

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

**GROUND WATER DISCHARGE PERMIT
Permit No. UGW350015**

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 COPPERLLC
4700 DAYBREAK PARKWAY

SOUTH JORDAN, UT 84095**

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

The North Concentrator is located on the following tracts of land (Salt Lake Base and Meridian):

Township 1 South, Range 2 West - SW 1/4 of Section 19
Township 1 South, Range 2 West - NW 1/4 of Section 30
Township 1 South, Range 3 West – SE 1/4 of Section 24
Township 1 South, Range 3 West - NW 1/4 of Section 25

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 maintained and operated in accordance with conditions set forth in the permit and the Utah Ground Water Quality Protection Regulations.

This Ground Water Quality Discharge Permit for the North Concentrator supersedes all other Ground Water Discharge Permits for this facility previously issued.

This [modified](#) permit shall become effective on [date xxxx, 2011](#).

This permit and the authorization to operate shall expire at midnight, March 15, 2014.

Walter L. Baker, P.E.
Executive Secretary
Utah Water Quality Board

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Attachments:

- Table 1: Protection Levels for Ground Water
- Table 2: North Concentrator Point Source Components
- Table 3: North Concentrator Features Permitted By Rule
- Table 4: North Concentrator Operational Monitoring Points
- Appendix A: Best Management Practices Plan [Appendix B Magna Reservoir Sampling Plan](#)

I. SPECIFIC PERMIT CONDITIONS

A. GROUND WATER CLASSIFICATION

The ground water classification for the uppermost aquifer in the area of the North Concentrator is generally Class II Drinking Water Quality ground water. Ground water at each compliance monitoring well has been classified based on historical monitoring data.

B. GROUND WATER PROTECTION LEVELS AND COMPLIANCE LIMITS

Ground Water Protection Levels for compliance monitoring wells for this permit are represented in Table 1.

C. BEST AVAILABLE TECHNOLOGY PERFORMANCE STANDARD

The enforceable performance standard for this permit to achieve protection of ground water quality will be discharge minimization of process fluids to ground water 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 performance criteria in Table 2
2. No ground water degradation beyond permit limits established in Table 1 and measured by compliance monitoring wells.
3. Implementation of the Best Management Practices Plan (Appendix A) to ensure prompt clean up of any spills and proper handling of process waters as well as an ongoing inspection and maintenance program for facilities included in this permit.
4. Closure - The North Concentrator shall undergo closure in accordance with the closure plan submitted in section 7 of the permit application.

D. PERMITTED FACILITIES

The Facilities authorized under this permit are listed in Table 2. These facilities constitute those, not permitted by rule, where there is potential for release of fluids to ground water. The facilities listed in Table 3 under the "Permit By Rule" heading are for unit processes not specifically addressed by this permit. However, no discharge of pollutants from these sites to ground water is allowed.

E. MONITORING

1. General Provisions

- a) *Future Modification of the Monitoring Network* - If at any time the Executive Secretary 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 Executive Secretary a modified monitoring plan that addresses the inadequacies noted by the Executive Secretary.

Within 60 days of completion and development of any new or replacement monitoring well, Kennecott shall submit documentation demonstrating that

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.

- b) *Compliance Monitoring Period* - Monitoring shall continue throughout 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: boron, chloride, sulfate, alkalinity, sodium, potassium, magnesium, and calcium
 - ▶ TDS total dissolved solids
 - ▶ Inorganic Chemicals: total cyanide
 - ▶ Metals (dissolved): arsenic, barium, cadmium, chromium, copper, lead, selenium, and zinc
- g) *Analytical Procedures* - Water sample analysis will be conducted according to test procedures specified under UAC R317-6-6.3L.

2. Operational Monitoring

- a) Kennecott shall characterize the fluids utilized in the Power Plant and the Magna Process Water Reservoir and Pumping Facilities with grab samples

for the unit process sites listed in Table 4.

- 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 with the application for permit renewal.

3. Monitoring Frequency

Well Monitoring Frequency - All existing compliance monitoring wells will be sampled semiannually throughout the term of this permit. For any new compliance monitoring wells that are installed, the permittee shall collect at least eight independent samples at equal time intervals over a one-year period from each well. The samples shall be analyzed for major ions and the parameters listed in Part I.E.1.f.

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 7 of the permit application.

F. 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 exceeds the greater of the protection level or the compliance limit (Table 1) Kennecott shall:

- a) Notify the Executive Secretary in writing within 30 days of receipt of the data;
- b) Initiate quarterly sampling for the compliance monitoring well(s) that has exceeded the greater of the protection level or the compliance limit (Table 1), unless the Executive Secretary determines that other periodic sampling is appropriate, for a period of two quarters 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 exceed the protection level and the compliance limit 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)

3. Out of Compliance for Allowable Leakage Rate

a. If the leakage rate is in excess of the Allowable Leakage Rate (ALR), stated in Appendix B, KUC shall:

i. Sample the effluent from the sump for water quality field and lab constituents noted in Part I.C.5 and report analytical results in the corresponding quarterly report.

ii. Notify the Executive Secretary within 24 hours of the discovery that the leak detection system has exceeded the ALR. This notification shall be followed up with a written statement confirming the oral report within five days of the failure along with a proposed schedule for implementing the Leak Detection and Repair Program.

iii. Submit for Executive Secretary approval, a schedule to implement the approved Leak Detection and Repair Program (approved under Part I.G) or proceed otherwise as directed by the Executive Secretary.

iv. Remove water affected on a continuous basis from the sump.

c) Upon determining that an out of compliance situation exists, Kennecott shall:

i) Notify the Executive Secretary of the out of compliance status within 24 hours of detection, followed by a written notice within 5 days of the detection.

ii) Initiate quarterly sampling unless the Executive Secretary determines that other periodic sampling is appropriate until the facility is brought into compliance.

iii) Submit a Source Assessment and Compliance Schedule to the Executive Secretary 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 level or compliance limits will not be exceeded at that compliance monitoring point.
 - Measures to ensure best available technology will be re-established.
- iv) Implement the Source Assessment and Compliance Schedule as directed by the Executive Secretary.

3. Unit Processes with Best Management Practices

Kennecott shall operate the, Power Plant and Magna Process Water Containment and Pumping Facilities in accordance with the Best Management Practices specified in Appendix A.

G. NON- COMPLIANCE FOR BEST AVAILABLE TECHNOLOGY

1. Kennecott is required to maintain the Best Available Technology in accordance with the approved design and practice for this permit. 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 best available technology, 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 Executive Secretary's approval, an adequate plan and schedule for meeting permit conditions; and
 - d. The provisions of UCA 19-5-107 have not been violated.

H. REPORTING REQUIREMENTS

1. Reporting

- a. Water quality sampling results with any supporting data for compliance monitoring wells shall be submitted two times per year to the Executive Secretary as follows:

<u>Quarter Sampled In</u>	<u>Results Due On</u>
1 st & 2 nd	August 15
3 rd & 4 th	February 15

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

2. Electronic Filing Requirements - The permittee will electronically submit the required ground water monitoring data in the electronic format specified by the Executive Secretary. The data should be in an Adobe PDF document sent by e-mail, CD, or other approved transmittal mechanism.

I. COMPLIANCE SCHEDULE

1. Kennecott shall notify the Division of Water Quality of any changes in operational status of the remaining North Concentrator facilities.

- ~~2. Kennecott shall analyze water samples from North Concentrator facilities compliance monitoring wells and operational monitoring points (Table 4) for boron. This is a new permit requirement. Compliance levels for boron will be established by DWQ at the mid-point of this permit term.~~

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 R317-6-6.12, 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 Executive Secretary, 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
Salt Lake City, Utah 84114-4870
Attention: Ground Water Quality Program
Electronic address: rherbert@utah.gov

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 Executive Secretary at any time.

I. TWENTY-FOUR HOUR NOTICE OF NONCOMPLIANCE AND SPILL REPORTING

1. The permittee shall verbally report any noncompliance, or spills subject to the provisions of UCA 19-5-114, 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 Executive Secretary 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; and,
 - d. Steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.
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 Executive Secretary, 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 Executive Secretary 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 Executive Secretary 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 Executive Secretary, within a reasonable time, any information which the Executive Secretary 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 Executive Secretary, 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 Executive Secretary, it shall promptly submit such facts or information.
- G. SIGNATORY REQUIREMENTS All applications, reports or information submitted to the Executive Secretary 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 the Executive

Secretary 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 Executive Secretary, 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 Executive Secretary 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 Executive Secretary. 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 Executive Secretary 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 Executive Secretary 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 water quality of the facility is significantly worse than represented in the original permit application.

TABLE 1

PROTECTION LEVELS FOR GROUND WATER

Well	Permit Limit	pH	TDS	Sulfate	Arsenic	Boron	Cadmium	Chromium	Copper	Lead	Selenium	Zinc
NEM650A	Protection Level	6.5 - 8.5	1364	228	0.013	0.14	0.0013	0.025	0.325	0.005	0.013	1.250
	Compliance Limit		1233	208	0.009	0.13	n/a	n/a	n/a	n/a	0.012	n/a
NEM651A	Protection Level	6.5 - 8.5	1600	450	0.013	0.12	0.0013	0.025	0.325	0.005	0.026	1.250
	Compliance Limit		1626	540	0.011	0.12	n/a	n/a	n/a	n/a	0.009	n/a
NEM652A	Protection Level	6.5 - 8.5	1597	585	0.018	0.49	0.0013	0.025	0.325	0.005	0.020	1.250
	Compliance Limit		1411	563	0.022	0.44	n/a	n/a	n/a	n/a	0.032	n/a
NEM897	Protection Level	6.5 - 8.5	2762	557	0.013	0.23	0.0013	0.025	0.325	0.005	0.013	1.250
	Compliance Limit		2968	793	0.019	0.22	n/a	n/a	0.057	n/a	0.014	n/a
NEM898	Protection Level	6.5 - 8.5	2095	300	0.015	0.22	0.0013	0.025	0.325	0.005	0.013	1.250
	Compliance Limit		1894	300	0.025	0.21	n/a	n/a	n/a	n/a	n/a	n/a
PCG2576	Protection Level	6.5 - 8.5	1000	153	0.013	0.064	0.0013	0.025	0.325	0.005	0.013	1.250
	Compliance Limit		1057	228	0.013	0.073	n/a	n/a	n/a	n/a	n/a	n/a
Ground Water Quality Standards		6.5 - 8.5	3000	n/a	0.05	n/a	0.005	0.10	1.30	0.015	0.05	5.00
<p>NOTES:</p> <p>units: milligrams per liter (mg/L), except for pH;</p> <p>Protection Levels are based on the greater of 1.25 times the measured background concentration or 0.25 times the ground water standard</p> <p>Compliance Limits are calculated from the mean of measured concentrations + 2 standard deviations</p> <p>n/a = not applicable</p> <p style="text-align: right;">Last Revision date: April 2011</p>												

TABLE 2

NORTH CONCENTRATOR
POINT SOURCE COMPONENTS

Facility	Fluids Handled	BAT Description	Operation and Maintenance	Performance Criteria
Magna Process Water Reservoir	Process water <ul style="list-style-type: none"> • No. 1 pump station • No. 4 pump station 	Double HDPE liner with leak detection	<ul style="list-style-type: none"> • Process water recycled • Inspections as per BMP plan 	<ul style="list-style-type: none"> • Prompt repair of leaks • Adherence to BMP plan (Appendix B)
Power Plant Cooling Towers No. 1, 2, 3 and 4	Storage of fresh water from deep well No. 10 to the deep well booster pump station. In case of emergency, this water may also be supplemented with water from the Golf Course well or Adamson Springs.	Concrete basin	<ul style="list-style-type: none"> • Water recycled after use • Inspections as per BMP plan • Continuous monitoring of water levels 	<ul style="list-style-type: none"> • Prompt repair of leaks • Adherence to BMP plan (Appendix A)
Old Power Plant Cooling Tower	Section 21 potable water via the UPP Pump Station	Concrete basin	<ul style="list-style-type: none"> • Water recycled after use • Inspections as per BMP plan • Continuous monitoring of water levels 	<ul style="list-style-type: none"> • Prompt repair of leaks • Adherence to BMP plan (Appendix A)
Power Plant Make-up Water for process (10 Cells for storage)	Fresh Water <ul style="list-style-type: none"> • Deep well No. 10 to deep well booster pump station. In emergencies, this water may also be supplemented with water from the Golf Course well or Adamson Springs. 	Concrete basin	<ul style="list-style-type: none"> • Inspections as per BMP plan 	<ul style="list-style-type: none"> • Prompt repair of leaks • Adherence to BMP plan (Appendix A)
No. 3 Pump Station	Process water <ul style="list-style-type: none"> • Water pumped from the Magna Process Water Reservoir via Pump Station No. 3 to the Bonneville Process Water Reservoir 	Concrete basin	<ul style="list-style-type: none"> • Inspections as per BMP plan 	<ul style="list-style-type: none"> • Prompt repair of leaks • Adherence to BMP plan (Appendix A)
UPP Pump Station	Potable Water <ul style="list-style-type: none"> • Section 21 	Concrete basin	<ul style="list-style-type: none"> • Inspections as per BMP plan 	<ul style="list-style-type: none"> • Prompt repair of leaks • Adherence to BMP plan (Appendix A)
Power Plant Coal Stockpile	Runoff from coal stockpile	Unlined pad	<ul style="list-style-type: none"> • Contain coal stockpile on designated pad 	<ul style="list-style-type: none"> • Maintain drainage structures • Adherence to BMP plan (Appendix A)

TABLE 3

NORTH CONCENTRATOR
FEATURES PERMITTED BY RULE

Facility	Fluids Handled	BAT Description	Regulatory Status	Operation and Maintenance	Performance Criteria
No. 3A Pump Station	Process water <ul style="list-style-type: none"> Water pumped from the Magna Process Water Reservoir via Pump Station No. 3A to the Copperton Process Water Reservoir 	Concrete basin	<ul style="list-style-type: none"> Daily inspection 	<ul style="list-style-type: none"> Weekly inspection 	<ul style="list-style-type: none"> None
Fly Ash Pipeline	<ul style="list-style-type: none"> Power plant fly ash slurry to the tailings pipeline 	<ul style="list-style-type: none"> 6" pipeline 	<ul style="list-style-type: none"> De Minimus 	<ul style="list-style-type: none"> Weekly inspection 	<ul style="list-style-type: none"> None

TABLE 4

NORTH CONCENTRATOR
OPERATIONAL MONITORING POINTS

Operational Monitoring Site	Sample ID	Sampling Location
Magna Process Water Reservoir	MCP1416	Grab sample of reservoir water
Old Power Plant Cooling Tower	PCP2586	Grab sample of tower water
Power Plant Unit Cooling Towers 1 through 4	PCP1420, PCP1421, PCP1422, PCP1423	Grab sample from one tower
Power Plant Station Service Cooling Tower (No. 5)	PCP1424	Grab sample of tower water
Power Plant Make-up Process Water (10 Cells)	PCP1459	Grab sample from one cell

APPENDIX A
BEST MANAGEMENT PRACTICES PLAN
FOR
NORTH CONCENTRATOR GROUND WATER DISCHARGE PERMIT
(Permit No. UGW350015)

INTRODUCTION

The Kennecott Utah Copper (KUC) North Concentrator was granted a Ground Water Discharge Permit (Permit #UGW350015) in March 2009. The North Concentrator physical permit boundaries includes the Power Plant and the Magna Process Water Containment and Pumping Facilities that route process water for Kennecott Copper operations and the demolished Bonneville Crushing and Magna Flotation and Filtration Mills. Based on topographical maps the permit area covers approximately 50 acres. The permit specifies monitoring conditions, performance criteria, Best Available Technology (BAT) and development and implementation of a Best Management Practices (BMP) plan to reduce or eliminate the loss of process fluids to ground water.

As directed in the permit, the BMP plan forms Appendix A of the North Concentrator Ground Water Discharge Permit and is intended to ensure prompt clean up of any spills and proper handling of process fluids and materials as well as an ongoing inspection and maintenance program for permitted facilities.

INSPECTION AND MAINTENANCE PROCEDURES

OPERATIONS

Operations at the Power Plant and Magna Process Water Containment and Pumping Facilities at the North Concentrator are controlled and monitored 24 hours a day via a combination of distributed control systems, video imagery, alarms and operator visual inspections. Every section of both facilities is assigned operators that are responsible for inspecting areas at least once a day to verify systems integrity and operations. Operators are also responsible for rectifying any deficiencies found in system components or equipment in a timely manner.

MAINTENANCE

Each operational area at the North Concentrator (Power Plant and Magna Process Water Containment and Pumping) has been assigned personnel responsible for repair and maintenance of all equipment. Scheduling of maintenance activities is part of a comprehensive preventive maintenance program (PM). The overall maintenance program utilizes computer assisted preventive maintenance scheduling. A PM schedule has been developed for each key piece of equipment.

Tracking of the PM schedule, as well as the PM procedures, is done via a computerized maintenance program called SAP. SAP is utilized as an information management system for scheduling maintenance tasks and compiling equipment, material and supply data. Based on information from the control system, feedback from operator inspections, and preset schedule inputs, SAP assists maintenance planners in tracking and scheduling PMs. When a PM is due, the computer system triggers the PM process for a specific piece of equipment. Equipment associated with the storage and transfer of process fluids are included in the SAP program.

Pre-established job procedures are printed out for the PM. Maintenance schedulers then assign an employee the responsibility of completing the work.

After PM work is completed, the employee returns a signed PM checklist to the maintenance scheduler. Items noted during inspections that require additional repairs are noted by the maintenance planner. A work order is then written for any additional repair work and the work will be scheduled. The work order tracking system is intended to ensure that proper and complete implementation of required repairs occurs. The SAP system will continue to remind maintenance planners weekly until the job work order is completed and closed out.

Systems that store, transfer or otherwise handle process solutions including pumping systems are included in the PM program. Pumping system components are inspected at a minimum of once every three months. Many system components are inspected more frequently. PM procedures for process fluid pumping systems include lubrication fluid check, inspecting foundations and mounting assemblies, pump vibrations, noise, etc., and inspection of associated piping and fittings.

Cooling tower systems and process fluid storage systems are included in the PM program and are tracked through SAP. Process fluid storage reservoirs are visually inspected when facility downtime periods allow drainage. Tank containment and sumps and associated piping are inspected monthly as required in KUC's Spill Prevention Control and Countermeasures Plan (SPCC).

The following table specifies inspection frequency for both point and area sources listed in the North Concentrator Groundwater Permit:

North Concentrator & UPP Area Point Source Inspection Schedule

COMPONENT	FLUIDS HANDLED	INSPECTION FREQUENCY
Power Plant Station Service cooling tower	Potable water (Section 21)	Continuous monitoring of water levels, weekly documented inspection
Power Plant cooling tower basin	Process water	Continuous monitoring of water levels, weekly documented inspection
No. 3 pump station	Process water	Daily observations, documentation of any repairs
UPP pump station	Potable water (Section 21)	Weekly documented Inspection
Fly Ash pipeline	Fly Ash	Daily observations, documentation of any repairs
No. 3A pump station	Process water	Daily observations, weekly documented inspection

HOUSEKEEPING

All operational KUC facilities at the historic North Concentrator adhere to strict Housekeeping standards. Housekeeping standards are enforced by area supervisors via employee training and housekeeping inspections. KUC housekeeping standards require prompt cleanup of spilled materials, and areas are to be kept reasonably free of excess dirt, grease and oil. KUC personnel are trained annually on environmental aspects of proper housekeeping.

SPILL PREVENTION / SPILL CLEANUP / SPILL REPORTING

The North Concentrator and Power Plant areas have an SPCC plan as required by the Clean Water Act. The plans specify procedures to be followed for spill response and spill prevention. Spills are contained and cleaned up as quickly as possible.

A verbal report of any noncompliance, or spills subject to the provisions of UCA 19-5-114 which may endanger public health or the environment are made as soon as possible, but no later than twenty-four hours from the time KUC first became aware of the incident. The verbal report will 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) 538-6146, during normal business hours. A written report containing specific details of the incident will be submitted to the Executive Secretary within five days of the time KUC becomes aware of the incident. Other notifications i.e. RCRA, SARA, NRC will be based on criteria described in the SPCC plan.

MATERIALS HANDLING

Liquid water treatment chemicals utilized in the Power Plant are stored in tanks that are located inside the building within containments.

The double containment status of the water treatment chemicals minimizes the possibility of leakage to ground water.

KUC enforces the Occupational Safety and Health Administration (OSHA) requirements for Hazard Communications at all facilities including the historic North Concentrator area and the Power Plant.

The following is a list of key OSHA standards enforced:

- Labels and/or appropriate warning concerning chemicals are in place
- MSDSs are maintained and readily available for all chemicals on site.
- Employees are informed and trained regarding chemicals and Hazardous Communications
- Contractor employees are informed concerning chemicals at KUC

EMPLOYEE TRAINING

All new employees are given an overview of KUC's Health, Safety, and Environmental (HSE) policy and procedures. Plant personnel receive annual standards training covering key elements of KUC's safety and environmental standards including SPCC, RCRA, Housekeeping, MSHA and OSHA Hazardous Communications. Represented employees receive the standards training from SAP online training. KUC encourages employees to actively participate in employee suggestion and improvement programs in an effort to enhance corporate environmental and safety performance.

RECORD KEEPING

Records that document compliance with the elements required in the BMP will be maintained for a minimum of three years. Copies of records are kept at the Power Plant and Tailings and Water Services record keeping centers.