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Ministry of the Environment and Climate Change
Ministère de l'Environnement et de l'Action en matière de changement
climatique

AMENDED ENVIRONMENTAL COMPLIANCE APPROVAL

NUMBER 6336-ACNH2J

Issue Date: August 26, 2016

Alamos Gold Inc.
Young-Davidson Mine Site - Highway 566
Post Office Box, No. 187
Matachewan, Ontario
P0K 1M0

Site Location: Young-Davidson Mine
Highway 566 (3 kilometres west of Matachewan, Geographic Township of Powell)
Township of Matachewan, District of Timiskaming
P0K 1M0

You have applied under section 20.2 of Part II.1 of the Environmental Protection Act, R.S.O. 1990, c. E. 19 (Environmental Protection Act) for approval of:

sewage works for the collection, transmission, treatment and disposal of up to 11,500 m³/day of mine water from the Matachewan Consolidated Mine workings and mine water from the Young-Davidson Mine, with on-site milling, with treated effluent discharge to the Montreal River, consisting of the following:

Proposed Works

- a water treatment plant system for the destruction of ammonia and precipitation of metals, consisting of a biofilm reactor tank(s) for biological removal of ammonia and a precipitator tank(s) to settle sludge from biofilm reactor and precipitate metals, designed for a maximum treatment of 1,500 m³/day equipped with chemical dosing system, with the treated effluent discharging to the existing mine water pond and/or the tailings impoundment area and the sludge generated pumped to the tailings impoundment area.
- all other controls, electrical equipment, instrumentation, piping, pumps, valves and appurtenances essential for the proper operation of the aforementioned sewage works.

Previous Works

- one (1) tailings slurry cyanide destruction (SO₂/Air) treatment facility for a gold ore processing facility of approximately 2.9 million tonnes per year, located in the mill complex, consisting of one (1) 440 m³ reactor tank, designed for a maximum treatment rate of approximately 481 m³/hour (11,500 m³/day), with an average retention time of approximately 50 minutes, equipped with chemical dosage system, and discharging to the Tailings Impoundment Facility.
- a Tailings Impoundment Area (TIA) with a storage capacity of approximately 20 million tonnes, encompassing an area of approximately 93 hectares, with a 2 metre wide emergency spillway located at the East Dam to drain easterly towards Davidson Creek, the TIA discharging effluent water via pump and a 400 mm (16 inch) diameter pipeline to the mill and/or mine water pond, to be constructed

in stages by successive dam raises as follows:

Stage	Dam Crest Elev. (masl)		Storage (Mt)	Accumulated Storage (Mt)	East Dam Spillway Invert (masl)
	West Dam	East Dam			
1A	339.5	339.5	1.2	1.2	338.5
1B	347.0	345.0	4.0	5.2	344.0
2A	352.0	350.0	3.4	8.6	349.0
2B	357.0	353.5	4.0	12.6	353.0
3	365.0	363.5	7.4	20.0	359.0

- a seepage collection system equipped with its associated pump stations located at the downstream toes of both the West and East Dams, to be pumped back to the TIA on a continuous basis.
- three (3) stormwater management ponds, #1, #2, and #3, located south of the mill complex, south of the waste rock stockpile, and west of the ore stockpile, respectively, each with pumping systems, a 2.0 to 3.5 m depth and a minimum 0.6 m freeboard, designed for a 1:10 year 24-hour rainfall.
- one (1) earthen fill embankment, high density polyethylene lined, mine water pond with a total of 18,100 m³ of storage, with an emergency overflow spillway, equipped with a 3 m by 1.8 m sump for transfer of treated tailings water, mine water, stormwater, runoff and snowmelt to a 355 mm diameter pipeline;
- one (1) 355 mm diameter high density polyethylene pipeline, for the transmission of minewater from the mine water pond to the Montreal River, approximately 2.6 km in length, with a flow meter, elbows, vacuum break valve(s), a corrugated steel culvert to house the pipeline crossing of Highway 566, earthworks to house the pipeline, and a diffuser section at the end of the pipeline positioning the pipeline on the river bed with concrete ballast weights as required, and 100 mm diameter outlet holes oriented for outflow from the top of the pipe, thereby preventing disturbance to river bottom sediments.

Miscellaneous

All other controls, electrical equipment, instrumentation, piping, pumps, valves and appurtenances essential for the proper operation of the aforementioned sewage Works,

all in accordance with the documents listed in Schedule 'A'.

For the purpose of this environmental compliance approval, the following definitions apply:

"Approval" means this entire document and any schedules attached to it, and the application;

"BOD5" (also known as TBOD5) means five day biochemical oxygen demand measured in an unfiltered sample and includes carbonaceous and nitrogenous oxygen demand;

"CBOD5" means five day carbonaceous (nitrification inhibited) biochemical oxygen demand measured in an unfiltered sample;

"Daily Concentration" means the concentration of a contaminant in the effluent discharged over any single day, as measured by a composite or grab sample, whichever is required;

"Director" means a person appointed by the Minister pursuant to section 5 of the EPA for the purposes of Part II.1 of the EPA;

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

"EPA" means the Environmental Protection Act , R.S.O. 1990, c.E.19, as amended;

"Equivalent equipment" means a substituted equipment that meets the required quality and performance standards of a named equipment;

"Limited Operational Flexibility" (LOF) means the Modifications that the Owner is permitted to make to the Works under this Approval;

"Maximum Operating Water Level" means the assigned maximum operational elevation of Waste Water contained in the Tailing Management Facility to allow adequate storage capacity and freeboard to accommodate the design flood event.

"Mine Production" means mining that is producing any mineral or mineral-bearing substance for immediate sale or stockpiling for future sale, and includes the development of a mine for such purposes

"Ministry" means the ministry of the government of Ontario responsible for the EPA and OWRA and includes all officials, employees or other persons acting on its behalf;

"Modifications" means any addition, replacement, alteration, expansion or optimization for the Works as specified under Limited Operational Flexibility;

"Monthly Average Concentration" means the arithmetic mean of all Daily Concentrations of a contaminant in the effluent sampled or measured, or both, during a calendar month;

"Notice of Modifications" means the form entitled "Notice of Modifications to Sewage Works";

"Owner" means Alamos Gold Inc. and its successors and assignees;

"OWRA" means the Ontario Water Resources Act , R.S.O. 1990, c. O.40, as amended;

"Previous Works" means those portions of the sewage works previously constructed and approved under an Approval;

"Proposed Works" means the sewage works described in the Owner's application, this Approval, to the extent approved by this Approval;

"Works" means the sewage works described in the Owner's application, and this Approval, and includes Proposed Works, Previous Works and Limited Operational Flexibility.

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

TERMS AND CONDITIONS

1. GENERAL CONDITION

(1) The Owner shall ensure that any person authorized to carry out work on or operate any aspect of the Works is notified of this Approval and the conditions herein and shall take all reasonable measures to ensure any such person complies with the same.

(2) Except as otherwise provided by these conditions, the Owner shall design, build, install, operate

and maintain the Works in accordance with the description given in this Approval, and the application for approval of the Works.

(3) Where there is a conflict between a provision of any document in the schedule referred to in this Approval and the conditions of this Approval, the Conditions in this Approval shall take precedence, and where there is a conflict between the documents in the schedule, the document bearing the most recent date shall prevail.

(4) Where there is a conflict between the documents listed in the Schedule submitted documents, and the application, the application shall take precedence unless it is clear that the purpose of the document was to amend the application.

(5) The Conditions of this Approval are severable. If any Condition of this Approval, or the application of any requirement of this Approval to any circumstance, is held invalid or unenforceable, the application of such condition to other circumstances and the remainder of this Approval shall not be affected thereby.

2. CHANGE OF OWNER

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

- (a) change of Owner or operating authority, or both;
- (b) change of address of Owner or operating authority or address of new Owner or operating authority;
- (c) change of partners where the Owner or operating authority is or at any time becomes a partnership, and a copy of the most recent declaration filed under the Partnerships Registration Act;
- (d) change of name of the corporation where the Owner or operator is or at any time becomes a corporation, and a copy of the most current "Initial Notice or Notice of Change" (Form 1, 2 or 3 of O. Reg. 189, R.R.O. 1980, as amended from time to time), filed under the Corporations Information Act shall be included in the notification to the District Manager.

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

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

3. OPERATIONS MANUAL

(1) The Owner shall prepare and maintain an operations manual that includes, but not necessarily limited to, the following information:

- (a) operating procedures for routine operation of the works;
- (b) inspection programs, including frequency of inspection, for the works and the methods or tests employed to detect when maintenance is necessary, as well as the methods, tests and estimation techniques to determine the volume of sludge that has accumulated in the mine water pond, and the remaining live volume and retention time in the mine water pond;
- (c) repair and maintenance programs, including the frequency of repair and maintenance for the works;
- (d) contingency plans and procedures for dealing with potential spill, bypasses and any other abnormal situations and for notifying the District Manager;
- (e) complaint procedures for receiving and responding to public complaints; and

(f) a list of the names, addresses and telephone numbers of employees designated by the Owner who can be contacted by Ministry staff during best hours, and who would be available at the mine site on short notice.

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

4. AS-CONSTRUCTED DRAWINGS

The Owner shall maintain the as-constructed drawings, as amended, at the location of the works for so long as it is in operation, and shall make them available for inspection and copying by a provincial officer upon request.

5. EFFLUENT OBJECTIVES

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

Table 1 - Effluent Objectives		
Effluent Parameter	Daily Concentration (milligrams per litre unless otherwise indicated)	Monthly Average Concentration Limit (milligrams per litre unless otherwise indicated)
Column 1	Column 2	Column 3
Arsenic	0.1	0.1
Copper	0.2	0.1
Cyanide Total	1.0	0.5
Lead	0.02	0.01
Nickel	0.1	0.05
Zinc	0.2	0.1
Total Ammonia Nitrogen	10	10
Total Phosphorus	0.5	0.5
Total Oil and Grease	Can not be: - detected as visible film, sheen or discolouration on the surface; - detected by odour; - cause tainting of edible aquatic organisms; - form deposits on shorelines and bottom sediments that are detectable by sight or odour, or are deleterious to sediment aquatic organisms	

(2) As a further effluent objective, the Owner shall use best efforts to maintain the pH of the effluent from the works within the range of 6.5 to 9, inclusive, at all times.

(3) The Owner shall include in all reports submitted in accordance with Condition 10 a summary of the efforts made and results achieved under this Condition.

(4) In the event that Mine Pond Effluent water quality consistently exceeds the objectives noted in Table 1 (i.e., three consecutive sampling results are above the daily concentration objective for a given parameter), the Owner shall, within four (4) months of occurrence, submit a study reporting on the causes and impacts of the higher concentration(s), along with a proposed corrective action plan for approval by the District Manager.

Contingency Measures

(5) In the event that Mine Pond Effluent water quality exceeds the objectives noted in Table 1, and reach the Contingency Measures - Trigger Levels of Table 2 (i.e., three consecutive sampling results reaching any of the trigger levels of any parameter), the Owner shall implement contingency measures that may include, but not limited to, the following:

Temporary Measures (over several days/weeks):

- (a) reduce the discharge rate;
- (b) re-direct the discharge back to the TIA (pending capacity availability);
- (c) discontinue the discharge; or
- (d) addition of hydrogen peroxide (H₂O₂).

Long Term Measures: (a) addition of aerators in the Mine Water Pond (to promote volatilization of ammonia/cyanide);

- (b) addition of flocculant (to promote solids removal and settling); or
- (c) addition of hydrogen peroxide (H₂O₂).

Table 2 - Contingency Measures - Trigger Levels	
Effluent Parameter	Concentration¹ (milligrams per litre unless otherwise indicated)
Column 1	Column 2
Total Suspended Solids	13.5
Arsenic	0.45
Copper	0.27
Cyanide Total	0.9
Lead	0.18
Nickel	0.45
Zinc	0.45

Note 1. Concentration values apply to individual consecutive samples and do not represent average values. Values are calculated as 90% of the monthly average concentration limit.

6. EFFLUENT LIMITS

(1) Notwithstanding the effluent quality requirements outlined by Ontario Regulation 560/94 under the *Environmental Protection Act*, as amended, the Owner shall design, construct and operate the sewage works such that the effluent concentrations of the parameters listed below are not exceeded in the effluent from the sewage Works.

Table 3 - Effluent Limits		
Effluent Parameter	Daily Concentration Limit (milligrams per litre unless otherwise indicated)	Monthly Average Concentration Limit (milligrams per litre unless otherwise indicated)
Column 1	Column 2	Column 3
Total Suspended Solids	30	15
Arsenic	1.0	0.5
Copper	0.6	0.3
Cyanide Total	2.0	1.0
Lead	0.4	0.2
Nickel	1.0	0.5
Zinc	1.0	0.5
pH of the effluent maintained between 6.0 to 9.5, inclusive, at all times		

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

(a) non-compliance with respect to a Daily Concentration Limit is deemed to have occurred when the maximum concentration of any single sample taken in accordance with this Approval analyzed for a parameter named in Column 1 is greater than the corresponding Daily Concentration Limit set out in Column 2;

(b) non-compliance with respect to a Monthly Average Concentration Limit is deemed to have occurred when the arithmetic mean concentration of samples taken in a month analyzed for a parameter named in Column 1 is greater than the corresponding Monthly Average Concentration Limit set out in Column 3;

(c) non-compliance with respect to pH is deemed to have occurred when any single sample is outside of the indicated range.

(3) The Owner shall ensure that the effluents discharged from the site shall be non-lethal to Rainbow Trout and/or Daphnia Magna (i.e. < 50% mortality) at all times.

(a) in the event that two (2) consecutive toxicity tests results in mortality of greater than 50%, then the Owner shall investigate the cause of the acute lethality and, if the toxicity source is identified, evaluate control options. Within 90 days of the second of the two consecutive toxicity test failures, provide a written report describing the investigation and control options to the District Manager.

(b) in the event that un-ionized ammonia is calculated to exceed 0.2 milligrams per litre, the Owner shall conduct bi-weekly (once every two weeks) acute toxicity tests with Rainbow Trout and Daphnia magna, until such time the un-ionized ammonia decreases below 0.2 mg/L, at which time monthly sampling can resume.

(4) The Owner shall ensure that the effluent from the works is essentially free of floating and settleable solids and does not contain oil or any other substance in amounts sufficient to create a visible film, sheen or foam on the receiving waters.

(5) The Owner shall ensure that the ratio of (flowrate in the receiver: flowrate of the effluent from the sewage works) is 85:1 or greater during the mine production/operation stage.

7. EFFLUENT MONITORING AND RECORDING

Notwithstanding the monitoring and reporting requirements outlined by Ontario Regulation 560/94 under the *Environmental Protection Act*, as amended, the Owner shall carry out the following monitoring program:

(1) All samples and measurements taken for the purposes of this Approval are to be taken at a time and in a location characteristic of the quality and quantity of the effluent stream over the time period being monitored, at a sample location approved in writing by the District Manager.

(2) Samples shall be collected and analyzed at the sampling frequencies specified for each parameter listed:

Table 4 - Effluent Monitoring	
Frequency	Parameters
Three times per week	Total Cyanide, and Total Suspended Solids. Field parameters: pH
Once each week	Total Ammonia ¹ , Free Cyanide, Weak Acid Dissociable Cyanide, ICP Metals Scan ² , Dissolved Organic Carbon, Dissolved Oxygen, Sulphate, Hardness, Conductivity, Alkalinity, Chloride, Cations (Ca, Na, Mg, K), and Nitrate. Field parameters: Temperature
Monthly	Total Oil and Grease

Note 1. Un-ionized ammonia should be calculated weekly.

2. ICP Metals Scan is to include: aluminum, antimony, arsenic, beryllium, boron, cadmium, calcium, chromium, cobalt, copper, iron, lead, mercury, molybdenum, nickel, phosphorus, selenium, silver, thallium, uranium, vanadium, and zinc. Metal analysis shall be both for total and dissolved metals.

(3) The methods and protocols for sampling, analysis and recording shall conform, in order of precedence, to the methods and protocols specified in the following and the detection limit for the analyses shall be below the Provincial Water Quality Objective for each parameter analyzed:

(a) the Ministry's publication "Protocol for the Sampling and Analysis of Industrial/Municipal Wastewater" (August 1994), ISBN 0-7778-1880-9, as amended from time to time by more recently published editions; and

(b) the publication "Standard Methods for the Examination of Water and Wastewater" (21st edition) as amended from time to time by more recently published editions.

(4) The temperature and pH of the effluent from the works shall be determined in the field at the time of sampling for total ammonia. The concentration of un-ionized ammonia shall be calculated using the total ammonia concentration, pH and temperature using the methodology stipulated in "Ontario's Provincial Water Quality Objectives" dated July 1994, as amended, for ammonia (un-ionized).

(5) The Owner shall perform rainbow trout acute lethality test and *Daphnia Magna* acute lethality test once a month according to procedures published in Environment Canada publications entitled Biological Test Method: Reference Method for Determining Acute Lethality of Effluents to Rainbow Trout, dated July 1990 and Biological Test Method: Reference Method for Determining Acute Lethality of Effluents to *Daphnia Magna*, dated July 1990, as amended from time to time by more recently published editions.

- (a) the acute lethality tests shall be carried out on a grab sample as a single concentration test using 100 per cent effluent.
- (b) after the Owner obtains 12 consecutive monthly acute lethality test results in which the mortality of the test organisms did not exceed 50 per cent, the Owner shall perform the test quarterly.
- (c) subsection (b) ceases to apply when the mortality of the test organisms exceeds 50 per cent and the Owner shall comply with monthly testing until further 12 consecutive months result in mortality for no more than 50 per cent of the test organisms in 100 percent effluent.

(6) The Owner shall retain for a minimum of five (5) years from the date of their creation, all records and information related to or resulting from the monitoring activities required by this Approval.

(7) The parameters and frequency of monitoring and sampling stated above in this Condition may be modified by the District Manager in writing from time to time.

(8) The Owner shall install, operate and maintain a flow measuring device, to measure (estimate) the flow rate of the effluent from the Works with an accuracy to within plus or minus 15 per cent (+ /- 15%) of the actual flow rate and record the total volume of effluent discharged during each discharge event.

(9) The Owner shall confirm in writing to the District Manager, within six (6) months after milling operations have commenced, and through laboratory analysis, the assumption that 50% of total cyanide is in free form, as noted in Northgate Minerals Corporation Young-Davidson Project Environmental Compliance Approval No. 2099-7RQKMM Industrial Sewage Works Amendment Application, prepared by AMEC Earth & Environmental and dated April 2010.

8. GROUNDWATER MONITORING

Notwithstanding the monitoring and reporting requirements outlined by Ontario Regulation 560/94 under the *Environmental Protection Act*, as amended, the Owner shall carry out the following monitoring program:

(1) All samples and measurements taken for the purposes of this Approval are to be taken at a time and in a location as described below.

Table 5 - Groundwater Monitoring	
Frequency: Twice per year	
Well No.	Parameters
MW96-08	pH ¹ , Total Ammonia, Total Cyanide, Free Cyanide, Conductivity, Alkalinity, Hardness, Sulphate, Dissolved Metals (As, Cu, Fe, Pb, Mo, Ni, Sb, Zn) and Temperature ¹
MW06-01	
MW06-03 (if not dry)	
MW0701 & MW11-01	
MW11-02	

Note 1. Field parameters

(2) If the Owner detects a hydraulic head to increase at the south Saddle Dam #1 and #2 so that seepage would become significant, the Owner shall install groundwater monitoring wells at the time and submit location drawings and a technical memo to the District Manager.

(3) The Owner shall retain for a minimum of five (5) years from the date of their creation, all records and information related to or resulting from the monitoring activities required by this Approval.

(4) The parameters and frequency of monitoring and sampling stated above in this Condition may be modified by the District Manager in writing from time to time.

9. RECEIVER IMPACT ASSESSMENT AND MONITORING

(1) The Owner shall establish receiver water monitoring locations on the Montreal River, upstream and downstream of the point of confluence with the effluent from the sewage works. The said monitoring locations shall be established to the written satisfaction of the District Manager. Grab samples of receiver water shall be collected at each of the monitoring stations on a monthly basis and analyzed for the parameters noted below.

Table 6 - Receiver Monitoring - Montreal River		
Sampling locations:		
a. Montreal River, upstream of outfall from Otisse Lake & Hollinger Lake Sub-watershed (MR5 ¹) ³		
b. Montreal River, downstream of outfall from Otisse Lake & Hollinger Lake Sub-watershed and upstream of the discharge location (MR1A ¹)		
c. Montreal River downstream of the discharge location- near field (MR4 ¹)		
d. Montreal River downstream of the discharge location- mid field (MR6 ¹)		
e. Montreal River downstream of the discharge location- far field (MR-EX-D) ²		
Frequency	Sample	Parameters
Monthly	Grab	Total Cyanide, Free Cyanide and Weak Acid Dissociable Cyanide, Field pH, Total Suspended Solids, ICP Metals Scan ⁴ , Total Ammonia, Field Temperature, Dissolved Oxygen, Sulphate, Hardness, Dissolved Organic Carbon, Conductivity, Alkalinity, Chloride and Cations (Ca, Na, Mg, K).

Note 1. The station names and locations refer to those specified in Figure 2.2 in the Northgate Minerals Corporation Young-Davidson Project Environmental Compliance Approval No. 2099-7RQKMM Industrial Sewage Works Amendment Application, prepared by AMEC Earth & Environmental and dated April 2010.

2. The station names and locations refer to those specified in Figure 1 of the Northgate Minerals Corporation Young-Davidson Project Terms of Reference for Montreal River Aquatic Environmental Effects Assessment and Biological Monitoring Study as Per Condition 3.2(2) of Approval of Approval No. 4-0053-96-987, prepared by AMEC Earth & Environmental and dated August 2007.

3. Sampling at station MR5, MR6 and MR-EX-D shall be done during ice free period.

4. ICP Metals Scan is to include: aluminum, antimony, arsenic, beryllium, boron, cadmium, calcium, chromium, cobalt, copper, iron, lead, mercury, molybdenum, nickel, phosphorus, selenium, silver, thallium, uranium, vanadium, and zinc. Metal analysis shall be both for total and dissolved metals.

(2) Within four (4) months of the issuance of this Approval, the Owner shall submit a winter (time period when receiver is under ice cover) sampling plan outlining additional location(s) (i.e. additional to MR1A and MR4) where the receiver will be sampled at least once during the winter season. The plan shall be submitted to the District Manager for approval.

(3) The Owner shall determine by field validation and then predictive modelling the extent of their effluent plume within the Montreal River under low flow conditions (i.e. annual 7Q20). The assessment

will be calculated by using the maximum permissible discharge volume and the maximum permitted limits for each regulated parameter to determine the distance downstream where the effluent is diluted to a 1% concentration. This information shall be submitted to the District Manager within one year of the issuance of this Approval.

Table 7 - Receiver Monitoring - TIA Receiver Monitoring		
Sampling locations ¹		
a) Mistinikon Lake upstream of West Dam (ML1 ²);		
b) Mistinikon Lake downstream of West Dam (ML3 ²); and		
c) Water body to the east of East Dam (DC3 ²)		
Frequency	Sample	Parameters
Monthly (during ice free period)	Grab	Field pH, Total Ammonia, Field Temperature, Dissolved Oxygen, Total Cyanide, Free Cyanide, Weak Acid Dissociable Cyanide, Conductivity, Total Suspended Solids, Dissolved Organic Carbon, Alkalinity, Hardness, Chloride, Sulphate, ICP Metals Scan ³ , and Cations (Ca, Na, Mg, K).

Note 1. ML1 and ML3 shall be sampled during the ice-free period.

2. The station names and locations refer to those specified in Figure 2.2 in the Northgate Minerals Corporation Young-Davidson Project Environmental Compliance Approval No. 2099-7RQKMM Industrial Sewage Works Amendment Application, prepared by AMEC Earth & Environmental and dated April 2010.

3. ICP Metals Scan is to include: aluminum, antimony, arsenic, beryllium, boron, cadmium, calcium, chromium, cobalt, copper, iron, lead, mercury, molybdenum, nickel, phosphorus, selenium, silver, thallium, uranium, vanadium, and zinc. Metal analysis shall be both for total and dissolved metals.

(4) Within a year of issuance of this Approval, the Owner shall seek an agreement with OPG to access their daily flow data for the West Montreal River at Mistinikon Dam. If such an agreement is not possible, within two years of issuance this Approval, the Owner shall establish a rating curve for the West Montreal River at a suitable location immediately upstream of the discharge point. Over this two years period, instrumentation for automation of water level recording and flow calculation shall also be completed. After two years from the issuance of this Approval, river flow will be calculated applying the recorded water levels to the established rating curve. At that time, daily effluent discharge rate will be determined based on the recorded daily river flow data.

(5) The Owner shall submit, with the first quarterly receiver report after issuance of this Approval, a Receiver Flow Measuring Plan that describes in detail how the daily flows in the receiver are determined, including sources of information, calculations, reliability and calibration needs.

(6) The Owner shall implement the Terms of Reference (TOR) - Montreal River Environmental Effects Assessment for Northgate Minerals Young-Davidson Project as approved by the District Manager and including changes requested by the District Manager in writing from time to time, commencing the fall of 2007 and subsequently every three (3) years thereafter.

(7) The Owner shall submit to the District Manager a written progress report, based on the said terms of reference, by June 1st relating to the previous calendar year that a study program was implemented as required by the District Manager.

(8) The Owner shall retain for a minimum of five (5) years from the date of their creation, all records and information related to or resulting from the monitoring activities required by this Approval.

(9) The parameters and frequency of monitoring and sampling stated above in this Condition may be modified by the District Manager in writing from time to time.

10. REPORTING

(1) The Owner shall report to the District Manager or designate, any exceedance of any parameter specified in Condition 6 orally, as soon as reasonably possible, and in writing within seven (7) days of the exceedance.

(2) The Owner shall prepare and submit quarterly reports to the District Manager, no later than 45 days after the end of each quarter. In addition to the information required under section 38 of O.Reg. 560/94 (Quarterly Reports to the Director), the reports shall also contain:

- (a) a listing of all the analytical and flow information collected daily on the effluent from the sewage works and the receiver water during the period being reported on; and
- (b) a compilation of daily flow ratios, receiver water : effluent from the sewage works, during the period being reported upon.

(3) The Owner shall prepare and submit a performance report to the District Manager on an annual basis, on or before June 1 in each year, relating to the previous calendar year. In addition to the information required under Section 35 of O.Reg. 560/94 (Reports Available to the Public), the reports shall also contain:

- (a) a comprehensive listing, statistical summary and interpretation of all monitoring data (including flow monitoring) and a comparison to the effluent limits outlined in Condition 6, including an overview of the success and adequacy of the sewage works;
- (b) a comprehensive listing, statistical summary and interpretation of all receiver water monitoring data, and a comparison of the 75th percentile values to this Ministry's Provincial Water Quality Objectives;
- (c) a description of any operating problems encountered and corrective actions taken;
- (d) a summary of all maintenance carried out on any major structure, equipment, apparatus, mechanism or thing forming part of the sewage works;
- (e) a summary of any effluent quality assurance or control measures undertaken in the reporting period;
- (f) a summary of the calibration and maintenance carried out on all effluent monitoring equipment;
- (g) a list summarizing any implementation programs affiliated with the approved sewage works that are planned, being implemented and completed, as well as the completion or scheduled completion date of each program.
- (h) a copy of all Notice of Modifications submitted to the District Manager as a result of Schedule B, section 1, with a status report on the implementation of each modification.
- (i) a report summarizing all modifications completed as a result of Schedule B, Section 3, and
- (j) any other information the District Manager requires from time to time.

11. LIMITED OPERATIONAL FLEXIBILITY

(1) The Owner may make modifications to the Works in accordance with the Terms and Conditions of this Approval and subject to the Ministry's "Limited Operational Flexibility Criteria for Modifications to Sewage Works", included under Schedule B of this Approval, as amended.

(2) Sewage works proposed under Limited Operational Flexibility shall adhere to the design guidelines contained within the Ministry's publication "Design Guidelines for Sewage Works 2008", as amended.

(3) The Owner shall ensure at all times, that the Works, related equipment and appurtenances which are installed or used to achieve compliance are operated in accordance with all Terms and Conditions of this Approval.

(4) For greater certainty, the following are not permitted as part of Limited Operational Flexibility:

(a) Modifications to the Works that result in an increase of the Rated Capacity of the Works.

(b) Modifications to the Works that may adversely affect the approved effluent quality criteria or the location of the discharge/outfall.

(c) Modifications to the treatment process technology of the Works, or modifications that involve construction of new reactors (tanks) or alter the treatment train process design.

(d) Modifications to the Works approved under s.9 of the EPA, and

(e) Modifications to the Works pursuant to an order issued by the Ministry.

(5) Implementation of Limited Operational Flexibility is not intended to be used for piecemeal measures that result in major alterations or expansions.

(6) If the implementation of Limited Operational Flexibility requires changes to be made to the Emergency Response, Spill Reporting and Contingency Plan, the Owner shall, provide a revised copy of this plan for approval to the local fire services authority prior to implementing Limited Operational Flexibility.

(7) For greater certainty, any modification made under the Limited Operational Flexibility may only be carried out after other legal obligations have been complied with, including those arising from the Environmental Protection Act, Lakes and Rivers Improvements Act and the Mining Act.

(8) At least thirty (30) days prior to implementing Limited Operational Flexibility, the Owner shall complete a Notice of Modifications describing any proposed modifications to the Works and submit it to the District Manager.

(9) The Owner shall not proceed with implementation of Limited Operational Flexibility until the District Manager has provided written acceptance of the Notice of Modifications or a minimum of thirty (30) days have passed since the day the District Manager acknowledged the receipt of the Notice of Modifications.

Schedule A forms part of this Approval and contains a list of supporting documentation / information received, reviewed and relied upon in the issuance of this Approval.

SCHEDULE 'A'

Documents Submitted for the Current Amendment Application:

1. ECA No. 4-0053-96-006 dated August 14, 1996 and all supporting documentation and information;
2. Notice of Amendment dated January 8, 1997 to ECA No. 4-0053-96-006;
3. Application for approval dated July 21, 2006 and supporting information and documentation and the Addendum A dated September 5, 2006 prepared by Blue Heron Solutions for Environmental Management Inc.
4. Application for Approval of Industrial Sewage Works submitted by Tom Wadey of Northgate Minerals Corporation dated April 9, 2009 and ECA No. 2099-7RQKMM, issued on September 22,

2009.

5. Application for Approval of Industrial Sewage Works submitted by John A. Cormier of Northgate Minerals Corporation Young-Davidson Project, dated April 15, 2010, and application package prepared by AMEC Earth & Environmental and ECA No. 4484-85KRJJ issued on March 30, 2011.
6. Application for Environmental Compliance Approval dated June 1, 2015 signed by Luc Guimond, General Manager, Alamos Gold Inc. and submitted under covering letter dated June 1, 2015 signed by Nancy Duquet-Harvey, Environmental Coordinator.
7. Supporting information submitted together with the Application for Environmental Compliance Approval dated June 1, 2015 within a bound report entitled "AuRico Gold Young-Davidson, Application for Amendment to Environmental Compliance Approval No. 4484-85KRJJ" dated April 2015 prepared by Nancy Duquet-Harvey, Environmental Coordinator, AuRico Gold Inc., Young-Davidson Mine.

SCHEDULE 'B'

Limited Operational Flexibility Criteria for Modifications to Industrial Sewage Works

1. The modifications to sewage works approved under an Environmental Compliance Approval (Approval) that are permitted under the Limited Operational Flexibility (LOF), are outlined below and are subject to the LOF conditions in the Approval, and require the submission of the Notice of Modifications. If there is a conflict between the sewage works listed below and the Terms and Conditions in the Approval, the Terms and Conditions in the Approval shall take precedence.

1.1 Sewage Pumping Stations

- a. Alter pumping capacity by adding or replacing equipment where new equipment is located within an existing sewage treatment plant site or an existing sewage pumping station site, provided that the modifications do not result in an increase of the sewage treatment plant Rated Capacity and the existing flow process and/or treatment train are maintained, as applicable.
- b. Forcemain relining and replacement with similar pipe size where the nominal diameter is not greater than 1,200mm.

1.2 Sewage Treatment Process

- a. Installing additional chemical dosage equipment including replacing with alternative chemicals for pH adjustment or coagulants (non-toxic polymers) provided that there are no modifications of treatment processes or other modifications that may alter the intent of operations and may have negative impacts on the effluent quantity and quality.
- b. Expanding the buffer zone between a sanitary sewage lagoon facility or land treatment area and adjacent uses provided that the buffer zone is entirely on the proponent's land.
- c. Optimizing existing sanitary sewage lagoons with the purpose to increase efficiency of treatment operations provided that existing sewage treatment plant rated capacity is not exceeded and where no land acquisition is required.
- d. Optimizing existing sewage treatment plant equipment with the purpose to increase the efficiency of the existing treatment operations, provided that there are no modifications to the works that result in an increase of the approved rated capacity, and may have adverse effects to

the effluent quality or location of the discharge.

e. Replacement, refurbishment of previously approved equipment in whole or in part with Equivalent Equipment, like-for-like of different make and model, provided that the firm capacity, reliability, performance standard, level of quality and redundancy of the group of equipment is kept the same or exceeded. For clarity purposes, the following equipment can be considered under this provision: pumps, screens, grit separators, blowers, aeration equipment, sludge thickeners, dewatering equipment, UV systems, chlorine contact equipment, bio-disks, and sludge digester systems.

1.3 Sewage Treatment Plant Outfall

a. Replacement of discharge pipe with similar pipe size or diffusers provided that the outfall location is not changed.

1.4 Sanitary Sewers

a. Pipe relining and replacement with similar pipe size within the Sewage Treatment Plant site, where the nominal diameter is not greater than 1,200 mm.

1.5 Pilot Systems

a. Installation of pilot systems for new or existing technologies provided that:

- i. any effluent from the pilot system is discharged to the inlet of the sewage treatment plant or hauled off-site for proper disposal,
- ii. any effluent from the pilot system discharged to the inlet of the sewage treatment plant or sewage conveyance system does not significantly alter the composition/concentration of the influent sewage to be treated in the downstream process; and that it does not add any inhibiting substances to the downstream process, and
- iii. the pilot system's duration does not exceed a maximum of two years; and a report with results is submitted to the Director and District Manager three months after completion of the pilot project.

1.6 Tailings Management Facilities

a. Routine dam raises and dam extensions to allow continued management of tailings and storage of mineral materials and sewage, provided that:

- i. Routine dam raises and extensions are in adherence to an approved tailings management plan.
- ii Routine dam raises and extensions are signed and stamped by a Professional Engineer licensed under the *Professional Engineers Act* in Ontario.
- iii Routine dam raises and extensions have an associated Erosion and Sediment Control Plan applying best management practices that is to be implemented during construction.
- iv Routine dam raises and extensions are designed in compliance with the *Lakes and Rivers*

Improvement Act (LRIA) and as required the LRIA Permit is in place.

b. New dams are not eligible under LOF, unless pre-approved under the tailings management plan.

c. Pipe replacement or extension with similar pipe size within the Tailings Management area, where the nominal diameter is not greater than 1,200 mm.

2. Sewage works that are exempt from section 53 of the OWRA by O. Reg. 525/98 continue to be exempt and are not required to follow the notification process under this Limited Operational Flexibility.

3. Normal or emergency operational modifications, such as repairs, reconstructions, or other improvements that are part of maintenance activities, including cleaning, renovations to existing approved sewage works equipment, provided that the modification is made with Equivalent Equipment, are considered pre-approved.

4. The modifications noted in section (3) above are not required to follow the notification protocols under Limited Operational Flexibility, provided that the number of pieces and description of the equipment as described in the Approval does not change.

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

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

2. Condition 2 is included to ensure that the Ministry records are kept accurate and current with respect to approved works and to ensure that subsequent owners of the works are made aware of the Approval and continue to operate the works in compliance with it.

3. Condition 3 is included to ensure that a comprehensive operations manual governing all significant areas of operation, maintenance and repair is prepared, implemented and kept up-to-date by the owner and made available to the Ministry. Such a manual is an integral part of the operation of the works. Its compilation and use should assist the Owner in staff training, in proper plant operation and in identifying and planning for contingencies during possible abnormal conditions. The manual will also act as a benchmark for Ministry staff when reviewing the owner's operation of the work.

4. Condition 4 is included to enable the Owner to record and the Ministry to verify that the works are constructed and operated in accordance with the Approval.

5. Condition 5 is imposed to establish non-enforceable effluent quality objectives which the Owner is obligated to use best efforts to strive towards on an ongoing basis. These objectives are to be used as a mechanism to trigger corrective action proactively and voluntarily before environmental impairment occurs and before the compliance limits of Condition 6 are exceeded.

5. Condition 6 is imposed to ensure that the effluent discharged from the works to the Montreal River

meets the Ministry's effluent quality requirements thus minimizing environmental impact on the receiver.

6. Conditions 7, 8 and 9 are included to require the Owner to demonstrate on a continual basis that the quality and quantity of the effluent from the approved works is consistent with the effluent limits specified in the Approval and that the approved works does not cause any impairment to the receiving watercourse.

7. Condition 10 is included to provide a performance record for future references and to ensure that the Ministry is made aware of problems as they arise, so that the Ministry can work with the Owner in resolving the problems in a timely manner.

8. Condition 11 is included to ensure that the Works are operated in accordance with the application and supporting documentation submitted by the Owner, and not in a manner which the Director has not been asked to consider. These conditions are also included to ensure that a Professional Engineer has reviewed the proposed Modifications and attests that the Modifications are in line with that of Limited Operational Flexibility, and provide assurance that the proposed Modifications comply with the Ministry's requirements stipulated in the terms and conditions of this Approval, MOE policies, guidelines, and industry engineering standards and best management practices.

Upon issuance of the environmental compliance approval, I hereby revoke Approval No(s). 4484-85KRJJ issued on March 30, 2011.

In accordance with Section 139 of the Environmental Protection Act, you may by written Notice served upon me, the Environmental Review Tribunal and in accordance with Section 47 of the Environmental Bill of Rights, 1993, S.O. 1993, c. 28 (Environmental Bill of Rights), the Environmental Commissioner, within 15 days after receipt of this Notice, require a hearing by the Tribunal. The Environmental Commissioner will place notice of your appeal on the Environmental Registry. Section 142 of the Environmental Protection Act provides that the Notice requiring the hearing shall state:

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

Pursuant to subsection 139(3) of the Environmental Protection Act, a hearing may not be required with respect to any terms and conditions in this environmental compliance approval, if the terms and conditions are substantially the same as those contained in an approval that is amended or revoked by this environmental compliance approval.

The Notice should also include:

3. The name of the appellant;
4. The address of the appellant;
5. The environmental compliance approval number;
6. The date of the environmental compliance approval;
7. The name of the Director, and;
8. The municipality or municipalities within which the project is to be engaged in.

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

This Notice must be served upon:

The Secretary* AND The Environmental AND The Director appointed for the

Environmental Review
Tribunal
655 Bay Street, Suite
1500
Toronto, Ontario
M5G 1E5

Commissioner
1075 Bay Street, Suite
605
Toronto, Ontario
M5S 2B1

purposes of Part II.1 of the
Environmental Protection Act
Ministry of the Environment and
Climate Change
135 St. Clair Avenue West, 1st
Floor
Toronto, Ontario
M4V 1P5

*** Further information on the Environmental Review Tribunal's requirements for an appeal can be obtained directly from the Tribunal at: Tel: (416) 212-6349, Fax: (416) 326-5370 or www.ert.gov.on.ca**

This instrument is subject to Section 38 of the Environmental Bill of Rights, 1993, that allows residents of Ontario to seek leave to appeal the decision on this instrument. Residents of Ontario may seek leave to appeal within 15 days from the date this decision is placed on the Environmental Registry. By accessing the Environmental Registry at www.ebr.gov.on.ca, you can determine when the leave to appeal period ends.

The above noted activity is approved under s.20.3 of Part II.1 of the Environmental Protection Act.

DATED AT TORONTO this 26th day of August, 2016

Fariha Pannu, P.Eng.
Director

appointed for the purposes of Part II.1 of
the *Environmental Protection Act*

HV/
c: District Manager, MOECC Timmins
Nancy-Duquet-Harvey, Alamos Gold Inc.