



**ALASKA POLLUTANT DISCHARGE ELIMINATION SYSTEM
INDIVIDUAL PERMIT**

Permit Number: AK0043206

**ALASKA DEPARTMENT OF ENVIRONMENTAL CONSERVATION
Wastewater Discharge Authorization Program
555 Cordova Street
Anchorage, AK 99501**

In compliance with the provisions of the Clean Water Act (CWA), 33 U.S.C. §1251 *et seq.*, as amended by the Water Quality Act of 1987, P.L. 100-4, this permit is issued under provisions of Alaska Statutes (AS) 46.03; the Alaska Administrative Code (AAC) as amended; and other applicable State laws and regulations. The

HECLA GREENS CREEK MINING COMPANY

is authorized to discharge from the Greens Creek Mine facility located on Admiralty Island at the following locations:

Outfall	Receiving Water or Body	Latitude	Longitude
002	Hawk Inlet	58° 06' 06" N	134° 46' 30" W
002A	Hawk Inlet	58° 06' 55" N	134° 45' 54" W
003	Hawk Inlet	58° 07' 32" N	134° 45' 16" W
004	Wetlands	58° 09' 01" N	134° 45' 16" W
005.2	Zinc Creek	58° 05' 28" N	134° 44' 10" W
005.3	Greens Creek	58° 04' 23" N	134° 43' 25" W
005.4	Greens Creek	58° 04' 21" N	134° 43' 12" W
005.5	Greens Creek	58° 04' 41" N	134° 39' 07" W
006	Greens Creek	58° 04' 43" N	134° 38' 49" W
007	Greens Creek	58° 04' 50" N	134° 38' 27" W
008	Greens Creek	58° 04' 52" N	134° 38' 06" W
009	Greens Creek	58° 04' 47" N	134° 37' 47" W
012	Hawk Inlet	58° 08' 39" N	134° 45' 15" W

In accordance with the discharge points, effluent limitations, monitoring requirements, and other conditions set forth herein:

This permit shall become effective October 1, 2023

This permit and the authorization to discharge shall expire at after September 30, 2028

The Permittee shall reapply for a permit reissuance on or before April 27, 2028, 180 days before the expiration of this permit if the Permittee intends to continue operations and discharges at the facility beyond the term of this permit.

The Permittee shall post or maintain a copy of this permit to discharge at the facility and make it available to the public, employees, and subcontractors at the facility.



Signature

August 16, 2023

Date

Gene McCabe

Name

Program Manager

Title

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SCHEDULE OF SUBMISSIONS

Table 1 - Schedule of Submissions summarizes some of the required submissions and activities the Permittee must complete and/or submit to the Alaska Department of Environmental Conservation (DEC) during the term of this permit. The Permittee is responsible for all submissions and activities even if they are not summarized in Table 1.

Table 1: Schedule of Submissions

Permit Part	Submittal or Completion	Frequency	Due Date	Submit to
1.3.3.3	Corrective Action Plan	As required	Within 7 working days after verifying that corrective actions have been triggered	Permitting & Compliance ^{a, b}
1.6.1.6	Hawk Inlet Monitoring Program Report	Annual	March 1 st of the next year	Compliance ^b
1.6.2.8	Storm Water Monitoring Report	Annual	March 1 st of the next year	Compliance ^b
1.6.3.5	Mixing Zone Monitoring Report	Annual	March 1 st of the next year	Compliance ^b
1.8	Annual Water Quality Monitoring Summary	Annual	March 1 st of the next year	Compliance ^b
Appendix A, 1.3	Application for Permit Reissuance	1/permit cycle	No later than 180 days before expiration of the permit	Permitting ^a
Appendix A, 3.2	Discharge Monitoring Report (DMR)	Monthly	Postmarked or submitted electronically through the eDMR system, on or before the 15 th of the next month	Compliance ^b
Appendix A, 3.4	Oral notification of noncompliance	As Necessary	Within 24 hours from the time the Permittee becomes aware of the circumstances of noncompliance	Compliance ^c
Appendix A, 3.4	Written documentation of noncompliance	As Necessary	Within 5 days after the Permittee becomes aware of the circumstances	Compliance ^b

Permit Part	Submittal or Completion	Frequency	Due Date	Submit to
1.2.8	Outfall 002 and 002A Diffuser Condition Reports	Annual	March 1 st of next year	Permitting & Compliance ^{a, b}

a. Permitting address – Department of Environmental Conservation, Division of Water, Wastewater Discharge Authorization Program, 555 Cordova St., Anchorage, Alaska 99501

b. Compliance address – Department of Environmental Conservation, Division of Water, Compliance Enforcement Program, 555 Cordova St., Anchorage, Alaska 99501

c. Oral notifications must be reported to the Department’s noncompliance reporting hotline: 1-907-269-4114 (from Alaska) or 1-877-569-4114 (nationwide).

1.0 LIMITATIONS AND MONITORING REQUIREMENTS

1.1 Discharge Authorization

1.1.1 During the effective period of this permit, the Permittee is authorized to discharge pollutants from outfalls 002, 002A, and 003 to Hawk Inlet, outfall 004 to wetlands, outfall 005.2 to Zinc Creek, outfalls 005.3, 005.4, 005.5, 006, 007, 008, 009 to Greens Creek, and outfall 012 to the Hawk Inlet Watershed, within the limits and subject to the conditions set forth herein. This permit authorizes the discharge of only those pollutants resulting from facility processes, waste streams, and operations that have been clearly identified in the permit application process.

1.2 Effluent Limitations and Monitoring for Outfall 002 and 002A

1.2.1 The Permittee must limit and monitor discharges from outfall 002 and 002A as specified in Table 2. Outfalls 002 and 002A discharge treated wastewater contributed by the following waste streams: mine contact water, storm water, mill process water, treated domestic wastewater, and intercepted groundwater. All values represent maximum effluent limits unless otherwise indicated. The Permittee must comply with the effluent limits in the tables at all times unless otherwise indicated, regardless of the frequency of monitoring or reporting required by other provisions of this permit.

Table 2: Outfall 002 & 002A Effluent Limitations and Monitoring Requirements

Parameter	Units	Effluent Limits		Monitoring Requirements	
		Daily Maximum	Monthly Average	Minimum Frequency	Sample Type
Flow (002)	mgd	4.6	3.7	continuous	recording
Flow (002A)	mgd	2.88	1.3	continuous	recording
Flow (Combined flow when both outfalls are utilized)	mgd	6.3	4.1	Continuous	recording
Cadmium ^a	µg/L	16	6	monthly	24-hour composite
Copper ^a	µg/L	32	13	monthly	24-hour composite
Lead ^a	µg/L	196	87	weekly	24-hour composite
Mercury ^b	µg/L	0.9	0.7	weekly	24-hour composite
Zinc ^a	µg/L	514	201	weekly	24-hour composite
TSS	mg/L	30	20	weekly	24-hour composite
pH	s.u.	See Permit Part 1.2.4		continuous	recording
Cyanide ^c	µg/L	5	3	Monthly	24-hour composite
Temperature	°C	-	-	weekly	grab
BOD ₅	mg/L	-	-	monthly	grab
Fecal coliform bacteria	#/100 mL	-	-	monthly	grab
Notes:					
a. Metals shall be measured as total recoverable.					
b. Mercury shall be measured as total.					
c. Cyanide shall be measured as weak acid dissociable (WAD).					

- 1.2.2 Discharge from outfall 002 and 002A shall not cause a violation of Alaska Water Quality Standards (WQS), 18 AAC 70, unless allowed in this permit through exceptions to the standards or in a compliance schedule.
- 1.2.3 The Permittee must not discharge any floating solids, visible foam in other than trace amounts, or oily wastes that produce a sheen on the surface of the receiving water.
- 1.2.4 During continuous pH monitoring required in Table 2, pH must not be less than 6.0 standard units (s.u.) or greater than 9.0 s.u.
- 1.2.4.1 Excursions outside the range of 6.0 to 9.0 s.u. are permitted provided that the total time during which the pH values are outside 6.0 to 9.0 s.u. does not exceed 7 hours and 26 minutes in any calendar month or 60 minutes per individual excursion.
- 1.2.4.2 The Permittee shall monitor the total time outside the range of 6.0 to 9.0 s.u. for the month, length, date of each excursion, and the number of pH excursions.

- 1.2.4.3 For reporting pH, allowable pH excursions under Permit Part 1.2.4.1 shall be excluded from the DMR form. However appended to each DMR, the Permittee shall report the total time outside the range of 6.0 to 9.0 s.u. for the month, length, date of each excursion, and the number of pH excursions.
- 1.2.5 The Permittee must collect effluent samples from the effluent stream after the last treatment unit prior to discharge into the receiving waters.
- 1.2.6 For all effluent monitoring, the Permittee must use a test method that can achieve a Minimum Level of Quantification (ML) less than the effluent limitation. For a parameter without an effluent limitation, the Permittee must use a method that can achieve a Method Detection Limit (MDL) less than or equal to the MDL specified in Table 5.
- 1.2.7 For purposes of reporting on the Discharge Monitoring Report (DMR) for this permit only, for a single sample, if a value is less than the MDL, the Permittee must report “less than {numeric value of the MDL}” and if a value is less than the ML, the Permittee must report “less than {numeric value of the ML}.” For purposes of calculating monthly averages, zero may be assigned for values less than the MDL, the {numeric value of the MDL} may be assigned for values between the MDL and the ML. If the average value is less than the MDL, the Permittee must report “less than {numeric value of the MDL}” and if the average value is less than the ML, the Permittee must report “less than {numeric value of the ML}.” If a value is greater than the ML, the Permittee must report and use the actual value.
- 1.2.8 Annually, a video and written report on the condition of outfall 002 and outfall 002A diffusers and diffusers ports must be included in the Annual Report and submitted to DEC by March 1st of the next year.

1.3 Effluent Limitations and Monitoring for Storm Water Outfalls

- 1.3.1 The Permittee must monitor discharges from outfalls 003, 004, 005.2, 005.3, 005.4, 005.5, 006, 007, 008, 009, and 012 as specified in Table 3 and the receiving water as specified in Permit Part 1.6.2. See Figure 1 and 4.
- 1.3.2 If monitoring required by Permit Parts 1.3.1 and 1.6.2 and listed in Table 3 demonstrates that effluent from 003, 004, 005.2, 005.3, 005.4, 005.5, 006, 007, 008, 009, or 012 exceeds a water quality criterion for oil & grease, lead, zinc, pH, or TSS and indicates a statistically significant reduction in the receiving water quality for the same criterion, then corrective action is triggered, and the Permittee shall verbally notify DEC no later than the end of the next State of Alaska working day after receipt of monitoring results.
- 1.3.3 After reporting under Permit Part 1.3.2, the Permittee shall perform the following tasks.
- 1.3.3.1 Determine the extent of the exceedance.

- 1.3.3.2 In consultation with DEC and documented in writing, implement a plan to determine the cause and source of the exceedance.
- 1.3.3.3 Submit to DEC, within seven working days after an exceedance is verified by the Permittee, a plan for corrective actions to prevent adverse environmental impacts and further exceedances.
- 1.3.3.4 Implement the Corrective Action Plan as approved by DEC.
- 1.3.3.5 Abide by any DEC-approved Corrective Action Plan.

Table 3: Storm Water Outfall Monitoring Requirements

Outfall	Location	Parameters ^a	Minimum Frequency ^b	Sample Type
003	Southern part of Hawk Inlet facilities area near the cannery buildings	Flow, oil & grease, lead, zinc, TSS, pH, hardness	twice per year	Grab
004	Pit 7 (inactive rock quarry and topsoil storage) off of A-road at mile 1.9	Flow, oil & grease, lead, zinc, TSS, pH, hardness	twice per year	Grab
005.2	Zinc Creek (east side of bridge) off of B-road at mile 3.0	Flow, oil & grease, lead, zinc, TSS, pH, hardness	twice per year	Grab
005.3	Site E (inactive waste rock storage area) off of B-road at mile 4.7	Flow, oil & grease, lead, zinc, TSS, pH, hardness	twice per year	Grab
005.4	Pit 6 (inactive rock quarry and top soil storage) off of B-road at mile 4.6	Flow, oil & grease, lead, zinc, TSS, pH, hardness	twice per year	Grab
005.5	Culvert at B-road mile 7.8	Flow, oil & grease, lead, zinc, TSS, pH, hardness	twice per year	Grab
006	Pond D (sediment pond from inactive waste rock storage area D) off of B-road at mile 8.0	Flow, lead, zinc, TSS, pH, hardness	twice per year	Grab
007	Pond C (sediment pond from inactive waste rock storage area C) off of B-road at mile 8.2	Flow, lead, zinc, TSS, pH, hardness	twice per year	Grab
008	960 laydown site (initial portal development waste rock)	Flow, lead, zinc, TSS, pH, hardness	twice per year	Grab
009	Site 1350 adit inactive waste rock storage area	Flow, lead, zinc, TSS, pH, hardness	twice per year	Grab
012	A-Road sand pit area	Flow, lead, zinc, TSS, pH, hardness	twice per year	Grab

Notes:

- a. Flow shall be reported in gpm, lead and zinc shall be measured as total recoverable in µg/L, oil & grease and TSS shall be measured in mg/L, pH shall be measured in s.u., and hardness shall be measured as mg/L of CaCO₃.
- b. The samples must be collected once during the spring runoff or snow-melt and once during the fall rainfall events. Sampling is only required when an outfall is discharging.

- 1.3.4 The Permittee must collect effluent samples from the effluent stream after the last treatment unit prior to discharge into the receiving waters.

- 1.3.5 MDLs. For storm water monitoring, the Permittee must use methods that can achieve an MDL of at least 0.5 µg/L for lead, with the exception of Hawk Inlet outfall 003 receiving water, where the MDL for lead is 1.0 µg/L, and 20 µg/L for zinc at all storm water sites.
- 1.3.6 For purposes of reporting for a single sample, if a value is less than the MDL, the Permittee must report “less than {numeric value of the MDL}” and if a value is less than the ML, the Permittee must report “less than {numeric value of the ML}.” For calculations using storm water data, zero may be assigned for values less than the MDL, and the {numeric value of the MDL} may be assigned for values between the MDL and the ML.
- 1.3.7 For each storm water sampling event, the Permittee must provide the date and duration (in hours) of the storm event sampled; rainfall measurements or estimates (in inches) of the storm event; the duration between the storm event sampled and the end of the previous measurable (greater than 0.1 inch rainfall) storm event; and an estimate of the total volume (in gallons) of the discharge based on observation of the outfall, duration of the event, and best professional judgment.

1.4 Monitoring for Internal Monitoring Locations 010 and 011

- 1.4.1 The Permittee must monitor discharges from internal monitoring locations 010 and 011 as specified in Table 4. Internal monitoring location 010 is the effluent monitoring location for the discharge of treated domestic wastewater from the Hawk Inlet sequencing batch reactor (SBR) and internal monitoring locations 011 is the effluent monitoring location for the discharge of treated domestic wastewater from the 920 Area SBR. Both the Hawk Inlet SBR and 920 Area SBR discharge to the pond 7 and 10 systems.

Table 4: Internal Monitoring Locations 010 and 011

Parameter	Units	Effluent Limits		Monitoring Requirements	
		Daily Maximum	Monthly Average	Minimum Frequency	Sample Type
BOD ₅	mg/L	-	-	monthly	grab

* Samples must be taken on the same day as outfall 002 BOD₅ sampling.

- 1.4.2 For purposes of reporting for a single sample, if a value is less than the MDL, the Permittee must report “less than {numeric value of the MDL}” and if a value is less than the ML, the Permittee must report “less than {numeric value of the ML}.” For calculations using data from internal monitoring locations 010 and 011, zero may be assigned for values less than the MDL, and the {numeric value of the MDL} may be assigned for values between the MDL and the ML.

1.5 Mixing Zones

- 1.5.1 In accordance with state regulations at 18 AAC 70.240, as amended through March 4, 2020, two mixing zones are authorized in Hawk Inlet for discharge from outfall 002 and 002A.
- 1.5.2 Outfall 002 Mixing Zone - A mixing zone for cadmium, copper, cyanide, lead, mercury, zinc, and pH, is authorized for each discharge at outfall 002. A mixing zone is defined as a rectangular box shape extending from the inlet floor to the water surface. The dimensions of the chronic mixing zone for outfall 002 are 165 feet (ft.) wide, centered along a 160 ft. diffuser, and extending 50 ft. on either side of the diffuser for a total length of 100 ft. See Figure 3. The dimension of the acute mixing zone for outfall 002 are 165 ft. wide, centered along a 160 ft. diffuser, and extending 20 ft. on either side of the diffuser for a total of 40 ft.
- 1.5.3 Outfall 002A Mixing Zone – A mixing zone for cadmium, copper, cyanide, lead, mercury, zinc, and pH, is authorized for each discharge at outfall 002A. The dimension of the chronic mixing zone for outfall 002A are 90 ft. wide, centered along a 85.3 ft. diffuser, and extending 35 ft. on either side of the diffuser for a total length of 70 ft. See Figure 5. The dimension of the acute mixing zone for outfall 002A are 90 ft. wide, centered along a 85.3 ft diffuser, and extending 15 ft. on either side of the diffuser for a total length of 30 ft.

1.6 Receiving Waterbody Monitoring

- 1.6.1 Hawk Inlet Monitoring Program
- 1.6.1.1 Water Column Monitoring. The Permittee must conduct water column monitoring at a depth of five ft. below the surface at monitoring sites 106 (background), 107, and 108 (as described in Permit Part 1.6.3) each calendar quarter and site 111 during calendar quarters when effluent is discharged through 002A for discharge other than for testing and maintenance as described in Section 1.6.1.4. See Figure 2.
- 1.6.1.1.1 The date, time, and weather conditions must be noted and reported for each sample collected.
- 1.6.1.1.2 All receiving water samples must be grab samples.
- 1.6.1.1.3 All receiving water samples must be analyzed for the parameters listed in Table 5 with methods that achieve MDLs equivalent to or less than those listed in Table 5. The Permittee may request different MDLs. Such a request must be in writing and must be approved by DEC.

Table 5: Receiving Water Monitoring Parameters and MDLs

Parameter	Units	Minimum Frequency	MDL
Cadmium, dissolved ¹	µg/L	quarterly	0.1
Copper, dissolved ¹	µg/L	quarterly	0.03
Lead, dissolved ¹	µg/L	quarterly	0.05
Mercury, total	µg/L	quarterly	0.002

Zinc, dissolved ¹	µg/L	quarterly	0.2
TSS	mg/L	quarterly	-
pH	s.u.	quarterly	-
Cyanide, WAD	µg/L	quarterly	5
Temperature	°C	quarterly	-
Turbidity	NTU	quarterly	-
Conductivity	µS/cm	quarterly	-
Note: 1. To compare dissolved measurements with total recoverable measurements, use translators specified in the <i>Alaska Water Quality Criteria Manual for Toxic and Deleterious Organic and Inorganic Substances</i> .			

1.6.1.2 Sediment Monitoring. The Permittee must conduct sediment monitoring at least once per year at monitoring stations S-1, S-2, and S-4, once every three years at monitoring stations S-5N and S-5S, and annually (to establish a baseline) at station S-7 until outfall 002A is constructed and then annually if outfall 002A is used for discharge other than for testing and maintenance as described in Section 1.6.1.4. See Figure 2.

1.6.1.2.1 The date, time, and weather conditions must be reported for each sample collected.

1.6.1.2.2 The Permittee must collect at least six samples per sample year at each site and conduct all chemical tests identified herein.

1.6.1.2.3 The sediment samples must be analyzed for the parameters in Table 6 using the listed analytical protocols (or equivalent) for each sediment sample.

Table 6: Sediments Monitoring Parameters and Methods

Parameter	Preparation Method	Analysis Method	MDL ^a (mg/Kg)
Cadmium	PSEP ^b	GFAA ^c	0.3
Copper	PSEP ^b	ICP ^d	15.0
Lead	PSEP ^b	ICP ^d	0.5
Mercury	7471 ^e	7471 ^e	0.02
Zinc	PSEP ^b	ICP ^d	15.0

Notes:

- Dry weight basis.
- Recommended Protocols for Measuring Selected Environmental Variables in Puget Sound. Puget Sound Estuary Program (PSEP), EPA 910/9-86-157, as updated by the Washington Department of Ecology. Subsection: Metals in Puget Sound Water, Sediment, and Tissue Samples, PSEP.
- Graphite Furnace Atomic Absorption (GFAA) Spectrometry - SW-846, Test Methods for Evaluating Solid Waste Physical/Chemical Methods. EPA 1986.
- Inductively Coupled Plasma (ICP) Emission Spectrometry - SW-846, Test Methods for Evaluating Solid Waste Physical/Chemical Methods. EPA 1986.
- Mercury Digestion and Cold Vapor Atomic Absorption (CVAA) Spectrometry - Method 7471, SW846, Test Methods for Evaluating Solid Waste Physical/Chemical Methods. EPA 1986.

1.6.1.3 In-situ Bioassays. The Permittee must conduct analysis of organism tissues annually at monitoring stations S-1, S-2, S-4, Stn 1, Stn 2, Stn 3, and Stn 4 (ESL), and annually at monitoring stations S-7, Stn 5, and Stn 6 (to establish a baseline) until outfall 002A is constructed and then annually if outfall 002A is used for discharge other than for testing and maintenance as described in Section 1.6.1.4 See Figure 2.

- 1.6.1.3.1 The date, time, and weather conditions must be noted and reported for each sample collected.
- 1.6.1.3.2 The tissue samples must be collected from the organisms and locations listed in Table 7 and at least six analyses conducted per year and site for the parameters listed in Table 7.
- 1.6.1.3.3 The tissue samples must be prepared following EPA Method 200.2, where 0.3 grams of dry tissue and 5 milliliters (mL) of nitric acid are heated to 85 °C for four hours, cooled, and diluted to a volume of 22 mL. Levels of the elements must be determined by inductively coupled plasma mass spectrometer.
- 1.6.1.4 Monitor the discharge volume during testing and maintenance of the 002A outfall to ensure compliance with the following conditions.
- 1.6.1.4.1 Discharge from testing and maintenance will not exceed 100,000 gallons/day.
- 1.6.1.4.2 The monthly accumulative discharge from testing and maintenance is not to exceed 300,000 gallons/month.
- 1.6.1.4.3 The rolling 12-month accumulative discharge is not to exceed 1,000,000 gallons/12-months.
- 1.6.1.5 Quality assurance/quality control (QA/QC) plans for all the Hawk Inlet monitoring must be covered in the Quality Assurance Project Plan (QAPP) required under Permit Part 2.1.

Table 7: In-Situ Bioassay Monitoring Organisms and Parameters

Sample Location	In-situ Test Organism ^a	Parameters (total in mg/Kg)
S-1 S-2 S-4 S-7	<i>Nephtys procera</i> (polychaete) and/or <i>Nereis sp.</i> (polychaete) ^b	Cadmium, Copper, Lead, Mercury, Zinc
Stn 1 Stn 2 Stn 3 Stn 4 (ESL) Stn 5 Stn 6	<i>Mytilus edulis</i> (blue mussel)	
Notes:		
a. The organisms must be collected from each of the locations identified.		
b. <i>Nereis sp.</i> may be replaced with other local species if <i>Nereis sp.</i> is not available. Only one species will be included in each sample.		

- 1.6.1.6 Reporting. All monitoring results must be included in the Annual Report and submitted to DEC by March 1st of the following year. See Permit Part 1.8. The report must include a presentation of the analytical results and an evaluation of the results. The Annual Report must include a statistical evaluation of data showing averages, variations, and changes over time, including a comparison of the past year's data to annual averages from the pre-production period and the production period. The report must include relevant QA/QC information. The report must be submitted electronically, and a hard copy provided upon request
- 1.6.2 Storm Water - Receiving Waterbody Monitoring Program
- 1.6.2.1 The Permittee must develop a program for monitoring the receiving waters potentially affected by the storm water discharges.
- 1.6.2.2 The Permittee must establish and maintain monitoring stations in the receiving water directly upstream and downstream of where each storm water outfall enters the receiving water. The storm water outfalls and parameters which must be monitored are shown in Table 3.
- 1.6.2.3 Receiving water monitoring upstream and downstream of the discharge points for the storm water outfalls listed in Table 3 shall be conducted semiannually and at the same time (within three hours). However, if adverse conditions preclude sampling for safety reasons, a justification for not sampling must be submitted with the Annual Report according to Permit Part 1.8.
- 1.6.2.4 For any discharges that routinely reach waters of the United States, in addition to those listed in Table 3, receiving water monitoring downstream of the discharge point shall be conducted semiannually in the spring and fall.
- 1.6.2.5 For discharges that do not routinely enter waters of the United States, receiving water monitoring shall be conducted downstream of the discharge point when a rainfall event is of such magnitude to cause the discharge to enter waters of the United States. However, if adverse conditions preclude sampling for safety reasons, a justification for not sampling must be submitted with the Annual Report according to Permit Part 1.8.
- 1.6.2.6 All ambient samples must be grab samples.
- 1.6.2.7 Method Detection Limits. When performing storm water receiving water monitoring, the Permittee must use methods that can achieve an MDL of at least 0.5 µg/L for lead, with the exception of Hawk Inlet outfall 003 receiving water, where the MDL for lead is 1.0 µg/L, and 20 µg/L for zinc.

1.6.2.8 Reporting. All storm water monitoring results including both discharge and receiving water data must be included in the Annual Report and submitted to DEC by March 1 of the next year. See Permit Part 1.8. The Permittee must include a map showing receiving water sample sites in relation to storm water outfall locations, analytical results, and an evaluation of the results. The Annual Report must be submitted electronically and a hard copy provided upon request.

1.6.3 Hawk Inlet Outfall Receiving Water Monitoring

1.6.3.1 Site 108 Monitoring

1.6.3.1.1 The Permittee must conduct monitoring in Hawk Inlet at DEC-approved monitoring site 108 preferably during a slack tide. See Figure 2.

1.6.3.1.2 To the extent practicable, quarterly receiving water sample collection must occur on the same day as effluent sample collection.

1.6.3.1.3 All site 108 samples must be grab samples, taken at least quarterly, and from a depth of five feet below the surface.

1.6.3.2 Site 111 Monitoring

1.6.3.2.1 The Permittee must conduct monitoring in Hawk Inlet at DEC-approved monitoring site 111. See Figure 2.

1.6.3.2.2 To the extent practicable, receiving water sample collection must occur on the same day as effluent sample collection.

1.6.3.2.3 All site 111 samples must be grab samples and from a depth of five feet below the surface.

1.6.3.3 Samples must be analyzed for the parameters listed in Table 5 and must achieve MDLs equivalent to or less than those listed in Table 5. The Permittee may request different MDLs. The request must be in writing and must be approved by DEC.

1.6.3.4 QA/QC plans for all the monitoring must be documented in the QAPP required under Permit Part 2.1.

1.6.3.5 Sites 108 and 111 monitoring results must be submitted to DEC with the Annual Report required by Permit Part 1.8. At a minimum, the Annual Report must include:

1.6.3.5.1 Dates of sample collection and analyses,

1.6.3.5.2 Results of sample analyses, and

1.6.3.5.3 Relevant QA/QC information, and

1.6.3.5.4 Comparison between effluent and site 108 data and site 111 if applicable.

- 1.6.4 For purposes of reporting for a single sample, if a value is less than the MDL, the Permittee must report “less than {numeric value of the MDL}” and if a value is less than the ML, the Permittee must report “less than {numeric value of the ML}.” For calculations using data from the receiving waterbody, zero may be assigned for values less than the MDL, and the {numeric value of the MDL} may be assigned for values between the MDL and the ML.

1.7 Non-Routine Discharge Monitoring

The Permittee must collect such additional samples as soon as the spill, discharge, or bypassed effluent reaches the outfall in order to ensure that the effluent limits set forth in this permit are not violated at times other than when routine samples are taken. The Permittee must collect additional samples at the appropriate outfall whenever any discharge occurs that may reasonably be expected to cause or contribute to a violation that is unlikely to be detected by a routine sample. The Permittee must analyze the additional samples for those parameters listed in Permit Parts 1.2 or 1.3 that are likely to be contained in the discharge.

The samples must be analyzed according to Permit Appendix A, Part 3. The Permittee must report all additional monitoring according to Permit Appendix A, Part 3.3.

1.8 Annual Water Quality Monitoring Summary

Annual discharge and receiving water quality monitoring results must be summarized in an Annual Water Quality Monitoring Summary (Annual Report) and submitted by March 1 of the next year. The report must include a presentation of the analytical results and an evaluation of the results. The evaluation must include an electronic spreadsheet containing historical data, a graphical presentation of the data at each monitoring station versus time, and a comparison of upstream and downstream monitoring results. The Annual Report must be certified and signed in accordance with Permit Appendix A, Part 1.12 and contain information required by Permit Parts 1.2.6, 1.6.1.5, 1.6.2.8, 1.6.3.6, and 2.2.6.

2 SPECIAL CONDITIONS

2.1 Quality Assurance Project Plan (QAPP)

The Permittee must develop a QAPP for all monitoring required by this permit. An existing QAPP may be modified under this section provided that Permit Parts 2.1.1 through 2.1.4 are satisfied.

- 2.1.1 The QAPP must be designed to assist in planning for the collection and analysis of effluent and receiving water samples in support of the permit and in explaining data anomalies when they occur.
- 2.1.2 Throughout all sample collection and analysis activities, the Permittee must use the EPA-approved QA/QC and chain-of-custody procedures described in the most recent versions of Requirements for Quality Assurance Project Plans (EPA/QA/R-5) and Guidance for Quality Assurance Project Plans (EPA/QA/G-5). The QAPP must be prepared in the format which is specified in these documents.

- 2.1.3 The Permittee must amend the QAPP whenever there is a modification in sample collection, sample analysis, or other procedure addressed by the QAPP.
- 2.1.4 The QAPP and documentation of annual review by the permittee shall be retained onsite as an electronic or physical copy and be made available to DEC upon request.

2.2 Best Management Practices Plan

- 2.2.1 Purpose. Through implementation of the best management practices plan (BMP Plan), the Permittee must prevent or minimize the generation and the potential for the release of pollutants from the facility to the waters of the United States through normal and ancillary activities. The BMP Plan must apply to all the components and facilities associated with the Greens Creek Mine.
- 2.2.2 Development and Implementation Schedule. The Permittee currently has an approved BMP Plan which achieves the objectives and the specific requirements listed in Permit Parts 2.2.3 through 2.2.6. The existing BMP plan may be modified under this section. The Permittee must implement the provisions of the plan as conditions of this permit and the plan shall be retained onsite as an electronic or physical copy and be made available to DEC upon request.
- 2.2.3 Objectives. The Permittee must develop and amend the BMP Plan consistent with the following objectives for the control of pollutants.
 - 2.2.3.1 The number and quantity of pollutants and the toxicity of effluent generated, discharged, or potentially discharged at the facility must be minimized by the Permittee to the extent feasible by managing each waste stream in the most appropriate manner.
 - 2.2.3.2 Under the BMP Plan and any Standard Operating Procedures included in the BMP Plan, the Permittee must ensure proper operation and maintenance of water management, storm water management, and wastewater treatment systems. BMP Plan elements must be developed in accordance with good engineering practices.
 - 2.2.3.3 Each facility component or system must be examined for its waste minimization opportunities and its potential for causing a release of significant amounts of pollutants to waters of the United States due to equipment failure, improper operation, natural phenomena such as rain or snowfall, etc. The examination must include all normal operations and ancillary activities including material storage areas, storm water, in-plant transfer, material handling and process handling areas, loading or unloading operations, spillage or leaks, sludge and waste disposal, or drainage from raw material storage.
- 2.2.4 Elements of the BMP Plan. The BMP Plan must be consistent with the objectives of Permit Part 2.2.3 and the general guidance contained in *Guidance Manual for Developing Best Management Practices* (EPA 833-B-93-004, October 1993) and *Storm Water Management For Industrial Activities, Developing Pollution Prevention Plans and Best Management Practices* (EPA 832-R-92-006) or any subsequent revision to these guidance documents. The BMP Plan must include, at a minimum, the following items:

- 2.2.4.1 Statement of BMP policy. The BMP Plan must include a statement of management commitment to provide the necessary financial, staff, equipment, and training resources to develop and implement the BMP Plan on a continuing basis.
- 2.2.4.2 Structure, functions, and procedures of the BMP Committee. The BMP Plan must establish a BMP Committee responsible for developing, implementing, and maintaining the BMP Plan.
- 2.2.4.3 Description of Activities. The BMP Plan must provide a description of the activities taking place at the site which affect or may affect storm water runoff or which may result in the discharge of pollutants to waters of the United States during dry weather.
- 2.2.4.4 Description of Potential Pollutant Sources. The BMP Plan must identify all activities and significant materials which may potentially be significant storm water pollutant sources or may result in the discharge of pollutants during dry weather. The BMP Plan must include at a minimum:
- 2.2.4.4.1 Drainage:
- 2.2.4.4.1.1 A site topographic map that indicates site boundaries, access and haul roads; location of storm water outfalls and outlines of drainage areas; storage and maintenance areas for equipment, fuel, chemicals, and explosives; materials handling areas; areas used for storage of overburden, materials, soils, tailings, or wastes; location and points of permitted discharges; and, springs, streams, wetlands and other waters of the United States.
- 2.2.4.4.1.2 For each area of the site that generates storm water discharges or may result in the discharge of pollutants during dry weather (e.g., a tank overflow or leakage), the Permittee must provide a prediction of the direction of flow and an identification of the types of pollutants which are likely to be present in discharges.
- 2.2.4.4.2 Inventory of Exposed Materials. The BMP Plan must include an inventory of the types of materials handled at the site that potentially may be exposed to precipitation. The inventory must include a description of the exposed materials; method and location of onsite storage and disposal; and materials management practices employed to minimize contact with storm water runoff and reduce pollutants in storm water runoff.
- 2.2.4.4.3 Spills and Leaks. The BMP Plan must include a list of significant spills and leaks of toxic or hazardous pollutants that discharged through a permitted outfall, a storm water conveyance, or otherwise entered waters of the United States. The list must include significant spills or leaks occurring three years prior to the effective date of this permit and must be updated as appropriate during the term of the permit.

2.2.4.4.4 Risk Identification and Summary of Potential Pollutant Sources. The BMP Plan must identify all activities, sites, and significant materials which may potentially be pollutant sources. The description must specifically list any potential source of pollutants at the site, and for each pollutant source, pollutant(s) or pollutant parameter(s) of concern must be identified.

2.2.4.5 Measures and Controls. The Permittee must develop a description of pollution prevention controls, BMPs, and other measures appropriate for the facility, and implement such controls. The appropriateness and priorities of controls in the BMP Plan must reflect identified potential sources of pollutants at the facility. The description of management controls must address the following minimum components:

2.2.4.5.1 Good Housekeeping. Good housekeeping requires the maintenance of areas which may contribute pollutants to surface waters.

2.2.4.5.2 Preventative Maintenance. A preventative maintenance program must be developed that includes inspection and maintenance of wastewater and storm water management devices, inspection and testing of facility equipment and systems to uncover conditions that could cause breakdowns or failures resulting in discharges of pollutants to surface waters, and ensuring appropriate maintenance of such equipment systems

2.2.4.5.3 Spill Prevention and Response Procedures. Areas where spills could result in the discharge of pollutants must be identified clearly in the BMP Plan. The description of each area must include procedures for spill prevention and procedures for cleaning up spills.

2.2.4.5.4 Sediment and Erosion Control. The BMP Plan must identify areas that have a high potential for significant erosion of soil and/or other materials and identify BMPs and other measures to be used to limit erosion and/or remove sediment from storm water runoff.

2.2.4.5.5 Management of Runoff. The BMP Plan must address the appropriateness of traditional storm water management practices (practices other than those that control the generation or source(s) of pollutants) used to divert, infiltrate, reuse, or otherwise manage storm water runoff in a manner that reduces pollutants in storm water discharges from the site. The BMP Plan must include provisions for implementation and maintenance of such measures that the Permittee determines to be reasonable and appropriate.

2.2.4.5.6 Capping. Where capping of a contaminant source is necessary, the BMP Plan must identify the source being capped and procedures and materials used to cap the contaminant source.

- 2.2.4.5.7 Treatment. The BMP Plan must provide a description of how wastewater and storm water will be treated prior to discharging to waters of the United States, if treatment is necessary.
- 2.2.4.5.8 Inspections and Comprehensive Site Compliance Evaluations. The BMP Plan must include provisions for qualified personnel to inspect BMPs and designated equipment and facility areas at least on a monthly basis, however, inspections are not required when adverse weather conditions make a location inaccessible. Inspections must include, at a minimum, all material handling and storage areas, wastewater and storm water control and containment structures, and erosion control systems. Records of inspections must be maintained. The BMP Plan must also include provisions for conducting comprehensive site compliance evaluations. See Permit Part 2.2.5.
- 2.2.4.5.9 Employee Training. The BMP Plan must outline employee training programs related to implementation of the BMP Plan and specify how often training will take place.
- 2.2.4.5.10 Recordkeeping and Internal Reporting Procedures. The following must be documented and incorporated into the BMP Plan: a description of incidents (such as spills, or other discharges), description of the quantity and quality of storm water discharges, inspections, maintenance activities, and training sessions.
- 2.2.4.5.11 Specific Best Management Practices. The BMP Plan must establish specific BMPs or other measures that ensure the following specific requirements are met:
 - 2.2.4.5.12 Specific BMPs must be established for each of the storm water outfalls in Permit Part 1.3, Table 3. The BMPs must be sufficient to ensure that the storm water discharges from outfalls 003, 0004, 005.2, 005.3, 005.4, 005.5, 006, 007, 008, 009, and 012 will not cause an exceedance of a water quality criterion resulting in a statistically significant reduction in receiving water quality for the same criterion.
 - 2.2.4.5.13 Solids, sludge, or other pollutants removed in the course of treatment or control of water and wastewaters must be disposed of in a manner such as to prevent any such materials from entering navigable waters of the US..
 - 2.2.4.5.14 Ensure that material tracked from haul equipment onto bridges does not enter waters of the United States.
- 2.2.5 Comprehensive Site Compliance Evaluation. Qualified personnel must conduct comprehensive site compliance evaluations at appropriate intervals specified in the BMP Plan, but in no case less than once per year. Such evaluations must include:

- 2.2.5.1 Site Evaluation. Areas contributing to wastewater and storm water discharges and areas susceptible to leaks or spills must be visually inspected for evidence of, or the potential for, pollutants entering the permitted outfalls, storm water drainage system, or waters of the United States. Structural and non-structural BMPs and other measures to reduce pollutant loadings must be evaluated to determine whether they are adequate and properly implemented. Inspection of equipment needed to implement the BMP Plan, such as spill response equipment, is required .
- 2.2.5.2 Updates and Revisions. Based on results of the site evaluation and inspection, the BMP Plan must be revised, as appropriate, within 30 days of such inspection and must provide for implementation of any changes to the BMP Plan in a timely manner, but in no case more than 90 days after the inspection.
- 2.2.6 BMP Plan Annual Report and Certification.
- 2.2.6.1 BMP Plan Annual Report. The Permittee must prepare a report annually summarizing the comprehensive site evaluations and inspections performed during the year. The report must include the scope and dates of the inspections/evaluations, major observations related to implementation of the BMP Plan, corrective actions taken as a result of the inspections/evaluations/monitoring, description of the quantity and quality of storm water discharged, and BMP Plan modifications made during the year. The report must also identify any incidents of non-compliance. The report must be retained as part of the BMP Plan and submitted to DEC by March 1 of the next year with the Annual Report. See Permit Part 1.8.
- 2.2.6.2 BMP Plan Annual Certification. The Permittee must prepare a certified statement that reviews (inspections and evaluations) required by Permit Part 2.2 have been completed and that the BMP Plan fulfills the requirements set forth in the permit. This statement must be signed in accordance with Appendix A, Part 1.12 and documentation of annual certification by the permittee shall be retained onsite as an electronic or physical copy and be made available to DEC upon request. See Permit Part 1.8.
- 2.2.7 Documentation. The Permittee must maintain a copy of the BMP Plan at the facility and make it available to DEC upon request.
- 2.2.8 BMP Plan Modification.
- 2.2.8.1 The Permittee must amend the BMP Plan whenever there is a change in the facility or in the operation of the facility which materially increases the generation of pollutants or their release or potential release to surface waters.
- 2.2.8.2 The Permittee must amend the BMP Plan whenever it is found to be ineffective in achieving the general objective of preventing and minimizing the generation and the potential for the release of pollutants from the facility to the waters of the United States and/or the specific requirements of Permit Part 2.2.

2.2.8.3 Any changes to the BMP Plan must be consistent with the objectives and specific requirements of Permit Part 2.2. All changes in the BMP Plan must be contained in the BMP Plan Annual Report required under Permit Parts 1.8 and 2.2.6.1.

Figure 1: Existing Facility Map

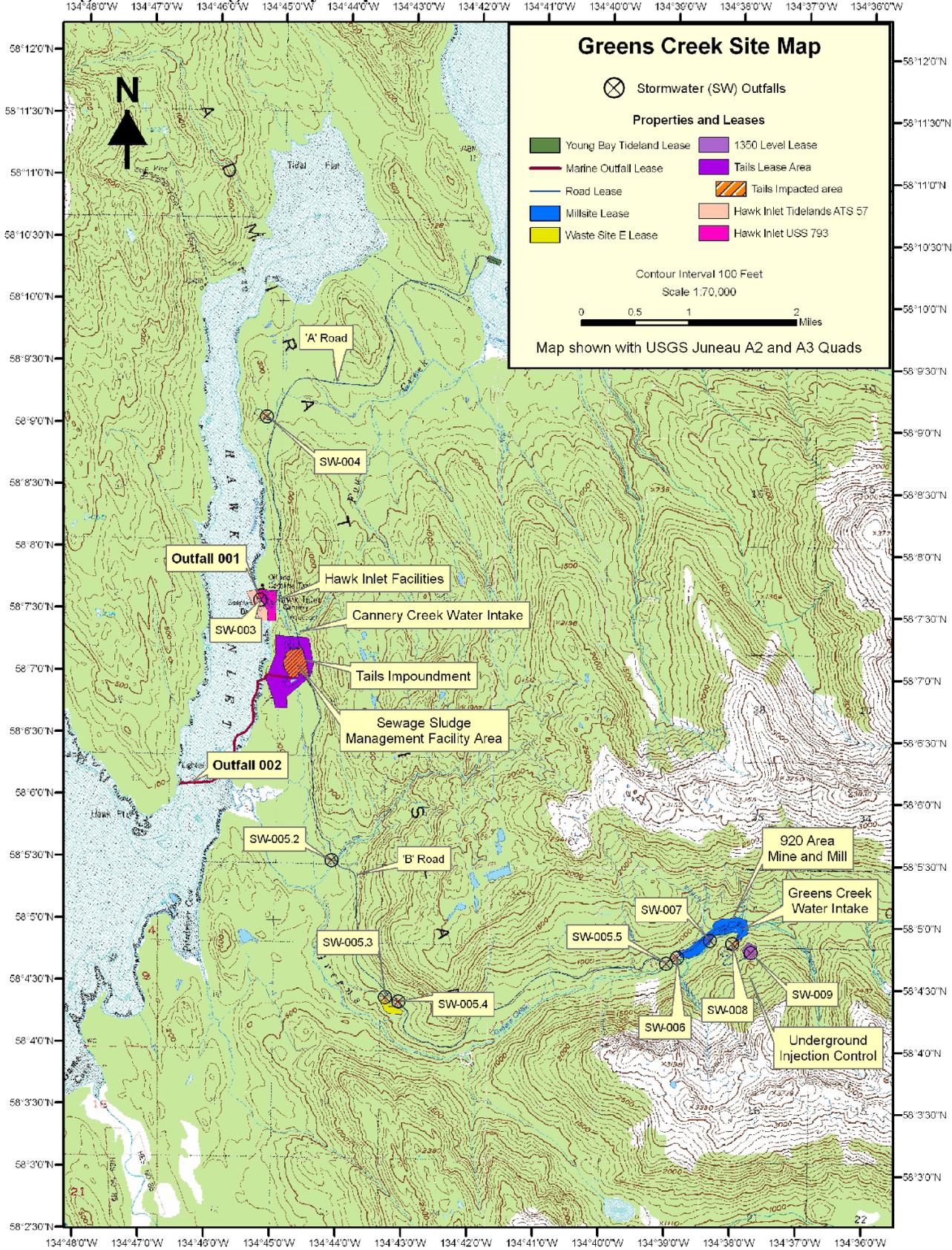


Figure 2: Hawk Inlet Monitoring Sites



Figure 3: Mixing Zone Diagram for Outfall 002



Figure 4: Proposed New Outfalls including 002A



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Figure 5: Mixing Zone Diagram for Outfall 002A

