

DEPARTMENT OF ENVIRONMENTAL CONSERVATION
AIR QUALITY CONTROL MINOR PERMIT

Minor Permit AQ1444MSS01 Revision 1
Rescinds Minor Permit AQ0144MSS01

Final: July 11, 2019

The Alaska Department of Environmental Conservation (Department), under the authority of AS 46.14 and 18 AAC 50, issues Air Quality Control Minor Permit **AQ1444MSS01 Revision 1** to the Permittee listed below.

Permittee: Teck American Incorporated
P.O. Box 3087
Spokane, WA 99220

Stationary Source: A&A Exploration Program

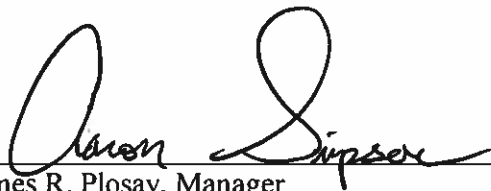
Location: Latitude: 68° 10' 46.79" North; Longitude 162° 57' 54.248" West

Project: A&A Exploration Program

Permit Contact: Catherine Suda, (cathy.suda@teck.com), 509-922-8767

This project is classified under 18 AAC 50.502(b)(3) for operation of a rock crusher with a rated capacity of at least five tons per hour; 18 AAC 50.502(c)(1) for construction of a new stationary source with a potential to emit greater than 40 tpy of NO_x; and 18 AAC 50.508(5) for Owner Requested Limits (ORLs) to avoid PSD permitting under 18 AAC 50.306 and Title V permitting under 18 AAC 50.326.

This permit satisfies the obligation of the Permittee to obtain a minor permit under 18 AAC 50. As required by AS 46.14.120(c), the Permittee shall comply with the terms and conditions of this permit.



For: James R. Plosay, Manager
Air Permits Program

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Section 1 Emissions Unit Inventory

Emissions Unit (EU) Authorization. The Permittee is authorized to install and operate the EUs listed in Table 1 in accordance with the terms and conditions of this permit and the minor permit application. Unless noted elsewhere in this permit, the information in Table 1 is for identification purposes only. The specific EU descriptions do not restrict the Permittee from replacing an EU identified in this section.

Table 1 – EU Inventory

EU ID	Description	Make/Model	Fuel	Rating/ Max Capacity
GE-X	Generator Engines w/ CO oxidation catalysts	TBD (EPA Tier 4 Final)	Diesel	67,452 MWh
EH-1	Ventilation Air Heater No. 1	Tioga IDF-21D	Diesel	4.2 MMBtu/hr
EH-2	Ventilation Air Heater No. 2	Tioga IDF-21D	Diesel	4.2 MMBtu/hr
EH-3	Ventilation Air Heater No. 3	Tioga IDF-21D	Diesel	4.2 MMBtu/hr
PRC-1	Feed Hopper	TBD	NA	460 tph
PRC-2	Cone Crusher	TBD	NA	460 tph
PRC-3	Jaw Crusher	TBD	NA	460 tph
PRC-4	Deck Screen	TBD	NA	460 tph
PRC-5	Conveyor Transfer Point	NA	NA	460 tph
PRC-6	Conveyor Transfer Point	NA	NA	460 tph
PRC-7	Conveyor Transfer Point	NA	NA	460 tph
PRC-8	Conveyor Transfer Point	NA	NA	460 tph
PRC-9	Conveyor Transfer Point	NA	NA	460 tph
PRC-10	Conveyor Transfer Point	NA	NA	460 tph
PRC-11	Conveyor Transfer Point	NA	NA	460 tph
PRC-12	Aggregate Stockpile Fugitive Emissions	NA	NA	NA
PRC-13	Generator Engine (NRE)	TBD (EPA Tier 2)	Diesel	725 kW
EF-1	Blasting Operations	NA	NA	1,100 blasts
EF-2	Waste Rock Stockpile Fugitive Emissions	NA	NA	500 m ³
EF-3	Miscellaneous Traffic	NA	NA	NA
NRE-1	Underground NREs	TBD	Diesel	6,984 hp
NRE-2	Surface NREs	TBD	Diesel	3,824 hp
CMP-1	Compactor 1 (surface NRE)	TBD	Diesel	
CMP-2	Compactor 2 (surface NRE)	TBD	Diesel	

Notes:

The make/model and quantity of the primary power generator engines are yet to be determined so the Department has identified the group as “GE-X”.

TBD is to-be-determined

NA is not applicable

MWh is megawatt hours

kW is kilowatts

Tons are U.S. Customary Units (1 ton = 2,000 pounds)

EUs classified as nonroad engines (NREs) must meet the definition of NRE in 40 CFR 89.2.

1. For each of EUs GE-X, including the associated oxidation catalyst control systems, notify the Department of the installation date(s), maximum design ratings, and provide specification sheets¹ and EPA certifications within 30 days after installation.
2. The Permittee shall comply with all applicable provisions of AS 46.14 and 18 AAC 50 when installing a replacement EU, including any applicable minor or construction permit requirements.
3. The Permittee shall install and maintain the equipment listed in Table 1 according to the manufacturer's or operator's maintenance procedures. Keep a copy of either the manufacturer's or operator's maintenance procedures onsite and make records available to Department personnel upon request. The records may be kept in electronic format.

¹ The specification sheet is a summary of the unit, including applicable emissions specifications.

Section 2 Fee Requirements

4. **Administration Fees.** The Permittee shall pay to the Department all assessed permit administration fees. Administration fee rates are set out in 18 AAC 50.400-403.
5. **Assessable Emissions.** The Permittee shall pay to the Department annual emission fees based on the stationary source's assessable emissions as determined by the Department under 18 AAC 50.410. The assessable emission fee rate is set out in 18 AAC 50.410. The Department will assess fees per ton of each air pollutant that the stationary source emits or has the potential to emit in quantities 10 tons per year or greater. The quantity for which fees will be assessed is the lesser of
 - 5.1 the stationary source's assessable potential to emit of 328 tpy; or
 - 5.2 the stationary source's projected annual rate of emissions that will occur from July 1 to the following June 30, based upon credible evidence of actual annual emissions emitted during the most recent calendar year or another 12 month period approved in writing by the Department, when demonstrated by the most representative of one or more of the following methods:
 - a. an enforceable test method described in 18 AAC 50.220;
 - b. material balance calculations;
 - c. emission factors from EPA's publication AP-42, Vol. I, adopted by reference in 18 AAC 50.035; or
 - d. other methods and calculations approved by the Department, including appropriate vendor-provided emissions factors when sufficient documentation is provided.
6. **Assessable Emission Estimates.** Emission fees will be assessed as follows:
 - 6.1 No later than March 31 of each year, the Permittee may submit an estimate of the stationary source's assessable emissions via the Department's Air Online Services (AOS) System at <http://dec.alaska.gov/applications/air/airtoolsweb> using the Permittee Portal option and filling out the Emission Fee Estimate form. Alternatively, the report may submitted by
 - a. email using dec.aq.airreports@alaska.gov; or
 - b. hard copy to the following address: ADEC Permits Program, ATTN: Assessable Emissions Estimate, 555 Cordova Street, Anchorage, AK 99501.
 - 6.2 The Permittee shall include with the assessable emissions report all of the assumptions and calculations used to estimate the assessable emissions in sufficient detail so the Department can verify the estimates.
 - 6.3 If the stationary source has not commenced construction or operation on or before March 31st, the Permittee may submit to the Department's Anchorage office a waiver letter certified under 18 AAC 50.205 that states the stationary source's actual

annual emissions for the previous calendar year are zero tons per year and provides estimates for when construction and operation will commence.

- 6.4 If no estimate or waiver letter is submitted on or before March 31 of each year, emission fees for the next fiscal year will be based on the potential to emit in Condition 5.1.
7. **Annual Compliance Fee.** For a stationary source not classified as needing a Title V permit, the Permittee shall pay an annual compliance fee as set out in 18 AAC 50.400(d), to be paid for each period from July 1 to the following June 30.

Section 3 State Emission Standards

8. **Visible Emissions Standard.** The Permittee shall not cause or allow visible emissions, excluding water vapor, emitted from each of EUs GE-X, EH-1 through EH-3, and PRC-1 through PRC-11, to reduce visibility through the exhaust effluent by more than 20 percent averaged over any six consecutive minutes.
- 8.1 Verify initial compliance of EUs GE-X and EH-1 through EH-3 by either:
- a. obtaining a certified manufacturer guarantee, prior to each unit becoming fully operational², that the EU will comply with the visible emission standard; or
 - b. conducting a Method 9 visible emissions observation within 30 days after unit becomes fully operational.
- 8.2 **Monitoring for Rock Crushers.** The Permittee shall identify emission points capable of producing fugitive emissions and use the point with the highest continuous opacity for monitoring fugitive emissions from EUs PRC-1 through PRC-11.
- a. Observe fugitive dust at the emission point identified in Condition 8.2 in accordance with 40 CFR 60, Appendix A, Method 9 for 18 minutes to obtain 72 consecutive 15-second observations, and as follows:
 - (i) Select an observer position at least 15 feet from the emissions unit.
 - (ii) When possible, select an observer position that minimizes interference from other fugitive emissions sources while maintaining the observer position relative to the sun, as required by Method 9.
 - b. Conduct observations at a load typical of the maximum operation during the reporting period described in Condition 24.
 - c. Conduct the observations:
 - (i) within two days of initial startup;
 - (ii) within two days after startup at each new location; and
 - (iii) at least once in every 30 days of operation.
- 8.3 Include with the operating report required by Condition 24:
- a. copies of any guarantee obtained under Condition 8.1a; and
 - b. results of all visible emissions observations conducted under Conditions 8.1b and 8.2.

² *Fully operational* is defined as completing all testing and commissioning requirements after unit installation, or 60 days after unit installation, whichever is sooner. Installation is defined as the point when unit is ready for testing.

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9. **Particulate Matter Emissions Standard.** The Permittee shall not cause or allow particulate matter emitted from each of EUs GE-X, EH-1 through EH-3, and PRC-1 through PRC-11 listed in Table 1, to exceed 0.05 grains per dry standard cubic foot of exhaust gas corrected to standard conditions and averaged over three hours.
 10. **Particulate Matter MR&R.** For EUs PRC-1 through PRC-12, and EF-2, the Permittee shall:
 - 10.1 Take reasonable precautions to prevent the release of airborne particulate matter and fugitive dust from the rock crusher operations and stockpiles by operating in accordance with the Portable Rock Crusher Fugitive Dust Control Plan provided in Attachment 1.
 - 10.2 Report in each operating report required by Condition 24, a statement that reasonable precautions and mitigative actions were implemented for the rock crusher and storage piles to prevent the release of airborne particulate matter and fugitive dust.
 - 10.3 Report in accordance with Condition 23 if the Permittee fails to comply with Conditions 10.1 or 10.2.
 11. **Sulfur Compound Emissions.** The Permittee shall not cause or allow sulfur compound emissions, expressed as SO₂, from each of EUs GE-X and EH-1 through EH-3, to exceed 500 parts-per-million (ppm) averaged over three hours.

Section 4 Owner Requested Limits to Avoid Permit Classifications

Limits to Avoid PSD Permitting under 18 AAC 50.306 and Title V Permitting under 50.326

12. **Power Output Limit.** The Permittee shall limit combined emissions from EUs GE-X to 74.7 tpy NO_x, 3.3 tpy PM₁₀, 0.5 tpy SO₂, and 17.7 tpy VOC by limiting the combined output from EUs GE-X to no more than 62,393 megawatt-hours (MWh) per consecutive 12-month period.
 - 12.1 Install and maintain a non-resettable power output meter on each of EUs GE-X to measure electrical output in units of kilowatt-hours (kWh) or MWh.
 - 12.2 Record the power output measured for each of EUs GE-X on the last day of each month.
 - 12.3 By the 15th day of each month, calculate and record:
 - a. the combined power output for EUs GE-X in MWh, for the previous month.
 - b. the combined power output for EUs GE-X in MWh, for the previous 12-month period.
 - 12.4 Include in the operating report required by Condition 24, copies of the records required by Conditions 12.3a and 12.3b.
 - 12.5 Report in accordance with Condition 23 whenever the consecutive 12-month power output determined in Condition 12.3b exceeds the limit specified in Condition 12.
13. **Carbon Monoxide (CO) Emission Limit.** The Permittee shall limit the cumulative CO emissions from EUs GE-X to no more than 97.6 tpy by complying with the following:
 - 13.1 Limit the combined power output of EUs GE-X in accordance with Condition 12;
 - 13.2 Limit the CO emission rate of EUs GE-X to no more than 1.3 g/kWh (each) by operating and maintaining consistent with manufacturer's specifications, an oxidation catalyst emission control system on each of EUs GE-X.
 - a. Maintain a copy of the manufacturer's specified operating range for inlet temperature and pressure drop for each installed oxidation catalyst system to ensure compliance with the CO limit in Condition 13.
 - b. For EUs GE-X, conduct a source test for CO on at least one representative unit according to Section 8 of this permit and within 90 days of the representative unit becoming fully operational. A representative unit shall consist of an identical make/model engine paired with an identical make/model oxidation catalyst system.
 - (i) The Permittee shall source test downstream of the oxidation catalyst system using the applicable test methods set out in 40 CFR 60, Appendix A and adopted in 18 AAC 50.035(b).
 - (A) Each source test shall consist of at least three 1-hour or longer valid test runs. Emission results shall be reported as the arithmetic average

- of all valid test runs and shall be in terms of the emission limit (g/kWh).
- (B) During each test run, measure the inlet temperature and pressure drop across each catalyst.
 - (C) Report the results of the source test(s) in accordance with Condition 41.
 - (D) Report in accordance with Condition 23 if the source test results exceed the CO emission limit of Condition 13.
- c. Conduct a source test for CO according to Section 8 and within 90 days of becoming fully operational of a replacement engine that is
 - (i) not paired with a catalyst system guaranteed to meet the CO emission limit in Condition 13, or
 - (ii) not an identical make/model for the engine being replaced.
 - d. Conduct a source test for CO according to Section 8 and within 90 days of replacement of an oxidation catalyst system that is
 - (i) not guaranteed to meet the CO emission limit in Condition 13, or
 - (ii) not an identical make/model for the catalyst system that is being replaced.
14. For compliance with the CO emission limit of Condition 13, monitor oxidation catalyst system parameters as follows:
- 14.1 Install a temperature sensing device to monitor the inlet temperature of each installed catalyst system.
 - a. Monitor engine exhaust temperature at the inlet to each catalyst system at least once per hour during all periods of operation. Each calendar day of operation, record the minimum and maximum inlet gas temperature of each catalyst system. Data capture and recording may be electronic.
 - b. For each calendar month a catalyst system operates, report the minimum and maximum inlet gas temperature of each catalyst system in the operating report required by Condition 24.
 - c. Report in accordance with Condition 23 whenever the inlet gas temperature of a catalyst system is outside the acceptable range identified in the manufacturer's specifications. The report should include any corrective actions taken.
 - 14.2 Install pressure sensing devices to monitor the pressure drop across each installed catalyst system.
 - a. Maintain the catalyst system(s) such that the pressure drop across each unit is within the acceptable range identified in the manufacturer's specifications.

- b. If the pressure drop exceeds the acceptable differential identified in the manufacturer's specifications, the catalyst system shall be inspected, cleaned, and/or replaced as necessary.
- c. Report in accordance with Condition 23 whenever the pressure drop across a catalyst is outside the acceptable range identified in the manufacturer's specifications. The report should include any corrective actions taken.

Section 5 Ambient Air Quality Protection Requirements

15. **General Provisions.** To protect the annual NO₂ Alaska Ambient Air Quality Standards (AAAQS), the Permittee shall comply with the following:

15.1 During construction and operational phases³:

- a. Limit blasting activities to no greater than
 - (i) 1,100 blasts in any consecutive 12 month period; and
 - (ii) 375 tons of ammonium nitrate and fuel oil (ANFO) used in any consecutive 12 month period.
- b. Install and operate EUs GE-X using units that meet the EPA Tier 4F emission standards and
 - (i) are rated no less than 56 kW each; and
 - (ii) comply with the ORL specified in Condition 12;
- c. Operate EU PRC-13 using units that meet the EPA Tier 2 emission standards and are rated
 - (i) no less than 225 kW each; and
 - (ii) no greater than 725 kW, in aggregate
- d. Operate EUs NRE-1 using units that meet the EPA Tier 2 emission standards and are rated no greater than 6,984 hp, in aggregate among all EUs;
- e. Operate EUs NRE-2, CMP-1, and CMP-2 using units that meet the EPA Tier 2 emission standards and are rated no greater than 3,824 hp, in aggregate among all EUs;

15.2 During the operational phase:

- a. Do not operate EUs PRC-13, CMP-1 and CMP-2.

16. **MR&R for General Provisions.** The Permittee shall comply with the following:

16.1 Record the date of each blast and the amount of ANFO used for each blast.

16.2 By the 15th of each month, calculate and record

- a. the total number of blast events and tons of ANFO used during the previous calendar month; and
- b. the cumulative number of blast events and tons of ANFO used during the previous 12 month period.

³ The construction phase occurs during the construction of a sub-surface portal and vent raises. The operational phase occurs after the underground infrastructure connecting the sub-surface portal and the vent raises is fully established.

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- 16.3 Include in each operating report under Condition 24, copies of the records required by Condition 16.1.
 - 16.4 Report in accordance with Condition 23 if the consecutive 12 month total for blast events or tons of ANFO used exceeds a limit specified in Condition 15.1a.
 - 16.5 For EUs GE-X, report in accordance with Condition 1.
 - 16.6 Maintain documentation that demonstrates that emissions from EUs PRC-13, NRE-1, NRE-2, CMP-1, and CMP-2 comply with the corresponding EPA tier standards in Condition 15.1. Make the documentation available to Department personnel on request. The records may be kept in electronic format.
 - 16.7 Include in in the first operating report required under Condition 24 submitted after the EUs have been commissioned:
 - a. individual and aggregated (if applicable) ratings (kW) for EU PRC-13;
 - b. individual and aggregated ratings (hp) for all EUs in the group NRE-1;
 - c. individual and aggregated ratings (hp) for all EUs in the group NRE-2, including CMP-1, and CMP-2.
 - 16.8 Within 30 days after beginning the operational phase, report to the Department the date that the underground infrastructure connecting the sub-surface portal and the vent raises was fully established.
 - 16.9 Report in accordance with Condition 23 if any of the following occur:
 - a. the ratings or operation of EUs GE-X are outside the ranges specified in Condition 15.1b;
 - b. the ratings of EU PRC-13 are outside the ranges specified in Condition 15.1c;
 - c. the aggregated rating of EUs NRE-1 exceed the limit specified in Condition 15.1d; or
 - d. the aggregated rating of EUs NRE-2, CMP-1, and CMP-2 exceed the limit specified in Condition 15.1e.
 - e. EUs PRC-13, CMP-1, and CMP-2 are operated any time after the date reported under Condition 16.8.
 17. **Stack Configuration.** For EUs GE-X, construct and maintain the exhaust stacks with uncapped vertical outlets. Flapper valves, or similar, are allowed for these units as long as the vertical momentum of the exhaust plume is not hindered.
 - 17.1 Provide as-built drawings and/or photographs of the exhaust stacks for EUs GE-X along with the as-built stack diameter, height and configuration (capped/uncapped, horizontal/vertical) in the second operating report required under Condition 24 submitted after the EUs have been commissioned.
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18. **Public Access Control Plan.** Upon beginning onsite construction or underground exploration activity,⁴ maintain the ambient boundary between the public and the industrial site as described in the August 2018 Public Access Control Plan submitted with the minor permit application and included as Attachment 2.
- 18.1 Record all signs of trespass or actual trespass events, and what if any action was taken to resolve the concern. Records may be kept in electronic format but must be kept onsite for a minimum of two years.
- 18.2 Post and maintain all warning signs described in the access control plan as follows:
- a. post all signs as stated in the access control plan;
 - b. inspect and repair the signs according to the schedule described in the access control plan;
 - c. keep all signs free of nearby visible obstructions.
- 18.3 Include in each operating report under Condition 24 a statement indicating whether the ambient air boundary is being maintained as required by the August 2018 Public Access Control Plan.
- 18.4 Report in accordance with Condition 23 if the requirements of Condition 18 are not met.

⁴ *Onsite construction or underground exploration activity* is defined as any activity that supports the development of the stationary source and has the potential to emit one or more pollutants under its physical or operational design.

Section 6 Recordkeeping, Reporting, and Certification Requirements

19. **Certification.** The Permittee shall certify any permit application, report, affirmation, or compliance certification submitted to the Department and required under the permit by including the signature of a responsible official for the permitted stationary source following the statement: “*Based on information and belief formed after reasonable inquiry, I certify that the statements and information in and attached to this document are true, accurate, and complete.*” Excess emissions reports must be certified either upon submittal or with an operating report required for the same reporting period. All other reports and other documents must be certified upon submittal.
- 19.1 The Department may accept an electronic signature on an electronic application or other electronic record required by the Department if
- a. a certifying authority registered under AS 09.25.510 verifies that the electronic signature is authentic; and
 - b. the person providing the electronic signature has made an agreement with the certifying authority described in Condition 19.1a that the person accepts or agrees to be bound by an electronic record executed or adopted with that signature.
20. **Submittals.** Unless otherwise directed by the Department or this permit, the Permittee shall send reports, compliance certifications, and other submittals required by this permit to ADEC, Air Permits Program, 610 University Ave., Fairbanks, AK 99709-3643, ATTN: Compliance Technician. The Permittee may, upon consultation with the Compliance Technician regarding software compatibility, provide electronic copies of data reports, emission source test reports, or other records under a cover letter certified in accordance with Condition 19.
21. **Information Requests.** The Permittee shall furnish to the Department, within a reasonable time, any information the Department requests in writing to determine whether cause exists to modify, revoke, reissue, or terminate the permit or to determine compliance with the permit. Upon request, the Permittee shall furnish to the Department copies of records required to be kept by the permit. The Department may require the Permittee to furnish copies of those records directly to the federal Administrator.
22. **Recordkeeping Requirements.** The Permittee shall keep all records required by this permit for at least five-years after the date of collection, including:
- 22.1 copies of all reports and certifications submitted pursuant to this section of the permit; and
 - 22.2 records of all monitoring required by this permit, and information about the monitoring including (if applicable):
 - a. calibration and maintenance records, original strip chart or computer-based recordings for continuous monitoring instrumentation;
 - b. the date, location, and time of sampling or measurements;
 - c. the operating conditions that existed at the time of sampling or measurement;
 - d. the date(s) analyses were performed;

- e. the company or entity that performed the sampling and analyses;
- f. the analytical techniques or methods used in the analyses; and
- g. the results of the analyses.

23. **Excess Emissions and Permit Deviation Reports.**

23.1 The Permittee shall report all emissions or operations that exceed or deviate from the requirements of this permit as follows:

- a. In accordance with 18 AAC 50.240(c), as soon as possible after the event commences or is discovered, report
 - (i) emissions that present a potential threat to human health or safety; and
 - (ii) excess emissions that the Permittee believes to be unavoidable;
- b. In accordance with 18 AAC 50.235(a), within two working days after the event commenced or was discovered, report an unavoidable emergency, malfunction, or nonroutine repair that caused emissions in excess of a technology-based emissions standard;
- c. Report all other excess emissions and permit deviations
 - (i) within 30 days after the end of the month during which the emissions or deviation occurred, except as provided in Condition 23.1c(iii); or
 - (ii) if a continuous or recurring excess emissions is not corrected within 48 hours of discovery, within 72 hours of discovery unless the Department provides written permission to report under Condition 23.1c(i); and
 - (iii) for failure to monitor, as required in other applicable conditions of this permit.

23.2 When reporting either excess emissions or permit deviations, the Permittee shall report using either the Department's online form, which can be found at <http://dec.alaska.gov/applications/air/airtoolsweb>, or, if the Permittee prefers, the form contained in Attachment 3 of this permit. The Permittee must provide all information called for by the form that is used.

23.3 If requested by the Department, the Permittee shall provide a more detailed written report as requested to follow up an excess emissions report.

24. **Operating Reports.** Submit to the Department an operating report by August 1 for the period January 1 through June 30 of the current year and by February 1 for the period July 1 through December 31 of the previous year. The report shall be submitted under a cover letter certified in accordance with Condition 19.

24.1 The operating report must include all information required to be in operating reports by other conditions of this permit, for the period covered by the report.

24.2 When excess emissions or permit deviations that occurred during the reporting period are not included with the operating report under Condition 24.1, the Permittee shall identify

- a. the date of the deviation;
 - b. the equipment involved;
 - c. the permit condition affected;
 - d. a description of the excess emissions or permit deviation; and
 - e. any corrective action or preventative measures taken and the date of such actions;
or
- 24.1 When excess emissions or permit deviations have already been reported under Condition 23 the Permittee shall cite the date or dates of those reports.
25. **Annual Affirmation.** The Permittee shall submit to the Department by March 31 of each year an affirmation certified according to Condition 19 of whether the stationary source is still accurately described by the application and this permit, and whether any changes have been made to the stationary source that would trigger the requirement for a new permit under 18 AAC 50.
26. **Reasonable Precautions to Prevent Fugitive Dust.** A person who causes or permits bulk materials to be handled, transported, or stored, or who engages in an industrial activity or construction project shall take reasonable precautions to prevent particulate matter from being emitted into the ambient air.
- 26.1 The Permittee shall keep records of
- a. complaints received by the Permittee and complaints received by the department and conveyed to the Permittee; and
 - b. any additional precautions that are taken
 - (i) to address complaints described in Condition 26.1a or to address the results of Department inspections that found potential problems; and
 - (ii) to prevent future dust problems.
- 26.2 The Permittee shall report according to Condition 27.
27. **Air Pollution Prohibited.** No person may permit any emission which is injurious to human health or welfare, animal or plant life, or property, or which would unreasonably interfere with the enjoyment of life or property.
- 27.1 If emissions present a potential threat to health or safety, the Permittee shall report any such emissions in accordance with Condition 23.
- 27.2 As soon as practicable after becoming aware of a complaint that is attributable to emissions from the stationary source, the Permittee shall investigate the complaint to identify emissions that the Permittee believes have caused or are causing a violation of Condition 27.
- 27.3 The Permittee shall initiate and complete corrective action necessary to eliminate any violation identified by a complaint or investigation as soon as practicable if

- a. after investigation because of complaint or other reason, the Permittee believes that emissions from the stationary source have caused or are causing a violation of Condition 27; or
- b. the Department notifies the Permittee that it has found a violation of Condition 27.

27.4 The Permittee shall keep records of

- a. the date and time, and nature of all emissions complaints received;
- b. the name of the person or persons that complained, if known;
- c. a summary of any investigation, including reasons the Permittee does or does not believe the emissions have caused a violation of Condition 27; and
- d. any corrective actions taken or planned for complaints attributable to emissions from the stationary source.

27.5 In each operating report required by Condition 24, the Permittee shall include a brief summary report which must include

- a. the number of complaints received;
- b. the number of times the Permittee or the Department found corrective action necessary;
- c. the number of times action was taken on a complaint within 24 hours; and
- d. the status of corrective actions the Permittee or Department found necessary that were not taken within 24 hours.

27.6 The Permittee shall notify the Department of a complaint that is attributable to emissions from the stationary source within 24 hours after receiving the complaint, unless the Permittee has initiated corrective action within 24 hours of receiving the complaint.

Section 7 Standard Permit Conditions

28. The Permittee must comply with each permit term and condition. Noncompliance with a permit term or condition constitutes a violation of AS 46.14, 18 AAC 50, and, except for those terms or conditions designated in the permit as not federally enforceable, the Clean Air Act, and is grounds for
 - 28.1 an enforcement action; or
 - 28.2 permit termination, revocation and reissuance, or modification in accordance with AS 46.14.280.
29. It is not a defense in an enforcement action to claim that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with a permit term or condition.
30. Each permit term and condition is independent of the permit as a whole and remains valid regardless of a challenge to any other part of the permit.
31. The permit may be modified, reopened, revoked and reissued, or terminated for cause. A request by the Permittee for modification, revocation and reissuance, or termination or a notification of planned changes or anticipated noncompliance does not stay any permit condition.
32. The permit does not convey any property rights of any sort, nor any exclusive privilege.
33. The Permittee shall allow the Department or an inspector authorized by the Department upon presentation of credentials and at reasonable times with the consent of the owner or operator to
 - 33.1 enter upon the premises where an emissions unit subject to this permit is located or where records required by the permit are kept;
 - 33.2 have access to and copy any records required by this permit;
 - 33.3 inspect any stationary source, equipment, practices, or operations regulated by or referenced in the permit; and
 - 33.4 sample or monitor substances or parameters to assure compliance with the permit or other applicable requirements.

Section 8 General Source Test Requirements

34. **Requested Source Tests.** In addition to any source testing explicitly required by this permit, the Permittee shall conduct source testing as requested by the Department to determine compliance with applicable permit requirements.
35. **Operating Conditions.** Unless otherwise specified by an applicable requirement or test method, the Permittee shall conduct source testing
- 35.1 at a point or points that characterize the actual discharge into the ambient air; and
- 35.2 at the maximum rated burning or operating capacity of the source or another rate determined by the Department to characterize the actual discharge into the ambient air.
36. **Reference Test Methods.** The Permittee shall use the following references for test methods when conducting source testing for compliance with this permit:
- 36.1 Source testing for the reduction in visibility through the exhaust effluent must be conducted in accordance with the procedures set out in 40 CFR 60, Appendix A, Reference Method 9. The Permittee may use the form in Attachment 3 of this permit to record data.
- 36.2 Source testing for emissions of total particulate matter, sulfur compounds, nitrogen compounds, carbon monoxide, lead, volatile organic compounds, fluorides, sulfuric acid mist, municipal waste combustor organics, metals and acid gases must be conducted in accordance with the methods and procedures specified in 40 CFR 60, Appendix A.
- 36.3 Source testing for emissions of PM_{2.5} and PM₁₀ must be conducted in accordance with the procedures specified in 40 CFR 51, Appendix M, Methods 201 or 201A and 202.
- 36.4 Source testing for emissions of any contaminant may be determined using an alternative method approved by the Department in accordance with 40 CFR 63 Appendix A, Method 301.
37. **Test Exemption.** The Permittee is not required to comply with Conditions 39, 40 and 41 when the exhaust is observed for visible emissions by Method 9 Plan.
38. **Test Deadline Extension.** The Permittee may request an extension to a source test deadline established by the Department. The Permittee may delay a source test beyond the original deadline only if the extension is approved in writing by the Department's appropriate division director or designee.
39. **Test Plans.** Before conducting any source tests, the Permittee shall submit a plan to the Department. The plan must include the methods and procedures to be used for sampling, testing, and quality assurance, and must specify how the emissions unit will operate during the test and how the Permittee will document that operation. The Permittee shall submit a complete plan within 60 days after receiving a request under Condition 34 and at least 30 days before the scheduled date of any test unless the Department agrees in writing to some other time period. Retesting may be done without resubmitting the plan.

40. **Test Notification.** At least 10 days before conducting a source test, the Permittee shall give the Department written notice of the date and time the source test will begin.
41. **Test Reports.** Within 60 days after completing a source test, the Permittee shall submit one certified copy of the results in the format set out in the *Source Test Report Outline*, adopted by reference in 18 AAC 50.030. The Permittee shall certify the results in the manner set out in Condition 19. If requested in writing by the Department, the Permittee must provide preliminary results in a shorter period of time specified by the Department.

Section 9 Permit Documentation

<u>Date</u>	<u>Document Details</u>
August 29, 2018	Department receives application for Minor Permit AQ1444MSS01
November 12, 2018	Department requests additional information pertaining to the modeled parameter assumptions and public access control plan.
November 16, 2018	Department receives response to the information request pertaining to the modeled parameter assumptions and public access control plan.
March 4, 2019	Department receives request to extend the public comment period to April 17, 2019 to allow additional time for outreach to the villages of Noatak and Kivalina.
April 5, 2019	Department receives request to extend the public comment period to April 30, 2019 to allow additional time for comments following the final outreach meeting on April 15, 2019.
April 30, 2019	Department receives comments on Preliminary Minor Permit AQ1444MSS01.
DATE	Department issues Minor Permit AQ1444MSS01 Revision 1.

Attachment 1 – Fugitive Dust Control Plan

A&A Exploration Program Portable Rock Crusher Fugitive Dust Control Plan

Section 1 – General Information

1-A Facility Information	
Company Name:	Teck American Incorporated
Plant Name:	A&A Exploration Program
Permit No.:	AQ1444MSS01
1-B Contacts	
Report the names, address, and phone numbers of persons and owners or operators responsible for the implementation of the Dust Control Plan and responsible for the dust generating operation and dust control applications.	
<i>Responsible Official</i> (authorized under 18 AAC 50.990(93))	
Name:	Catherine Suda, Manager, U.S. Land and Assets
Phone Number:	(509) 922-8767
<i>On-site Manager/Operator or Point of Contact</i> (if different from above)	
Name:	Rebecca Hager, Senior Environmental Coordinator
Phone Number:	(907) 754-5141
1-C Recordkeeping and Reporting	
Keep copy of Fugitive Dust Control Plan on-site at all times. Keep records of deviations from dust plan, reasons for the deviation, and corrective actions taken for at least five years.	

Section 2 – Fugitive Emission Points

2-A Fugitive Emission Points
Identify the relative locations of actual and potential sources of fugitive dust emissions. <input checked="" type="checkbox"/> Bulk material handling and storage areas. <input checked="" type="checkbox"/> Paved and unpaved access roads, haul roads, traffic areas, and equipment storage yards. <input type="checkbox"/> Exit points where carryout and vehicle track-out onto paved public roads may occur. <input checked="" type="checkbox"/> Water supply locations if water application will be used for controlling visible dust emissions. <input checked="" type="checkbox"/> Rock crushing operations. <input checked="" type="checkbox"/> Screening <input checked="" type="checkbox"/> Conveyors <input type="checkbox"/> Fines Screening <input type="checkbox"/> Asphalt plant operations <input type="checkbox"/> Screening <input type="checkbox"/> Conveyors <input type="checkbox"/> Baghouse Catch <input type="checkbox"/> Drum Mixer Discharge <input type="checkbox"/> Hot mix storage silo receiving point
2-B Comments – Fugitive Emission Points
The portable rock crusher will be located on the Waste Rock Facility pad. No paved public roads exist in the vicinity of the project.

Section 3 – Control of Fugitive Dust Sources

3-A Control of Fugitive Dust Sources
Check any boxes that apply. Checked boxes represent methods that will be used <i>as needed</i> .
<i>Active Operations</i>
<input checked="" type="checkbox"/> Water will be applied to dry areas during leveling, grading, trenching, and earthmoving activities.
<input checked="" type="checkbox"/> Wind barriers will be constructed and maintained, and water or dust suppressants will be applied to the disturbed surface areas.
<i>Inactive Operations, including after work hours, weekends, and holidays</i>
<input checked="" type="checkbox"/> Not applicable for this project (Please explain why in Section 3-C).
<input type="checkbox"/> Water or dust suppressants will be applied on disturbed surface areas to form a visible crust, and vehicle access will be restricted to maintain the visible crust.
<i>Sites Inactive for Seven or More Days</i>
<input checked="" type="checkbox"/> Not applicable for this project (Please explain why in Section 3-C).
<input type="checkbox"/> Vehicle access will be restricted and water/dust suppressants will be applied at all un-vegetated areas.
<input type="checkbox"/> Vegetation will be established on all previously disturbed areas.
<input type="checkbox"/> Gravel will be applied and maintained at all previously disturbed areas.
<input type="checkbox"/> Previously disturbed areas will be paved.
<i>Unpaved Access and Haul Roads, Traffic and Equipment Storage Areas</i>
<input type="checkbox"/> Not applicable for this project (Please explain why in Section 3-C).
<input checked="" type="checkbox"/> Apply water or dust suppressants to unpaved haul and access roads.
<input checked="" type="checkbox"/> Post speed limit signs of not more than 15 mph at each entrance, and again every 500 ft.
<input checked="" type="checkbox"/> Water or dust suppressants will be applied to vehicle traffic and equipment storage areas.
<i>Wind Events</i>
<input checked="" type="checkbox"/> Water application equipment will apply water to control fugitive dust during wind events, unless unsafe to do so. Outdoor construction activities that disturb the soil will cease whenever visible dust emissions cannot be effectively controlled.
3-B Bulk Materials
Check any boxes that apply. Checked boxes represent methods that will be used <i>as needed</i> .
<i>Outdoor Handling of Bulk Materials</i>
<input checked="" type="checkbox"/> Water or dust suppressants will be applied when handling bulk materials.
<input checked="" type="checkbox"/> Wind barriers with less than 50 percent porosity will be installed and maintained, and water or dust suppressants will be applied.
<i>Outdoor Storage of Bulk Materials</i>
<input checked="" type="checkbox"/> Water or dust suppressants will be applied to storage piles.
<input type="checkbox"/> Storage piles will be covered with tarps, plastic, or other suitable material and anchored in such a manner that prevents the cover from being removed by wind actions.
<input type="checkbox"/> Wind barriers with less than 50 percent porosity will be installed and maintained around the storage piles and water or dust suppressants will be applied.
<input type="checkbox"/> A three-sided structure (< 50% porosity) will be used that is at least as high as the storage piles.
<i>On-Site Transporting of Bulk Materials</i>
<input checked="" type="checkbox"/> Vehicle speed will be limited on the work site.
<input type="checkbox"/> All haul trucks will be loaded such that the freeboard is not less than six inches when transported across any paved public access road.
<input checked="" type="checkbox"/> A sufficient amount of water will be applied to the top of the load to limit visible dust emissions.
<input type="checkbox"/> Haul trucks will be covered with a tarp or other suitable cover.

Section 3 – Control of Fugitive Dust Sources (cont.)

3-B Bulk Materials - continued
<i>Off-Site Transporting of Bulk Materials</i> <input type="checkbox"/> No bulk materials will be transported to or from the project site. <input checked="" type="checkbox"/> Materials for transport will be wetted as needed. <input checked="" type="checkbox"/> Covers will be used, as needed. Some or all of the following will be used as necessary: <ul style="list-style-type: none">• The interior of emptied truck cargo compartments will be cleaned or covered before leaving the site.• Spillage or loss of bulk materials from holes or other openings in the cargo compartment's floor, sides, and tailgates will be prevented.• Haul trucks will be covered with a tarp or other suitable cover or will be loaded such that the freeboard is not less than six inches when transported on any paved public access road to or from the project site.
<i>Outdoor Transport using a Chute or Conveyor</i> <input type="checkbox"/> No chutes or conveyors will be used. <input type="checkbox"/> Chute or conveyor will be fully enclosed. <input checked="" type="checkbox"/> Water spray equipment will be used to sufficiently wet the materials. <input type="checkbox"/> Transported materials will be washed or screened to remove fines (PM-10 or smaller).
3-C Comments – Control of Fugitive Dust Sources
The project will operate 7 days a week, 365 days a year. No periods of inactive operations are expected.

Section 4 – Dust Control Methods

4-A Water Application
Complete this section if water application will be used as a control method for limiting visible dust emissions and stabilizing surface areas. Check and answer everything that applies. Checked boxes represent methods that will be used <i>as needed</i> .
<i>Water Application Equipment:</i> <input checked="" type="checkbox"/> Sprinklers: Describe the activities that will utilize sprinklers: Road and crusher dust fugitive dust suppression <input type="checkbox"/> Water Truck, <input type="checkbox"/> Water Trailer, <input checked="" type="checkbox"/> Water Wagon, <input checked="" type="checkbox"/> Other: Water Truck Describe the activities that will utilize this equipment: Road and crusher dust fugitive dust suppression Water application equipment is available to operate after normal working hours, on weekends, and holiday. After-hours contact: Rebecca Hager Phone number: (907) 754-5141
<i>Water Supply (as needed):</i> <input type="checkbox"/> Fire hydrants. Obtain necessary approval to use specific hydrants. <input type="checkbox"/> Storage tanks Number and capacity: Click here to enter text. <input type="checkbox"/> Wells Number and flow rate: Click here to enter text. <input checked="" type="checkbox"/> Canal, River, Pond, Lake, etc. Describe: <u>Authorized take-out points on natural water courses</u> Approval granted by the owner or public agency to use their water source for this project. Owner or Agency: <u>Alaska Department of Natural Resources – Water Section</u> Contact: <u>Kindra Geis</u> Phone number: <u>(907) 451-2791</u> <input type="checkbox"/> Other: _____

Section 4 – Dust Control Methods (cont.)

4-B Dust Suppressant Products

Suppressant materials include, but are not limited to: hygroscopic suppressants (road salts), adhesives, petroleum emulsions, polymer emulsions, and bituminous material (road oils).

Copy this section if more than one dust suppressant product will be used.

Not applicable. Only water application will be the control method used.

Applicable.

Product Name: _____

Application Equipment: _____

Number of Application Equipment Available: _____

Attach each of the following information that fully describes this product. Use the checklist below to make sure all information is submitted with this plan.

Product Specifications (MSDS, Product Safety Data Sheet, etc.).

Manufacturer's Usage Instructions (method, frequency, and intensity of application).

Environmental impacts and approvals or certifications related to the appropriate and safe use for ground application.

4-C Other Dust Control Methods

Check the other types of dust control methods that will be implemented at the construction site.

Physical barriers for restricting unauthorized vehicle access:

Fences Gates Posts Berms Concrete Barriers

Other: Public Access Control Plan

Wind barriers – Describe: _____

Posted speed limit signs meet state and Federal Department of Transportation standards.

Posted at 15 miles per hour, Posted at _____ miles per hour (less than 15 mph)

Re-establish vegetation for temporarily stabilizing previously disturbed surfaces.

Explain: Vegetation will be re-established at the end of the project per the reclamation plan.

Apply and maintain gravel:

On haul roads On access roads At equipment storage yards

At vehicle traffic areas For temporarily stabilizing previously disturbed areas.

Explain: Access roads and other high traffic areas (e.g., camp parking area).

Apply pavement – Explain: _____

Other: _____

4-D Comments – Dust Control Methods

Click here to enter text.

Section 5 – Carryout and Vehicle Track-out

5-A Treatments for Preventing Track-out
Track-out is any material that adheres to vehicle tires and is deposited onto a paved public road or the paved shoulder of a paved public road. Check one or a combination that will apply.
<input type="checkbox"/> <i>Grizzly</i> : Rails, pipes, or grates used to dislodge debris off of vehicles before exiting the site. Extends from the intersection with the paved public road surface for the full width of the unpaved exit surface for the distance of at least 25 feet. Describe: _____
<input type="checkbox"/> <i>Gravel Pad</i> : A layer of washed gravel at least one inch or larger in diameter, three inches deep, and extends from the intersection with the public paved road surface for the full width of the unpaved exit surface for a distance of at least 50 feet. Describe: _____
<input type="checkbox"/> <i>Paved Surface</i> : Extends from the intersection with the paved public road surface for the full width of the unpaved access road for at least 100 feet to allow mud and dirt to drop off of vehicles before exiting the site. Describe: _____ Mud and dirt deposits accumulating on paved interior roads will be removed with sufficient frequency, but not less frequently than once per workday. Clean-up Frequency: _____
<input type="checkbox"/> <i>Wheel Washer</i> : Uses water to dislodge debris from tires and vehicle undercarriage. Describe: _____
<input checked="" type="checkbox"/> <i>Other</i> : <u>Not applicable – There are no paved roads in the vicinity of the project</u>
5-B Treatments for Preventing Carryout
Carryout occurs when materials from emptied or loaded haul trucks, vehicles, or trailers falls onto a paved public road or paved shoulder of a paved public road. Check all methods that apply.
<input checked="" type="checkbox"/> No haul trucks will be routinely entering or leaving the project site.
<i>Emptied Haul Trucks</i> : <input type="checkbox"/> Interior cargo compartments will be cleaned before leaving the project site. <input type="checkbox"/> Cargo compartment will be covered with a tarp or suitable cover before leaving the project site. <i>Loaded Haul Trucks</i> : Spillage or loss of materials from holes or other opening in the cargo compartment will be prevented when material is transported onto any paved public access road. <input type="checkbox"/> Haul trucks will be loaded such that the freeboard is not less than six inches with water applied to the top of the load before leaving the project site. <input type="checkbox"/> Cargo compartment and load will be covered with a tarp or suitable cover before leaving the project site. <input checked="" type="checkbox"/> <i>Other</i> : <u>Not applicable – There are no paved roads in the vicinity of the project</u>
5-C Cleaning up Vehicle Carryout and Track-out
Clean up Method: Check the method(s) below that will be used for cleaning carryout and track-out. <input type="checkbox"/> Manually sweeping and picking up. <input type="checkbox"/> Mechanical sweeping with a rotary brush or broom accompanied or preceded by water. Describe the types of equipment that will be used: _____ <input type="checkbox"/> Operating a PM10-efficient street sweeper. Make and Model: _____ <input type="checkbox"/> Flushing with water – allowed if: <ul style="list-style-type: none">• No curbs or gutters are present.• Using water will not result as a source of track-out and carryout.• Using water will not result in adverse impacts on storm water drainage systems.• Using water will not violate any National Pollutant Discharge Elimination System permit program or Alaska Department of Environmental Conservation, Division of Water Permit.
5-D Comments – Vehicle Carryout and Track-out
Items 5-A, 5-B, and 5-C are not applicable because there are no paved roads in the vicinity of the project.

Attachment 2 – Public Access Control Plan

Anarraaq and Aktigiruaq (A&A) Exploration Program Public Access Control Plan

Purpose

This document describes the Public Access Control Plan that will be used to protect the general public from health and safety hazards associated with industrial activities planned at the Anarraaq and Aktigiruaq (A&A) Exploration Program. Teck American Incorporated (Teck) proposes to conduct underground exploration at an area located approximately 10 miles north of the Red Dog Mine as shown in Figure 1. This plan describes the access control measures that will be used to implement public access restrictions.

Teck is fully committed to protecting the general public from health and safety hazards as well as meeting the applicable Alaska Ambient Air Quality Standards (AAAQS) at the ambient air quality boundary of the project. A primary purpose of this plan is to delineate the area to be protected and controlled for occupational health and safety (within the ambient air quality boundary) from the area that is subject to unrestricted, general public access in which the AAAQS are applicable (outside the ambient air quality boundary). A secondary purpose is to ensure that measures are in place to restrict public access within the ambient air quality boundary.

General Information

The A&A Exploration Program will be conducted in the upper reaches of Ikalukrok Creek approximately 10 miles north of the Red Dog Mine. The permitted area for the project is located on State lands controlled by Teck under valid mining claims. Currently, access to the property is by helicopter but the proposed exploration activities include constructing a 10-mile access road between the Red Dog Mine and the exploration site, a four-season camp, a water treatment plant, support buildings, and power generating and fuel storage facilities. The nearest communities to the exploration site are Kivalina (estimated population of 383), located approximately 52 miles to the west-southwest and Noatak (estimated population of 514), located approximately 43 miles to the south-southwest. Figure 2 provides an overview of the general project area, including the nearest industrial facilities, potential public access points, and communities.

Due to the remote Arctic location of the A&A Exploration Program, considerable distance from nearby communities, lack of public infrastructure, and rugged terrain near the project, public access to the project site is not only difficult, but is also unlikely. Teck proposes to limit the public access to any areas within the ambient air quality boundary through the measures provided below.

Public Access Control Measures

Road Access Barriers

The A&A Exploration Program is located in a remote area of Alaska which is not accessible by any public roads. A proposed access road will connect the A&A Exploration Program to existing infrastructure at the Red Dog Mine. The Red Dog Mine is connected by a 52 mile haul road to the Delong Mountain Transportation System (DMTS) Port Facility on the Chukchi Sea. Access is restricted at the DMTS Port Facility and Red Dog Mine under Public Access Control Plans for each respective facility.

Public access at the DMTS Port Facility is restricted by Teck Alaska Incorporated, the operator of the DMTS Port Facility in accordance with 33 Code of Federal Regulations (CFR) Part 150 (Marine Security: Facilities). Non-commercial vessels are not permitted to dock at the DMTS Port Facility. The public authority owning the DMTS Port Facility, Alaska Industrial Development and Export Authority (AIDEA); the uplands landowner, NANA; and the tidelands landowner, the Alaska Department of Natural Resources (ADNR) have

agreed to reasonable restriction on general public access to accomplish protection of the public at the DMTS Port Facility. Currently, and historically, Teck Alaska Incorporated has been the sole user of the DMTS Port Facility. In accordance with the Public Access Control Plan for the DMTS Port Facility, signage is placed and periodically inspected at the upland boundary, marine facility, and industrial facility boundary. No communities or private residences are located along the DMTS haul road. The use of the DMTS haul road is restricted to authorized personnel only.

Public access at the Red Dog Mine is also restricted by Teck Alaska Incorporated. In accordance with the Public Access Control Plan for the Red Dog Mine, signage is placed and periodically inspected at industrial areas and haul roads.

Air Travel Access Barriers

There are two airstrips located in the general vicinity of the A&A Exploration Program. One private airstrip is located at the Red Dog Mine, and is closed to non-mine affiliated air traffic. The general public is not permitted to land at the Red Dog Mine airstrip without prior permission from Teck Alaska Incorporated. The second airstrip is located across the Wulik River approximately six miles west-southwest of the A&A Exploration Program. There are no roads connecting the second airstrip to the A&A Exploration Program, and the Wulik River provides a physical and natural barrier between the airstrip and the A&A Exploration Program.

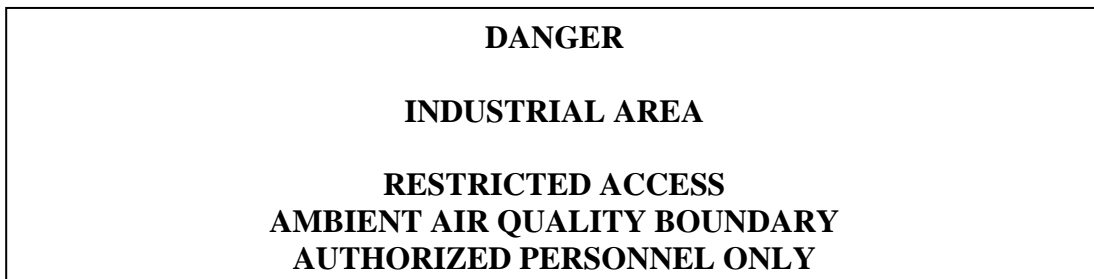
Physical and Natural Barriers

The ambient air quality boundary is generally surrounded by moderately steep mountains that provide a degree of a barrier to the public. Major rivers, including the Wulik River, provide a barrier to public access from the west. Red Dog Creek provides a barrier to public access from the south. The road between the A&A Exploration Program and the Red Dog Mine will be generally situated adjacent to Ikalukrok Creek, which is located in a canyon. Although the physical and natural barriers do not define the ambient air quality boundary, the physical and natural barriers do make entry across the ambient air quality boundary difficult.

Posting

Teck will post signs to further deter public access. The signs will be posted along the A&A Exploration Program access road and at selected locations along the edges of the ambient air quality boundary. The sign specification will be:

- Each sign will measure 4 feet wide by 2 feet high;
- Each sign will be inspected semi-annually and will be promptly repaired or replaced to maintain lettering and mounting;
- Each sign will be free of visible obstructions; and
- Each sign will read as follows:



Proposed Surveillance

All on-site personnel will be informed of the public safety reasons and air permitting requirements to restrict public access at the ambient air quality boundary. All personnel will be asked to observe and report non-project personnel identified in the vicinity of the ambient air boundary perimeter. Any suspected violation of the ambient air quality boundary by unauthorized individual(s) will be reported immediately to Teck management.

A&A Exploration Program personnel will periodically observe the perimeter of the facilities area. If unauthorized individuals(s) are observed, a log of the time and date of the observation will be recorded on the attached form. A record of the completed logs will be maintained onsite at the A&A Exploration Program office.

Trespass Individuals

If unauthorized individual(s) are noted within the ambient air quality boundary, appropriate measures will be taken by Teck personnel to address potential health and safety concerns. Teck personnel will be instructed to use the following protocol when dealing with unauthorized entry. A log of the incident will be recorded on the attached form which will be maintained onsite at the A&A Exploration Program office.

- Approach the unauthorized person(s) and request that they leave the area immediately due to potential health and safety concerns.
- If the unauthorized individual(s) refuse to leave the area after the above request, inform the individual(s) that they are in an area in which the Alaska Ambient Air Quality Standards may not be met and the State regulations require Teck to restrict entry to the posted air to authorized personnel only. The unauthorized individual(s) will be asked again to leave the ambient air quality area.
- If the unauthorized individual(s) still refuse to leave, the individual(s) will be informed that Teck will not be liable or responsible for any harm they may encounter by being in a restricted entry area.
 - In the event that the Teck representative believes the health and safety of the unauthorized individual(s) may be at risk, the Teck representative may call Teck Safety and Health to have the individuals removed from the area.

The Teck representative will also request the name or names of the unauthorized individual(s). The encounter will be logged and shall include the following information:

- Day and time;
- Name of individual(s) if known or otherwise provided;
- Method of entry into the ambient air boundary (e.g. foot, snow machine, etc.);
- Duration of unauthorized presence within the ambient air quality boundary; and
- Other pertinent information as appropriate.

Distribution

Copies of this plan will be provided to the local residents, landowners, and potential users associated with this project. The distribution will include at least the following:

- Red Dog Subsistence Committee;
- Northwest Arctic Borough Assembly;
- Red Dog Management Committee;
- Alaska Department of Natural Resources;
- Kivalina IRA Council;
- Noatak IRA Council; and
- City of Kivalina.

Attachment 3 – Visible Emissions Form

VISIBLE EMISSIONS OBSERVATION FORM

This form is designed to be used in conjunction with EPA Method 9, “Visual Determination of the Opacity of Emissions from Stationary Sources.” Temporal changes in emission color, plume water droplet content, background color, sky conditions, observer position, etc. should be noted in the comments section adjacent to each minute of readings. Any information not dealt with elsewhere on the form should be noted under additional information. Following are brief descriptions of the type of information that needs to be entered on the form: for a more detailed discussion of each part of the form, refer to “Instructions for Use of Visible Emission Observation Form” <https://www3.epa.gov/ttnemc01/methods/webinar8.pdf>

- Source Name: full company name, parent company or division or subsidiary information, if necessary.
- Address: street (not mailing or home office) address of facility where visible emissions observation is being made.
- Phone (Key Contact): number for appropriate contact.
- Stationary Source ID Number: number from NEDS, agency file, etc.
- Process Equipment, Operating Mode: brief description of process equipment (include type of facility) and operating rate, % capacity, and/or mode (e.g. charging, tapping, shutdown).
- Control Equipment, Operating Mode: specify type of control device(s) and % utilization, control efficiency.
- Describe Emission Point: for identification purposes, stack or emission point appearance, location, and geometry; and whether emissions are confined (have a specifically designed outlet) or unconfined (fugitive).
- Height Above Ground Level: stack or emission point height relative to ground level; can use engineering drawings, Abney level, or clinometer.
- Height Relative to Observer: indicate height of emission point relative to the observation point.
- Distance from Observer: distance to emission point; can use rangefinder or map.
- Direction from Observer: direction plume is traveling from observer.
- Describe Emissions and Color: include physical characteristics, plume behavior (e.g., looping, lacy, condensing, fumigating, secondary particle formation, distance plume visible, etc.), and color of emissions (gray, brown, white, red, black, etc.). Note color changes in comments section.
- Visible Water Vapor, note in comments section if visible water vapor is present.
- If Plume is present, note in comments section “attached” if water droplet plume forms prior to exiting stack, or “detached” if water droplet plume forms after exiting stack.
- Point in Plume at Which Opacity was Determined: describe physical location in plume where readings were made (e.g., 1 ft above stack exit or 10 ft. after dissipation of water plume).
- Describe Plume Background: object plume is read against, include texture and atmospheric conditions (e.g., hazy).
- Background Color: sky blue, gray-white, new leaf green, etc.
- Sky Conditions: indicate color of clouds and cloud cover by percentage or by description (clear, scattered, broken, overcast).
- Wind Speed: record wind speed; can use Beaufort wind scale or hand-held anemometer to estimate.
- Wind Direction From: direction from which wind is blowing; can use compass to estimate to eight points.
- Ambient Temperature: in degrees Fahrenheit or Celsius.
- Wet Bulb Temperature: can be measured using a sling psychrometer
- RH Percent: relative humidity measured using a sling psychrometer; use local US Weather Bureau measurements only if nearby.
- Source Layout Sketch: include wind direction, sun position, associated stacks, roads, and other landmarks to fully identify location of emission point and observer position.
- Draw North Arrow: to determine, point line of sight in direction of emission point, place compass beside circle, and draw in arrow parallel to compass needle.
- Sun’s Location: point line of sight in direction of emission point, move pen upright along sun location line, mark location of sun when pen’s shadow crosses the observer’s position.
- Observation Date: date observations conducted.
- Start Time, End Time: beginning and end times of observation period (e.g., 1635 or 4:35 p.m.).
- Data Set: percent opacity to nearest 5%; enter from left to right starting in left column. Use a second (third, etc.) form, if readings continue beyond 30 minutes. Use dash (-) for readings not made; explain in adjacent comments section.
- Comments: note changing observation conditions, plume characteristics, and/or reasons for missed readings.
- Range of Opacity: note highest and lowest opacity number.
- Observer’s Name: print in full.
- Observer’s Signature, Date: sign and date after performing VE observation.
- Organization: observer’s employer.
- Certified By, Date: name of “smoke school” certifying observer and date of most recent certification.

Attachment 4 – Notification Form

A&A Exploration Program
Stationary Source Name
Teck American Incorporated
Company Name

AQ1444MSS01 Revision 1
Air Quality Permit No.
Date

When did you discover the Excess Emissions/Permit Deviation?

Date: ____ / ____ / ____

Time: ____ : / ____

When did the event/deviation occur?

Begin Date: ____ / ____ / ____

Time: ____ : ____ (please use 24-hr clock.)

End Date ____ / ____ / ____

Time: ____ : ____ (please use 24-hr clock.)

What was the duration of the event/deviation? ____ : ____ (hrs:min) or ____ days
(total # of hrs, min, or days, if intermittent then include only the duration of the actual emissions/deviation)

Reason for Notification: (please check only 1 box and go to the corresponding section)

- Excess Emissions – Complete Section 1 and Certify
- Deviation from Permit Condition – Complete Section 2 and Certify
- Deviations from COBC, CO, or Settlement Agreement – Complete Section 2 and Certify

Section 1. Excess Emissions

(a) Was the exceedance: Intermittent or Continuous

(b) Cause of Event (Check one that applies):

- Start Up/Shut Down
- Natural Cause (weather/earthquake/flood)
- Control Equipment Failure
- Schedule Maintenance/Equipment Adjustment
- Bad Fuel/Coal/Gas
- Upset Condition
- Other _____

(c) Description

Describe briefly, what happened and the cause. Include the parameters/operating conditions exceeded, limits, monitoring data and exceedance.

(d) **Emissions Units Involved:**

Identify the emission unit involved in the event, using the same identification number and name as in the permit. Identify each emission standard potentially exceeded during the event and the exceedance.

EU ID	EU Name	Permit Condition Exceeded/Limit/Potential Exceedance

(e) **Type of Incident** (please check only one):

- Opacity _____ % Venting _____ gas/scf Control Equipment Down
 Fugitive Emissions Emission Limit Exceeded Recordkeeping Failure
 Marine Vessel Opacity Flaring Other _____

(f) **Unavoidable Emissions:**

Do you intend to assert that these excess emissions were unavoidable? Yes No

Do you intend to assert the affirmative defense of 18 AAC 50.235? Yes No

Certify Report (go to end of form.)

Section 2. Permit Deviations

(a) **Permit Deviation Type** (check only one box, corresponding with the section in the permit):

- | | |
|---|--|
| <input type="checkbox"/> Emission Unit-Specific | <input type="checkbox"/> Generally Applicable Requirements |
| <input type="checkbox"/> Failure to Monitor/Report | <input type="checkbox"/> Reporting/Monitoring for Diesel Engines |
| <input type="checkbox"/> General Source Test/Monitoring Requirements | <input type="checkbox"/> Recordkeeping Failure |
| <input type="checkbox"/> Recordkeeping/Reporting/Compliance Certification | <input type="checkbox"/> Insignificant Emission Unit |
| <input type="checkbox"/> Standard Conditions Not Included in the Permit | <input type="checkbox"/> Stationary Source Wide |
| <input type="checkbox"/> Other Section: _____ | (Title of section and section number of your permit). |

(b) **Emission Unit Involved:**

Identify the emission units involved in the event, using the same identification number and name as in the permit. List the corresponding permit conditions and the deviation.

EU ID	EU Name	Permit Condition/ Potential Deviation

(c) **Description of Potential Deviation:**

Describe briefly what happened and the cause. Include the parameters/operating conditions and the potential deviation.

(d) **Corrective Actions:**

Describe actions taken to correct the deviation or potential deviation and to prevent future recurrence.

Certification:

Based on information and belief formed after reasonable inquiry, I certify that the statements and information in and attached to this document are true, accurate, and complete.

Printed Name: _____ Title: _____ Date: _____

Signature: _____ Phone Number: _____

NOTE: *This document must be certified in accordance with 18 AAC 50.345(j)*

To Submit this Report:

1. Fax to: 907-451-2187

Or

2. Email to: DEC.AQ.Airreports@alaska.gov

If faxed or emailed, the report must be certified within the operating report required by the operating permit issued to the stationary source under AS 46.14 and 18 AAC 50, for the same reporting period.

Or

3. Mail to: ADEC
 Air Permits Program
 610 University Avenue
 Fairbanks, AK 99709-3643

Or

4. Phone Notification: 907-451-5173

Phone notifications require a written follow-up report.

Or

5. Submission of information contained in this report can be made electronically at the following website: <http://dec.alaska.gov/Applications/Air/airtoolsweb/>

