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Permit No.: UGW350010

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
4700 DAYBREAK PARKWAY
SOUTH JORDAN, UTAH 84095

is granted a ground water discharge permit for the operation of the **Bingham Canyon Mine and Water Collection System** in Salt Lake County, Utah.

The Bingham Canyon Mine and Water Collection System is located on the following tracts of land (Salt Lake Base and Meridian):

Township 3 South, Range 2 West - Portions of Sections 17, 18, 19, 20, 21, 29, 30, 31, 32
Township 3 South, Range 3 West - Portions of Sections 11, 12, 13, 14, 22, 23, 24, 25, 26, 27, 33, 34, 35, 36
Township 4 South, Range 2 West - Portions of Sections 6 and 7
Township 4 South, Range 3 West - Portions of Sections 1, 2, 3, 9, 11, 12

The permit is a renewal of the original groundwater discharge permit issued May 1, 1999. 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 _____, 2015.

This permit and the authorization to operate shall expire at midnight, _____, 2020.

_____
Walter L. Baker, P.E.
Director

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I. CONSTRUCTION PERMIT ISSUANCE AND BEST AVAILABLE TECHNOLOGY (BAT) STANDARD

A. Authorized Construction

As part of this ground water discharge permit a construction permit is hereby issued to Kennecott as summarized below and detailed in Appendix K. Construction for this portion of the South End Drainage System project will require new cut-off walls and associated detention basins in the Olsen, Butterfield 1 and Yosemite drainages.

B. Design and Construction

Under authority of the Utah Water Quality Act, Section 19-5-108(1) Utah Code Ann. 1953, as amended and Utah Administrative Code R317-1, the authorized facilities will be constructed in accordance with the engineering design plans and specifications attached as Appendix K.

Construction elements include:

1. Creation of drainage basins to help control the flood events for a 25 and 100 year 24 hour storm event;

2. Placement of overflow weirs, permeable rock weirs, inlet and outlet structures, and piping systems to help meter storm flow events through the drainage system; and

3. Construction of new concrete cut-off walls to replace existing cut-off walls that will be buried under the expanded waste rock footprint.

II. SPECIFIC PERMIT CONDITIONS

A. Groundwater Classification

The groundwater classification for the uppermost aquifer in the area of the Bingham Canyon Mine and Water Collection System ranges from Class I to Class II groundwater. There are areas where groundwater has been impacted by acidic water and water quality is degraded to Class III. Groundwater at each compliance monitoring well has been classified based on historical monitoring data.

B. Groundwater Protection Levels

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

C. Best Available Technology Performance Standard

1. The Best Available Technology (BAT) for the Bingham Canyon Mine and Water Collection System will be a Discharge Minimization approach designed, constructed and operated in accordance with approved designs and specifications (Part II Section E). The design for conveying mine impacted water consists of a combination of concrete cut-off walls, toe drains; french drains or seepage collection trenches, HDPE pipelines, collection boxes, and extraction wells. Meteoric precipitation is conveyed through either the HDPE pipelines or concrete lined ditches which also act as secondary containment mechanisms for the mine impacted water HDPE pipeline system in cases where flows exceed the pipeline capacity or where maintenance of the pipeline is required.

   The BAT for the Dry Fork area shall include operation and maintenance of two extraction wells, Mid-Valley well (COP2701) and the Picnic Flats well (COG1172), located up-gradient of Dry Fork dump. These wells are in place to capture water before it contacts the waste rock dumps and the underlying contaminated groundwater.

   Operation and maintenance of a series of three alluvial extraction wells down-gradient of the toe of the Bingham Canyon dump will include the following components. The primary well is Bingham Canyon Alluvial Well (ECG2787) located within Bingham Creek; the secondary alluvial extraction well, Curtis Springs (VWK83) is down-gradient of ECG2787 and also within the alluvial channel of Bingham Creek. A third alluvial well named Copperton Channel (ECG1185) is located due north of Curtis Springs and intercepts water from an alluvial channel adjacent and north of Bingham

Creek. Production from these wells is dependent upon 1) seasonal conditions, 2) available mine impacted water from within the alluvium, and 3) the influence of up-gradient wells on the yield of down-gradient wells.

Operating parameters and regulatory obligations related to Dry Fork wells are listed in Table 2 with additional information regarding Dry Fork management contained in Appendix G.

A series of down-gradient compliance monitoring wells screened in bedrock also monitor bedrock contamination from the Dry Fork and Bingham Canyon area. The wells are ECG2789A & B, ECG1100A & B and VWK93 which have established compliance limits. With respect to the compliance monitoring wells, a remedial strategy is necessary to address bedrock groundwater contamination from Dry Fork under the guidance of Appendix C, G and the discretion of the Director. A report prepared by Kennecott to address this situation is required under Part II.J.8. of this permit.

BAT shall also include inspection and maintenance commitments included in the Compliance Monitoring Plan (Appendix A).

2. Best Available Technology for the Bluewater Repository is a low permeability clay liner and cap system as specified in Part II Section E Item 2. Only materials approved by the Director may be disposed of in the repository following analysis under the Waste Characterization Plan (Appendix B)

3. The Best Available Technologies instituted for the Chalcopyrite Heap Leach Project (CHLP) consist of double lined HDPE facilities for the Heap, Pregnant Leach Solution (PLS) Pond and Raffinate Pond. Each facility incorporates two layers of 60 millimeter HDPE liner with independent leak collection and detection systems. Performance criteria are outlined in Appendix F. If the CHLP facilities listed here do not meet the performance criteria outlined in Appendix F, Kennecott shall refer to Part II Section H of this permit.

4. Closure - The Bingham Canyon Mine and Water Collection System shall undergo closure in accordance with the requirements of the approved closure plan (Appendix D – Bingham Canyon Mine 2003 Reclamation and Water Management Plan, March 2003) submitted in conformance with Part II Section J Item 3.

5 Implementation of Best Management Practices - Kennecott Utah Copper LLC (Kennecott) shall operate the facilities specified in the Best Management Practices Plan (Appendix F) in accordance with that plan upon approval of the plan pursuant to Part II Section J.

D. Permitted Facilities

The Facilities authorized under this permit include:

1. The Bingham Canyon Mine and existing associated facilities: All Bingham Canyon Mine maintenance facilities, South Area Water Services (SAWS), and the Bingham Canyon Water Treatment Plant.

2. The East, South and West Side waste rock dumps and collection systems.

3. Pipelines, conveyance ditches, collection boxes, pump back wells and associated structures used to convey flows of meteoric and storm water that originate from Kennecott's waste rock piles adjacent to the Bingham Canyon Mine. The Large and Small Bingham Reservoirs are not included in this permit but are covered under separate ground water quality discharge permits.

4. Bluewater Repository – The repository is located on the north end of the east waste rock piles. As specified in Appendix B, the Bingham Canyon Mine and Water Collection System ground water quality discharge permit includes pertinent portions of the prior Bluewater Repository ground water quality discharge permit. Each segment of the repository includes a leachate collection system that routes flows to the leach collection pipeline.

5. SXEW (Solvent Extraction/Electrowinning) Facilities pursuant to approval of plans and specifications submitted in accordance with Part II, Section J, item 4 of this permit.

6. Chalcopyrite Heap Leach Project – Includes a lined leach pad containing low grade copper ore as well as the associated pregnant leach solution pond, raffinate pond and sulfuric acid tank with secondary containment. The leach pad covers approximately 420,000 square feet. From bottom to top, it is constructed of six inches of compacted clay, six inches of compacted silty sand and HDPE and PVC lines.

E. Design and Construction

1. The Bingham Canyon Mine and Water Collection System is constructed according to the specifications, plans and drawings included in the permit application entitled:

a. Bingham Canyon Mine Eastside Collection Monitoring Network Ground Water Discharge Permit Application (revised) dated April 1996 (submitted June 13, 1996)

b. Geohydrology of the Dry Fork Region, Bingham Canyon Mine, Kennecott Utah Copper, May 1994 (submitted Feb. 25, 1997)
c. Supplemental application materials transmitted in letters of October 23, 1997 from Elaine Dorward-King, January 6, 1998 and August 31, 1998 from David J. Cline.

d. Contaminant Investigation and Corrective Action Plan for the Dry Fork Area, September 2002 (Submitted Sept. 26, 2002)

e. Supplemental application materials related to the Dry Fork area detailed in letters dated January 21, February 11 and March 10, 2003 (from Paula Doughty to the DWQ).

f. Supplemental Dry Fork Management Plan materials titled "Proposal to Relocate Dry Wells – Rio Tinto Kennecott Utah Copper (KUC) Bingham Canyon Mine Water Collection System Ground Water Discharge Permit No. UGW350010" dated September 22, 2008

g. Groundwater Discharge Permit Modification Application for East Waste Rock Extension, groundwater discharge permit UGW350010, submitted August 2012.

h. Groundwater Discharge Permit Modification Application for South Waste Rock Reclamation, groundwater discharge permit UGW350010, submitted November 2014.

2. The Bluewater North Repository segment and the Bluewater Main Repository segment are constructed according to the design specifications and drawings submitted May 17, 1991 as amended by Addendum No. 1 submitted June 6, 1991 and plans for expansion of the repository submitted December 18, 1992. These include:

a) *Clay Bottom Liner* - the bottom liner consists of a 12 inch thick clay layer with an in place hydraulic conductivity of no greater than 1 X 10^{-7} cm/sec.

b) *Seepage Collection System* - a seepage collection system constructed on the bottom clay liner consisting of a 4 inch minimum HDPE slotted pipe buried in 3/8 inch gravel surrounded by geo-textile and running the length of the landfill.

c) *Clay Barrier* - a 12 inch thick clay cap constructed on top of the tailings. The cap has a hydraulic conductivity no greater than 1 X 10^{-7} cm/sec.

d) *Clay Soil Layer* - a 34 inch clay soil layer placed on top of the 12 inch clay barrier. This layer has a hydraulic conductivity no greater than 1 x 10^{-4} cm/sec.

e) *Topsoil Layer* - An eight-inch layer of topsoil placed on top of the clay cap layers. This layer will be vegetated in accordance with reclamation requirements of the Division of Oil Gas and Mining.

f) *Run-on and Run-off Control* - Surface water run-on is controlled by site grading and ditches to direct drainage away from the repository.

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 compliance or operational 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 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 as described in Part II. F. 1 (a).

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 collected 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 (2014).

f) *Constituents Sampled* - The following analyses shall be performed on all water quality samples collected:

i) Field Measurements: pH, specific conductance, temperature
ii) Laboratory Analysis:

- Alkalinity
- Major Ions: (chloride, sulfate, sodium, potassium, magnesium, and calcium)
- Metals (dissolved): (arsenic, cadmium, chromium, copper, lead, selenium, and zinc)
- TDS

g) Analytical Procedures - Water sample analysis will be conducted according to test procedures specified under UCA R317-6-6.3L with the exception of selenium analysis. Analysis for selenium will be conducted using the Hydride ICP Mass Spectroscopy Method as approved in the April 17, 1998 letter from the Director and/or the Inductively Coupled Plasma Mass Spectrometry-Dynamic Reaction Cell (ICPMS-DRC) method as approved in the March 7th, 2003 letter from the Director.

2. Operational Monitoring

Operational Monitoring will be used to assess effectiveness of the water collection system including the following aspects:

a) Mine Impacted Water - Flow and water quality data from the water collection system.

b) Bluewater Repository Leachate Collection System - Flows and water quality from the leachate collection system.

c) Tunnel Flows - Flows from the mine tunnels that underlie the Waste Rock Piles for the Bingham Canyon Mine.

d) Informational Wells – Table 3 lists the informational monitor wells that will be used to supplement compliance monitor wells down-gradient of the collection system and within the Dry Fork area.

e) Groundwater Extraction Rates – Annual volume of water removed from the three alluvial extraction wells down-gradient of Dry Fork (ECG2787, VWK83 and ECG1185) as well as Bingham Canyon cut-off wall and the two water capture wells up-gradient of Dry Fork (COP2701 and COG1172).

3. Monitoring Frequency

a) *Well Monitoring Frequency* - All existing compliance monitoring wells scheduled for sampling are listed in Table 1. Compliance monitoring wells screened in alluvium will be sampled quarterly throughout the term of this permit, while compliance monitoring wells screened in bedrock, including those in the Dry Fork area, will be sampled semi-annually. Any newly drilled monitoring wells (to be used for compliance wells), will be sampled quarterly for 12 consecutive quarters (3 years) following installation to establish baseline groundwater quality. However, if a preexisting monitoring well has at least three years of data, the compliance limits for that well will be calculated and established. Following completion of 12 quarterly samples, monitoring shall change to a semi-annual (bedrock completion) or quarterly (alluvial completion) sampling frequency unless more frequent sampling is required under other terms of this permit.

b) *Operational Monitoring Frequency* - Operational monitoring including collection system flows, tunnel flows, informational wells, pumping rates from extraction wells and leachate collected from the Bluewater Repository shall occur as specified in Appendix E of this permit.

4. Post-Closure Monitoring

Kennecott shall conduct post-closure monitoring in accordance with the approved post closure monitoring program that is submitted and approved with the closure plan (Bingham Canyon Mine 2003 Reclamation and Water Management Plan, March 2003) submitted in in conformance with Part II Section J item 3 of this permit.

G. Non- Compliance for Ground Water Protection Levels

1. Probable Out of Compliance - If the concentration of a pollutant from any compliance monitoring well sample exceeds the compliance limit (in the case of pH exceeds the higher or lower limit) (Table 1) Kennecott shall:

a. Notify the Director in writing within 30 days of receipt of the data;

b. Initiate monthly sampling for the compliance monitoring well(s) that have exceeded the compliance limit (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

Out of compliance status exists when two or more consecutive samples from a compliance monitoring well exceed the compliance limit for a pollutant (Table 1). 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 discovery 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 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 Director.

H. 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 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.

I. Reporting Requirements

1. Reporting

a. *Monitoring Wells* - Water quality sampling results for compliance monitoring wells, shall be submitted quarterly to the Director as follows:

Quarter Sampled In		Results Due On
1st	(Jan., Feb., March)	May 15
2nd	(April, May, June)	August 15
3rd	(July, Aug., Sept.)	November 15
4th	(Oct., Nov., Dec.)	February 15

b. *Operational Monitoring* - Operational monitoring results and analysis, including results from collection sites, Bluewater Repository, tunnels, informational wells, extraction wells and surface water sites (seeps), shall be submitted in an annual report by March 31 of each year in accordance with the requirements of Appendix E.

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

2. Electronic Filing Requirements - In addition to submittal of the hard copy data, above, the permittee will electronically submit the required groundwater

monitoring data in the electronic format specified by the Director. The data may be sent by e-mail, compact disc, mass storage device or other approved transmittal mechanism.

J. Compliance Schedule

1. Bluewater Main Repository – Future construction of a clay liner or cap will conform to the Quality Assurance/Quality Control plan approved for the 2004 - 2010 groundwater discharge permit for the Bluewater Repository. For all construction of clay liner or cap that is completed at the Bluewater Main Repository during the term of the Bingham Canyon Mine and Water Collection System ground water discharge permit, an "As Built" report shall be submitted to the Director within 60 days of final completion of a segment of the repository documenting that the construction conformed to the Quality Assurance/Quality Control Plan.

2. *Permit Renewal Application Items* - As a part of the application for permit renewal each five years, Kennecott will include a water quality summary of the previous data collected for operational and compliance monitoring wells. Data from the Operational Monitoring program will be included in this summary. The summary will include an analysis of trends and any changes in the data over the life of the permit.

3. *Closure Plan* - Kennecott shall submit a conceptual closure plan for the Bingham Canyon Mine and Water Collection System for approval by the Director in conjunction with major changes and revisions, the approved closure plan is attached in Appendix D of this permit. The plan will provide detail on all aspects of closure that are related to or have an impact on water quality. For any issues that require further study prior to finalizing aspects to the closure plan, details on what each study will include, and a schedule with milestones for each segment of the study shall be included in Kennecott's plan. The closure plan includes preliminary designs and a schedule to modify the waste rock dumps to minimize infiltration of meteoric water through the dumps.

   The Closure Plan includes a post closure water quality monitoring plan that describes how post closure monitoring will be undertaken, including monitoring stations, frequency of monitoring, and parameters to be analyzed.

   The conceptual closure plan will be updated to include any major updates or changes in the closure plan.

   One year prior to final closure, Kennecott shall submit for approval by the Director, a final closure plan that addresses all aspects of closure that are related to or have an impact on water quality.

4. *SXEW Plans and Specifications* – Kennecott shall submit, for approval by the Director, plans and specifications for all future SXEW (Solvent Extraction/Electrowinning) operations associated with the Bingham Canyon Mine. Plans and specifications shall include the BAT proposed along with monitoring and maintenance measures to meet the requirements of this permit and the ground water quality discharge regulations. Plans and specifications shall be submitted 180 days prior to the planned date for commencement of construction of these facilities.

5. Kennecott shall provide DWQ with ongoing updates on the progress of the EWRE and SWRR projects in the quarterly reports required under the permit and outlined in Appendix H. If there is no construction activity or work being performed as listed in Appendix H, Table H-1, progress reports shall not be included in the groundwater quarterly reports.

6. Kennecott shall provide DWQ with written notification of any significant changes or findings that are significantly different than those described in either the EWRE or SWRR permit modification application and provide quarterly updates as outlined in appendix H.

7. Within one year of completion, Kennecott shall submit a final report to DWQ for each of the EWRE and SWRR projects as outlined in Appendix H.

8. Within 30 days of the effective date of this permit, Kennecott shall submit an updated contamination investigation report regarding the bedrock groundwater contamination in Dry Fork for DWQ review and approval.

9. Within 1 year of the effective date of this permit, Kennecott shall submit a remedial design that will be implemented to address the bedrock groundwater contamination in Dry Fork for DWQ review and approval.

III. MONITORING, RECORDING AND REPORTING REQUIREMENTS

A. Representative Sampling. Samples collected 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
P.O. Box 144870
195 North 1950 West
Salt Lake City, Utah 84114-4870
Attention: Ground Water Quality Program

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 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) 538-6146, during normal business hours (8:00 am - 5:00 pm Mountain Standard 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; and,

   e. Steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

3. Reports shall be submitted to the addresses in Part III 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.

IV. 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.

V. 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 the 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 V.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 V.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 water quality of the facility is significantly worse than represented in the original permit application.

Table 1: Permit Limits for Dry Fork and Bingham Canyon Compliance Wells for UGW350010

Well ID	Screen Lithology	Sampling Frequency	Northing (ft)	Easting (ft)	pH	TDS mg/L	SO4 mg/L	Diss. Cd mg/L	Diss. Cu mg/L	Diss. Zn mg/L
BRG287	Bedrock	Semi-annually	14559	16105	6.17-8.5	3219	830	0.001	0.325	1.25
BRG921	Bedrock	Semi-annually	13190	16540	6.5-8.5	2341	926	0.001	0.325	1.25
BRG999	Bedrock	Semi-annually	14479	17043	6.48-8.5	1607	587	0.001	0.325	1.25
COG2806A	Bedrock	Semi-annually	17605	8389	6.5-8.5	496	47	0.050	0.170	0.10
COG2806B	Bedrock	Semi-annually	17605	8389	6.5-8.5	465	42	0.056	0.001	0.03
ECG1100A	Bedrock	Semi-annually	16058	12362	6.5-8.5	3947	2404	0.002	0.650	2.85
ECG1100B	Bedrock	Semi-annually	16058	12362	6.5-8.5	390	79	0.001	0.130	1.25
ECG1186	Alluvium	Quarterly	9646	18578	6.5-8.5	2002	875	0.001	0.325	1.25
ECG1187	Alluvium	Quarterly	7539	18457	6.5-8.5	1589	169	0.001	0.325	1.25
ECG1188	Alluvium	Quarterly	16105	22493	6.5-8.5	4360	2122	0.003	0.650	2.50
ECG1189	Alluvium	Quarterly	13054	19989	6.5-8.5	763	23	0.001	0.325	1.25
ECG1190	Alluvium	Quarterly	11715	19026	6.5-8.5	1030	70	0.001	0.325	1.25
ECG299	Bedrock	Semi-annually	13807	17474	4.3-8.5	4619	3232	0.020	2.81	3.09
ECG2789A	Bedrock	Semi-annually	16041	11495	6.5-8.5	3926	2220	0.050	1.20	0.20
ECG2789B	Bedrock	Semi-annually	16041	11495	6.5-8.5	5987	3509	0.050	3.00	0.60
ECG902	Bedrock	Semi-annually	12180	17214	6.5-8.5	1321	338	0.001	0.325	1.25
ECG905	Bedrock	Semi-annually	10839	16434	6.06-8.5	2613	1495	0.001	0.325	1.25
ECG906	Bedrock	Semi-annually	9121	17481	6.5-8.5	4844	2434	0.003	0.650	2.50
ECG907	Bedrock	Semi-annually	7087	17875	6.5-8.5	2004	278	0.001	0.325	1.25
ECG916	Bedrock	Semi-annually	9692	15269	6.5-8.5	862	254	0.001	0.325	1.25
ECG917	Alluvium	Quarterly	6289	18385	6.5-8.5	1422	164	0.001	0.325	1.25
ECG924	Alluvium	Quarterly	661	16870	6.20-8.5	5739	3021	0.004	0.650	2.50
ECG925	Alluvium	Quarterly	1343	17470	6.39-8.5	3498	1365	0.001	0.325	1.25
ECG928	Bedrock	Semi-annually	5126	18358	6.5-8.5	860	68	0.001	0.325	1.25
ECG931	Bedrock	Semi-annually	-708	16395	6.39-8.5	6004	625	0.005	0.650	2.50
ECG932	Bedrock	Semi-annually	-2325	14914	6.5-8.5	796	164	0.001	0.325	1.25
ECG934	Bedrock	Semi-annually	-4704	14177	6.5-8.5	1157	449	0.001	0.325	1.25
ECG935	Bedrock	Semi-annually	-6210	13555	6.47-8.5	4771	2794	0.003	0.650	2.50
ECG936	Bedrock	Semi-annually	-6303	12389	6.36-8.5	5159	3160	0.003	0.650	2.50
ECG937	Bedrock	Semi-annually	-8174	11378	6.5-8.5	1359	476	0.001	0.325	1.25
ECG938	Bedrock	Semi-annually	-8909	9785	6.5-8.5	1016	266	0.001	0.325	1.25
LTG1191	Alluvium	Quarterly	3749	20548	6.17-8.5	5888	3525	0.096	0.650	23.33
VWK72	Alluvium	Quarterly	13841	18189	6.45-8.5	2060	750	0.008	0.325	1.25
K93	Bedrock	Semi-annually	16021	13562	6.5-8.5	480	39	0.050	0.100	0.06
VWP220	Bedrock	Semi-annually	10999	16234	6.5-8.5	2205	1019	0.007	0.325	1.25
VWP225	Bedrock	Semi-annually	11920	16886	6.5-8.5	1117	331	0.010	0.0	1.25
VWP228	Alluvium	Quarterly	-1491	13963	5.5-8.5	11173	7721	0.064	0.650	4.74
VWP244A	Alluvium	Quarterly	2266	16139	3.2-8.5	31790	24749	0.770	47.2	53.9
VWP244B	Bedrock	Semi-annually	2278	16124	6.34-8.5	6959	2389	0.009	0.650	2.50
VWP244C	Bedrock	Semi-annually	2285	16110	6.5-8.5	3876	1235	0.008	0.325	1.25
VWP248A	Alluvium	Quarterly	15485	17875	3.47-8.5	13854	9991	0.240	169.6	38.6
VWP248B	Bedrock	Semi-annually	15491	17849	3.96-8.5	6104	4261	0.184	24.7	19.5
VWP272	Bedrock	Semi-annually	3964	16571	6.37-8.5	4193	2144	0.006	0.650	2.50

NOTES:

All units are mg/L; pH standard units

1) Compliance limits are based on 1.25 times the background concentration for TDS for class II and III ground water
2) For many wells cadmium, copper and zinc were predominantly non detects, compliance limits determined from the ground water quality standard.
3) Where the background concentrations is <detection, compliance limits are based on 0.25 times the ground water quality standard for Class II ground water and 0.50 times the ground water quality standard for Class III ground water for cadmium, copper and zinc
4) If background value exceeds the ground water quality standard; therefore, the Protection Level equals the background value
5) The Compliance Limits for IV ground water are the higher of the ground water quality standard, the mean *1.25 or the mean + 2 std. dev.
6) There is not a ground water quality standard for SO4
7) Compliance limits for sulfate were calculated as the higher of the mean+2 std. dev. or 1.25 times the mean
8) Range of pH values for Compliance Limits are based on the higher and lower limit of 6.5-8.5 and/or mean + and - 2 std. dev.
9) Coordinate system in KUCC True North southend map drawn in 1927 State Plane Utah central Zone
10) Limits were set using all available data for each individual well through 2008

Table 2: Permit Conditions for Dry Fork Extraction Wells

Well ID & Name	General Location	Permit Condition
Up-gradient (Clean Water Capture)		
COP2701 (Mid-Valley)	300 ft. up-gradient of Dry Fork dump	- Keep surrounding alluvium substantially dewatered - Applies to both wells
COG1172 (Picnic Flats)	1500 ft. up-gradient of Dry Fork dump	
Down-gradient (Alluvial Extraction)		
ECG2787 (Bingham Canyon Alluvial Well)	900 ft. down-gradient of Bingham Canyon dump	- Target pumping rate is 100 acre-feet/year based on a 3 year rolling average[1] - Pumping to continue until sulfate concentration <5000 mg/L - If sulfate concentration >5000 mg/L resume pumping
VWK83 (Curtis Springs)	3200 ft. down-gradient of Bingham Canyon dump	- Target pumping rate is 100 acre-feet/year based on a 3 year rolling average[1] - If alluvial well water level <92 feet then decrease pumping rate to match inflow - Pumping rate may be decreased or stopped to match inflow if it is determined that up-gradient alluvial pumping well(s) are diminishing available alluvial water - Pumping to continue until sulfate concentration <5000 mg/L - If sulfate concentration >5000 mg/L resume pumping
ECG1185 (Copperton Channel)	3500 ft. down-gradient of Bingham Canyon dump	- Pump alluvium at a rate consistent with available inflow of contaminated water - Pumping may cease if the quantity of alluvial water is less than the well can sustain
ECP2562 (Bingham Creek COW)	5600 ft. down-gradient of Bingham Canyon dump	- None specific to Dry Fork plume

Note:
[1] Target pumping rate is 100 acres-feet per year based upon a three year rolling average for both K83 and ECG2787 combined. The pumping rates for ECG2787 may influence available water that can be extracted from the alluvium by K83.

Table 3: Informational Wells for Permit #UGW350010

Well ID	Site Description	Screen Lithology	Sampling Frequency	Northing (ft)	Easting (ft)
ECG2787	Extraction well at the Mouth of Bingham Canyon	Alluvium	Annually	16133	12382
ECG1185	Copperton Channel Extraction Well	Alluvium	Annually	16909	14862
ECG1184	the Mouth of Butterfield Canyon	Alluvium	Annually	-1537	17816
ECG933	Saints Rest Drainage	Bedrock	Annually	-2975	14227
COP2701 (Mid Valley)	Upper Dry Fork Extraction Well	Alluvium	Annually	20135	2199
COG1172 (Picnic Flats)	Second Upper Dry Fork Extraction Well	Alluvium	Annually	20926	952
K83 (Curtis Springs)	Extraction well at the mouth of Bingham Canyon	Alluvium	Annually	16031	14582

Note

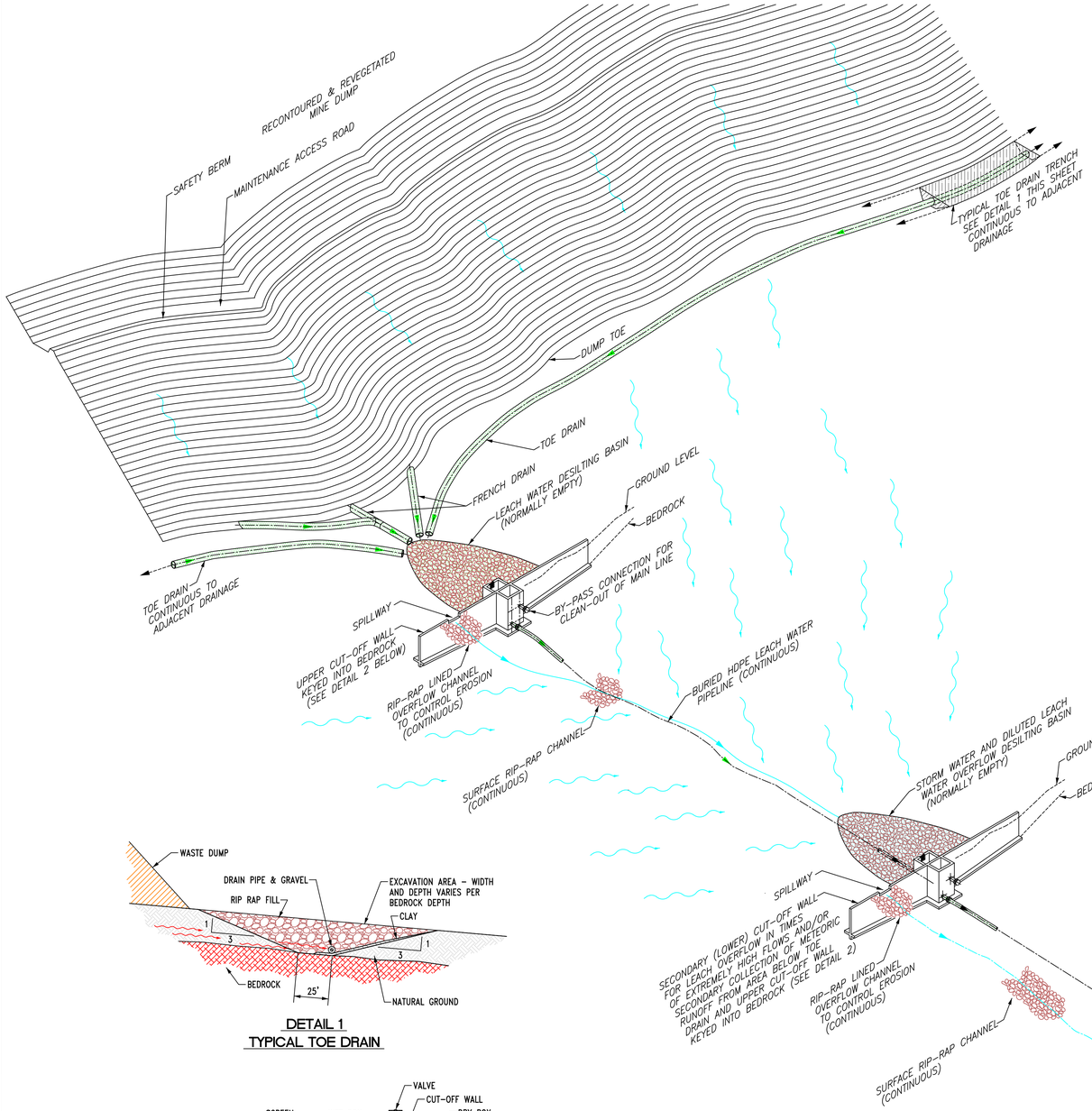
1) Coordinate system in KUCC True North southend map drawn in 1927 State Plane Utah Central Zone

Table 4: Groundwater Discharge Permit #UGW350010 Sample Point Coordinates

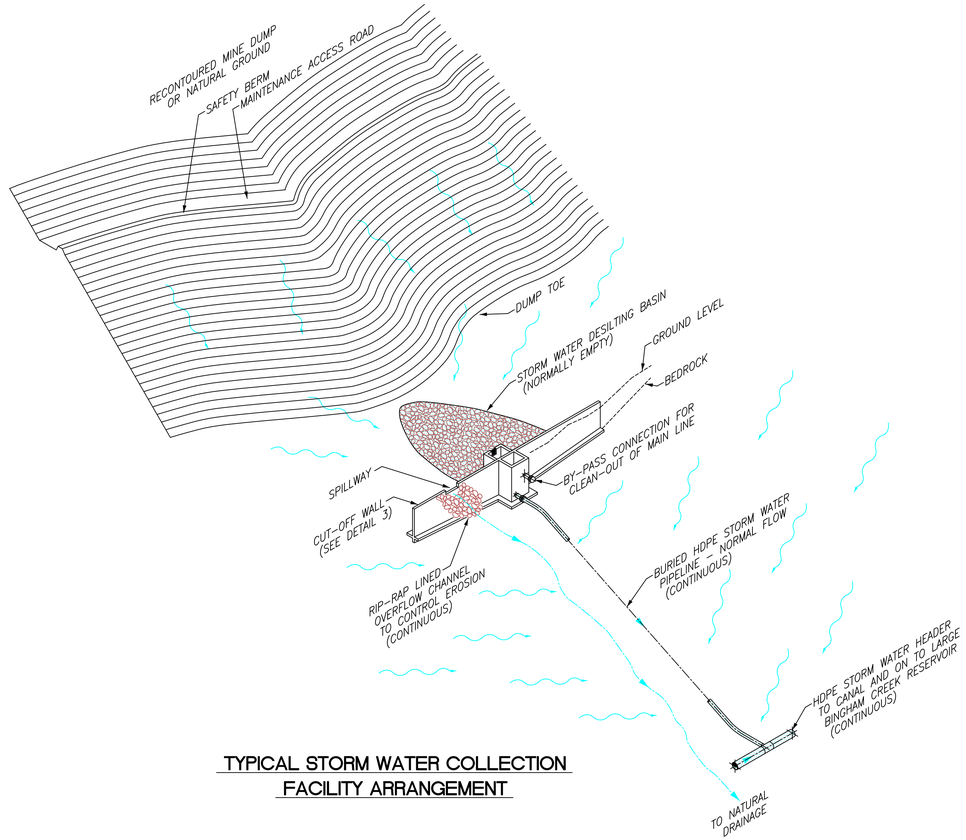
	KUC True North		Lat-Long DMS		State Plane	
Sample ID	**Northing (ft)**	**Easting (ft)**	**Lattitude**	**Longitude**	**SP83 North (ft)**	**SP83 East (ft)**
ECP2562	15784	16905	40° 33' 37.97"	112° 5' 57.05"	7,373,491.80	1,473,936.80
ECP2682	15145	13910	40° 33' 31.68"	112° 6' 35.86"	7,372,875.60	1,470,937.10
MDP2679	14467	13613	40° 33' 24.98"	112° 6' 39.71"	7,372,199.60	1,470,635.40
ECP2709	12271	16656	40° 33' 3.26"	12° 6' 0.31" W	7,369,981.00	1,473,661.60
ECP2674	11022	16182	40° 32' 50.92"	112° 6' 6.45"	7,368,735.40	1,473,179.30
ECP2670	9391	15692	40° 32' 34.81"	112° 6' 12.82"	7,367,108.50	1,472,676.60
ECP2668	9189	15494	40° 32' 32.81"	112° 6' 15.38"	7,366,907.40	1,472,477.60
ECP2662	8733	15468	40° 32' 28.31"	112° 6' 15.72"	7,366,452.20	1,472,448.20
ECP1654	7792	16070	40° 32' 19.01"	112° 6' 7.93"	7,365,507.10	1,473,043.30
ECP2651	7084	16131	40° 32' 12.01"	112° 6' 7.15"	7,364,798.30	1,473,098.80
ECP2648	5204	16175	40° 31' 53.43"	112° 6' 6.60"	7,362,917.80	1,473,128.60
ECP2629	4127	16110	40° 31' 42.79"	112° 6' 7.45"	7,361,841.50	1,473,055.70
ECP2627	3223	15792	40° 31' 33.86"	112° 6' 11.57"	7,360,940.00	1,472,731.50
ECP2624	2349	15760	40° 31' 25.22"	112° 6' 12.00"	7,360,065.90	1,472,692.40
ECP2618	915	15607	40° 31' 11.05"	112° 6' 13.99"	7,358,633.00	1,472,529.00
ECP2616	-1302	12460	40° 30' 49.17"	112° 6' 54.75"	7,356,440.30	1,469,366.10
ECP2614	-2797	13156	40° 30' 34.39"	112° 6' 45.75"	7,354,939.90	1,470,050.90
ECP2612	-4318	13304	40° 30' 19.36"	112° 6' 43.84"	7,353,418.00	1,470,188.00
ECP2606	-5637	13598	40° 30' 6.33"	12° 6' 40.05"	7,352,097.40	1,470,471.80
ECP2605	-7876	9515	40° 29' 44.22"	112° 7' 32.91"	7,349,888.20	1,466,372.90
ECP2603	-8670	8481	40° 29' 36.38"	112° 7' 46.30"	7,349,102.10	1,465,332.90
ECP2601	-9483	6350	40° 29' 28.35"	112° 8' 13.88"	7,348,304.60	1,463,196.40
ECP2664	8990	16938	40° 32' 30.84"	112° 5' 56.68"	7,366,698.40	1,473,919.90
UPD010	-10026	10313	40° 29' 22.97"	112° 7' 22.59"	7,347,732.30	1,467,155.10
BMP2712	-1255	-2563	40° 30' 49.66"	112° 10' 9.26"	7,356,597.80	1,454,343.90
ECP2689	13680	7595	40° 33' 17.23"	112° 7' 57.68"	7,371,457.20	1,464,611.80
ECP2631	3569	17231	40° 31' 37.27"	112° 5' 52.94"	7,361,275.40	1,474,172.40
ECP2710	15715	14960	40° 33' 37.30"	112° 6' 22.25"	7,373,437.20	1,471,991.40
LWP2632	3736	17773	40° 31' 38.92"	112° 5' 45.92"	7,361,438.80	1,474,715.50
BRP292	14146	16561	40° 33' 21.79"	112° 6' 1.52"	7,371,856.80	1,473,580.80
BRP1476	13770	15740	40° 33' 18.08"	112° 6' 12.16"	7,371,486.90	1,472,757.10
COG1204A	16745	6868	40° 33' 47.52"	112° 8' 7.09"	7,374,527.50	1,463,907.20
COG1204B	16745	6868	40° 33' 47.52"	112° 8' 7.09"	7,374,527.50	1,463,907.20
ECG1100A	16058	12362	40° 33' 40.71"	112° 6' 55.91"	7,373,800.00	1,469,395.90
ECG1100B	16058	12362	40° 33' 40.71"	112° 6' 55.91"	7,373,800.00	1,469,395.90
K93	16005	13576	40° 33' 40.18"	112° 6' 40.18"	7,373,738.00	1,470,609.60
ECG2789A	16061	11586	40° 33' 40.74"	112° 7' 5.96"	7,373,808.40	1,468,620.30
ECG2789B	16061	11586	40° 33' 40.74"	112° 7' 5.96"	7,373,808.40	1,468,620.30
COG2806A	17605	8389	40° 33' 56.04"	112° 7' 47.36"	7,375,360.97	1,465,220.63
COG2806B	17605	8389	40° 33' 56.04"	112° 7' 47.36"	7,375,360.97	1,465,220.63
ECG1203	16124	12333	40° 33' 41.36"	112° 6' 56.28"	7,373,865.90	1,469,367.80
ECG1185	16909	14862	40° 33' 49.10"	112° 6' 23.51"	7,374,631.90	1,471,902.30
ECG1184	-1537	17816	40° 30' 46.81"	112° 5' 45.41"	7,356,165.30	1,474,719.80
ECG933	-2975	14227	40° 30' 32.62"	112° 6' 31.89"	7,354,753.50	1,471,120.20
COP2701	20224	2290	40° 34' 21.90"	112° 9' 6.40"	7,378,039.60	1,459,355.30
COG1172	20926	952	40° 34' 28.84"	112° 9' 23.73"	7,378,751.70	1,458,023.10
VWK83	16031	14582	40° 33' 40.43"	112° 6' 27.14"	7,373,756.50	1,471,616.20
BRG287	14559	16105	40° 33' 25.87"	112° 6' 7.42"	7,372,272.70	1,473,128.20
BRG921	13190	16540	40° 33' 12.34"	112° 6' 1.80"	7,370,900.60	1,473,552.80
BRG999	14479	17043	40° 33' 25.08"	112° 5' 55.27"	7,372,186.50	1,474,065.50
ECG1186	9646	18578	40° 32' 37.31"	112° 5' 35.43"	7,367,342.20	1,475,564.70
ECG1187	7539	18457	40° 32' 16.49"	112° 5' 37.02"	7,365,236.10	1,475,428.00
ECG1188	16105	22493	40° 33' 41.10"	112° 4' 44.64"	7,373,771.80	1,479,527.50

Table 5: Groundwater Discharge Permit #UGW350010 Sample Point Coordinates

	KUC True North		Lat-Long DMS		Utah State Plane	
Sample ID	**Northing (ft)**	**Easting (ft)**	**Lattitude**	**Longitude**	**SP83 North (ft)**	**SP83 East (ft)**
ECG1189	13054	19989	40° 33' 10.97"	112° 5' 17.12"	7,370,739.10	1,477,000.60
ECG1190	11715	19026	40° 32' 57.75"	112° 5' 29.61"	7,369,407.60	1,476,027.70
ECG299	13807	17474	40° 33' 18.43"	112° 5' 49.69"	7,371,510.70	1,474,491.70
ECG902	12180	17214	40° 33' 2.36"	12° 5' 53.08"	7,369,886.20	1,474,219.10
ECG905	10839	16434	40° 32' 49.11"	112° 6' 3.19"	7,368,550.60	1,473,429.70
ECG907	7087	17875	40° 32' 12.03"	112° 5' 44.56"	7,364,788.60	1,474,842.90
P225	11920	16886	40° 32' 59.79"	112° 5' 57.33"	7,369,628.30	1,473,889.30
ECG916	9692	15269	40° 32' 37.78"	112° 6' 18.30"	7,367,411.90	1,472,255.50
ECG917	6289	18385	40° 32' 4.14"	12° 5' 37.96"	7,363,986.80	1,475,347.10
ECG928	5126	18358	40° 31' 52.86"	112° 5' 38.40"	7,362,831.63	1,475,302.28
ECG924	661	16870	40° 31' 8.54"	12° 5' 57.63"	7,358,370.50	1,473,790.70
ECG925	1343	17470	40° 31' 15.27"	112° 5' 49.86"	7,359,047.50	1,474,395.30
ECG931	-708	16395	40° 30' 55.01"	112° 6' 3.80"	7,357,004.60	1,473,305.00
ECG932	-2325	14914	40° 30' 39.04"	112° 6' 22.99"	7,355,398.50	1,471,812.00
ECG934	-4704	14177	40° 30' 15.54"	112° 6' 32.55"	7,353,025.40	1,471,057.50
ECG935	-6210	13555	40° 30' 0.66"	12° 6' 40.61"	7,351,523.90	1,470,424.60
ECG936	-6303	12389	40° 29' 59.75"	112° 6' 55.70"	7,351,439.80	1,469,258.30
ECG937	-8174	11378	40° 29' 41.27"	112° 7' 8.80"	7,349,576.80	1,468,233.40
ECG938	-8909	9785	40° 29' 34.01"	112° 7' 29.42"	7,348,853.20	1,466,635.30
LTG1191	3749	20548	40° 31' 39.02"	112° 5' 9.98"	7,361,430.60	1,477,490.80
K72	13841	18189	40° 33' 18.76"	112° 5' 40.43"	7,371,539.30	1,475,206.60
P220	10999	16234	40° 32' 50.69"	112° 6' 5.78"	7,368,711.80	1,473,230.90
P228	-1491	13963	40° 30' 47.29"	112° 6' 35.29"	7,356,239.80	1,470,867.70
P244A	2266	16139	40° 31' 24.40"	112° 6' 7.09"	7,359,980.40	1,473,071.00
P244B	2278	16124	40° 31' 24.52"	112° 6' 7.28"	7,359,992.60	1,473,056.40
P244C	2285	16110	40° 31' 24.59"	112° 6' 7.46"	7,359,999.80	1,473,042.50
P248A	15485	17875	40° 33' 35.01"	112° 5' 44.48"	7,373,185.80	1,474,905.00
P248B	15491	17849	40° 33' 35.07"	112° 5' 44.82"	7,373,192.10	1,474,878.80
P272	3964	16571	40° 31' 41.18"	112° 6' 1.48"	7,361,675.50	1,473,515.60
ECP2786	-7263	5097	40° 29' 50.29"	112° 8' 30.10"	7,350,533.80	1,461,959.20
ECS2715	-7870	9688	40° 29' 44.28"	112° 7' 30.67"	7,349,893.10	1,466,546.00
LWS2717	3813	18837	40° 31' 39.67"	112° 5' 32.14"	7,361,507.60	1,475,780.10
ECS2718	6859	16099	40° 32' 9.79"	112° 6' 7.57"	7,364,573.90	1,473,064.80
ECG2787	16165	12323	40° 33' 41.76"	112° 6' 56.41"	7,373,906.50	1,469,358.10

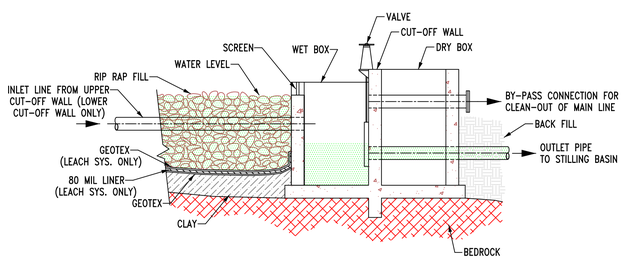


TYPICAL LEACH WATER COLLECTION FACILITY ARRANGEMENT

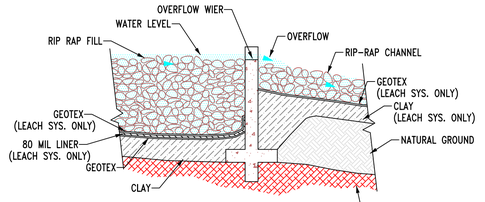


TYPICAL STORM WATER COLLECTION FACILITY ARRANGEMENT

DETAIL 1
TYPICAL TOE DRAIN



DETAIL 2
TYP. CUT-OFF WALL CROSS SECTION



DETAIL 3
CROSS SECTION AT OVERFLOW WIER
FOR FLOWS IN EXCESS OF 10YR 24HR EVENT

LEGEND

- LEACH WATER
- STORM WATER
- COLLECTED LEACH WATER FLOW
- COLLECTED STORM WATER FLOW
- ALLUVIAL FLOW
- STORM AND SNOWMELT RUNOFF FLOW

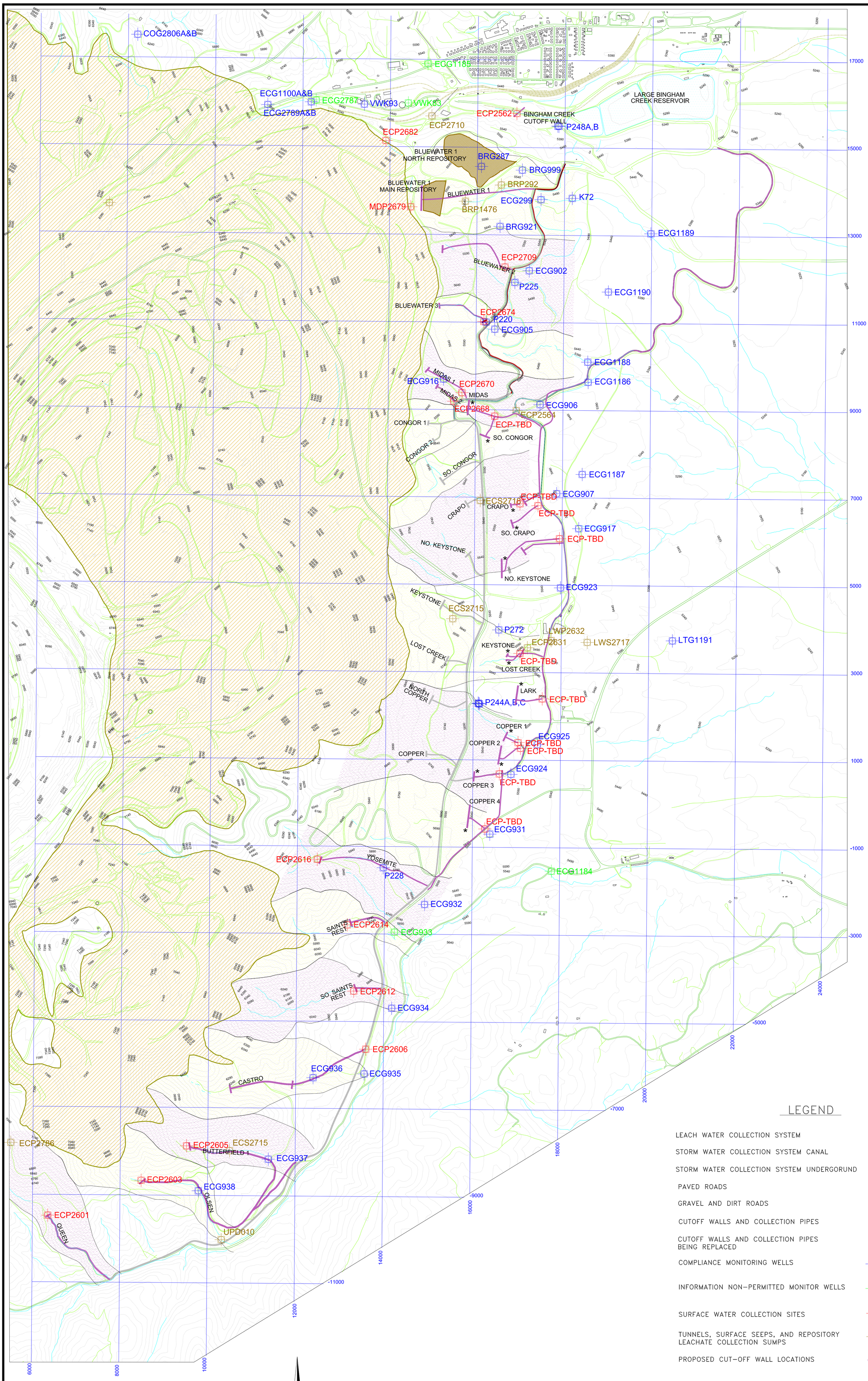
PLANT PROJECTS GROUP		
SCALE:	NONE	DATE
DESIGNED BY	RKC	8/18/93
DRAWN BY	RKC	8/19/93
CHECKED BY	JFC	8/25/93
PROJECT ENGINEER		
PROJECT MANAGER		

KENNECOTT
UTAH COPPER

EASTSIDE COLLECTION SYSTEM
GROUND WATER DISCHARGE PERMIT
TYPICAL DRAINAGE FACILITY FOR
LEACH AND STORM WATER COLLECTION

Job No. --- Dwg. No. 451-T-9080 REV 0
BY
DATE

N:\451\45119080.dwg 07/25/96 07:43 kccompb



LEGEND

- LEACH WATER COLLECTION SYSTEM
- STORM WATER COLLECTION SYSTEM CANAL
- STORM WATER COLLECTION SYSTEM UNDERGORUND
- PAVED ROADS
- GRAVEL AND DIRT ROADS
- CUTOFF WALLS AND COLLECTION PIPES
- CUTOFF WALLS AND COLLECTION PIPES BEING REPLACED
- COMPLIANCE MONITORING WELLS — ECG931
- INFORMATION NON-PERMITTED MONITOR WELLS — ECG1184
- SURFACE WATER COLLECTION SITES — ECP2612
- TUNNELS, SURFACE SEEPS, AND REPOSITORY LEACHATE COLLECTION SUMPS — ECS2715
- PROPOSED CUT-OFF WALL LOCATIONS — *

GRAPHIC SCALE

1000 0 500 1000 2000

(IN FEET)

Notes:
Topography from Bingham Canyon Mine flyover 2009 and Bingham Canyon Mine flyover 2000. (Aerographics, Inc.)

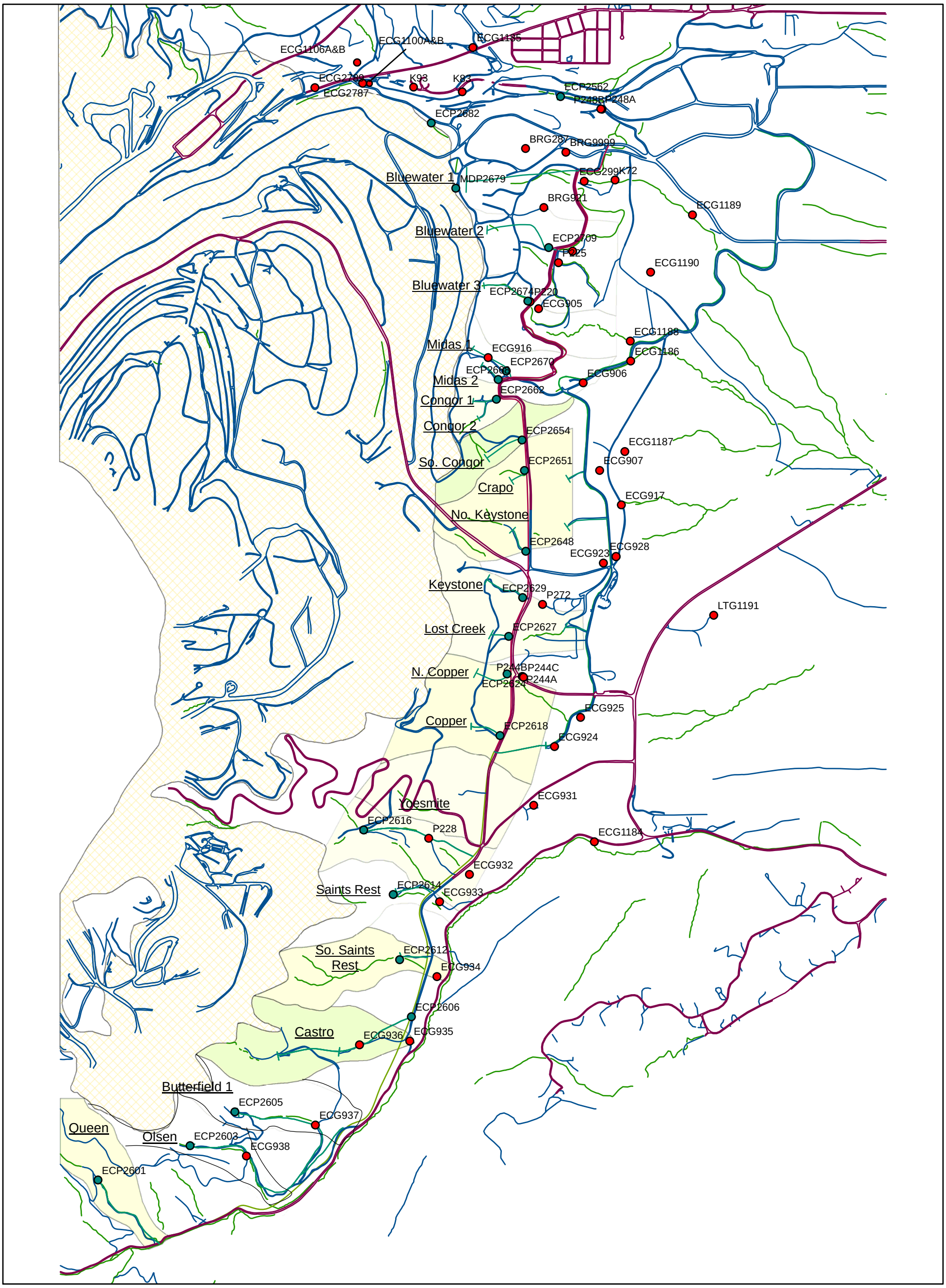
Coordinate system shown in KUCC True North, map drawn in Utah State Plane NAD27, central zone.

ENVIRONMENTAL RESTORATION GROUP		
SCALE: 1"=1000'		DATE
DESIGNED BY	VP	10/18/04
DRAWN BY	JI	5/11/10
CHECKED BY	ZK	5/2010
PROJECT ENGINEER		
PROJECT MANAGER		

KENNECOTT
UTAH COPPER

BINGHAM CANYON MINE AND WATER COLLECTION SYSTEM GROUNDWATER DISCHARGE PERMIT 2012 EWRE MODIFICATION

Job No. ---
Dwg. No. 454-T-0119
REV 1
REV DATE 10/25/2012



Legend

- ECG938 — Monitoring Well
- ECP2601 — Surface Water Collection Site
- KUC Road
- Cutoff Walls and Collection Pipes
- Storm Water Collection
- Paved Roads
- Drainages
- Waste Rock

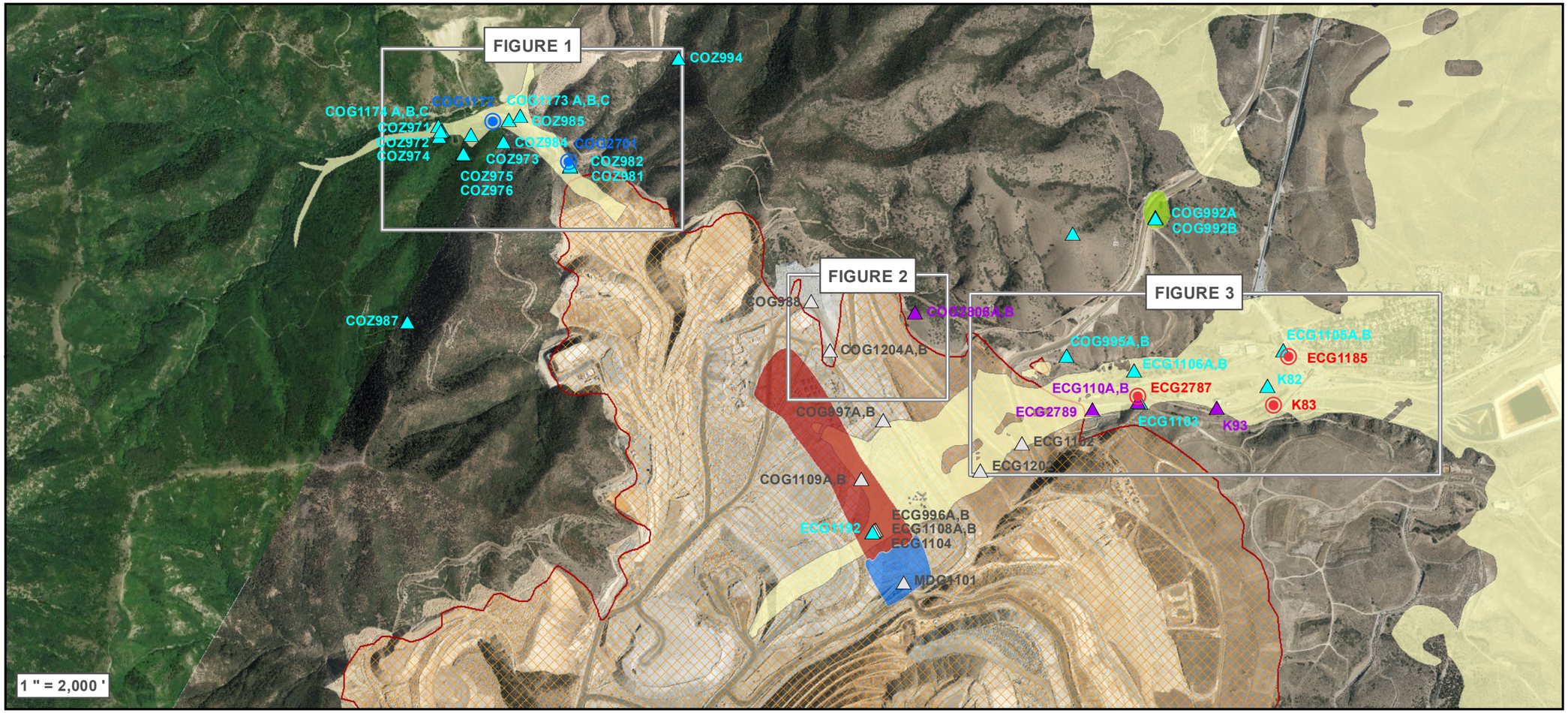
N W E S

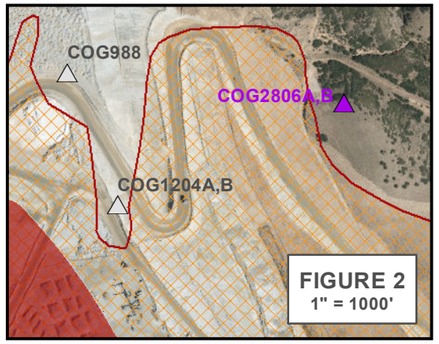
Rio Tinto

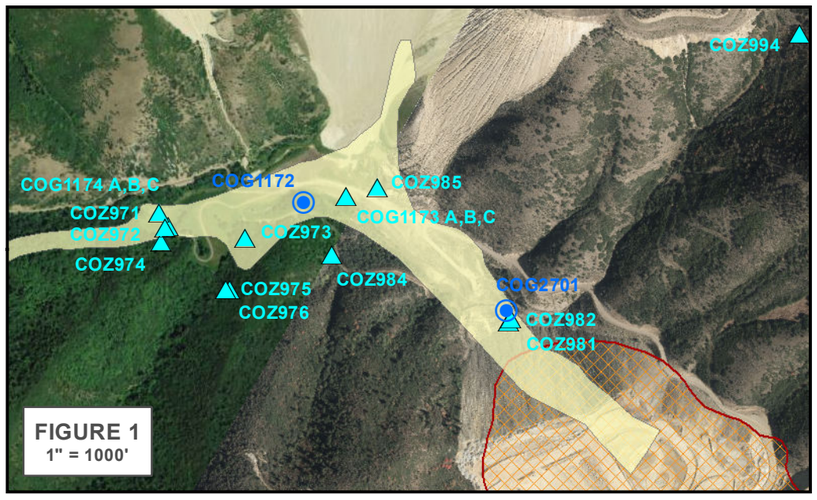
Bingham Canyon Mine and Water Collection System Groundwater Discharge Permit #UGW350010

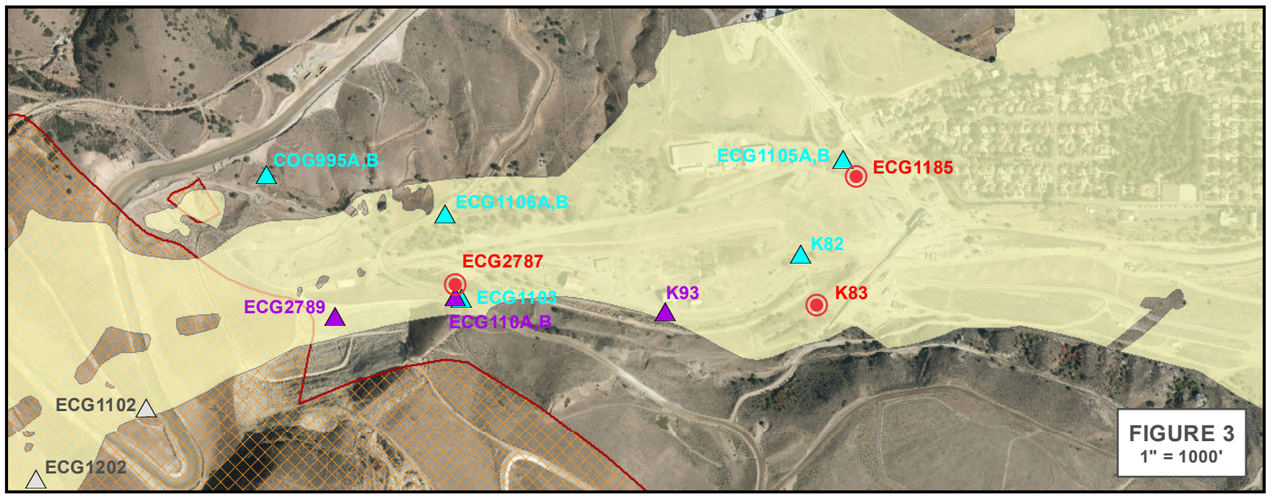
Drawing Number: 454-T-0118REV

Date: September 15, 2014
Drawn By:
Project Mgr:
Rev:









N
W E
S

LEGEND

- UPGRADIENT CLEAN WATER INTERCEPTOR WELL
- ALLUVIAL EXTRACTION WELL
- COMPLIANCE MONITORING WELL
- MONITORING WELL
- ABANDONED / BURIED WELL
- ALLUVIUM
- AREA OVERLAIN WITH WASTE ROCK
- GROUNDWATER IN BEDROCK WITH > 1000 SO4
- PERCHED WATER WITH > 500 SO4
- GROUNDWATER IN BEDROCK WITH 500-1000 SO4

Rio Tinto
Kennecott Copper

DATE: 1/23/2015 1:03:44 PM
CREATED BY: TERESA.COCKAYNE
PATH: \\USSLCAP117\GIS_PROJECTS\2015\20150123_DRYFORK_MANAGEMENTPLAN\DRYFORK_MANAGEMENTPLAN_FIG2.MXD
COORDINATE SYSTEM: NAD 1983 STATEPLANE UTAH CENTRAL FIPS 4302 FEET

FIGURE 2
DRY FORK MANAGEMENT PLAN
GROUNDWATER PERMIT