

**STATE OF UTAH  
DIVISION OF WATER QUALITY  
UTAH WATER QUALITY BOARD  
SALT LAKE CITY, UTAH 84114-4870**

**GROUND WATER DISCHARGE PERMIT**

In compliance with the provisions of the Utah Water Quality Act, Title 19, Chapter 5, Utah Code Annotated 1953, as amended, the Act,

**Kennecott Utah Copper LLC (Kennecott)  
4700 Daybreak Parkway  
South Jordan, Utah 84095**

is granted a ground water discharge permit for the operation of the **Copperton Concentrator** in Salt Lake County, Utah.

The primary facilities associated with the **Copperton Concentrator** are located on the following tract of land Township 3 South, Range 2 West (Salt Lake Base and Meridian). This permit also covers additional components of Kennecott's operations associated with these primary facilities, including the identified components within the pipeline corridors as more specifically detailed in Table 2, and any ancillary features related to the primary facilities and the specified components in Table 2.

<b>Facility</b>	<b>Latitude(deg, min, sec)</b>	<b>Longitude(deg, min, sec)</b>
Coarse Ore Stockpile	40, 35, 4.36 N	112, 6, 7.58 W
Grinding Plant	40, 35, 2.67 N	112, 6, 0.18 W
Flotation Plant	40, 35, 1.77 N	112, 5, 57.18 W
Molybdenite Plant	40, 35, 0.92 N	112, 5, 54.2 W
Process Water Res.	40, 34, 58.18 N	112, 6, 27.55 W
Retention Pond 1	40, 34, 52.1 N	112, 5, 59.24 W
Retention Pond 2	40, 34, 55.94 N	112, 5, 42.43 W
Retention Pond 3	40, 35, 10.44 N	112, 5, 30.6 W
Retention Pond 4	40, 35, 5.11 N	112, 5, 19.27 W
Tailings Thickener 1	40, 35, 4.95 N	112, 5, 44.83 W


Tailings Thickener 2	40, 35, 6.08 N	112, 5, 37.95 W
Tailings Thickener 3	40, 34, 59.9 N	112, 5, 38.29 W
Row 7 & 8 Flotation Building	40, 35, 07.08N	112, 5, 53.63W
Copper Thickener	40, 34, 58.3 N	112, 5, 56.54 W
Copper-Moly Thickener	40, 34, 57.94 N	112, 5, 53.98 W
Overflow Clarifier	40, 34, 56.21 N	112, 5, 56.88 W
Byron Jackson Pump Station	40, 35, 0.28 N	112, 5, 34.59 W
3B Surge Basin	40, 38, 38.49 N	112, 5, 46.07 W
Process Water Return Line	Begin at 40, 42, 48.57 N	112, 7, 8.83 W
	End at 40, 35, 1.29 N	112, 6, 25.51 W
Tailings Lines	Begin at 40, 35, 17.97 N	112, 5, 28.56 W
	End at 40, 43, 1.52 N	112, 7, 54.53 W

The permit is based on representations made by the permittee and other information contained in the administrative record. It is the responsibility of the permittee to read and understand all provisions of this permit.

The facility shall be constructed and operated in accordance with conditions set forth in the permit and the Utah Ground Water Quality Protection Regulations.

This permit shall become effective on December 29, 2017

This permit and the authorization to operate shall expire at midnight on December 28, 2022.

  
 Erica Brown Gaddis, Ph.D.  
 Director  
 Utah Division of Water Quality

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**TABLES:**

Table 1:	Ground Water Protection Levels
Table 2:	Permitted Facilities
Table 2A:	Tailings Lines Release Response

**APPENDICES:**

Appendix A:	Process and Pipeline Release Prevention, Control and Response Plan
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## I. SPECIFIC PERMIT CONDITIONS

- A. Ground Water Classification. Ground water in the immediate area of the Copperton Concentrator is not classified along with a majority of the tailings line area. Generally, the water quality for the principal basin-fill aquifer of the Salt Lake Valley has been classified as Class II Drinking Water Quality with an area of Class IA Pristine Ground Water near Kearns and UT Hwy 173; the area north of Hwy 201 is Class III, Limited Use Ground Water.
- B. Ground Water Protection Levels. Ground water protection levels for the Copperton Concentrator area compliance monitoring wells W31, COG1149A and COG1149B are identified in Table 1. Permit limits for these wells are based on samples collected from the wells at the time of initial permitting. The identified protection levels have been set using the requirements for Class II ground water identified in R 317-6-4.5.

Permit limits will be established for newly installed monitoring wells along the pipeline (Part I.J. 1&2) after sufficient sampling data becomes available to establish background concentrations.

**Table 1. Ground Water Protection Levels for W31, COG1149A and B** (all values in mg/L except pH-standard units)

Parameter	Groundwater Quality Standard	Monitoring Well ID		
		W31	COG1149A	COG1149B
pH	6.5-8.5	6.5-8.5	6.5-8.5	6.5-8.5
TDS	n/a	707	1158	630
Sulfate	n/a	50	30	15
Arsenic	0.05	0.0125	0.0125	0.0125
Cadmium	0.005	0.0073	0.0013	0.0013
Copper	1.3	0.325	0.325	0.325
Selenium	0.05	0.0125	0.0125	0.0125
Zinc	5	1.25	1.25	1.25

- C. Best Available Technology Performance Standard. The enforceable performance standard for this permit to achieve protection of ground water quality will be to minimize release of solids and/or fluids from the permitted facilities listed in Table 2. The permittee is responsible for implementing and maintaining the best available technology (BAT) noted in Table 2 to minimize discharge of process fluids from the permitted facilities to ground water. Maintenance of this performance standard will be demonstrated by:
1. Adherence to the function, inspection, and maintenance criteria in Table 2.

2. No ground water degradation beyond permit limits as established in Table 1 and measured by compliance monitoring wells.
  3. Implementation of the Process Material, Pipeline Spill Prevention, Minimization, and Response Plan (Plan) attached as Appendix A.
  4. Closure - The Copperton Concentrator shall undergo closure in accordance with the closure plan submitted in Section 6 of the permit application. This plan will be updated 1 year before final closure.
- D. Permitted Facilities. The facilities authorized under this permit are listed in Table 2 and are the primary facilities associated with the Copperton Concentrator (including the identified components within the pipeline corridors more specifically detailed on Table 2) and any ancillary features related to those facilities. These facilities constitute those where there is potential for release of fluids to ground water.

**Table 2. Permitted Facilities (see attached)**

E. Design and Construction.

1. The Copperton Concentrator will be operated according to the specifications, plans and drawings included in the permit application received January 2000 and revised April 2002 as modified by subsequent permit revisions.

F. Monitoring

1. General Provisions

- a) *Future Modification of the Monitoring Network* - If at any time the Director determines the monitoring program to be inadequate for determining compliance with BAT, applicable permit limits or ground water protection levels, Kennecott shall submit within 30 days of receipt of written notice from the Director, a modified monitoring plan that addresses the inadequacies noted by the Director.

Within 60 days of completion and development of any new or replacement monitoring well, Kennecott shall submit documentation demonstrating the well is in conformance with the EPA RCRA Ground Water Monitoring Technical Enforcement Guidance Document, 1986, OSWER-9950.1 (RCRA TEGD) Section 3.5 or subsequent updated version.

- b) *Compliance Monitoring Period* - Monitoring shall commence upon issuance of this permit and shall continue through the life of this permit. For compliance monitoring wells that are installed during the term of this permit, monitoring shall commence upon completion of the well installation and development.
- c) *Laboratory Approval* - All water quality analyses shall be performed by a laboratory certified by the State of Utah to perform such analysis.

- d) *Water Level Measurement* - In association with each well sampling event, water level measurements shall be made in each monitoring well prior to removal of any water from the well bore. These measurements will be made from a permanent single reference point clearly marked on the top of the well or surface casing. Measurements will be made to the nearest 0.01 foot.
- e) *Sampling Protocol* - Water quality samples will be collected, and handled in conformance with the currently approved version of the Kennecott Ground Water Characterization and Monitoring Plan.
- f) *Constituents Sampled* - The following analysis shall be performed on all water quality samples collected:
  - i) Field Measurements:
    - pH
    - Specific conductance
    - Temperature
  - ii) Laboratory Analysis:
    - Major Ions:
      - Chloride
      - Sulfate
      - Alkalinity
      - Sodium
      - Potassium
      - Magnesium
      - Calcium
    - TDS
    - Inorganic Chemicals:
      - Cyanide-Total
    - Metals (dissolved):
      - Arsenic
      - Cadmium
      - Copper
      - Selenium
      - Zinc
- g) *Analytical Procedures* - Water sample analysis will be conducted according to test procedures specified under UCA R317-6-6.3L.

2. Operational Monitoring

- a) Kennecott shall characterize the applicable fluids utilized in the Copperton Concentrator processes with grab samples for the unit process sites listed in Table 2.
- b) *Monitoring Frequency* - Operational monitoring shall occur two times during the five year term of this permit. The first sampling

event shall occur in the second year of the permit term. The second sampling will be conducted in the last year of the permit term. Results from operational monitoring data shall be included during the application for permit renewal process.

3. Monitoring Frequency. *Well Monitoring Frequency* - All existing compliance monitoring wells will be sampled quarterly throughout the term of this permit, unless more frequent sampling is required under other terms of this permit.
4. Post-Closure Monitoring. Kennecott shall conduct post-closure monitoring in accordance with the post closure monitoring program that is included in the closure plan in section 6 of the permit application.

G. Demonstration of Compliance.

1. Probable Out of Compliance for Ground Water Protection Levels - If the concentration of a pollutant from any compliance monitoring well sample is greater than the protection level (Table 1) Kennecott shall:
  - a) Notify the Director in writing within 30 days of receipt of the data; and
  - b) Initiate monthly sampling for the compliance monitoring well(s) that has exceeded the protection level (Table 1), unless the Director determines that other periodic sampling is appropriate, for a period of two months or until the compliance status of the facility can be determined.
2. Out of Compliance Status for Ground Water Protection Levels. Out of compliance status exists when:
  - a) Two or more consecutive samples from a compliance monitoring well are above the protection level for a pollutant (Table 1); or
  - b) The concentration of any pollutant in two or more consecutive samples is statistically significantly higher than the applicable protection level. Statistical significance shall be determined using methods described in Statistical Methods for Evaluating Ground Water Monitoring Data from Hazardous Waste Facilities, Vol. 53, No. 196 (Federal Register, Oct. 11, 1988).
  - c) Upon determining that an out of compliance situation exists, Kennecott shall:
    - i) Notify the Director of the out of compliance status within 24 hours of detection followed by a written notice within 5 days of the detection.



- ii) Initiate monthly sampling unless the Director determines that other periodic sampling is appropriate until the facility is brought into compliance.
- iii) Submit a Source Assessment and Compliance Schedule to the Director within 30 days of detection of the out of compliance status that outlines the following:
  - Steps of action that will assess the source, extent, and potential dispersion of the contamination.
  - Evaluation of potential remedial actions to restore and maintain ground water quality and ensure the protection levels or permit limits will not be exceeded at that compliance monitoring point.
  - Measures to ensure BAT will be re-established.
- iv) Implement the Source Assessment and Compliance Schedule as directed by the Director.

H. Non-Compliance with Best Available Technology.

1. Kennecott is required to maintain BAT in accordance with the approved design and practice (refer to Table 2) of this permit and the BAT performance standard requirements of Part I.C. Failure to maintain BAT or maintain the approved design and practice shall be a violation of this permit. In the event a compliance action is initiated against the permittee for violation of permit conditions relating to BAT, Kennecott may affirmatively defend against that action by demonstrating the following:
  - a. Kennecott submitted notification in accordance with R317-6-6.13;
  - b. The failure was not intentional or caused by Kennecott's negligence, either in action or in failure to act;
  - c. Kennecott has taken adequate measures to meet permit conditions in a timely manner or has submitted for the Director's approval, an adequate plan and schedule for meeting permit conditions; and
  - d. The provisions of UCA 19-5-107 have not been violated.
2. When a non-compliance with BAT is identified, Kennecott shall provide the Director a description of the down gradient monitoring wells appropriate for monitoring ground water protection levels as a result of the noncompliance.

If existing monitoring wells are not adequate to monitor potential impacts resulting from the noncompliance, the permittee shall propose location(s) for installation of additional monitoring wells for approval by the Director based on information presented below:

- prepare a hydrogeologic cross section of the area using available data from existing Kennecott wells, nearby municipal wells, USGS maps, etc., including well depths and screened intervals,
- prepare a water table map based on most recent available data, any other relevant information to support location(s) of new monitoring wells, and
- a site map showing the location(s) of proposed new wells.

I. Reporting Requirements.

1. Reporting

- a. *Monitoring Wells* - Water quality sampling results with any supporting data shall be submitted quarterly to the Director.
- b. *Tailings and Process Water Releases* – Reporting requirements for releases of tailings or process water shall be in accordance with Table 2A. All other spills shall be reported in accordance with Part II. I. or J. of this permit.

Quarterly reporting to the Director shall be according to the following schedule:

<u>Quarter</u>	<u>Report Due On</u>
1 <sup>st</sup> (January-March)	May 15
2 <sup>nd</sup> (April-June)	August 15
3 <sup>rd</sup> (July-September)	November 15
4 <sup>th</sup> (October-December)	February 15

Failure to submit reports within the time frame due shall be deemed as noncompliance and may result in enforcement action.

2. *Delivery Requirements* - the permittee shall electronically submit the required ground water monitoring data using a transmittal mechanism and format approved by the Director. If requested by the Director, hard copies shall also be submitted.

J. Compliance Schedule

1. *Contaminant Investigation Plan* – The requirements relating to contaminant investigation and possible corrective action in accordance with R317-6-6.15 set forth in the Stipulation and Consent Order, Docket No. UGW13-02, are superseded by this permit. Within 60 days of the effective date of this permit, a contaminant investigation plan is required for Director review and approval. The contaminant investigation plan shall describe an iterative process for installing investigational wells downgradient of the following spill locations in accordance with R317-6-6.15:
  - a) H1.A and A.25 Drop boxes;
  - b) Surge Basin 3B; and

- c) The area adjacent to and downgradient of the Magna Reservoir and the power plant.

Based on information available as of the date of Permit issuance, the Division of Water Quality (DWQ) anticipates between four and twelve investigational wells will be required in order to conduct the investigation. It is possible for a well to serve a dual purpose as both investigational and compliance monitoring location, upon approval by the Director.

2. Kennecott shall submit a Contaminant Investigation Report to the Director for review and approval in accordance with R317-6-6.15 within 60 days of the completion of the required wells within a given area.
3. Ground Water Compliance Monitoring Plan – within 30 days of the DWQ approval of the Contaminant Investigation Report, Kennecott shall submit for Director review and approval, a ground water compliance monitoring plan for the process water return line and the 48-inch and 60-inch tailings lines. The required plan shall be prepared in accordance with R317-6-6.4.C.2 and R317-6-6.9A and shall include a minimum of five (5) new monitoring well locations for review and approval by the Director.
4. Installation of Compliance Monitoring Wells – within 60 days of approval of the Compliance Monitoring Plan Kennecott shall begin installation of the monitoring wells in conformance with Part I.F(1) and submit within 60 days of completion of any monitoring well a report detailing drilling and installation methods, screen intervals, water bearing units, water quality data, lithology etc. and demonstrating compliance with the EPA RCRA Ground Water Monitoring Technical Enforcement Guidance Document, 1986, OSWER-9950.1 (RCRA TEGD) Section 3.5 or subsequent updated version.
5. Corrective Action – Following Kennecott's implementation of the contaminant investigation plan, the Director may require the submission and implementation of a Corrective Action Plan in conformance with R317-6-6.15D.

## II. MONITORING, RECORDING AND REPORTING REQUIREMENTS

- A. Representative Sampling. Samples taken in compliance with the monitoring requirements established under Part I shall be representative of the monitored activity.
- B. Analytical Procedures. Water sample analysis must be conducted according to test procedures specified under UAC R317-6-6.3L, unless other test procedures have been specified in this permit.
- C. Penalties for Tampering. The Act provides that any person who falsifies, tampers with, or knowingly renders inaccurate, any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than \$10,000 per violation, or by imprisonment for not more than six months per violation, or by both.

- D. Reporting of Monitoring Results. Monitoring results obtained for each monitoring period specified in the permit, shall be submitted to the Director, Utah Division of Water Quality at the following address no later than 45 days after the end of the monitoring period (unless specified otherwise in this permit):
- State of Utah  
Division of Water Quality  
Department of Environmental Quality  
195 North 1950 West  
Salt Lake City, Utah 84114-4870  
Attention: Ground Water Protection Section
- E. Compliance Schedules. Reports of compliance or noncompliance with, or any progress reports on interim and final requirements contained in any Compliance Schedule of this permit shall be submitted no later than 14 days following each schedule date.
- F. Additional Monitoring by the Permittee. If the permittee monitors any pollutant more frequently than required by this permit, using approved test procedures as specified in this permit, the results of this monitoring shall be included in the calculation and reporting of the data submitted. Such increased frequency shall also be indicated.
- G. Records Contents. Records of monitoring information shall include:
1. The date, exact place, and time of sampling or measurements;
  2. The individual(s) who performed the sampling or measurements;
  3. The date(s) and time(s) analyses were performed;
  4. The individual(s) who performed the analyses;
  5. The analytical techniques or methods used; and,
  6. The results of such analyses.
- H. Retention of Records. The permittee shall retain records of all monitoring information, including all calibration and maintenance records and copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least three years from the date of the sample, measurement, report or application. This period may be extended by request of the Director at any time.
- I. Twenty-four Hour Notice of Noncompliance and Release Reporting.
1. Subject to the provisions of UCA 19-5-114, and consistent with Appendix A "Process and Pipeline Release Prevention, Control and Response Plan", the permittee shall verbally report any noncompliance or release which may endanger public health or the environment as soon as possible, but no later than twenty-four (24) hours from the time the permittee first became aware of the circumstances. The report shall be made to the Utah Department of Environmental Quality 24 hour number, (801) 536-4123, or to the Division of Water Quality, Ground Water Protection Section at (801) 536-4300, during normal business hours (8:00 am - 5:00 pm Mountain Time).

2. A written submission shall also be provided to the Director within five days of the time that the permittee becomes aware of the circumstances. The written submission shall contain:
    - a. A description of the noncompliance and its cause;
    - b. The period of noncompliance, including exact dates and times;
    - c. The estimated time noncompliance is expected to continue if it has not been corrected;
    - d. Steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance; and,
    - e. Why an R317-6-6.15 corrective action should or should not be conducted as a result of the noncompliance or release.
  3. Reports shall be submitted to the addresses in Part II.D, Reporting of Monitoring Results.
- J. Other Noncompliance Reporting. Instances of noncompliance not required to be reported within 24 hours, shall be reported at the time that monitoring reports for Part II.D are submitted.
- K. Inspection and Entry. The permittee shall allow the Director, or an authorized representative, upon the presentation of credentials and other documents as may be required by law, to:
1. Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of the permit;
  2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
  3. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and,
  4. Sample or monitor at reasonable times, for the purpose of assuring permit compliance or as otherwise authorized by the Act, any substances or parameters at any location.

### III. COMPLIANCE RESPONSIBILITIES

- A. Duty to Comply. The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Act and is grounds for enforcement action; for permit termination, revocation and re-issuance, or modification; or for denial of a permit renewal application. The permittee shall give advance notice to the Director of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.
- B. Penalties for Violations of Permit Conditions. The Act provides that any person who violates a permit condition implementing provisions of the Act is subject to a civil

penalty not to exceed \$10,000 per day of such violation. Any person who willfully or negligently violates permit conditions is subject to a fine not exceeding \$25,000 per day of violation. Any person convicted under Section 19-5-115(2) of the Act a second time shall be punished by a fine not exceeding \$50,000 per day. Nothing in this permit shall be construed to relieve the permittee of the civil or criminal penalties for noncompliance.

- C. Need to Halt or Reduce Activity not a Defense. It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.
- D. Duty to Mitigate. The permittee shall take all reasonable steps to minimize or prevent any discharge in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.
- E. Proper Operation and Maintenance. The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems which are installed by a permittee only when the operation is necessary to achieve compliance with the conditions of the permit.

#### IV. GENERAL REQUIREMENTS

- A. Planned Changes. The permittee shall give notice to the Director as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required when the alteration or addition could significantly change the nature of the facility or increase the quantity of pollutants discharged.
- B. Anticipated Noncompliance. The permittee shall give advance notice of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.
- C. Permit Actions. This permit may be modified, revoked and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, revocation and re-issuance, or termination, or a notification of planned changes or anticipated noncompliance, does not stay any permit condition.
- D. Duty to Reapply. If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee must apply for and obtain a permit renewal or extension. The application should be submitted at least 180 days before the expiration date of this permit.
- E. Duty to Provide Information. The permittee shall furnish to the Director, within a reasonable time, any information which the Director may request to determine

whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The permittee shall also furnish to the Director, upon request, copies of records required to be kept by this permit.

- F. Other Information. When the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or any report to the Director, it shall promptly submit such facts or information.
- G. Signatory Requirements. All applications, reports or information submitted to the Director shall be signed and certified.
1. All permit applications shall be signed as follows:
    - a. For a corporation: by a responsible corporate officer;
    - b. For a partnership or sole proprietorship: by a general partner or the proprietor, respectively.
    - c. For a municipality, State, Federal, or other public agency: by either a principal executive officer or ranking elected official.
  2. All reports required by the permit and other information requested by Director shall be signed by a person described above or by a duly authorized representative of that person. A person is a duly authorized representative only if:
    - a. The authorization is made in writing by a person described above and submitted to the Director, and,
    - b. The authorization specified either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position.)
  3. Changes to Authorization. If an authorization under Part IV.G. 2 is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of Part IV.G.2 must be submitted to the Director prior to or together with any reports, information, or applications to be signed by an authorized representative.
  4. Certification. Any person signing a document under this section shall make the following certification:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

- H. Penalties for Falsification of Reports. The Act provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or noncompliance shall, upon conviction be punished by a fine of not more than \$10,000 per violation, or by imprisonment for not more than six months per violation, or by both.
- I. Availability of Reports. Except for data determined to be confidential by the permittee, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the offices of the Director. As required by the Act, permit applications, permits, effluent data, and ground water quality data shall not be considered confidential.
- J. Property Rights. The issuance of this permit does not convey any property rights of any sort, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations.
- K. Severability. The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.
- L. Transfers. This permit may be automatically transferred to a new permittee if:
  - 1. The current permittee notifies the Director at least 30 days in advance of the proposed transfer date;
  - 2. The notice includes a written agreement between the existing and new permittee containing a specific date for transfer of permit responsibility, coverage, and liability between them; and,
  - 3. The Director does not notify the existing permittee and the proposed new permittee of his or her intent to modify, or revoke and reissue the permit. If this notice is not received, the transfer is effective on the date specified in the agreement mentioned in paragraph 2 above.
- M. State Laws. Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, penalties established pursuant to any applicable state law or regulation under authority preserved by Section 19-5-117 of the Act.



- N. Reopener Provision. This permit may be reopened and modified (following proper administrative procedures) to include the appropriate limitations and compliance schedule, if necessary, if one or more of the following events occurs:
1. If new ground water standards are adopted by the Board, the permit may be reopened and modified to extend the terms of the permit or to include pollutants covered by new standards. The permittee may apply for a variance under the conditions outlined in R317-6-6.4(D)
  2. If alternate compliance mechanisms are required
  3. If pollutant concentrations in process waters at the facility are significantly higher than represented in the original permit application.

Table 2 – Permitted Facilities

Copperton Concentrator Groundwater Discharge Permit UGW350017

Component/Function	Material	Containment	Best Available Technology <sup>1</sup>	
			Inspection	Work Practice and Equipment
Tails Race & Octagon Drop Box: Designed to convey the tailings from Concentrator to Tailings thickeners.	Whole Tailings	Underground with concrete base and walls	1) Inspections require total system shut-down 2) No more than 30-months between inspections 3) Octagon can be viewed from surface	1) Concrete design. Sized to carry more than 100% of flows. 2) No visible damage affecting integrity. 3) Repaired during system shutdown period. 4) Included with Preventative Maintenance (PM) schedule for Concentrator conducted during shutdowns.
Tailings Thickeners: Thickeners function to increase tailings to a specific density before tailings line introduction.	Whole Tailings, Process Water	Concrete Basin on clay base, Under-drain system to capture leaks	Monthly visual inspections for structural integrity and checks of under drain system	1) Secondary containment which reports to the tailings line such that no leaks escape to the environment. 2) Allowable leakage rate of 1 gpm. 3) No visible damage affecting integrity. 4) If leak is discovered repaired either immediately or if leak is not reporting to environment, repair during next shutdown.
Byron Jackson Pumps (BJPS): BJPS circulate the decanted water from the thickeners back to the Concentrator's process water	Process Water	Underground Concrete Vault	Monthly inspections of system performance, power systems, hydraulic systems and valves. Monitored at the Concentrator control room.	1) Upgraded in 2016 with valve system that does not allow large volume discharge to tailing lines. 2) Operational Check Failure will initiate alarms for automatic BJPS operation shutdown or fluid redirection. Operations personnel will identify the alarm cause and correct all issues prior to restart.
Tailings Lines (48" & 60")*: The Tailings lines convey the tailings material from the	Whole Tailings, Process Water, Mining-impacted water, Stormwater and	Pipelines are rubber-lined steel, concrete or HDPE, Pipelines are above and below ground.	1) Visual inspections (above ground sections) twice per 24-hour period to identify: -Upsets	1) Tailings lines terminate at the tailings impoundment. 2) Infrequent tailings slurry releases may occur due to tailings line hydraulic disruptions. The reporting requirements and response actions for these release events are summarized in Table 2A. 3) Drop boxes are designed to dissipate the energy and slow tailings

<sup>1</sup> "Best Available Technology" means the application of design, equipment, work practice, operation standard or combination thereof at a facility to effect the maximum reduction of a pollutant achievable by available processes and methods taking into account energy, public health, environmental and economic impacts and other costs. See Utah Admin R317-6-1. The Permit clearly references the BAT requirements for RTKC. See Part 1C of Ground Water Discharge Permit, Appendix A (and the cross-referenced Standard Operating Procedures provided to DWQ), and Appendix B. Table 2 has been revised to ensure that all the BAT requirements identified throughout the draft Permit documents are specifically referenced.

Component/Function	Material	Containment	Best Available Technology <sup>1</sup>	
			Inspection	Work Practice and Equipment
<p>Concentrator to the Tailings Impoundment for deposition.</p> <p>- Specifically, the tailings lines shall be considered initiating at valves on the North side of drop box H1A North of the Concentrator terminating on N side of UT SR 201 on the south edge of the South Tailing Facility (STF)</p> <p>*some sections of the pipeline are varying in pipe diameter</p>	Treatment concentrate	Pipeline corridor berms provide additional containment in select areas	<p>-Integrity</p> <p>-Proper operation</p> <p>2) Inspection reports prepared for:</p> <p>-external visual survey</p> <p>-annual assessment of concrete and structural support integrity</p> <p>3) In-pipe video camera logging (The 48 inch Tailings pipeline is inspected quarterly for the first 25,000 feet; entire pipeline annually. The 60 inch Tailings pipeline is inspected annually to detect pipeline scaling, erosion and/or integrity.</p> <p>4) Level indicators are continuously monitored at control rooms</p>	<p>slurry flowrate at gradient drops.</p> <p>4) Bubble dissipaters installed below drop boxes accommodate air release from the tailings pipe.</p> <p>5) Vent stacks allow airflow within the pipelines to promote design material flow. Vent stacks also create inspection points and access for maintenance.</p> <p>6) Level indicators alarm control room operator when flow exceeds 70% of capacity.</p> <p>-operators will follow SOP's<sup>2</sup></p> <p>-In accordance with Appendix A, maintain existing vent stacks (including extensions beyond original design), bubble dissipaters, and level indicators as reflected in Attachment to Appendix A (Pipeline Corridor map).</p> <p>6) Periodic inspection and as necessary, the replacement of wear heels to ensure pipe integrity is maintained.</p>
<p>Process water return line 48": The Process water return line transports for reuse &amp; recycle north end waters from PS3A south to Pump Station 3B then on to Copperton Process Water Reservoir.</p> <p>- Specifically, the process water line shall be considered initiating at the south side of Pump</p>	Process water	Buried encased steel line with cathodic protection. Steel line has an inner cement liner and outside of the steel has a cement wire mesh wrap.	<p>1) Visual inspection of the pump stations</p> <p>2) Buried line cathodic protection inspected annually</p>	<p>1) The process water pipeline has a surge basin at Pump Station 3B and terminates at the inlet to the Copperton Process Water Reservoir.</p> <p>- -Spillage will be reported within 24 hrs, a five day letter prepared and submitted to DWQ and included in the quarterly reports and corrective action(s) implemented as appropriate.</p> <p>3) Inspection of Cathodic Protection probes annually.</p> <p>5) The Process Water Return Line will be operated in accordance with Appendix A attachment SOP<sup>3</sup>.</p>

<sup>2</sup> SOP for level indicators is TASOP300-247 with latest revision in May 2017. SOPs are documents that are periodically updated to be consistent with operational changes and that the SOPs referenced in the table are those in effect at the time.

<sup>3</sup> SOP for operation of the Pump Stations 3A, 3B, 3B Surge Basin and Copperton Process Pond Reservoir is included in CPSOP250-0081 with latest revision in May 2017.

Component/Function	Material	Containment	Best Available Technology <sup>1</sup>	
			Inspection	Work Practice and Equipment
Station 3A (Magna Reservoir Pump house) and terminating at the inlet to the Concentrator process water reservoirs.				
Tailings Line Launder: Launder is an open portion of the tailings line before the H1A drop box that allows for visual inspection of the tailings and provides surge capacity.	Whole Tailings, Process Water, Mining-impacted and stormwater	Concrete walls and floor	Daily visual inspections (above ground slurry levels) twice per 24-hour period to confirm: -Indications of upsets -Integrity -Proper operation	BAT for Tailings Line Launder includes items #1 through #4 for the 48 and 60 inch tailing lines. 1) The Tailings Line Launder lies along pipeline corridor which has accompanying maintenance / access / inspection roadways. 2) H1A instrumented with a high level alarm set to 60% of launder flow depth) monitored at the Concentrator control room. High level alarm causes control room operator to visually verify and make process adjustments to maintain correct flow level. 3) The Launder will be operated in accordance with Appendix A attachment SOP <sup>2</sup> . 4) In the event of the launder or cleaning water overflow, a concrete sump and float, located adjacent and west of the tailings line, receives the fluid and is pumped back into the tailings line.
Concentrator Process Water Reservoir: Concentrator Process Water Reservoir stores recycled water for reuse in the Concentrator process.	Process water	Double lined (clay & synthetic), 36 mil HDPE synthetic liner and Sump with leak detection	Monthly inspections for degree of siltation, vegetation and debris	1) Double-lined with HDPE overlying clay 2) Allowable leakage rate of 3 gpm into sump 3) No visible damage to HDPE liner 4) If reservoir operation is not impacted with debris, vegetation and/or siltation, it will be removed during next shut down. If debris, vegetation, and/or siltation are impacting proper function and it is a threat to overflow into environment, it will be removed immediately.

3B Surge Basin: 3B surge basin provides containment for pressure relief / draining of process water return line.	Process Water	Concrete basin primary containment	1) Annual above ground inspection for damage and cracks in the concrete basin 2) Monthly instrumentation inspection 3) Continual monitoring of surge basin level	1) Damage and cracks repaired during shutdown unless a leak to environment is evident. If leak to environment is or has occurred, repair will be immediate – weather permitting. 2) Level sensor monitors water level 3) Alarm will sound in a high level condition in the surge basin as described in the Appendix A attachment SOP <sup>3</sup> at the North Tailings and Concentrator control rooms and will trigger a reduction of flow or shut down of the Process Water Return Line. The system will not be restarted until the issue has been identified and corrected by operations personnel.
Retention Ponds – General: Retention ponds I-IV are used primarily for stormwater capture and may include contact water.	Storm water / system upsets	Clay lined basins	1) Annual pump(s) inspection 2) Annual SWPPP visual inspections for damage 3) Monthly inspection checklist completed and submitted with quarterly reports.	1) Sediment and vegetation that accumulates and impedes operation of the pump system will be cleared immediately unless not impacting proper pond function. If pond operation is not impacted, debris, vegetation and/or siltation will be removed during next shut down or PM. 2) Inlet and outlets maintained clear of debris.
Copper Thickener:	Process water and copper concentrate	Concrete basin on clay base and under drain to capture leaks	Monthly inspections for structural integrity and checks of under drain system -Inspect for structural integrity, overflow protection and containment.	1) Allowable leakage rate of 1gpm 2) Concrete basin set on clay base as secondary containment with underdrains that drain fluids to the tailings line. 3) No visible damage affecting integrity
Copper / Molybdenite Thickener and the Clarifier. Both items have same containment, inspection and work practice and therefore are combined.	Process water and copper / molybdenum concentrate	Concrete basin on clay base	Monthly inspections for structural integrity and checks of under drain system (describe checks of under drain system) -Inspect for structural integrity, overflow protection and containment.	1) No visible damage to concrete walls or secondary containment nor settling of ground adjacent to thickeners 2) No detectable leakage from secondary containment 3) Cracks or settlement causing leaks to environment will be repaired immediately; if no leak to environment, repairs made during next shut down.

Table 2A – Tailings Lines Release Response  
Copperton Concentrator Groundwater Discharge Permit UGW350017

Estimated Release Volume (solid and liquid combined)	Permitted Release	Reporting Requirements <sup>1</sup>	Additional Reporting Requirements	Response Actions
Up to 500 gal. <sup>2</sup>	Yes	A count of these releases will be reported in the quarterly report, no additional details are required.	None	Recover any standing liquids using pumps or vac truck. Excavate and dispose solid tailings deposits in accordance with Appendix A.
500-1,500 gal.	Yes	Submit as part of quarterly report in table format to include: date, location, description, sample results, cause, and estimated volume.	None	Recover any standing liquids using pumps or vac truck. Excavate and dispose solid tailings deposits in accordance with Appendix A.
1,500-12,000 gal	Yes	<b>Releases caused by “bubbles and burps”:</b> Submit as part of quarterly report. Include detailed description of the event, sample results, and cleanup activities performed.	For 3 releases over 1,500 gal each within any calendar month or 4 releases over 1,500 gal during the same quarter, DWQ must be notified within 24-hrs and a written report submitted within 5-days.	Follow sampling and cleanup procedures as described in Appendix A.
	Yes	<b>Releases other than “bubbles and burps”:</b> Submit as part of quarterly report. Include detailed description of the event, root cause analysis <sup>3</sup> , sample results, and cleanup activities performed.		Follow sampling and cleanup procedures as described in Appendix A.
>12,000 gal.	No	Report to 24-hr DEQ spill line, submit 5 day letter, root cause analysis <sup>3</sup> and 45-day report as per Appendix A requirements.	None	Follow sampling and cleanup procedures as described in Appendix A.

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<sup>1</sup> Release of any volume reaching a reportable drainage identified in Figure 4 must be reported within 24-hours to the DEQ 24-hr spill line.

<sup>2</sup> This category also includes up to 500 gallons of process water released during pump and valve maintenance activities, not to exceed 4 times per calendar year.

<sup>3</sup> A root cause analysis discussion should address a complete analysis of why the release occurred and optimization of the tailings line operation and adjustment of pipeline BAT if necessary.

## APPENDIX A

### Process and Pipeline Release Prevention, Control and Response Plan Kennecott Utah Copper LLC (Kennecott) Copperton Concentrator Groundwater Discharge Permit UGW350017

#### 1.0 Introduction

The Copperton Concentrator Process and Pipeline Release Prevention, Control and Response Plan provides detailed procedures for release prevention, response, and reporting.

This Plan applies to the Copperton Concentrator permitted facilities, the tailings pipelines (the “48-inch” and “60-inch” pipelines), and return process water pipeline (the 48” process water return line) on Kennecott property covered by Ground Water Discharge Permit UGW350017.

The tailings pipelines have five distinct features:

- The tailing pipelines, referred to as the 48-inch and 60-inch;
- Tailings pipeline drop boxes
- Tailings pipeline splitter box
- Tailings pipeline vent stacks, and:
- Tailings pipeline bubble dissipaters.

The tailings pipeline system consists of two, approximately 12.5-mile parallel pipelines that deliver whole tailings slurry to the north splitter box. The tailings lines (48-inch and 60-inch) and all associated drop boxes and vent stacks start at the H1A drop box near the Concentrator and end on the north side of SR-201 where the tailings lines cross onto the South Tailings Impoundment. The tailings pipelines convey tailings slurry from the Copperton Concentrator north to the tailings impoundment using a gravity flow system. The gravity flow system requires the tailings lines to have open vent stacks along the pipeline to ensure proper hydraulic fluid flow. The vent stacks are also used as inspection ports and access points for monitoring and cleaning activities associated with the tailings line preventative maintenance (PM) program. The tailings lines also incorporate a series of drop boxes along the length of the corridor. The drop boxes reduce the velocity of the tailings slurry and adjust for elevation change along the corridor.

The process water return system extends from the Magna Reservoir to the Copperton Concentrator. This system consists of Pump Stations 3A and 3B, approximately 12 miles of 48” diameter steel with concrete reinforced pipeline, and associated infrastructure. Pump Station 3B is a booster station that is located mid-line and incorporates a concrete surge basin to buffer pump operations and process upsets as well as provide adequate suction head pressure to the booster pumps. The surge system at Pump Station 3B provides water storage above the pump station to maintain minimum pump suction inlet pressure, provide reserve capacity to buffer pump starts and stops between the pump stations, and absorb surges from upset conditions. The pumping system hydraulics cause pressure surges and pressure spikes with each start and stop. The system is designed to absorb these changes in pressure.

Figure 1 illustrates the sections of the tailings pipelines and process water return pipeline subject to the UGW350017 Permit (also known as the pipeline corridors). Figure 2 illustrates the locations of all drop boxes and vents on the tailings pipelines.

## **2.0 Release Prevention and Best Available Technology (BAT)**

This release prevention section is consistent with the BAT referenced in Permit UGW350017, Table 2. It describes the design and controls in place to prevent releases from Kennecott's two tailings pipelines, drop boxes, vent stacks, and the 48" process water return line. The management of the pipelines relies on monitoring systems, inspections, the implementation of certain Standard Operating Procedures (SOPs), and regular maintenance.

### **2.1 Tailings Pipeline Release Prevention Mechanisms**

The tailings pipelines have the following design features to reduce the potential for a release:

(1) A hydraulic manifold that controls valves at the Concentrator recycle pump station. The hydraulic manifold at the Copperton recycle pump station allows control of the isolation valves on the return water system thereby reducing the potential for water overflow into the Tailing lines.

(2) During 2015 Kennecott conducted a detailed review of pipeline hydraulics and ventilation of the 48-inch and 60-inch Tailings Pipelines. The review resulted in the following design modifications:

- Removal of some covers to improve the functioning of the vents and enhance tailings flow;
- Extension of some vents; and
- Modification of nine vents to include a bubble dissipater to eliminate the bubble reaction inside the pipeline. The added bubble dissipater enhances the initial and primary air relief that promotes the Tailings Pipeline hydraulics. The dissipaters will be inspected at least annually and they are designed where expendable replacement parts are not needed.

### **2.2 Process Water Pipeline and Surge Basin Release Prevention Mechanisms**

Redundant water management systems at 3B pump station (including the Surge Basin) ensure water does not backflow uncontrollably when the 3B pumps are not operating or interrupted due to power outage (CPSOP250-0081-Attachment 1). These systems include:

- Isolation gate valves between the existing surge protection valves and the pipeline. The isolation gate valves between these surge protection valves and the pipeline from 3B to Copperton Reservoir allows the operator to stop flow if the surge protection valve will not close. The isolation valve also has an electro-hydraulic actuator that has uninterruptible power supply for control power.
- At the 3B pump station, the downstream isolation valves are outfitted with electro-hydraulic actuators that can be remotely operated. These actuators, position indicators and programmable logic controllers open/close commands are backed up with uninterruptible power supply allowing functionality during power outages.



- At the 3B pump station, redundant transmitters, indicators and Input/Output feeding information are on uninterruptible power supply also allowing functionality during power outages.
- At the Surge Basin, redundant pressure transmitters are installed which allow the full elevation range of the surge basin to be read.
- At the Surge Basin, a radar level indicator with telemetry communicating the level of the surge basin overflow to the 3B programmable logic controller is installed. Solar power is installed at the surge basin to power the equipment.

## **2.3 Pipeline Monitoring Systems**

The pipeline monitoring systems assess flow, pump performance, valve position and fluid level. Monitoring occurs on a real-time basis from the Copperton Concentrator and the Tailings control rooms.

Flow monitoring for the tailings pipelines is primarily visual. To assist this visual monitoring, level transmitters were installed at three vents in each pipeline and set with alarms that represents 70% fill of the pipeline to alert operations that the pipeline is approaching design capacity. The 70% pipe capacity set point represents the optimal hydraulic performance of the tailings slurry. Above this optimal pipe capacity, the tailings slurry begins to lose hydraulic cohesiveness allowing the solid phase flow to slow down and increase the risk of solid settlement on the bottom of the pipeline causing potential plugging. If alarms are activated, upstream sources are adjusted to bring the pipeline into proper operating levels.

Process water return line flow monitoring is also primarily visual (see 2.4). Pressure transmitters at the 3A and 3B pump stations are used to control the operation of the pumps and the volume of the pipeline. Real-time status of the pumps is monitored to verify that the pumps are functional using run status and amperage. Status of the pipeline using pressure transmitters is limited due to characteristics of the pipeline. With dual pressure transmitters at the suction side of 3B pump station, status of the surge pipeline and basin for 3B pump station suction system is reported in real time.

As noted above and described below, Kennecott maintains level sensors in strategic locations within the tailings pipelines as well as within the process water return system pump sumps and reservoirs. These strategic locations were selected based on placement above stream of historic release locations and conceptual friction loss areas that could impact hydraulic performance of flows. Additionally and as also detailed below, the tailings pipeline monitoring system includes continuous level monitoring instrumentation at select locations (Figure 2). The level indicators and monitoring instrumentation are monitored by the control rooms consistent with Standard Operating Procedures (SOPs). Specifically, Kennecott implements an SOP to evaluate the tailings pipeline system and alarms including tailings levels in the identified drop boxes and vent stacks. See generally TASOP300-247 (Attachment 2). Alarms are programmed to sound when an operating condition is outside of regular operating ranges; control room operators are trained to respond to alarm conditions as provided in the SOPs. As indicated in the SOPs, the level indicators are checked monthly for proper operation.

The following describes the particular drop boxes and vent stacks subject to the remote monitoring SOPs:

- Drop Box A.25 – This drop box has a level indicator on both sides (LIT 600 and LIT 601).
- Vent Stacks – There are six level indicators (three on each line at Vents 195, 197, 331, 335, 403 and 3711). These level indicators are not only used for high alarm levels but also to detect level differentials which could be an early warning of a possible pipeline upset.

## **2.4 Inspections**

The tailings pipelines are visually inspected once per shift or 2 times in a 24-hour period. The inspection is performed by a tailings rover who drives the tailings pipeline corridor and visually checks for external pipeline damage and evidence of releases from the pipelines, drop boxes, and/or vent stacks and external damage to the pipelines.

The drop boxes are also observed by the tailings rovers once per shift as part of the above-referenced drive-by visual inspection. Where needed, the drop boxes have hanging curtains of high grade rubber on the side of the box. This curtain is in place to lessen the wear on the side of the drop box where flows cascade. These curtains are inspected for damage annually, and replaced if needed.

Kennecott implements quarterly internal inspections of the section of the 48-inch tailings pipeline starting with the A.25 drop box and proceeding downstream for 25,000 linear feet. Inspections for the 48-inch line are done at a higher frequency rate compared to the 60-inch line because the 48-inch line receives a larger diversity of fluids that includes tailings, concentrate from the Zone A RO plant at Box H1A and all acidic flows from the Kennecott's south end operations, which are typically added to the 48-inch line at Box A.25. The internal inspections are also governed by specific SOPs (*see* TASOP300-248, Attachment 3). The internal inspections are performed by placing a camera on a "raft" and floating the camera down the pipeline on a fraction of the normal slurry flow. The inspections are initiated by lowering cameras through the vent stacks on the pipelines. This allows maintenance personnel to safely inspect the pipelines and identify areas with excessive scaling, missing or damaged wear heels or structural integrity issues inside the pipelines. The entire 48-inch tailings pipeline (starting at the A.25 drop box to the North Splitter box) is inspected via camera or a physical inspection annually. For more detail on the line inspection and cleaning please refer to TASOP300-248 (Attachment 3).

The 60-inch tailings pipeline (starting at the A.25 drop box to the North Splitter box) is inspected with the camera or via physical inspection on an annual basis (*see* TASOP300-248).

## **2.5 Regular Maintenance**

As indicated, the tailings pipeline monitoring program is comprised of frequent visual inspection and remote monitoring. Kennecott prepares documentation of inspections and, as assessed, pipeline conditions. The documentation consists of (1) the twice daily rover inspections (as documented on the route sheets); (2) the quarterly camera 48-inch pipeline inspections; (3) any physical inspections; and (4) the annual inspection on both lines. Maintenance and repairs are initiated in response to inspection results consistent with the SOPs. Each inspection is documented; any action items are identified and separately tracked on work order forms. Documentation relative to the referenced inspections and any repair work is maintained on file at Kennecott consistent with the record retention requirements of the Permit.

As indicated, the vent stacks' level indicators are inspected and repaired monthly, consistent with the SOPs.

### **3.0 Release Management**

This section discusses actions Kennecott will take in the event of a pipeline release.

#### **3.1 Release Detection**

Releases will be identified by one or more of the following measures:

1. Visual observations are made by roving operators or area personnel. The frequency of visual inspections is outlined in Section 2.2.
2. Tailings or Copperton Concentrator control room monitoring of level indicators, flow metering, sump levels, and other pipeline monitoring equipment with response actions consistent with the above-referenced SOPs.

#### **3.2 Release Minimization**

There are at least two steps to release minimization. First, when high level alarms indicate elevated pipeline flow levels, Kennecott can potentially reduce flow to the specific pipeline. Second, Kennecott will immediately implement release containment where and when it is safe to do so. The following describes those steps.

Upon identification of a release, Kennecott operations personnel will reduce the flows into the respective pipeline experiencing high levels by either routing flow to the other tailings line or by reducing flow from the Concentrator and/or isolate the compromised pipeline for repair to minimize additional releases. Kennecott personnel are instructed to implement the procedures immediately.

The Control Room and/or Operations Supervisor is responsible for taking steps to minimize and contain released material to the immediate area if and when it is safe to do so. Release containment may consist of one or more of the following activities: dedication of manpower and equipment, construction of earthen berms and evacuation of sumps and containments. If equipment is readily available it will be mobilized to the site of the release and containment measures implemented to prevent released material from spreading. During the initial assessment of the released material, any standing water will be removed from the ground and either placed back into the Kennecott's process water management system or disposed of properly.

#### **3.3 Release Response**

After a release has been identified and Kennecott has determined the area to be safe to enter, it will be the duty of Kennecott personnel to access the release area and for the Operations Supervisor to assemble the appropriate release management team. The Operations Supervisor is also responsible for immediately notifying the Kennecott Environmental Department. The release response team will be responsible for determining the release source, cause and constituents of the release. The Operations Supervisor, assisted by the Environmental personnel as appropriate, will initially assess the release area and confirm that the source has been isolated. The Operations Supervisor will coordinate clean-up efforts (if required) and liaise with the Kennecott Environmental Department regarding proper handling and disposal. If cleanup efforts are required, any associated handling, transportation, reclamation or disposal of any released material shall comply with applicable laws

and regulations. The environmental personnel assigned to the release will coordinate sample collection and any required reporting to regulatory agencies.

If there is standing water sufficient to sample, a sample will be collected near the source and as close to the toe of the release as possible (if practicable) before it is removed and placed back into the process water management system. If no standing water is available to sample, the environmental personnel will coordinate with the Operations Supervisor to collect a release representative sample from the process or to use best available data (e.g., recent historical data that is representative of conditions that were present at the time of the release) to assist in compliance with applicable reporting requirements.

Solid or slurry samples (tailings pipeline release) will be collected based on:

- If the release goes beyond the tailings pipeline corridor, a minimum of three solid samples will be collected near the source, middle of the release (on the centerline of the release) and the toe of the release and a liquid sample will be collected from standing waters as near to the source as possible.
- Any material within a drainage identified on Figure 3 will be removed. Tailings material outside of a drainage shown on Figure (X) will be removed to prevent mobilization and possible discharge to an identified drainage.

All sampled material will be analyzed by the State Certified Kennecott Environmental Laboratory (KEL) for constituents listed in the Permit Part I Section F. In most cases the samples from the released material can be analyzed within five days.

### **3.4 Release Reporting**

Reporting shall be in accordance with Table 2A. Tailings releases greater than 12,000 gallons are not permitted discharges and must follow spill protocol as required under Part II.(I) of the Permit.

For any releases requiring 24-hour notification to the DWQ, a written report shall be submitted to the Director within five days of the time Kennecott is aware of the release and consistent with the requirements of the Permit, Part II.I. A supplemental written report shall be submitted within 45-days of the incident. The supplemental report shall contain, to the extent the information is available:

- A description of the spill and its cause;
- Date, time, duration, and volume of the spill;
- Parameters used to estimate the volume of the spill;
- Estimated liquid/solid percentages of the spill;
- Volume of liquids and solids recovered and parameters used to determine recovered volume;
- Laboratory analytical results from all liquid and solid samples that were collected to assess the spill;
- Steps taken or planned to reduce, eliminate, and prevent reoccurrence of the spill;
- Steps taken, if any, to mitigate the adverse impacts on the environment and human health as a result of the spill; and,

- Confirmation soil samples will be submitted to KEL following cleanup activities, if conducted; the results will be reported to the DWQ as part of the 45-day report.

The Director may waive the written 45-day report on a case-by-case basis based on the spill information verbally reported under the 24-hour notice requirement or the information reported in the 5-day letter.