER GOLD MINES	HALIFAX COUNTY
40338972				MOOSE RIVER GOLD MINES	HALIFAX COUNTY
40350050	6719	MOOSE RIVER	RD.	MOOSE RIVER GOLD MINES	HALIFAX COUNTY
40350068	6705	MOOSE RIVER	RD.	MOOSE RIVER GOLD MINES	HALIFAX COUNTY
40350076				MOOSE RIVER GOLD MINES	HALIFAX COUNTY
40449589				MOOSE RIVER GOLD MINES	HALIFAX COUNTY
40449597				MOOSE RIVER GOLD MINES	HALIFAX COUNTY
40500647				MOOSE RIVER GOLD MINES	HALIFAX COUNTY
40503468	43	MOOSE RIVER GOLD MINES	RD.	MOOSE RIVER GOLD MINES	HALIFAX COUNTY
40524217				MOOSE RIVER GOLD MINES	HALIFAX COUNTY
40524225				MOOSE RIVER GOLD MINES	HALIFAX COUNTY
40524233				MOOSE RIVER GOLD MINES	HALIFAX COUNTY
40524241				MOOSE RIVER GOLD MINES	HALIFAX COUNTY
40535254	56	MOOSE RIVER GOLD MINES	RD.	MOOSE RIVER GOLD MINES	HALIFAX COUNTY
40627218	6569	MOOSELAND	RD.	MOOSE RIVER	HALIFAX

				GOLD MINES	COUNTY
40627226				MOOSE RIVER GOLD MINES	HALIFAX COUNTY
40657363				MOOSE RIVER GOLD MINES	HALIFAX COUNTY
40747818	6460	MOOSELAND	RD.	MOOSELAND	HALIFAX COUNTY
41274606				MOOSE RIVER GOLD MINES	HALIFAX COUNTY
41280892				MOOSE RIVER GOLD MINES	HALIFAX COUNTY
41317108				MOOSE RIVER GOLD MINES	HALIFAX COUNTY
41334640				MOOSE RIVER GOLD MINES	HALIFAX COUNTY
41340621				MOOSE RIVER GOLD MINES	HALIFAX COUNTY
41346073				MOOSE RIVER GOLD MINES	HALIFAX COUNTY
41455510	131	MOOSE RIVER GOLD MINES	RD.	MOOSE RIVER GOLD MINES	HALIFAX COUNTY

Approval No: 2012-084244-05

File No: 92100-30-BED-2012-084244

Reference Documents

- Application submitted March 2, 2018 and attachments.
- Industrial Approval Amendment Application and supporting documents. Submitted by Atlantic Mining NS Corp. (AMNS) Signed by James Millard, Manager of Environment and Permitting on February 2, 2018.
- E-mail from Danielle Finlayson-Bourque, AMNS on March 16, 2018 RE: AMNS – Touquoy – Amendment Application – Proposed Quarry in the TMF with the following attachments:
    - Letter prepared by Danielle Finlayson-Bourque, AMNS dated March 16, 2018. RE: Blasting within the TMF Impoundment Area, 6749 Moose River Rd, RR2 Middle Musquodoboit, NS Industrial Approval 2012-084244.

- Letter prepared by Paul Deering, Engineer of Record, Stantec Consulting Ltd. RE: Response to NSE Letter of February 27, 2018, Amendment Application – Industrial Approval #2012-084244-04, Proposed Quarry in TMF – Touquoy Gold Mine – Moose River, NS.
- Memo prepared by Jonathan Keizer, Hydrogeologist, Stantec Consulting Ltd. RE: Groundwater Monitoring Requirements for TMF quarry development. Response to NSE Letter of February 27, 2018, Amendment Application – Industrial Approval #2012-084244-04, Proposed Quarry in TMF – Touquoy Gold Mine – Moose River, NS.

- E-mail from Karlis Jansons, Independent Tailings Review Board, dated November 2, 2017. RE: Proposed Blasting in the Impoundment at Atlantic Gold.
- E-mail from Jim Millard, AMNS on May 4, 2018, RE: Response to NSE Letter April 24, Amendment Application – Industrial Approval 2012-084244 Blasting in the TMF with the following attachments:
  - Letter prepared by James Millard, AMNS dated May 4, 2018. RE: Response to NSE Letter of April 24, 2018, Amendment Application – Industrial Approval 2012-084244, Blasting within the TMF – Touquoy Gold Mine – Moose River, NS.
  - Letter prepared by Paul Deering, Engineer of Record, Stantec Consulting Ltd. RE: Response to NSE Letter of April 24, 2018, Amendment Application – Industrial Approval #2012-084244-04, Proposed Quarry in TMF – Touquoy Gold Mine – Moose River, NS.
- E-mail from Rachel Bower, Inspector Specialist, Nova Scotia Environment on May 15, 2018. RE: Response to NSE Letter April 24, Amendment Application – Industrial Approval 2012-084244, Blasting in the TMF.
- Industrial Approval Amendment Application and supporting documents. Submitted by Atlantic Mining NS Corp. (AMNS) Signed by James Millard, Manager of Environment and Permitting on February 27, 2018.
- Memo prepared by Paul Deering, Engineer of Record, Stantec Consulting Ltd. dated May 29, 2018, RE: Operational Prepardness and Response Plan for Upset Water levels in Tailings Pond Water Level within IDF Zone and No Emergency Spillway Scenario, Touquoy Gold Project, Halifax County, NS.
- E-mail from Jim Millard, AMNS on June 15, 2018, RE: Monitoring, Evaluation and

Response Plan Quarry Development within TMF with the following attachments:

- Monitoring, Evaluation and Response Plan Quarry Development within TMF Touquoy Gold Project, Halifax County, NS, dated June 15, 2018, prepared by Stantec Consulting Ltd.

1. Definitions

a. “Act” means Environment Act, Chapter 1, s.1 of the Acts of 1994-95, and includes, unless the context otherwise requires, all regulations made pursuant to the Act.

b. "Active Area" means the area required to construct, operate and reclaim the Facility and includes the open pit (surface) mine, mineral processing facility and associated works.

c. "Administrator" means a person appointed by the Minister to be responsible for processing applications respecting activities designated under the Activities Designation Regulations, and includes an acting administrator.

d. “Approval” means an approval issued pursuant to this Act with respect to an activity.

e. “Associated Works” means any building, machinery, equipment, device, tank, system, stockpile, or other related infrastructure.

f. "Department" means the Central Region, Bedford Office, of Nova Scotia Environment located at the following address:

Nova Scotia Environment
Inspection, Compliance, and Enforcement Division
Central Region, Bedford Office,
Suite 115, 30 Damascus Road,
Bedford, Nova Scotia, B4A 0C1.

Phone:(902) 424-7773
Fax:(902) 424-0597

g. "Disturbed Area" means any area on the Site that has been stripped of vegetation and is susceptible to erosion.

h. “Dormancy” means periods of cessation of mining and mineral processing.

i. “Engineer of Record” means the professional engineer that has overarching responsibility for assuring that a tailings storage facility or dam is designed, built,

operated and/or closed/decommissioned with appropriate concerns for safety, water management and environmental impact and meets the applicable regulations, statutes, guidelines, codes and standards.

j. “Extension” means an increase in size, volume or other physical dimensions of an activity such that the increase may cause an adverse effect if not properly mitigated.

k. “Facility” means the open pit (surface) gold mine, mineral processing facility and associated works required for the production of gold.

l. “Historic Tailings” means mine tailings deposited by operations that predate the Facility and are identified and documented, as such, by an independent experienced consultant.

m. "Minister" means the Minister of Environment, and may include any person appointed as a designate of the Minister.

n. “Modification” means a change to an activity that may cause an adverse effect if not properly mitigated and includes, but is not limited to, the expansion of the same process, addition of product lines and replacement of equipment with different technology other than that presently in use.

o. “NSE” means Nova Scotia Environment.

p. “Operation” means

i) For the purpose of the open pit mine (OPM wells), operation will only be considered as commenced when historic tailings are disturbed or material is extracted for the purpose of placement in the waste rock stockpile or as ore in the processing plant.

ii) For the purpose of the processing plant (PLM wells), operation will only be considered as commenced when ore is placed in the processing plant.

iii) For the purpose of the tailings management facility (TMF), including the proposed containment cell for historic tailings (TMW wells and 2 domestic wells), operation will only be considered as commenced when tailings or sludge are placed in the TMF or containment cell.

iv) For the purpose of the waste rock storage area (WRW wells), operation will only be considered as commenced when material is placed in the waste rock stockpile area.

q. “Production” means the development, mining, processing, concentration and smelting to produce elemental gold from gold ore.

r. “Province” means the responsible regulatory Department(s) within the government of Nova Scotia.

s. "Reclamation or Rehabilitation" means restorative work performed or to be performed in accordance with the approved reclamation plan and/or as directed by the Department.

t. “Site” means the lands where an activity or proposed activity will take place and includes the area within the property boundaries of the lots identified with PID#' s listed in this approval.

u. “Standard” means a standard, policy, code, guideline, protocol or other rule in relation to a designated activity that, by reason of its establishment or adoption by regulation or as a condition of an approval or certificate of qualification, becomes a mandatory requirement for participation in that designated activity.

v. "Structure" includes, but is not limited to, a private home, a cottage, an apartment building, a school, a church, a commercial building or a treatment facility associated with the treatment of municipal sewage, industrial or landfill effluent, an industrial building, infrastructure or construction, a hospital, and a nursing home, etc.

w. “Tailings Management Facility (TMF)” means all infrastructure required to be constructed and operated for the purpose of management of mine tailings, historic tailings and associated wastewater over the life cycle of the Facility.

x. “Watercourse” means

(i)the bed, banks and shore of every river, stream, lake, creek, pond, spring, lagoon or other natural body of water, and the water therein, within the jurisdiction of the Province, whether it contains water or not, and

(ii)all groundwater;

y. "Wetland” means lands commonly referred to as marshes, swamps, fens, bogs, and shallow water areas that are saturated with water long enough to promote wetland aquatic processes and which are indicated by poorly drained soil, vegetation and various kinds of activities which are adapted to a wet environment.

2. Scope

a. This Approval (the "Approval") relates to the Approval Holder and their application for Industrial Approval Amendment dated November 25, 2016 and supporting reference documents, including those listed in Appendix I attached, to construct, operate and reclaim the Facility, situated at or near 6749 Moose River Rd., Moose River Gold Mines, Halifax Regional Municipality (the "Site").

b. The scope of the Approval shall be limited to surface mining by open pit methods for the extraction of gold ore and the mineral processing of gold ore for the production of elemental gold.

c. The scope of Approval includes recommendations in the Supporting Reference Documents of the Application which apply to the construction, operation and reclamation of the TMF with the following features:

i) an upstream clay till blanket for the purpose of seepage control.

ii) an upstream clay till core in the dam for the purpose of seepage control.

iii) a quarry for the extraction of construction aggregate for the Facility.

d. The Approval Holder shall not process historic tailings for the purpose of gold recovery without the approval of the Department.

e. The Approval Holder shall not remove tailings, waste rock, slag or historic tailings from the Site without prior approval of the Department.

f. The Facility shall not exceed the active area as outlined in the application and supporting reference documents.

g. This Approval provides for the operation of the Facility at the existing Site only. Any change in location requires further Approval from the Department.

h. The Approval Holder shall maintain a minimum separation distance of 30 metres between the Facility and outer property boundaries of the Site unless otherwise varied by the Department.

3. General

a. The Approval Holder shall construct, operate and reclaim its' Facility in accordance with the following provisions:

i) Environment Act S.N.S. 1994-1995, c.1, s.1 as amended from time to time;

ii) Regulations, pursuant to the above Act, as amended from time to time;

iii) Nova Scotia Standards for Construction and Installation for Petroleum Storage Tank Systems, 1997 Edition as amended from time to time,

iv) The Nova Scotia Environment Contingency Planning Guidelines, May 10, 2016 as amended from time to time, and

v) Any standard adopted by the Department, as amended from time to time.

b. No authority is granted by this Approval to enable the Approval Holder to construct or operate the Facility on lands which are not in the control or ownership of the Approval Holder. It is the responsibility of the Approval Holder to ensure that such a contravention does not occur.

c. If there is a discrepancy in the reference documents or between the reference documents and the terms and conditions of this Approval, the terms and conditions of this Approval and the most recent Application reference submission of clarification from the Approval Holder shall apply.

d. Any request for renewal or extension of this Approval is to be made in writing, to the Department, at least ninety (90) days prior to the Approval expiry.

e. The Minister may modify, amend or add conditions to this Approval at anytime pursuant to Section 58 of the Act.

f. This Approval is not transferable without the consent of the Minister.

g. i) if the Minister determines that there has been non-compliance with any or all of the terms and conditions contained in this Approval, the Minister may cancel or suspend the Approval pursuant to subsections 58A(1) and 58A(2) of the Act, until such time as the Minister is satisfied that all terms and conditions have been met.

ii) If the Minister cancels or suspends this Approval, the Approval Holder remains subject to the penalty provisions of the Act and regulations.

h. The Approval Holder shall notify the Department prior to any proposed extensions or modifications of the Facility, including, but not limited to, process changes or waste disposal practices which are not granted under this Approval. An amendment to this Approval may be required before implementing any change.

i. Extensions or modifications to the Facility may be subject to the Environmental Assessment Regulations. Written approval from the Minister may be required before implementing any change.

j. Pursuant to Section 60 of the Act, the Approval Holder shall submit to the Minister any new and relevant information respecting any adverse effect that actually results, or may potentially result, from any activity to which the Approval relates and that comes to the attention of the Approval Holder after the issuance of the Approval.

k. The Approval Holder shall immediately notify the Department of any incidents of non-compliance with this Approval.

l. The Approval Holder shall bear all expenses incurred in carrying out the environmental monitoring required under the terms and conditions of this Approval.

m. Unless specified otherwise in this Approval, all samples required to be collected by this Approval shall be collected, preserved and analysed, by qualified personnel, in accordance with recognized industry standards and procedures.

n. Unless written authorization is received otherwise from the Minister, all samples required by this Approval shall be analysed by a laboratory that meets the requirements of the Department's "Policy on Acceptable Certification of Laboratories" as amended from time to time.

o. The Approval Holder shall ensure that this Approval, or a copy, is kept on the Site at all times and that personnel directly involved in the Facility operation are made fully aware of the terms and conditions which pertain to this Approval.

p. Upon any changes to the Registry of Joint Stock Companies information, the Approval Holder shall provide a copy of the complete information to the Department within 15 days.

4. Particulate Emissions (Dust)

a. Particulate emissions shall not contribute to an ambient concentration of total suspended particulate matter that exceed the following limits (in micrograms per cubic metre of air) at or beyond the Site property boundaries:

Annual Geometric Mean 70 µg/m3

Daily Average (24 hr.) 120 µg/m3

b. The use of used oil as a dust suppressant is strictly prohibited. The generation of dust from the Site shall be suppressed as required.

c. i) The Approval Holder shall establish six ambient air monitoring stations for the total suspended particulate. Stations are situated as identified in drawing Dwg. 1, located in Appendix A attached, entitled “Particulate Emission Monitoring Locations, Nova Scotia Industrial Approval, Touquoy Mine Tailings Management Facility, Halifax County, Nova Scotia, Atlantic Mining NS Corp., prepared by Stantec, February 15, 2017".

ii) These stations shall be monitored annually thoughout construction, operation and reclamation, during July - August, including periods of Facility dormancy.

iii) Suspended particulate matter shall be measured by the EPA standard; EPA/625/R-96/010a; Sampling of Ambient Air for Total Suspended Particulate Matter (SPM) and PM10 Using High Volume (HV) Sampler.

iv) Revised and/or additional dust monitoring and reporting shall be conducted at the request of the Department.

v) Results of particulate emission monitoring shall be submitted with the annual report, required in Condition 12 unless otherwise requested by the Department.

d. i) The Approval Holder shall implement their plan to control fugitive dust emissions from the Facility during all periods of Facility development, operation and reclamation including periods of post reclamation and dormancy.

ii) The plan for dust control shall be implemented to the satisfaction of the Department.

5. Sound Levels

a. Sound levels measured at stations situated at or beyond the Site property boundaries shall not exceed the following equivalent sound levels (Leq):

Leq 65 dBA 0700-1900 hours (Days)
60 dBA 1900-2300 hours (Evenings)
55 dBA 2300-0700 hours (Nights)

b. Monitoring of sound levels shall be conducted at the request of the Department. The location of the monitoring station(s) for sound will be established by a qualified person retained by the Approval Holder and submitted to the Department for approval and may include point(s) to and beyond the property boundary of the Site.

c. Where it is the opinion of the Department that the Approval Holder has exceeded limits established in Condition 5(a), the Approval Holder will be required to implement a corrective action plan which may include additional noise monitoring. The Approval Holder shall implement immediate corrective actions to mitigate noise if so directed by the Department.

d. Noise monitoring shall be conducted in accordance with the Department's Guideline for Environmental Noise Measurement and Assessment or future revisions to this Guideline. Noise measurements shall be integrated on the A weighted scale based on a minimum of two hours of continuous sampling during each of the periods of the day as identified in Condition 5(a).

e. Revised and/or additional noise monitoring and reporting shall be conducted at the request of the Department. The location of the revised and/or additional noise monitoring station(s) will be established by the Department in consultation with the CLC and may include point(s) beyond the property boundary of the Site.

6. Air Emissions

a. The Approval Holder shall ensure that emissions from the facility do not contribute to an exceedence of the maximum permissible ground level

concentrations specified in Schedule “A” of the Air Quality Regulations.

b. The Approval Holder shall operate the Facility so that air emissions do not result in an exceedence of the ground level concentrations at or beyond the Site boundary listed in Table 1, Appendix B.

c. Stack Emissions for Particulate Collection Systems, Electrowinning, Carbon Regenerator and Gold Furnace

i) The Approval Holder shall meet the air emissions criteria specified in Table 2, Appendix B.

d. The Approval Holder shall be required to comply with additional ambient air or stack limits established by the Department.

e. Stack testing shall be conducted and results submitted as directed by the Department to confirm compliance with the limits in Condition 6.

f. Air Emission Source Program

i) The Approval Holder shall prepare a program to conduct source monitoring to verify the dispersion modeling estimates for the parameters of mercury, total suspended particulate, hydrogen cyanide, ammonia, and metals, including arsenic and lead.

ii)The program shall be submitted 30 days prior to commencement of operation and implemented in a time frame acceptable to the Department.

iii) The implementation of the program shall be conducted and subsequent analysis shall be performed by a consultant with experience in source testing and ambient air testing and modelling.

iv) Detailed pre-test methods including the test procedures, name of the company performing the work and their previous experience must be submitted to the Department not less than eight weeks prior to the testing, if such testing is required or planned.

v) The results of the program as described in Condition 6(f) of this Approval shall be based upon the operating condition scenario for which the highest concentration of contaminant at ground level would result.

vi) The results of the program shall be submitted to the Department for review and approval.

vii) If results from the program described in Condition 6(f) of this approval demonstrate that the Approval Holder is or may be contributing to an exceedance

of the maximum permissible ground level concentrations specified in Table 1, limits in Table 2, Appendix B or Schedule “A” of the Air Quality Regulations, the Approval Holder may be required to conduct additional ambient monitoring or field measurement. The Approval Holder may also be required to prepare and submit, to the Department, an emission reduction plan to prevent non-compliance.

viii) If required, the Approval Holder shall implement the emission reduction plan in a time frame acceptable to the Department to achieve compliance.

g. Air Emission Control Operation and Maintenance

i) Air emissions from the particulate collection systems, electrowinning circuit, gold furnace and carbon regeneration kiln shall be directed to the emission control systems when these units are in operation.

ii) The Approval Holder shall prepare and submit, to the Department, an operation and maintenance manual for the control of air emissions from all emission control equipment including scrubbers, baghouses, demisters, dust collectors, etc.

iii) The manual shall be prepared and submitted prior to commencement of operation of the process units.

iv) The Approval Holder shall maintain records of the inspections on the emission control systems for a period of not less than two years and make them available to the Department upon request.

v) The Approval Holder shall conduct annual inspections of each emission control system to ensure it is in proper operating condition. This shall include, but not be limited to, an examination of the instrumentation, seals and connections on ductwork and the condition of all vent lines. The Approval Holder shall maintain a record of these inspections on the Site for a period of not less than two years and make them available to the Department upon request.

7. Surface Water

a. The Site shall be developed and maintained to prevent siltation of the surface water which is discharged from the Site into the nearest watercourse. Additional controls shall be implemented if site runoff exceeds the discharge limits contained in Condition 7.

b. No authority is granted by this Approval to enable the Approval Holder to discharge surface water onto adjoining lands without the authorization of the affected landowner(s). It is the responsibility of the Approval Holder to ensure

authorizations are current and valid.

c. The Approval Holder shall establish and maintain sixteen (16) surface water monitoring stations as identified in attached drawing Dwg. 2 (Appendix C attached), entitled “Surface Water Monitoring Locations, Nova Scotia Industrial Approval Touquoy Mine Tailings Management Facility, Halifax County, Nova Scotia, Atlantic Mining NS Corp., prepared by Stantec, February 15, 2017". The stations are described as follows:

SW-1 Moose River - Upstream of Facility and Upstream of Moose River Road culvert.

SW-2 Moose River - Downstream of Facility and Upstream of Bridge.

SW-3 Unnamed Tributary (Watercourse #4) to Moose River Downstream of Facility.

SW-11 Moose River - Upstream at Facility Boundary

SW-12 Outlet from Square Lake

SW-13 Outlet from Scraggy Lake at Dam

SW-14 Final (MDMER) Facility Liquid Effluent - Outlet from the Polishing Pond.

SW-15 End of unnamed Tributary to Scraggy Lake south of the Polishing Pond

SW-16 Seepage Collection Point East of Tailings

SW-17 Seepage Collection Point West of Tailings

SW-18 Fish River North of Pughole and Upstream of Bridge

SW-19 Unnamed Tributary to Moose River Upstream of Facility.
SW-20 East of the TMF on an unnamed Tributary to Scraggy Lake

SW-21 Scraggy Lake near the final effluent outfall into the lake

SW-22 Seepage Collection Point North of Tailings

SW-23 Upstream of the Mineral Processing plant on Watercourse #4, an unnamed Tributary to Moose River.

d. i) The Approval Holder shall conduct surface water quality monitoring during the various stages of the Facility construction, operation and reclamation in

accordance with Table 3, Appendix D, for the parameters specified in Appendix G, subject to condition 7(e).

ii) The Approval Holder shall conduct monitoring at environmentally significant areas for total suspended solids as specified in the Application and identified on Drawing No. 7.2 Stantec dated November 25, 2016 and implement mitigative measures as specified in the Atlantic Gold, Touquoy Mine Project, Environmental Effects Monitoring Plan (EEM) for various phases of the Facility.

e. i) The Approval Holder shall conduct monthly surface water quality monitoring at all monitoring stations designated by the MDMER.

ii) Monitoring shall be conducted during construction and for one year following commencement of all operations for parameters specified in the MDMER.

iii) Thereafter, the frequency of monitoring shall be, at minimum, as specified in Table 3, Appendix D.

f. i) The Approval Holder shall develop a stage - discharge curve for the flow in Moose River surface water monitoring stations SW-11 and SW-2 for the period of June 1 to September 30, to establish the relationship between the water level on the staff gauge and the rate of flow.

ii) Accepted stream gauging standards such as ISO 748 shall be used in developing the stage discharge curve for both monitoring stations.

iii) A minimum of four measurements shall be made of depth and flow in Moose River at both locations in 2017. At least one measurement shall be made in the period between August 15 and September 3 during a low stage in Moose River.

iv) Flow measurement equipment which is sufficiently sensitive to measure flows in the range of 0.002 cubic metres per second shall be used to determine flows. The capability of flow measurement instrumentation shall be documented in all required reporting for establishment of the stage discharge curve.

v) The staff gauge at both locations shall be recalibrated annually by a person qualified and experienced in low flow hydrology.

vi) In relation to the stage discharge curve, the Approval Holder shall submit a report to NSE by October 31, 2017. The report shall be prepared by a person trained and experienced in low flow hydrology and shall include the following information, as a minimum:

• The stage-discharge curve for both locations, plotted at a scale which clearly shows the low flow end of the curve,

• A best-fit equation describing the low flow stage-discharge relationship,

• A description of the development of the stage discharge curve,

• A description of the location chosen for the monitoring stations.

vii) The Approval Holder shall provide additional information regarding the stage discharge curve and staff gauge at the request of NSE.

g. i) The Approval Holder shall install and maintain two permanent staff gauges for recording surface water flow measurements in Moose River, upstream and downstream of the open pit mine, at an appropriate location near SW11 and SW2.

ii) Water measurements shall be recorded at least daily, to estimate flow through an established stage-discharge curve relationship, beginning no later than July 15, 2017 through September 30, 2017 and from June 1st through September 30th every year after.

iii) Surface water flow data may be measured and recorded using a combination of staff gauge readings and automated data loggers.

iv) If measurements are recorded using data loggers, on at least a bi-weekly basis, the data shall be downloaded, reviewed, and compared to the staff gauge to ensure accuracy of the data loggers. During this data review, the Approval Holder shall compare upstream and downstream flow rates in order to identify potential impacts on Moose River.

v) The Approval Holder shall notify NSE immediately if significant deviation from baseline or upstream flow is observed in Moose River.

vi) Data loggers shall be calibrated on at least an annual basis.

vii) The permanent monitoring stations shall be established no later than July 14, 2017.

viii) Site selection for placement of the permanent monitoring stations shall be completed by or under the direct supervision of a qualified person trained and experienced in low flow hydrology.

ix) The staff gauge shall be located such that it will be submerged if there is any flow in the watercourse.

h. The Department reserves the right to require modifications including, but not

limited to, monitoring locations, monitoring frequency and contaminants of concern for surface water. The Approval Holder shall conduct additional monitoring at the direction of the Department.

i. Revisions to the surface water monitoring program proposed by the Approval Holder shall require prior written approval of the Department.

j. The Approval Holder shall be required to change environmental control measures if surface water monitoring indicates adverse environmental effects are or may be occurring and are attributable to activities at the Facility.

k. The Approval Holder shall be required to implement contingency measures to maintain flow in the Moose River or its tributaries if so directed by the Department.

l. The Approval Holder shall implement the approved Copper Sulphate Management Plan and review it on an annual basis for improvements or revisions. The Plan revisions shall meet the approval of the Department.

m. The Approval Holder shall retain a 30 metre undeveloped buffer on all adjacent watercourses and wetlands unless specific approval has been given to alter the watercourse/wetland. The Approval Holder shall obtain written authorization from the Department to encroach within these limits.

n. No later than ninety (90) days prior to commencing construction, the Approval Holder shall submit an application for water withdrawal for all sources from which water is proposed to be withdrawn for the processing facility water supply (startup and makeup once recycling commences). The application shall specify the full anticipated daily maximum and average withdrawal volume and expected duration for startup and makeup water requirements for each water body that is proposed as water withdrawal source. The application shall meet all submission requirements of the NSE “Guide to Surface Water Withdrawal Approvals 2016" or future revisions.

o. The Approval Holder shall obtain a water approval prior to alteration of the mini-pit and notify the Department at least thirty (30) days prior to the planned removal of fish from the mini-pit.

p. i) The Approval Holder shall submit, to the Department, a report on surface water quality, to be included with the annual report, no later than April 30 of each year, based on the data from the previous calendar year.

ii) The Approval Holder shall provide additional reporting or modify annual reporting content and/or format if so directed by the Department.

8. Groundwater

a. i) Prior to commencement of construction of the Facility, subject to condition

8(a)(iii), the Approval Holder shall establish and maintain thirty two (32) groundwater monitoring stations at the locations as identified in the following drawing; “Groundwater Monitoring Locations, Nova Scotia Industrial Approval Touquoy Mine Tailings Management Facility, Halifax County, Nova Scotia, Atlantic Mining NS Corp., prepared by Stantec., February 15, 2017" (Appendix E attached), the two additional domestic water wells situated at the museum and office shall be included in the program.

ii) An additional monitoring well, identified as TMW-9A/B on Figure SK-44 dated June 15, 2018 prepared by Stantec, shall be installed and situated in shallow fractured bedrock along strike of slates to the southwest of the quarry. The installation shall be subject to conditions 8(a)(iv), (v), (vi) and (vii) and be installed and monitored prior to the first quarry blast.

iii) Monitoring wells,referenced in 8(a)(i), shall be installed no less than 275 days prior to commencement of operation.

iv) Monitoring well drilling and installation shall be overseen by a qualified hydrogeologist experienced in monitoring well installation and licensed to practice in Nova Scotia by the Association of Professional Geologists of Nova Scotia (APGNS) or the Association of Professional Engineers of Nova Scotia (APENS).

v) Monitoring well pairs shall consist of at least one monitoring well installed to intercept the water table and one monitoring well installed in shallow fractured bedrock.

vi) The elevation of the top of well casing shall be surveyed relative to an appropriate fixed reference point at the Site which is also referenced to mine water levels.

vii) Within 30 days of completion of monitoring well installation, a borehole log showing well construction shall be provided to the Department.

b. i) The Approval Holder shall complete groundwater quality monitoring for the stations, referenced in condition 8(a)(i), during the various stages of Facility development including pre-construction, construction, operation, reclamation and post-reclamation in accordance with Table 4, Appendix F, for the parameters specified in Appendix G.

ii) All groundwater monitoring stations shall be monitored for static water level on at least a monthly basis, unless otherwise directed by NSE or specified within the terms and conditions of Approval.

iii) (a) Data loggers shall be maintained in groundwater monitoring stations OPM 1A/B, OPM 2A/B, OPM 3A/B, OPM 5A/B, OPM 6A/B, and OPM 7A/B with

readings recorded on an hourly basis, as a minimum.

(b) The data logger results shall be downloaded and reviewed by a trained independent consultant on a monthly basis, as a minimum, in order to identify impacts on the water levels associated with the open pit mine.

(c) The data loggers shall be calibrated on at least an annual basis.

iv) Water level measurements and water quality samples shall be collected by qualified personnel in a consistent manner in accordance with accepted best practises for groundwater monitoring.

c. i) The Approval Holder shall submit an updated Groundwater Contingency Plan that addresses the Departments comments sent in May 2017. The plan shall be submitted for approval on or before October 1, 2018. The revised plan shall include the establishment of actual Action Levels for key groundwater and surface water parameters which trigger the activation of the Contingency Plan. The plan shall include a comparison of the Action Level with appropriate Nova Scotia, Environmental Quality Standards (EQS) and CCME Water Quality Guidelines for the Protection of Aquatic Life (Freshwater).

ii) The Approval Holder shall clearly establish and identify the baseline monitoring results and Action Levels for groundwater and surface water monitoring stations. These results shall be used for the purpose of comparison with ongoing monitoring results and be included with the annual report starting April 30, 2017.

iii) The Approval Holder shall implement the approved Groundwater Contingency Plan at the direction of the Department.

iv) The Approval Holder shall ensure that any replacement water supplied for potable water use, to address the plan, shall meet the quantity and quality requirements of Health Canada drinking water, health and aesthetics objectives and be supplied in accordance with provincial regulations and guidelines.

d. i) The Approval Holder shall submit, to the Department, a report on groundwater monitoring, with the annual report, no later than April 30 of each year based on the data from the previous calendar year.

ii) Results of groundwater monitoring shall be submitted to the Department upon request.

e. i) The Approval Holder shall undertake a review of the monitoring well logs for the groundwater monitoring wells surrounding the TMF, in comparison to anticipated seepage depths, groundwater elevation, and hydraulic conductivity of the bedrock to ensure that monitoring well screens are appropriately placed to capture seepage from the TMF. The review shall be undertaken by a

Professional Hydrogeologist licensed to practice in Nova Scotia by APENS or APGNS,

ii) Results and recommendations associated with condition 8(e)(i)shall be submitted to the Department on or before April 30, 2017.

f. The Approval Holder shall install additional monitoring wells at the request, and in a time frame, acceptable to NSE.

g. The Approval Holder shall be required to prepare and implement a plan to mitigate unacceptable seepage from the TMF and/or groundwater impacts at the direction of the Department.

h. Revisions to the groundwater monitoring program, proposed by the Approval Holder, shall require written approval of the Department.

9. Spills or Releases

a. Spills or releases shall be reported in accordance with the Act and the Environmental Emergency Regulations.

b. Spills or releases shall be cleaned up in accordance with the Act and the Contaminated Sites Regulations.

10. Construction

a. Erosion and sedimentation control devices shall be installed prior to construction at the Site and shall remain in place and be maintained until disturbed areas are stabilized.

b. A surface water monitoring and management plan shall be prepared that is specific to each stage of construction consistent with the “Erosion and Sediment Control Plan for the Development of the Touquoy Gold Project, Moose River Gold Mines, NS, prepared by Stantec, dated March 2010 of Appendix C of the original Application for Industrial Approval. A copy of this plan shall be forwarded to the Department prior to the commencement of each phase of construction.

c. The Approval Holder shall retain the services of an independent professional engineer to inspect, design, report and/or advise on the status of soil erosion and sedimentation controls during construction and, if so directed, during other phases of operation and reclamation.

d. All proposed TMF dams shall be constructed with a low permeability core, consisting of compacted clay till having a hydraulic conductivity no greater than 1x10-6 cm/sec.

e. The TMF shall be constructed in accordance with the Stantec Technical Specifications October 7, 2016 and Stantec Quality Management Plan dated

November 25, 2016 or as revised and reported to the Department. The construction shall include a seepage control blanket with tailings beach along the upstream main tailings pond dam separating the polishing pond.

f. i)No less than thirty (30) days prior to construction of each component identified below, the Approval Holder shall provide copies of the final construction design engineering drawings stamped by a professional engineer licensed to practise in the Province of Nova Scotia:

- Soil Erosion and Sedimentation Plan (continuous during 5 construction phases, including the final construction and post reclamation stages)

- Secondary Containment for Dangerous Goods Handling,

- Containment Cell(s) for Historic Tailings,

- Effluent Treatment Plant,

- Mill Wastewater Treatment for Arsenic Reduction

- Inco SO2/air process for Cyanide Destruction,

- Air Emission Control Systems for particulate collection and on the Gold Furnace, Carbon Regeneration Kiln and Electrowinning Circuit,

ii) The Approval Holder shall be required to revise the construction design drawings if so directed by the Department.

iii) The Approval Holder shall obtain written certification by a professional engineer that all construction or installation has been conducted in accordance with the terms and conditions of this Approval and has met the minimum requirements of all drawings and specifications for the components listed in 11(f)(i).

iv) A copy of this certification must be provided to the Department six (6) weeks prior to the operation or use of the component or 6 weeks following completion of installation, whichever comes first.

v) The certification must confirm that all as-built drawings and any other relevant documentation have been provided to the Approval Holder by the engineer.

g. Erosion control materials shall be comprised of clean, non-erodible, non-ore bearing, non-watercourse derived and non-toxic materials. Any rock used for construction which lies outside the TMF drainage catchment shall be tested for acid rock drainage and metal leaching potential. Records of such testing shall be

held for inspection by the Department for the life of the project.

h. All work operations shall be conducted in a manner to protect the watercourses/wetlands and groundwater from siltation and disturbance to the adjacent and downstream areas. Silted water is not to be released directly into a watercourse/wetland.

i. i) Separate watercourse/wetland alteration Approval(s) shall be obtained by the Approval Holder from the Department prior to causing alteration or disturbance of the watercourse/wetland.

ii) No less than ninety (90) days prior to wetland alteration the Approval Holder shall submit for review and approval a Wetland Protection Plan which has been developed in consultation with Nova Scotia Department of Natural Resources Wildlife Division.

iii) As part of the application, under the Environment Act, for approval to alter a wetland, the industrial Approval Holder shall submit, a wetland compensation plan for wetlands situated within the footprint of the TMF and the engineered wetlands treatment system.

iv) The compensation plans shall be submitted for review and approval at least ninety (90) days prior to the wetland alteration. The time frame for implementation of the approved plans shall be acceptable to the Department and Nova Scotia Department of Natural Resources.

j. Any overland flow which has the potential to enter the construction area is to be diverted away from the construction site, into vegetated areas a minimum of 30 metres from any watercourse and/or wetland, where it will not enter a watercourse/wetland.

k. All excavated material shall be placed in a location where it will not adversely impact a watercourse/wetland.

l. The Approval Holder shall ensure that topsoil / organic material resulting from construction remains segregated and stabilized for reclamation use at the Facility and Site reclamation.

11. Blasting

a. i) The Approval Holder shall have a technical blast design prepared by a qualified person which ensures the ground vibration and air concussion limits in this Approval can be achieved;

ii) At the request of the Department, the Approval Holder shall submit a copy of the blast design;

iii) At the direction of the Department, the Approval Holder shall modify or cease blasting.

b. The Approval Holder shall call the nearest weather office to assess the climatic conditions prior to conducting any blasting. No blasting will be permitted if a thermal inversion is anticipated at the time of the proposed blast.

c. No blasting shall occur on Sunday or on a statutory holiday prescribed by the Province.

d. The Approval Holder shall ensure that all blasts are monitored for air concussion and ground vibration as described in Table 5. The limits established in Table 5, Appendix H shall not be exceeded at structures located off Site.

e. The monitoring stations for blasting shall be as indicated in Table 5, Appendix H.

f. Additional monitoring stations for blasting may be specified as required by the Department. Any changes to the location of the stations shall be approved in writing by the Department.

g. i) A summary of results of monitoring shall be submitted to the Department, with the annual report, on or before April 30. Reporting frequencies shall be revised at the direction of the Department.

ii) Blast monitoring results shall also be made available to the Department within 48 hours of a specific request.

iii) Non-compliant results shall be reported within 24 hours of the blast.

h. The Approval Holder shall conduct pre-blast surveys for all structures situated beyond the Site boundary and within 800 metres of a proposed blast location at the Facility, which have not had pre-blast surveys conducted. The survey shall be conducted in accordance with the Department's 'Procedure For Conducting a Pre-Blast Survey" and the results of this survey sent to the Department prior to any blasting. The pre-blast survey shall include potable water quality analysis for all identified structures.

12. Reporting

a. Any non-compliance with this Approval shall be reported immediately to the Department's Regional Office.

b. The Approval Holder shall provide records, inspection results and/or reports required by terms and conditions of the Approval upon the request of the Department. These shall include, but not be limited, to those associated with the following:

• Operating parameters for waste management and treatment systems,

• Implementation of the OMS Manual requirements, including TMF operating parameters,

• Groundwater, surface water, liquid effluent, blasting, air emissions, noise, particulate emission, acid rock generation, seepage or flow rates,

• Implementation of the Technical Specifications requirements,

• Implementation of the Quality Management Plan requirements,

• Resulting from the duties of the Engineer of Record.

• Operation and monitoring of the TMF Quarry, as described in the "Monitoring, Evaluation and response Plan for Quarry Development within the TMF".

• Activation of the Operational Preparedness and Response Plan for Upset Water Levels in the Tailings Pond.

c. An Annual Report shall be submitted to the Department by April 30 of each year. Two copies of the report, plus an electronic copy, shall be provided and include the following information associated with the previous calendar year:

i) The Annual Report shall contain all required and requested monitoring results and/or reports. It shall contain an executive summary with a general description on the status of operations and environmental compliance, highlighting notable events. Any instance of non-compliance shall be identified and cross referenced in the executive summary.

ii) The Approval Holder shall maintain records for the surface water and groundwater monitoring program, including surface water flow data, data logger and staff gauge readings, monitoring well elevations, and groundwater and surface water quality, for the duration of the Approval. Records shall be made available to NSE immediately upon request.

d. The Annual report shall detail the results of the groundwater and surface water monitoring program. This section of the report shall be prepared, by or under the direction of, an independent qualified professional licensed to practice in Nova Scotia by APGNS or APENS and shall include, but is not limited to, the following details related to surface water and groundwater:

Surface Water

• a review of field methodologies, including sampling techniques;
• a description of the surface water monitoring network;

• a review of the current surface water monitoring program and recommendations for modifications, as applicable;
• current and historical surface water quality data in chronological tabular format; in comparison to relevant criteria and Contingency Plan Action Levels, with exceedances highlighted;
• current and historic surface water flow data in chronological tabular format, including both electronic and staff gauge data;
• a detailed interpretation of the surface water quality data including an analysis of spatial and temporal trends, graphical representation of relevant parameters;
• a detailed interpretation of the surface water flow data including an analysis of spatial and temporal trends, a comparison of upstream and dowstream flow rates, a graphical representation of trends in flow over the monitoring period at both downstream and upstream locations, and a comparison of electronic and staff gauge measurements;
• updated stage discharge curve for both monitoring locations;
• the identification of any adverse impacts to surface water resources (quality and quantity), including watercourses, wetlands, and aquatic life, as a result of site activities and associated recommendations, as applicable;
• a comparison of the actual surface water quality results for Scraggy Lake and Watercourse #4 with those predicted in the Application.
• a comparison of actual seepage volumes into the seepage collection ditches with those estimated in the Application.
• laboratory certificates of analysis.

Groundwater

• a review of field methodologies, including sampling techniques;
• a description of the groundwater monitoring network;
• a review of the current groundwater monitoring program and recommendations for modifications, as applicable;
• current and historic static water level data in chronological tabular format;
• current and historical groundwater quality data in tabular format, in comparison to relevant criteria and Contingecy Plan Action Levels, with exceedances highlighted;
• a detailed interpretation of the groundwater quality data including an analysis of spatial and temporal trends, including graphical representation of relevant parameters, in relation to background and baseline data and relevant criteria;
• current and historical groundwater elevation data in chronological tabular format;
• a detailed interpretation of the groundwater elevation data including graphical representation and an analysis of trends; and
• the identification of any adverse impacts to groundwater (quality or quantity), third party properties, or human health, as a result of site activities and associated recommendations, as applicable.
• laboratory certificates of analysis;

13. Complaint Response

a. The Approval Holder shall develop and maintain standard procedures to address complaints associated with the Facility which would include, but not be limited to;

i) Immediately investigate the cause of the complaint and undertake immediate and appropriate action, if necessary, to correct the problem.

ii) The Approval Holder shall record all complaints and document the date, time, name, address and telephone number of the individual lodging the complaint. The record shall also state any cause and the agreement or action taken to correct a problem.

iii) The Approval Holder shall record all arbitration referrals, the proceedings of any referrals and the decisions rendered.

iv) Records referenced in Condition 13(a)(i,ii,iii) shall be forwarded to the Department on an annual basis with the annual report, required in Condition 12, as requested by the Department.

b. The Approval Holder shall be required to establish and maintain a Community Liaison Committee (CLC) to facilitate communication between the Approval Holder and the local community. Terms of reference shall include, but not be limited to, environmental monitoring, dispute/complaint resolution, wetlands compensation plans, mine development, operations and reclamation plans.

14. Environmental Assessment Approval

a. The Approval Holder shall comply with the terms and conditions of the Environmental Assessment Approval dated February 2008 for the open pit (surface) gold mine and mineral processing facility (Touquoy Gold Project) situated at or near 6749 Moose River Rd, Moose River Gold Mines, Halifax Regional Municipality (the "Site").

b. i) Within one year of the date of Approval Amendment, the Approval Holder shall complete a plan, acceptable to NSE, for procuring conservation land. The lands shall possess valued protected area attributes in the vicinity of the Site for statutory protection by the Province, consistent with Condition 2.1 of the Environmental Assessment Approval. If an acceptable plan has not been completed within this time, the Approval Holder shall post a financial security in the value of $500,000 with the Province. The security shall be returned to the Approval Holder once an acceptable plan has been implemented.

ii) The form of security and any revision to the security or plans shall meet the approval of the Province.

c. The Approval Holder shall submit a semi-annual update (April 30 and October 30) on the status of compliance with conditions of Environmental Assessment Approval for the first two years following Approval Amendment and, thereafter, at the request of the Department.

15. Liquid Effluent

a. i) The Approval Holder shall direct all wastewater and surface runoff, associated with the Facility, to the TMF for treatment. The exception to the above shall include two overburden stockpiles situated between the TMF and the open pit south and west of the polishing pond and any other areas granted approval for exemption by the Minister. Bypass discharge of the runoff from waste rock stockpile perimeter ditches shall only occur with the written permission of the Department.

ii) The Approval Holder shall submit a copy of the engineered design drawings of the surface water collection and pump station required to control drainage from the waste rock stockpile.

iii) Cyanide laden wastewater from mineral processing shall be pre-treated using the Inco SO2/air process for cyanide destruction prior to discharge into the TMF to achieve a minimum weekly average, weak acid dissociable (WAD) concentration of less than 1.0 mg/l, unless otherwise revised by NSE.

iv) The Approval Holder shall implement and maintain automated cyanide controls for cyanide addition and tailings detoxification in accordance with the details in the Application and reference documents, specifically the Atlantic Gold letter to the Department dated February 13, 2017.

v) TMF wastewater shall be treated in the effluent treatment plant and geotube filter system for arsenic removal prior to discharge. The exception being TMF wastewater required to be transferred while activating the Operational Preparedness and Response Plan for Upset Water Levels in the Tailings Pond. The geotube system shall be operated and maintained in accordance with the manufacturers specifications.

vi)The effluent treatment plant shall remain operational during the activation of the Operational Preparedness and Response Plan for Upset Water Levels in the Tailings Pond.

vii) The Approval Holder shall ensure adequate structures, such as rockfill walls, are in place to physically retain filled geotubes on the drumlin during and after operation.

viii) Alternate/Additional wastewater treatment systems shall require the written

approval of the Minister.

b. i) Facility wastewater shall be directed through the main tailings pond, polishing pond and the engineered wetland treatment system for treatment prior to final effluent discharge to Scraggy Lake. Discharge through the emergency spillway(s) is only permitted when the water level in the tailings and/or polishing pond is above the respective pond's operating level. The Approval Holder shall not discharge tailings or process water into either pond when an emergency spillway is in use or the Operational Preparedness and Response Plan for Upset Water Levels in the Tailings Pond is in activation.

ii) Alternate discharge locations shall otherwise require written authorization by the Minister.

c. i) The Approval Holder shall provide the Department with a copy of all liquid effluent reports, environmental effects monitoring reports and emergency reporting as required for submission to the federal government in accordance with the Metal and Diamond Mining Effluent Regulations (MDMER) pursuant to Fisheries Act. Reports shall be provided to the Department at the same frequency as required by the federal government.

ii) If so directed by the Department, the Approval Holder shall comply with limits established in the MDMER and any other separate liquid effluent discharge limits the Department may chose to establish outside the scope of the MDMER.

d. The Site shall be developed and maintained to prevent surface water contaminants from being discharged into a watercourse, wetland, water resource, or beyond the property boundary, in excess of the following criteria:

i) Total Suspended Solids

Clear Flows (Normal Background Conditions):

1) Maximum increase of 25 mg/l from background levels for any short term exposure (24 hour or less)

2) Maximum average increase of 5 mg/l from background levels for longer term exposure (inputs lasting between 24 hours and 30 days)

High Flow (Spring Freshets and Storm Events):

1) Maximum increase of 25 mg/l from background levels at any time when background levels are between 25 mg/l and 250 mg/l

2) Shall not increase more than 10% over background levels when background is > 250 mg/l

ii) pH

1) Maximum 5 to 9 in grab sample

2) Maximum 6 to 9.5 as a Monthly Arithmetic Mean

iii) Petroleum Hydrocarbons

1) Nova Scotia Environment Tier 1 Environmental Quality Standards for Surface Water - Petroleum Hydrocarbons (PHC) Parameters.

Note: Results for the following stations shall be used to determine Background concentrations: SW-1, SW-11 and SW-12, SW-23 Downstream concentrations: SW-2, SW-3, SW-15, SW-19, SW-20 and SW-21. Reference Dwg. 2, entitled " Surface Water Monitoring Locations, Nova Scotia Industrial Approval Touquoy Mine Tailings Management Facility, Halifax County, Nova Scotia, Atlantic Mining NS Corp., prepared by Stantec, February 15, 2017".

e. The Approval Holder shall be required to undertake any mitigative action specified by the Department to comply with limits established in the MDMER or by the Department in accordance with Condition 15.

16. Engineer of Record

a. The Approval Holder shall commit to retain the service of an Engineer of Record (EOR) to complete duties over the life cycle of the Facility as defined in the CDA Application of Dam Safety Guidelines to Mining Dams.

b. The Approval Holder shall clearly identify the EOR and any future changes to the EOR. The Approval Holder shall ensure that a proper succession plan is in place to maintain continuity of responsibility and that all records, files and knowledge are transferred to the new EOR.

c. i) The EOR shall be involved with all aspects of the life cycle of mining dams on the Site. This shall include the phases of construction, operation, care and maintenance, reclamation and closure of the mining dams on the site.

ii) The scope of the EOR responsibilities shall include dam safety inspections (DSI) and dam safety reviews (DSR), as well as environmental impacts to ensure the design and on-going construction and operation meets the terms and conditions of Approval.

iii) The Approval Holder shall ensure that the EOR provides certification that the

tailings dams and TMF have been designed and constructed for it's intended purpose, in accordance with the design and specifications provided in the Application and supporting reference documents. This certification shall be submitted prior to a) initial tailings deposition and b) following each and every raise to the tailings dams.

d. The Approval Holder shall conduct semi-annual dam safety inspections (DSI).

e. The Approval Holder shall conduct at least two dam safety reviews (DSR) of the tailings and polishing pond dams during the life of the project. One of the DSR's shall be conducted after final reclamation and prior to abandonment. The dam safety reviews shall be in accordance with the Canadian Dam Association Dam Safety Review, Technical Bulletin 2016 as amended from time to time.

f. A copy of the results, conclusions and recommendations of the DSI and DSR reports shall be provided to the Department with the annual report required in Condition 12.

17. Tailings Management

a. The Approval Holder shall adhere to the Atlantic Gold, Best Applicable Practises for Tailings Management document dated November 25, 2016, as a minimum, and if updated shall be approved by the Department. An integral part of the adherence involves the Canadian Dam Associations, Dam Safety Guidelines 2016 and the Mining Association of Canada document entitled, "Developing of an Operations, Maintenance and Surveillance Manual for Tailings and Water Management Facilities"

b. i) The TMF and associated works shall be designed, constructed, operated and maintained in accordance with the report on "Operation Maintenance and Surveillance Manual, Tailings Management Facility, prepared by Stantec dated April 5, 2016" and subsequent updates.

ii) The OMS Manual shall be updated with changes to personnel, operations, infrastructure, and/or design as required. Any revisions to the OMS Manual shall be submitted to the Department within 30 days after completing the revision and a copy also made available to staff of the Department upon request.

iii) An updated Operation, Maintenance and Surveillance (OMS) Manual shall be submitted to the Department on or before September 1, 2018 to incorporate a monitoring and pumping system for surface water collection at the waste rock stockpile and the TMF seepage collection ditches.

c. i) TMF pipelines, spillways, decants and seepage collection ditches and TMF water elevations shall be inspected and the inspections recorded on a daily basis and necessary action taken to prevent spillage of untreated tailings and/or wastewater beyond the TMF.

ii) A secondary tailings discharge point shall be established in the TMF in the event of breakage and/or blockage during discharge of the tailings line which is in use.

iii) The Approval Holder shall submit a design for secondary containment, leak detection and a leak response plan for the tailings pipeline. The design shall be submitted to the Department on or before March 31, 2017.

d. The tailings and polishing pond water levels shall be maintained within the operating design levels, and design freeboard must be maintained at all times. The Approval Holder shall notify the Department when tailings and polishing pond water levels are less than a measured freeboard of 1 metre on these dams or when the Operational Preparedness and Response Plan for Upset Water Levels in the Tailings Pond is activated or anticipated to be activated. A record shall be kept of all days when freeboard is less than 1 metre.

e. The Approval Holder shall only dispose of tailings associated with the Facility in the designated TMF. This includes historic tailings and treatment sludge unless otherwise revised through compliance with terms and conditions of the Approval.

f. i) The Approval Holder shall record the monthly volume of tailings, historic tailings and treatment sludge deposited in the TMF, and report the results to the Department on an annual basis with the annual report required in Condition 12. Reporting frequencies shall be revised at the direction of the Department.

ii) The Approval Holder shall record the effluent discharge, mine water, tailings water recycle, freshwater makeup, process water and potable water volumes utilized on a daily basis. A summary record shall be kept of the monthly total and average daily volumes and provided in the annual report required in Condition 12.

iii) Fresh makeup water and potable water withdrawal records shall be submitted to the Department with reporting as required by water withdrawal approvals.

iv) Records shall be made available to the Department upon request.

g. i) The Approval Holder shall ensure that the capacity of the TMF is maintained to retain the projected accumulation of mine tailings and runoff. The Approval Holder shall have the Engineer of Record conduct a semi-annual review of the capacity of the TMF.

ii) The review shall evaluate the capability of the TMF to retain the projected accumulation of mine tailings and runoff and confirm that the current stage of TMF development complies with the current Canadian Dam Association (CDA) design standards.

iii) A copy of the results of the review shall be forwarded to the Department with the annual report, required in Condition 12, unless otherwise directed by the Department. If the results indicate that the CDA standard is not being met, then the Approval Holder shall notify the Department and propose immediate actions to comply the above standard.

iv) The Approval Holder shall be required to complete revised engineering design and specifications prior to altering the TMF dams or discharge spillways. Any designs shall be submitted to the Department for approval prior to commencement of work.

v) All work identified in 17(g)(iv) shall be supervised and confirmed, in writing, by the Engineer of Record (EOR) prior to use.

h. The Approval Holder shall be required to complete the staged construction of tailings dam raises on an annual basis and construction of the final tailings dam spillway, in accordance with the Application, including the technical specifications and drawings, unless otherwise directed in writing by the Department. This shall include the staged construction from commissioning to ultimate stage of construction.

i. The Approval Holder shall be required to implement tailings, waste rock, overburden, topsoil and/or byproduct management plans, including TMF waste water treatment plans, based on the results of monitoring programs identified in this approval.

j. i) Seepage collected in the perimeter seepage collection ditches along the north, east and west dams shall be collected and directed back to the TMF, unless otherwise approved by NSE.

ii) The seepage collection system shall be excavated to bedrock or constructed in materials that have a permeability no greater than 1x10-6 cm/sec, unless otherwise approved by NSE.

iii) The Approval Holder shall measure the flow of seepage into the collection ditches and provide this information with the annual report required in Condition 12.

iv) The Approval Holder shall submit and implement a mitigative strategy to investigate and/or mitigate potential seepage from the TMF at the direction of the Department.

k. The Approval Holder shall be required to install floating baffle curtains in the main tailings and/or polishing pond to increase the retention period if so directed by the Department.

l. The slopes of all dams shall be protected against erosion, as required, with placement of riprap and/or appropriate vegetation.

m. i) The TMF and associated works shall also be operated and maintained in accordance with the Operational Preparedness and Response Plan for Upset Water Levels in the Tailings Pond dated May 29,2018 and the approved Monitoring, Evaluation and Response Plan for Quarry Development within TMF as amended from time to time.

ii) The Approval Holder shall revise the above referenced documents at the direction of the Department.

iii) Any revisions proposed by the Approval Holder, to the above referenced documents, shall be authorized by the EOR and submitted to the Department for approval prior to implementing the revision.

TMF Quarry

n. The Approval Holder shall adhere to the "Monitoring, Evaluation and Response Plan Quarry Development within TMF" prepared by Stantec Consulting Limited dated June 15, 2018, as amended from time to time, describing all monitoring activities that will be undertaken before, during and after TMF Quarry aggregate extraction activities.

o. The Monitoring, Evaluation and Response Plan for Quarry Development within TMF shall be submitted for final review and approval by the Department prior to any blasting for aggregate extraction.

p. The Approval Holder shall provide the Department with written notice prior to initiating the first blast for aggregate extraction and prior to abandonment of the TMF Quarry.

q. The Approval Holder shall have the Engineer of Record review and interpret the results of the monitoring program on a minimum weekly basis. The EOR shall be responsible to oversee a weekly review and interpretation of all monitoring programs associated with the operation of the TMF quarry and provide advice to the Approval Holder for additional monitoring or mitigation, if required. Weekly reports and recommendations of the EOR shall be submitted to the Department and documented for inspection by the Department. The Department shall be informed on recommendations of the EOR prior to the Approval Holder implementing the recommendation.

r. The Department shall be notified of any potential adverse environmental impacts and/or changes to the Plan resulting from the review and interpretation of results by the EOR.

s. If ground vibration limits are exceeded at the TMF dam, clay blanket, and/or Historic Tailings Cell, inspections shall be conducted and recommendations made by the EOR prior to the next blast.

t. Under the supervision and advice of the EOR, the Approval Holder shall install a clay seepage control blanket in areas identified for seepage control.

u. The Approval Holder shall be required to cease development of the TMF quarry if so directed by the Department.

Spillway Cancellation

v. i) The Approval Holder shall adhere to the Operational Preparedness and Response Plan for Upset Water Levels in Tailings Pond prepared by Stantec Consulting Limited subject to conditions of Approval, as amended from time to time.

ii) The Approval Holder shall provide the Department with an updated Operational Preparedness and Response Plan for Upset Water Levels in Tailings Pond that considers the July 2018 amendments to this Approval. The updated plan shall be submitted on or before August 1, 2018.

w. All equipment and infrastructure required to carry out the Plan shall be in place and installed by October 1, 2018.

x. The Approval Holder shall notify the Department prior to activation or deactivation of the Plan.

y. During activation of Plan A,B and/or C, mechanical wastewater input areas into the tailings pond shall be inspected daily to prevent overtopping and/or failure of controls.

z. Tailings wastewater shall be directed to the effluent treatment plant for treatment prior to and during the period which the plan is in activation.

aa. Prior to and during the activation of Plan A the Approval Holder shall sample and analyse tailings wastewater at or near the pump outlet and discharge to Scraggy Lake twice per day, with each sample spaced a minimum of 8 hours apart. Water shall be analyzed for MDMER parameters,with the exception of toxicity and radium. Results shall be sent to the Department within 2 days of receipt.

ab. The Approval Holder shall cease activation of Plan A and activate Plan B and/or C if wastewater quality indicates liquid discharge effluent to is expected to be non-compliant with the MDMER limits.

ac. The Approval Holder shall be required to install staged spillways on the TMF if so directed by the Department.

18. Historical Tailings Management

a. i) Prior to disturbance of areas of the Site which are known to contain, and/or suspected to have Historic Tailings, the Approval Holder shall be required to fully delineate the location of the Historic Tailings in the Areas of Potential Environmental Concern (APEC).

ii) Areas of Potential Environmental Concern (APEC) for the delineation shall include all areas of the Site which are known or suspected to have deposits of historic gold mine tailings, as identified in the Historic Mine Tailings Management Plan, and which are planned for disturbance during the construction, operation or reclamation of the Facility.

b. For the purpose of Historic Tailings delineation, the Approval Holder shall retain a Site Professional (as defined by the Contaminated Sites Regulations), to delineate all soil and groundwater impacts associated with the tailings using current CAN/CSA Phase I/II Environmental Site Assessment Standards. The results of the delineation activities shall be submitted to the Department in the form of a CAN/CSA Phase I/II ESA Report by September 30, 2017.

c. i) The Historic Mine Tailings Management Plan shall be revised to include the results of a technical study of the potential mobility of mercury into the receiving environment. The testing and results of the technical study shall be completed by a professional geochemist as described in correspondence from Lorax Environmental dated the January 25, 2017.

ii) Upon completion of delineation activities, the “Historic Mine Tailings Management Plan” shall also be revised to reflect the 2017 delineation activities and any changes to the proposed plans for the management of historical tailings. The Historic Mine Tailings Management Plan shall describe remediation plans for all historic tailings delineated as per item 18 a(ii).

d. i) The revised Historic Mine Tailings Management Plan shall be submitted to the Department for review and approval thirty (30) days prior to implementation. The revisions shall include designs and specifications, where required, by a professional engineer. Final disposal of the historic tailings shall be in the TMF unless otherwise approved by the Department.

ii) The Approval Holder shall retain a Site Professional to provide details of any proposed risk assessment approaches to address historic tailings on Site.

e. Historic tailings deposited in the TMF prior to or during TMF quarry development shall be within an encapsulated cell constructed in accordance with Stantec Drawing 1925W-113, Rev 4, unless otherwise granted written authorization for temporary storage. The EOR shall confirm the historic cell construction complies with the design prior to deposition of historic tailings into the cell.

19. Acid Rock Drainage Contingency

a. Drainage water pumped from the open pit (surface) mine and draining from the waste rock stockpiles shall be monitored weekly for pH. Records of this monitoring shall be maintained on the Site for inspection by the Department.

b. i) The Approval Holder shall collect and analyze samples of fresh waste rock from the open pit mine and tailings for at least every 100,000 tonnes of ore mined. Samples from the TMF quarry shall be collected and analyzed for at least every 20,000 tonnes of rock quarried. Sampling and analyses shall otherwise be conducted in accordance with the approved Blast Material Sampling procedure as updated from time to time. Samples shall be analyzed for acid base accounting, total sulphur and percent sulphide.

ii) A revised Blast Material Sampling Procedure that addresses the Departments comments sent in April 2017 shall be prepared by a professional geochemist. The revised Procedure shall be submitted to the Department for review by August 1, 2018. This Blast Material Sampling Procedure shall be reviewed and updated annually by a Professional Geochemist and a copy provided to the Department with the Annual Report.

iii) The B.C. Confirmation Test or alternate acceptable acid rock drainage kinetic testing shall be conducted on all samples which have an acid consuming to acid generating ratio of 3:1 or less.

c. Should the results of testing indicate potentially acid generating conditions the Approval Holder shall notify the Department immediately and may be required to conduct additional monitoring/testing or implement a plan to monitor and mitigate potential acid mine drainage, if so directed by Department.

d. A summary of the results of acid rock drainage testing shall be provided with the annual report required in Condition 12.

20. Dangerous Goods/Waste Dangerous Goods/Reagent Handling

a. All floors in the storage and handling and mix tank areas shall be constructed of smooth impervious material with secondary containment or sloped to an impermeable enclosed drainage collection sump capable of holding a spill.

b. Individual dangerous/waste dangerous goods or groups of compatible dangerous/waste dangerous goods shall have secondary containment to meet the specifications of Condition 20(g). Secondary containment shall be constructed such that potential spills of dangerous/waste dangerous goods do not come in contact with or pass under or near incompatible materials.

c. An employee trained in the handling of dangerous/waste dangerous goods shall be present during all dangerous/waste dangerous goods handling operations.

d. The storage, handling and mix tank areas of the Facility shall have no open floor drains.

e. All storage racks, vehicles, ventilation ducts, containers and mix/storage tanks associated with flammable dangerous/waste dangerous goods shall be electrically grounded to prevent build up of static electric charges.

f. All dangerous/waste dangerous goods that are accepted by the Facility shall be stored in drums, containers or tanks composed of materials which are compatible with the goods stored therein as specified by the manufacturer.

g. All containers or tanks shall be completely surrounded by secondary containment sized to contain 110% of the volume of the largest tank or container in the specifically contained area or 100% of the volume of the largest tank or container plus 10% of the aggregate capacity of all other containers or tanks in the contained area, whichever is greater.

h. All containers shall be stored upright and kept off the floor. All products and dangerous/waste dangerous goods shall be stored in accordance with manufacturers specifications.

i. Sufficient aisle space shall be provided between dangerous/waste dangerous goods to allow the unobstructed movement of persons, transfer equipment, fire protection equipment, spill control equipment, and decontamination equipment to any part of the Facility.

j. The Approval Holder shall ensure that all storage areas, containers and tanks, for dangerous/waste dangerous goods are labelled to clearly identify their contents.

k. The Approval Holder shall maintain written acceptable standard operating procedures for the handling of dangerous goods. Such procedures shall be readily available to all employees and the Department.

l. The Approval Holder shall be required to design and upgrade the storage of dangerous/waste dangerous goods to meet the approval of the Department if so directed.

m. Storage of used oil shall be in accordance with Guidelines for the Storage of Used Oil, August 26, 2003 as amended from time to time.

n. i) The Approval Holder shall identify the proposed storage and disposal location for air emission control system wastes prior to commencement of operation.

ii) The Approval Holder shall be required to evaluate the characteristics of air emission control system wastes at the direction of the Department.

iii) The disposal of air emission control system wastes shall be acceptable to the

Department.

o. Any proposal to dispose of solid waste in an approved municipal landfill shall meet the criteria established in the Nova Scotia Department of the Environment "Guidelines for Disposal of Contaminated Solids in Landfills (May 10, 2016) as amended from time to time.

21. Inventory

a. The Approval Holder shall maintain an up-to-date inventory of dangerous goods and waste dangerous goods which are stored at the Facility. The inventory shall include the informational requirements of Section 11(2) of the Dangerous Goods Management Regulations.

b. The inventory shall be made available to the Department for inspection upon request.

22. Insurance

a. The Approval Holder shall maintain environmental impairment liability insurance in the minimum amount of ten million dollars ($10,000,000). The insurance shall name Nova Scotia Environment as insured.

b. The Approval Holder shall review the adequacy of insurance coverage on an annual basis and provide a status report to the Department with the annual report due April 30.

c. The Approval Holder shall be required to review and/or amend the value of insurance coverage at the direction of the Department.

23. Contingency/Emergency Response Plan

a. The Approval Holder shall maintain approved contingency/emergency response plans for the Facility. The contingency/emergency response plans shall be updated annually in accordance with the Department’s Contingency Planning Guidelines dated May 10, 2016, as amended from time to time. The plans shall be made available to the Department upon request and include, but not be limited to:

i) general procedures for routine (equipment break-down, upset conditions, maintenance, etc.) or major emergencies within the Facility,

ii) plans for dealing with emergency issues including, but not limited to, fires, explosions, spills and releases including those associated with sodium cyanide and hydrogen cyanide release,

iii) malfunctions, risk of failure and actual failure of tailings/wastewater management systems,

iv) actions to be taken in the event of known or suspected impacts to surface water and groundwater quality and/or quantity, and

v) contingency plans for replacement or mitigation, if necessary, of all water wells situated within 800 metres of the open pit during all stages of the Facility development.

vi) Operational Preparedness and Response Plan for Upset Water Levels in the Tailings Pond.

b. The Approval Holder shall ensure that the contingency/emergency response plans for the Facility are reviewed and updated on a yearly basis. The Approval Holder shall document what modifications were made to the plans and how the plans were communicated to their staff.

c. Copies of the contingency/emergency response plans are to be maintained on Site at all times and made available for inspection by staff of the Department upon request.

d. The contingency plan shall contain a Site layout drawing identifying the location of all Facility features and dangerous/waste dangerous goods. A copy of the Contingency plans shall be made available to the local fire Department(s) and police.

e. The Approval Holder shall ensure that all personnel are trained to address environmental emergencies in a manner consistent with the Facility's approved contingency plan and that the necessary materials and equipment are available at all times for such purpose.

f. The Approval Holder shall be required to implement the design, construction and implementation of the contingency plan in a time frame specified by the Department.

24. Reclamation & Financial Security

a. i) The Approval Holder shall submit and maintain a financial reclamation security with the Province in an amount and form acceptable to the Department. The security shall also be provided and maintained in a time frame acceptable to the Province.

ii) The Approval Holder shall ensure that any security posted for rehabilitation/reclamation be kept valid for the term of the Approval.

iii) Additional financial security may be required by the Department to address potentially acid generating wastes, wastewater treatment requirements and/or other environmental issues that come to the attention of the Department or

Province.

iv) Cost estimates for reclamation shall reflect the greatest level of reclamation required at any point prior to the completion of reclamation.

v) Reclamation security in the value of no less than $10.4 million (M) shall be posted with the Province of Nova Scotia. The security shall be posted on or before the specified dates in accordance with the installment schedule specified below:

Prior to Construction (confirmed) $3.6 M - April 15, 2016
Prior to Ore processing $2.10 M - Dec.31, 2017
1 years after Start Ore Processing $2.6 M – Dec. 31, 2018
2 years after Start Ore Processing $2.1 M - Dec. 31, 2019

vi) The Approval Holder shall not commence construction and/or ore processing until written confirmation is received from the Province that satisfactory reclamation security has been posted.

vii) The Approval Holder shall provide two sets of legal survey drawings to the Department which depict the disturbance of the open pit, plant area, tailings treatment and containment areas, the tailings and stockpiles of waste, overburden and topsoil.

One set of drawings shall depict the current Site disturbance and the second set shall depict the anticipated Site disturbance for the upcoming 12 months of project development.

The drawing sets shall be prepared by a surveyor licensed to practise in the Province of Nova Scotia and submitted on or before the following dates: January 30, 2018, January 30, 2019 and January 30, 2020.

b. i) The Approval Holder shall submit an updated mine and reclamation plan on or before April 30, 2017, and every three years thereafter, unless a final plan is submitted in accordance with condition 24 b) iii). The revisions shall include an evaluation of the reclamation progress and recommendations from an experienced independent consultant. The revised reclamation plan shall examine the location options for long term physical and chemical stability of the wastewater effluent treatment plant sludge. The revised plans shall consider changes which have occurred due to the TMF quarry operation and status of the TMF spillways. Revisions shall include the costs associated with these changes and their impact to the security held by the Province.

ii) The updated plan shall indicate the current status of the Facility development and Site reclamation. It shall also indicate the mine plan and progressive

reclamation plans for the remaining mine life and include an estimate of the remaining reclamation cost.

iii) The Approval Holder shall submit a final mine and reclamation plan to the Department for approval six months prior to the planned end of production, or within six months after the continuous unplanned suspension of production, unless granted an extension in writing by the Department. The plan shall address reclamation of the TMF, waste piles, mine, processing plant, ancillary equipment and associated works.

iv) The Approval Holder shall submit a final Post Mining Environmental Management Plan within six months prior to the planned end of production or six months prior to the commencement of final reclamation, unless granted an extension in writing by the Department. The plan shall address ongoing monitoring, maintenance and response measures.

v) The Approval Holder shall conduct geochemical studies on the tailings, under the direction of a qualified geochemist, to examine the potential solubility and mobility of arsenic under different reclamation scenarios. The results shall be used to develop a reclamation plan which limits arsenic mobility. The results shall be submitted with the updated and final reclamation plan and implemented in manner acceptable to the Department. The reclamation plan shall be developed in consultation with a qualified geochemist.

c. Post reclamation monitoring and reporting shall extend for a period of no less than three (3) years following completion of reclamation unless otherwise directed by the Department

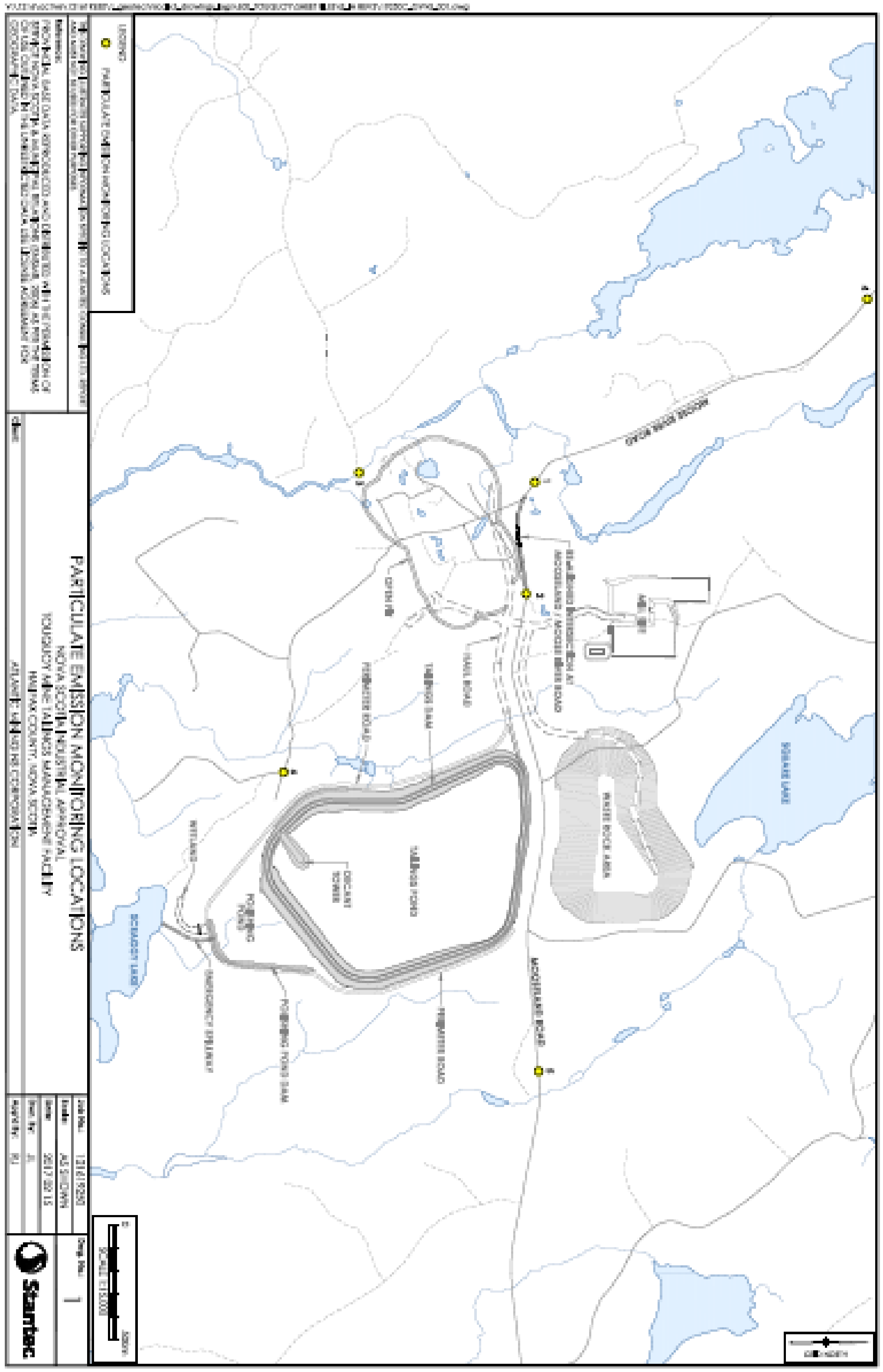
d. If so directed, the Approval Holder shall be required to reclaim all or any portion of the Facility and Site to the satisfaction of the Department.

e. The final Site reclamation shall meet the approval of the Province after which the Approval Holder shall be released from their financial security obligations.

25. Community Liaison Committee

a. The Approval Holder shall be required to establish and maintain a Community Liaison Committee (CLC) to facilitate communication between the Approval Holder and the local community. Terms of reference shall include, but not be limited to, environmental monitoring, dispute/complaint resolution, wetlands compensation plans, mine development, operations and reclamation plans.

APPENDIX A


PARTICULATE EMISSION MONITORING LOCATIONS
NOVA SCOTIA INDUSTRIAL APPROVAL
HALIFAX COUNTY, NOVA SCOTIA
LEGEND
TAILINGS POND
WASTE ROCK AREA
SQUARE LAKE
SCRAGGY LAKE
MOOSELAND ROAD
HAUL ROAD
PERIMETER ROAD
POLISHING POND DAM
EMERGENCY SPILLWAY
DECANT TOWER
WETLAND
AS SHOWN
Stantec

APPENDIX B

Table 1. Air Emission Concentration Limits at Ground Level or Site Boundary.

Air Contaminant	CAS Number	Maximum Ground Level Concentration - [Half Hour Standard Concentration ($\mu g/m^3$)*]	Maximum Ground Level Concentration - [24 Hour Standard Concentration ($\mu g/m^3$)*]
Arsenic and Compounds	7440-38-2	1	0.3
Mercury-alkyl compounds	7439-97-6	1.5	0.5
Mercury	7439-97-6	5	2

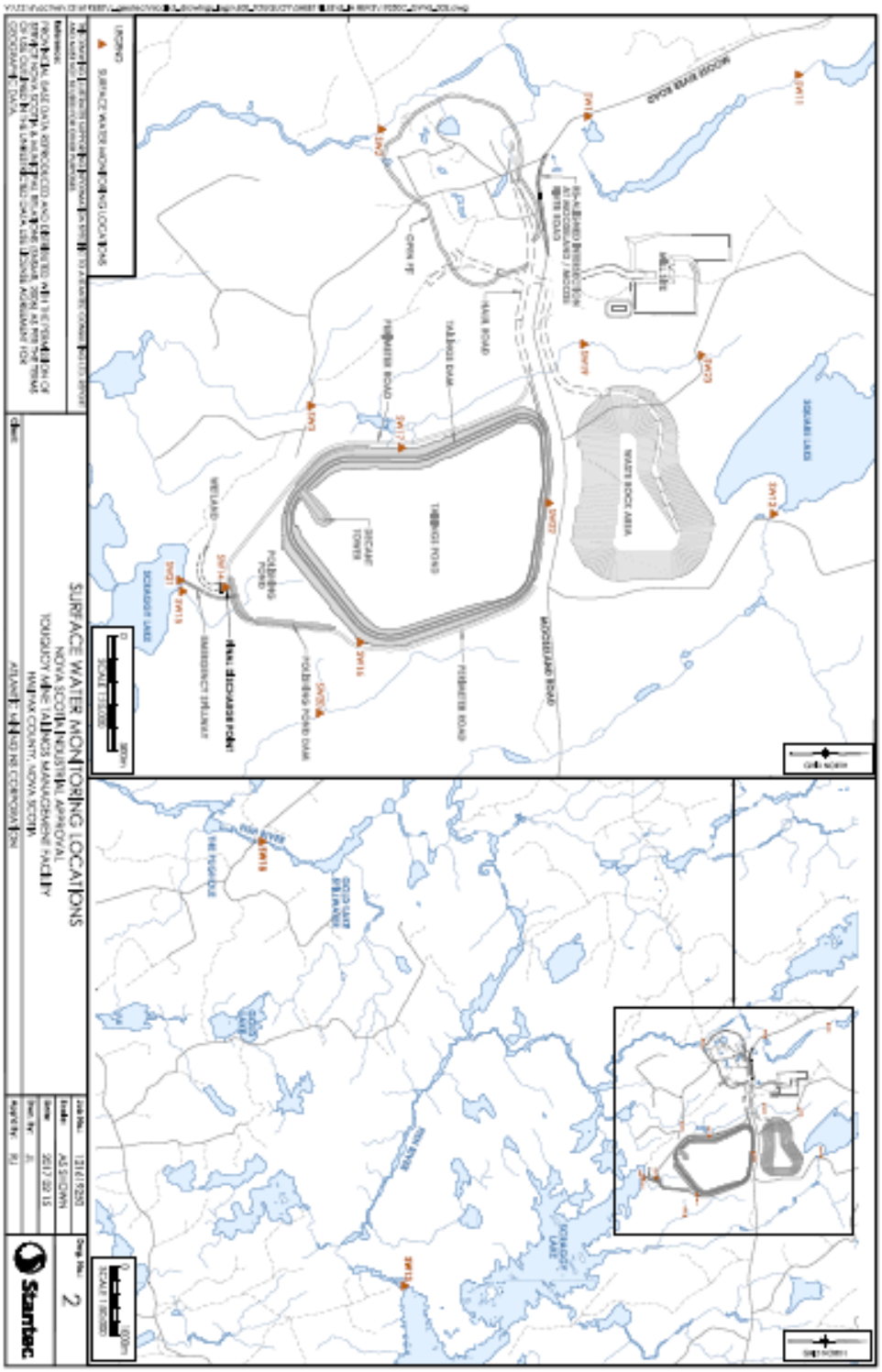
* Summary of Standards and Guidelines to support Ontario Regulation Reg. 419/05, Air Pollution-Local Air Quality, Standards Development Branch, Ontario Ministry of the Environment, April 2012

Table 2. Stack Emissions Limits.

Source	Parameter	Stack Emission Limit	Method*
Furnace Stack	Total Particulate Matter	20 mg/Rm3	EPS-1/RM/8 (as amended)
	Opacity	Maximum 10%	EPS-1-AP-75-2 (as amended)

* Correction for oxygen not required unless a combustion source is used.
Modification of Sampling Methods shall require prior approval of the Department.

APPENDIX C


SURFACE WATER MONITORING LOCATIONS
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TOXICITY AT THE TAILINGS MANAGEMENT FACILITY
HALIFAX COUNTY, NOVA SCOTIA
ATLANTIC GOLD CORPORATION
Stantec
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APPENDIX D

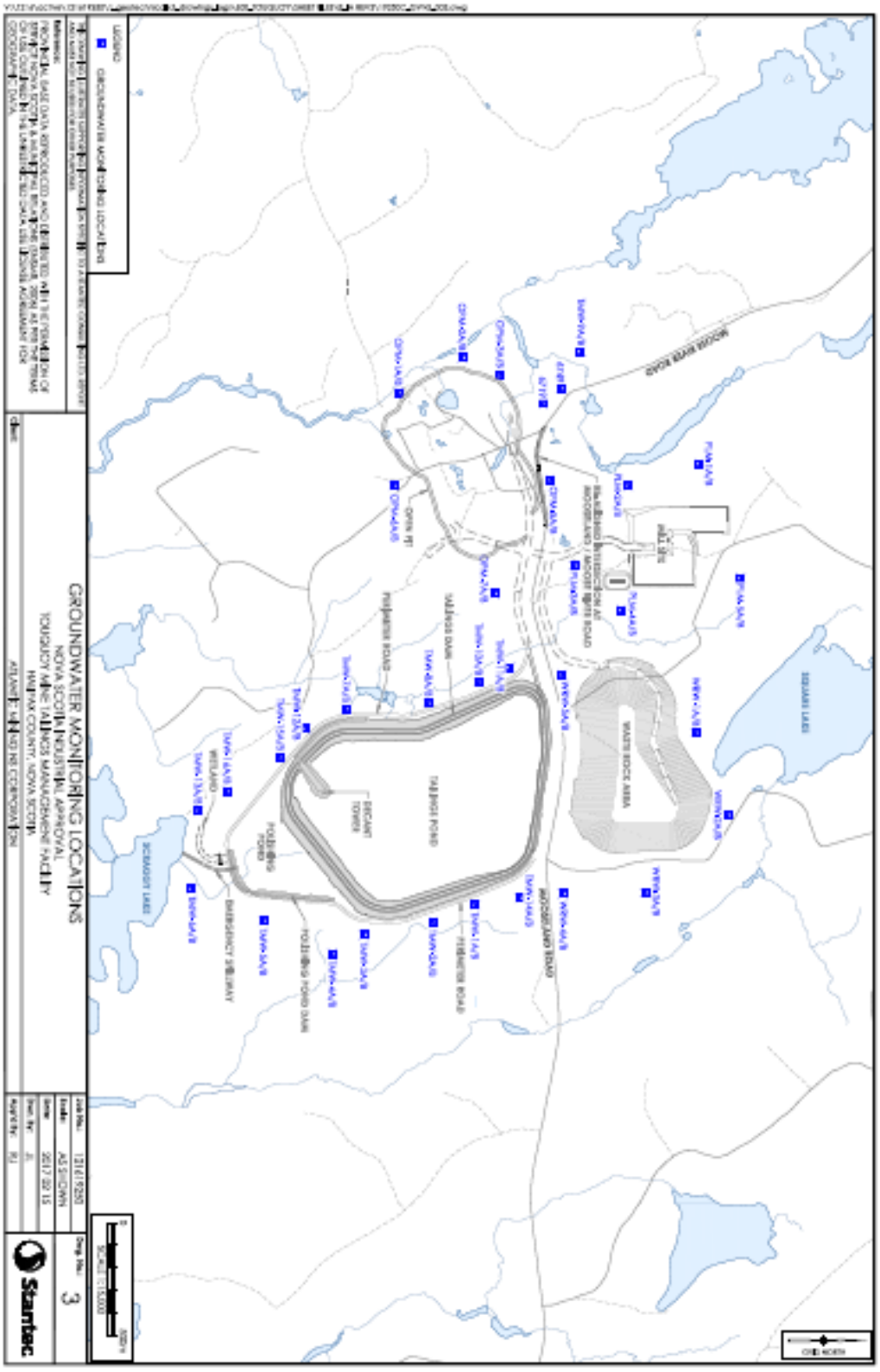
Table 3. Surface Water Monitoring Parameters and Frequency.

Monitoring Point	Parameter	Frequency
SW-1 SW-2 SW-3 SW-11 SW-12 SW-13 SW-14 SW-15 SW-16 SW-17 SW-18 SW-19 SW-20 SW-21 SW-22 SW-23	i) Water Quality Appendix G Parameters ii) Surface water flow rate at the permanent surface water monitoring stations near SW11 and SW2*	i) Monthly ii) Surface water flow rate - Daily **

* Note: Surface water measurements to estimate flow based on established stage-discharge curve at the permanent surface water monitoring stations near SW-11 and SW-2.

** Note: Daily surface water measurement to estimate flow based on established stage-discharge curve for the period of June to September.

APPENDIX E


GROUNDWATER MONITORING LOCATIONS
NOVA SCOTIA INDUSTRIAL APPROVAL
TOMSQUOY MINE TAILINGS MANAGEMENT FACILITY
HALIFAX COUNTY, NOVA SCOTIA
ATLANTIC INNOVATION CORPORATION
Stantec
SCALE: 1:15000
1 CM = 150 M
MOOSE RIVER ROAD
TAILINGS POND
WASTE ROCK AREA
EMERGENCY SPILLWAY
HOLDING POND DAM
SCRAGGOT LAKE
ISSABEL LAKE

APPENDIX F

Table 4. Groundwater Monitoring Parameters and Frequency.

Monitoring Point	Parameter	Frequency
Plant PLM-1A/B PLM-2A/B PLM-3A/B PLM-4A/B PLM-5A/B **Open Pit Mine** OPM-1A/B OPM- 2A/B OPM-3A/B OPM-5A/B OPM-6A/B OPM-7A/B **Waste Rock Area** WRW-1A/B WRW-2A/B WRW-3A/B WRW-4A/B WRW-5A/B **TMF** 2 Domestic Wells TMW-1A/B TMW-2A/B TMW-3A/B TMW-4A/B TMW-5A/B TMW-6A/B TMW-7A/B TMW-8A/B TMW-9A/B TMW-10A/B TMW-11A/B TMW-12A/B TMW-13A/B TMW-14A/B TMW-15A/B TMW-16A/B	i) and ii) Water Quality Parameters in Appendix G iii)Static Water Level iv) Data Logging of Groundwater Levels in wells associated with the open pit mine.	i) a minimum of four quarterly baseline water quality analyses prior to the start of operation of the processing plant (PLM), open pit/mine (OPM), waste rock storage area (WRW) and TMF, including the containment cell area and 2 domestic wells(TMW). ii) Quarterly, unless otherwise stated in the conditions of Approval iii) Static Water Levels Monthly, unless otherwise required, by conditions of Approval iv) Data logging of wells, associated with the open pit mine, on an hourly basis as a minimum.

APPENDIX G

GROUNDWATER and SURFACE WATER QUALITY PARAMETERS

Note: ** Groundwater only * Surface water only

Total Alkalinity
Dissolved chloride
Colour
Hardness
Nitrate & nitrite
Nitrite, Nitrogen
Ammonia (Ammonia nitrogen)
Total organic carbon
Total Phophorus
pH
Reactive silica
Dissolved sulphate
Turbidity
Conductivity
Aluminum
Antimony
Arsenic
Barium
Beryllium
Bismuth
Boron
Cadmium
Calcium
Chromium
Cobalt
Cyanate
Copper
Iron
Lead
Manganese
Molybdenum
Nickel
Selenium
Silver
Strontium
Thallium
Tin
Titanium
Uranium
Vanadium
Zinc
Total Suspended Solids
Sodium
Potassium
Magnesium
Fluoride
Ion Balance
Mercury
Sulphate
Total Dissolved Solids**
Total Petroleum

Chemical Oxygen Demand
Total Cyanide
Weak Acid Dissociable Cyanide
Free Cyanide (CN_F)
Thiocyanates (SCN)
Radium 226* (monitored and reported only at MDMER stations)
Salinity*
Hydrocarbons TPH & BTEX **
Field Parameters: Temperature, pH, Electrical Conductivity, Dissolved Oxygen*
Static Water Level (groundwater only)**
Additional Parameters as specified or requested by the Department.

APPENDIX H

Table 5. Blasting Limits.

Parameters	Maximum	Monitoring Frequency	Monitoring Station
Concussion (Air Blast)	128 dBL	Every Blast	Within 7 m of the nearest structure not located on the Site
Ground Vibration	0.5 in/sec (12.5 mm/s)	Every Blast	Below grade or less than 1 m above grade in any part of the structure not located on Site.
Ground Vibration	1.97 in/sec (50 mm/s)	Every Quarry Blast within the TMF	At the nearest location to the Tailings Dam or clay blanket and the nearest location to the Historic Tailings Management Cell

APPENDIX I

Amendment Application Documents:

- Industrial Approval Amendment Application. Submitted by Atlantic Mining NS Corp. Signed by Chris Batalha, AMNS Director on November 22, 2016. Application included the following attachments:

    - Industrial Approval Amendment. Report. Touquoy Gold Mine -Tailings Management Facility. Prepared by Stantec Consulting Ltd (Stantec). Fredericton, NB. Dated: November 25, 2016.

    - Touquoy Mine, Tailings Management Facility Dam Design – Slope Stability Assessment. Prepared by Stantec Consulting Ltd. (Stantec). Fredericton, NB. Dated: February 29, 2016.

    - Technical Specifications. Prepared by Stantec Consulting Ltd. (Stantec). Dated: October 7, 2016.

    - Touquoy Mine, Tailings Management Facility – Embankment Core Construction Alternatives. Memo. Prepared by Stantec Consulting Ltd. (Stantec). Fredericton, NB. Dated: December 22, 2015.

    - Touquoy Mine TMF – Upstream Clay Blanket – Seepage Analysis. Internal Memo. Prepared by Stantec Consulting Ltd. (Stantec). Fredericton, NB. Dated: October 13, 2016.

    - Touquoy Mine, Tailings Management Facility – Hydraulic Design Rev. 1.0. Prepared by Stantec Consulting Ltd. (Stantec). Fredericton, NB. Dated: November 25, 2016

    - Touquoy Mine Tailings Management Facility - Geotechnical/Hydrogeological Field Investigation. Factual Report. Prepared by Stantec Consulting Ltd. (Stantec). Fredericton, NB. Dated: February 29, 2016.

    - Touquoy Waste Rock Storage Facility – Geotechnical Investigation. Prepared by Stantec Consulting Ltd. (Stantec). Fredericton, NB. Dated: March 2, 2016.

    - Touquoy Mine Tailings Management Facility Dam Design - Seepage Assessment. Prepared by Stantec Consulting Ltd. (Stantec). Fredericton, NB. Dated: August 26, 2016.

    - Touquoy Mine Tailings Management Facility – Potential Clay Borrow Source Investigation. Prepared by Stantec Consulting Ltd. (Stantec). Fredericton, NB. Dated: March 9, 2016.

    - Assessment of Water Quality Downstream of Tailings Management Facility, Touquoy Gold Project. Prepared by Stantec Consulting Ltd. (Stantec). Fredericton, NB. Dated: November 25, 2016

    - 15 Stamped Engineered Drawings dated October 13, 2016 (2 complete sets).
        - 19250W-101- General TMF Plan. Rev. 3
        - 19250W-102- Longitudinal Profile through Centerline of Tailings Dam. Rev. 2
        - 19250W-103- Seepage Collection System Plan View and Details. Rev. 2
        - 19250W-104- Seepage Collection System Longitudinal Profiles. Rev. 2
        - 19250W-105- Tailings Dam Ultimate Stage Sections. Rev. 2
        - 19250W-106-Tailings Dam Foundation Details. Rev. 2
        - 19250W-107- Tailings Dam Details. Rev. 2
        - 19250W-108-Tailings Dam Spillway Profiles, Sections and Details. Rev. 2
        - 19250W-109- Polishing Pond Dam Plan, Profile and Details. Rev. 2
        - 19250W-110- Polishing Pond Emergency Spillway Profile and Details. Rev. 2

    - 19250W-111- Decant Tower 1 for Stages Commissioning, 1&2. Rev. 2
    - 19250W-112- Decant Tower 2 for Stages 4 & Ultimate. Rev. 2
    - 19250W-113- Historic Tailings Disposal Cell. Rev. 2
    - 19250W-114- Constructed Wetland. Rev. 2
    - 19250W-115- Geotube Cells Plan View & Sections. Rev. 2

- Application for TMF Industrial Approval Amendment - #2012-084244. Touquoy Gold Mine and Mill, Moose River Gold Mines, HRM. Letter Report prepared by J. Gilchrist, Stantec Consulting Ltd., February 10, 2017. Letter Report includes the following attachments:

    - Response to NSE 's Comments on Application for Industrial Approval Amendment - #2012-084244. Letter prepared by Stantec Consulting Limited. Dated: January 31, 2017.
        - Attachment A – Touquoy Gold Mine - Response to Comments on Industrial Approval
        - Amendment (FINAL), Lorax Environmental, January 25, 2017.
        - Attachment B - Instrumentation Layout Drawing (#1) Dated: November 29, 2016; Longitudinal Profile Through Centerline of Tailings Dam Showing Instrumentation Locations Drawing (#2). Dated: November 29, 2016 and Instrumentation Typical Section Drawing (#3). Dated December 9, 2016.
    - Discussion of Predicted Levels in Polishing Pond, Touquoy Gold Mine and Mill. Letter prepared by Stantec Consulting Limited. Dated February 7, 2017.
    - Responses to DNR Comments on Application for Industrial Approval Amendment - #2012-084244. Letter prepared by Stantec Consulting Limited. Dated: February 10, 2017.
    - Industrial Approval Amendment. Report. Touquoy Gold Mine -Tailings Management Facility. Prepared by Stantec Consulting Ltd (Stantec). Fredericton, NB. Dated: November 25, 2016. (Signed copy of the body of the report).
    - Water Management Plan. Version 1.0. Touquoy Gold Mine Facility. Prepared by Stantec Consulting Ltd (Stantec). Fredericton, NB. Dated: February 9, 2017.

- Reliance Letter – Stantec Reports prepared for Atlantic Mining NS Corp Touquoy Gold Mine and Mill, Moose River Gold Mines, HRM. Letter prepared by Paul Deering, Stantec Consulting Limited. Dated February 10, 2017.

- Application for IA Amendment - #2012-084244. Touquoy Gold Mine and Mill, Moose River Gold Mines, HRM. Letter prepared by Janis Rod, Atlantic Mining NS Corp. in response to B. Matlock letter Feb 8, 2017. Letter dated February 13, 2017.; and

- AMNS – IA Amendment Application. Email prepared by Janis Rod, Atlantic Mining NS Corp. in response to R. Bower comments on Jan 31, 2017. E-mail dated: February 13, 2017.

Original Application Documents:

- Application dated November 26, 2012 and attachments.

- Industrial Approval Application and Supporting Documentation, Touquoy Gold Project, Moose River Gold Mines, NS, prepared for DDV Gold Limited by Conestoga Rovers and Associates, November 2012 Ref. No. 820933.

- Industrial Approval Application and Supporting Documentation (Appendices), Touquoy Gold Project, Moose River Gold Mines, NS, prepared for DDV Gold Limited by Conestoga-Rovers and Associates, November 2012 Ref. No. 820933(10).

- Preliminary Reclamation Plan, Touquoy Gold Project, Moose River Gold Mines NS, prepared by DDV Gold Limited, May 2011 Version 3

- Industrial Approval Application Supporting Documentation (Appendix C, Soil Erosion and Sedimentation Plan) Touquoy Gold Project, Moose River Gold Mines, NS, prepared for DDV Gold Limited by Conestoga-Rovers and Associates, November 2012 Ref. No. 820933(10).

- Correspondence (e-mail with attachments) from DDV Gold Ltd. dated January 23, 2013 regarding Vesting Order (issued by Minister of Natural Resources dated June12, 2012) and Compensation for PID 40627218 and 40627226.

- Correspondence (e-mail with attachments) from DDV Gold Ltd. dated January 23, 2013 regarding Vesting Order (issued by the Minister of Natural Resources dated June12, 2012) and Compensation for PID40524241 and 00643171.

- Letter from Nova Scotia Environment dated June 14, 2013 to Conestoga-Rovers & Associates regarding the application for Industrial Approval.

- Response to letter of June 14, 2013 Application for Approval, Reference No. 820933-E, Additional Supporting Documentation, Moose River Gold Mines, NS, prepared for DDV Gold Limited by Conestoga-Rovers and Associates, September 12,2013.

- Environmental Assessment Registration Document for the Touquoy Gold Project, Moose River Gold Mines, prepared for DDV Gold Limited by Conestoga-Rovers & Associates dated March 2007 Ref. No. 820933(3)

- Environmental Assessment Focus Report for the Touquoy Gold Project, Moose River Gold Mines, prepared for DDV Gold Limited by Conestoga-Rovers & Associates dated November 2007 Ref. No. 820933(8)

- Environmental Assessment Approval, signed by the Minister of Environment, Approval Date February 2008, Touquoy Gold Project.

APPENDIX J

Fixed Submission Deadline Summary (for Reference Only)

i) Semi-annual EA update in accordance with condition 14(c),
ii) Land Procurement February 24, 2018 in accordance with condition 14(b),
iii) Results of ambient particulate monitoring in accordance with condition 4(c)(v),
iv) Stage Discharge Curve Report submitted October 31, 2017th condition 7(f)(vi)
v) Surface water monitoring annual report in accordance with condition 7(p),
vi) Results of DSI dam safety inspections and DSR dam safety reviews in accordance with condition 16(f),
vii) Updated OMS Manual September 1, 2018 in accordance with condition 17(b)(iii),
viii) Tailings Pipeline design March 31, 2017 in accordance with condition 17(c)(iii),
ix) Tailings deposition volumes, water use and effluent discharge volumes in accordance with condition 17(f),
x) Reports prepared by the Engineer of Record on the status of the capacity of the TMF in accordance with condition 17(g) related to the tailings deposition,
xi) Seepage rate report in accordance with condition 17(j),
xii) Historic Tailings delineation September 30, 2017 in accordance with condition 18(b),
xiii) Revised Historic Tailings Management Plan in accordance with condition 18(d)
xiv) Results of acid rock drainage testing in accordance with condition 19(d),
xv) Updated Groundwater Contingency Plan submitted October 1, 2018 in accordance with condition 8(c),
xvi) Groundwater monitoring with annual report in accordance with condition 8(d),
xvii) Review report of groundwater monitoring wells, submitted April 30,2017, in accordance with condition 8(e),
xviii) A summary of Blast monitoring in accordance with condition 11(g),
xix) A statement on the status of compliance with Insurance in accordance with condition 22(b),
xx) A list of complaints and the company response to each complaint; in accordance with condition 13,
xxi) Reclamation security confirmation in accordance with condition 24(a)(vi),
xxi) Survey Drawings to be submitted January 30,2018, January 30, 2019, January 30, 2020, in accordance with condition 24(a)(vii),
xxii) Updated reclamation plans confirmation April 30, 2017, April 30, 2020 in accordance with condition 24(b)(i).
xxiii) Install and maintain two permanent staff gauges for recording surface water flow measurements in Moose River, upstream and downstream of the open pit mine, at an appropriate location near SW11 and SW2. The permanent monitoring stations shall be established on or before October 31, 2017, in accordance with condition 7(g).
xxiv) Annual Report due April 30 of each year, in accordance with condition 12(c).
xxv) A revised Blast Material Sampling procedure that addresses the Departments comments sent in April 2017 shall be submitted to the Department for review by August 1, 2018 (and updated annually) in accordance with condition 19(b)(iii).
xxvi) Submit a revised Monitoring, Evaluation and Response Plan for Quarry Development within the TMF for final review and approval prior to blasting for aggregate extraction.

xxvii) Submit a revised Operational Preparedness and Response Plan for Upset Water Levels in the Tailings Pond by August 1, 2018.