STATE OF UTAH
DIVISION OF WATER QUALITY
DEPARTMENT OF ENVIRONMENTAL QUALITY
SALT LAKE CITY, UTAH

UTAH POLLUTANT DISCHARGE ELIMINATION SYSTEM (UPDES) PERMITS

Minor Industrial Permit No. UT0025992

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

ALTON COAL DEVELOPMENT, LLC. - COAL HOLLOW PROJECT

is hereby authorized to discharge from its wastewater treatment facility to receiving waters named

Lower Robinson Creek, Sink Valley Wash and Kanab Creek

in accordance with specific limitations, outfalls, and other conditions set forth herein.

This permit shall become effective on July 27th, 2021.

This permit expires at midnight on July 26th, 2026.

Signed this 27th day of July, 2021.

Erica Brown Gaddis, PhD
Director

DWQ-2021-006036

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I. DISCHARGE LIMITATIONS AND REPORTING REQUIREMENTS

A. Description of Discharge Points. The authorization to discharge wastewater provided under this part is limited to those outfalls specifically designated below as discharge locations. Discharges at any location not authorized under a UPDES permit are violations of the *Act* and may be subject to penalties under the *Act*. Knowingly discharging from an unauthorized location or failing to report an unauthorized discharge may be subject to criminal penalties as provided under the *Act*.

Outfall	Description of Discharge Point
001	Sediment pond #1 to Lower Robinson Creek, Latitude 37° 24' 13" N, Longitude 112°27'13" W.
001B	Sediment pond #1B to Lower Robinson Creek, Latitude 37° 24' 11" N, Longitude 112°27'16" W.
002	Sediment pond #2 to Lower Robinson Creek, Latitude 37° 24' 10" N, Longitude 112°27'16" W.
003	Sediment pond #3 to Lower Robinson Creek, Latitude 37° 23' 51" N, Longitude 112°27'53" W.
004	Sediment pond #4 to Sink Valley Wash, Latitude 37° 23' 01" N, Longitude 112°27'03" W.
005	Sediment pond #5 to an unnamed tributary of Kanab Creek, Latitude 37° 25' 18.07" N and Longitude 112° 28' 35.82' W.
006	Sediment pond #6 to an unnamed tributary of Kanab Creek, Latitude 37° 25' 12.32' N and Longitude 112° 28'25.42 W.
007	Sediment pond #7 to an unnamed tributary of Kanab Creek, Latitude 37° 25' 13.95' N. and Longitude 112° 28' 8.40' W.

B. Narrative Standard. It shall be unlawful, and a violation of this permit, for the permittee to discharge or place any waste or other substance in such a way as will be or may become offensive such as unnatural deposits, floating debris, oil, scum, or other nuisances such as color, odor or taste, or cause conditions which produce undesirable aquatic life or which produce objectionable tastes in edible aquatic organisms; or result in concentrations or combinations of substances which produce undesirable physiological responses in desirable resident fish, or other desirable aquatic life, or undesirable human health effects, as determined by a bioassay or other tests performed in accordance with standard procedures.

C. Specific Limitations and Self-Monitoring Requirements.

1. Effective immediately, and lasting through the life of this permit, there shall be no acute or chronic toxicity in all Outfalls as defined and determined by test procedures described in *Part VIII* of this permit.

2. Effective immediately and lasting the duration of this permit, the permittee is authorized to discharge from all Outfalls. Such discharges shall be limited and monitored by the permittee as specified below:

Effluent Characteristics	Effluent Limitations a/				Monitoring Requirements	
	30 Day Average	7 Day Average	Daily Minimum	Daily Maximum	Sample Frequency	Sample Type
Flow, [1]MGD b/	NA	[2]NA	NA	NA	Monthly	Measured
TSS, mg/L	NA	NA	NA	70	Monthly	Grab
Turbidity, NTU c/	NA	NA	NA	Report	Monthly	Grab
Total Iron, mg/L	NA	NA	NA	1.0	Monthly	Grab
Oil & Grease, mg/L d/	NA	NA	NA	10	Monthly	Grab
Oil and Grease, floating solids, visible foam, d/	NA	NA	NA	None	Monthly	Visual
pH, standard units	NA	NA	6.5	9.0	Monthly	Grab
Sanitary Waste e/	NA	NA	NA	None	Monthly	Visual
Total Selenium, mg/L	0.0046	NA	NA	0.020	Monthly	Grab
Boron mg/L	NA	NA	NA	0.75	Monthly	Grab
1 MGD: million gallons per day		*2 NA: not applicable*				

a/ Samples collected in compliance with the monitoring requirements specified above shall be collected prior to mixing with the receiving water.

b/ For intermittent discharges, the duration of the discharge shall also be reported.

c/ Turbidity monitoring shall be conducted monthly whenever possible from all discharging Outfalls to ensure that there is not an increase of more than 10 NTU over the receiving waters, if applicable.

d/ In addition to monthly sampling for oil and grease, a visual inspection for oil and grease, floating solids, and visible foam shall be performed at least monthly. There shall be no sheen, floating solids, or visible foam in other than trace amounts. If sheen is observed, a sample of the effluent shall be collected immediately thereafter and oil and grease shall not exceed 10 mg/L in concentration

e/ There shall be no discharge of sanitary waste.

3. Specific Effluent limitations for Total Dissolved Solids. The following effluent limitations will apply to Total Dissolved Solids.

Effluent Characteristics	Effluent Limitations /a				Monitoring Requirements	
	30 Day Average	7 Day Average	Daily Minimum	Daily Maximum	Sample Frequency	Sample Type
TDS lbs/day f/	NA	NA	NA	2,000	Monthly	Grab
Outfalls 001, 001b, 002, 003, 004						
TDS mg/L	NA	NA	NA	1,900	Monthly	Grab

Irrigation Season (April – November) Non-Irrigation Season (December – March)				1,700		
Outfalls 005, 006, 007						
TDS mg/L Irrigation Season (April – November) Non-Irrigation Season (December – March)	NA	NA	NA	1,400 1,200	Monthly	Grab

a/ Samples collected in compliance with the monitoring requirements specified above shall be collected prior to mixing with the receiving water.

f/ A limit of one ton per day (2,000 lbs per day) or 366 tons per year as a sum from all discharge points is required of the permittee, unless a concentration of 500 mg/L or less is achieved at all discharge points. If 500 mg/L or less is achieved at all discharge points, then no loading limit applies. If the permittee cannot achieve the 500 mg/L concentration requirement, or the one ton per day or 366 tons per year loading limit, then the permittee will be required to remove salinity/TDS in excess of one ton per day or 366 tons per year by developing a treatment process, participating in a salinity off-set program, or developing some type of mechanism to remove the salinity/TDS. The selection of a salinity control method, if needed, must be approved by the Director of the Division of Water Quality and implemented within one year of that approval.

4. Special Metals Sampling Requirements for Outfalls 005, 006 and 007. The following monitoring requirements will apply to Outfalls 005, 006 and 007.

Effluent Characteristics	Effluent Limitations /a				Monitoring Requirements	
	30 Day Average	7 Day Average	Daily Minimum	Daily Maximum	Sample Frequency	Sample Type
Total Cadmium, mg/L	NA	NA	NA	Report	Monthly	Grab
Total Chromium, mg/L	NA	NA	NA	Report	Monthly	Grab
Total Copper, mg/L	NA	NA	NA	Report	Monthly	Grab
Total Mercury, mg/L	NA	NA	NA	Report	Monthly	Grab
Total Nickel, mg/L	NA	NA	NA	Report	Monthly	Grab
Total Lead, mg/L	NA	NA	NA	Report	Monthly	Grab
Total Silver, mg/L	NA	NA	NA	Report	Monthly	Grab
Total Zinc, mg/L	NA	NA	NA	Report	Monthly	Grab

a/ Samples collected in compliance with the monitoring requirements specified above shall be collected prior to mixing with the receiving water.

Wet Weather Limitations Any overflow, increase in volume of a discharge or discharge from a bypass system caused by precipitation within a 24-hour period less than or equal to the 10-year, 24-hour precipitation event (or snow-melt of equivalent volume) at surface water runoff pond outfalls only may comply with the following limitation instead of the otherwise applicable limitation (for TSS) contained in the *Part I.C.2*:

Effluent Characteristics	Daily Maximum
Settleable solids (SS), mL/L	0.5

In addition to the monitoring requirements specified under *Part I.C*, all effluent samples collected during storm water discharge events may also be analyzed for settleable solids. Such analyses shall be conducted by grab samples.

The operator shall have the burden of proof that the increase in discharge was caused by the applicable precipitation event described in *Part 1.C.5*. The alternate limitations in *Part 1.C.5* shall not apply to treatment systems that treat exclusively underground mine water.

5. Reporting of Wastewater Monitoring Results Monitoring results obtained during the previous month shall be summarized for each month and reported on a Discharge Monitoring Report Form (EPA No. 3320-1)* or by NetDMR, post-marked or entered into NetDMR no later than the 28th day of the month following the completed reporting period. The first report is due on August 28, 2021. If no discharge occurs during the reporting period, "no discharge" shall be reported. Legible copies of these, and all other reports including whole effluent toxicity (WET) test reports required herein, shall be signed and certified in accordance with the requirements of *Signatory Requirements (see Part VII.G*), and submitted by NetDMR, or to the Division of Water Quality at the following address:

Department of Environmental Quality
Division of Water Quality
PO Box 144870
Salt Lake City, Utah 84114-4870

* Starting January 1, 2017 monitoring results must be submitted using NetDMR unless the permittee has successfully petitioned for an exception.

II. PRETREATMENT REQUIREMENTS

A. Discharge to POTW. Any wastewaters discharged to the sanitary sewer, either as a direct discharge or as a hauled waste, are subject to Federal, State and local pretreatment regulations. Pursuant to Section 307 of The Water Quality Act of 1987, the permittee shall comply with all applicable federal General Pretreatment Regulations promulgated at 40 CFR 403, the State Pretreatment Requirements at UAC R317-8-8, and any specific local discharge limitations developed by the Publicly Owned Treatment Works (POTW) accepting the wastewaters. At a minimum the discharge, into a POTW, must met the requirements of Part VI of the permit.

B. Hazardous Waste Notification. The permittee must notify the POTW, the EPA Regional Waste Management Director, and the State hazardous waste authorities, in writing, if they discharge any substance into a POTW which if otherwise disposed of would be considered a hazardous waste under 40 CFR 261. This notification must include the name of the hazardous waste, the EPA hazardous waste number, and the type of discharge (continuous or batch).

C. General and Specific Prohibitions.

1. General Prohibitions. The permittee may not introduce into a POTW any pollutant(s) which cause Pass Through or Interference. These general prohibitions and the specific prohibitions in paragraph 2. of this section apply to the introducing pollutants into a POTW whether or not the permittee is subject to other National Pretreatment Standards or any national, State, or local Pretreatment Requirements.

2. Specific Prohibitions. The following pollutants shall not be introduced into a POTW:

   a. Pollutants which create a fire or explosion hazard in the publicly owned treatment works (POTW), including, but not limited to, wastestreams with a closed cup flashpoint of less than 140˚F (60˚C);

   b. Pollutants, which will cause corrosive structural damage to the POTW, but in no case, discharges with a pH lower than 5.0;

   c. Solid or viscous pollutants in amounts which will cause obstruction to the flow in the POTW resulting in interference;

   d. Any pollutant, including oxygen demanding pollutants (BOD, etc.), released in a discharge at such volume or strength as to cause interference in the POTW;

   e. Heat in amounts, which will inhibit biological activity in the POTW, resulting in interference, but in no case, heat in such quantities that the influent to the sewage treatment works exceeds 104˚F (40˚C));

   f. Petroleum oil, nonbiodegradable cutting oil, or products of mineral oil origin in amounts that will cause interference or pass through;

   g. Pollutants, which result in the presence of toxic gases, vapor, or fumes within the POTW in a quantity that may cause worker health or safety problems;

   h. Any trucked or hauled pollutants, except at discharge points designated by the POTW; or

   i. Any pollutant that causes pass through or interference at the POTW.

   j. Any specific pollutant which exceeds any local limitation established by the POTW.

D. Categorical Standards. In addition to the general and specific limitations expressed in *Part VI. C.* of this section, applicable National Categorical Pretreatment Standards must be met by all industrial users discharging into a POTW. These standards are published in the federal regulations at *40 CFR 405 through 471*.

E. Definitions. For this section the following definitions shall apply:

1. *Indirect Discharge* means the introduction of pollutants into a publicly-owned treatment works (POTW) from any non-domestic source regulated under section 307 (b), (c) or (d) of the CWA.

2. *Interference* means a discharge which, alone or in conjunction with a discharge or discharges from other sources, both:

   a. Inhibits or disrupts the POTW, its treatment processes or operations, or its sludge processes, use or disposal; and

   b. Therefore is a cause of a violation of any requirement of the POTW's NPDES permit (including an increase in the magnitude or duration of a violation) or of the prevention of sewage sludge use or disposal in compliance with the following statutory provisions and regulations or permits issued thereunder (or more stringent State or local regulations): Section 405 of the Clean Water Act, the Solid Waste Disposal Act (SWDA) (including title II, more commonly referred to as the Resource Conservation and Recovery Act (RCRA), and including State regulations contained in any State sludge management plan prepared pursuant to subtitle D of the SWDA), the Clean Air Act, the Toxic Substances Control Act, and the Marine Protection, Research and Sanctuaries Act.

3. *Pass Through means* a Discharge which exits the POTW into waters of the United States in quantities or concentrations which, alone or in conjunction with a discharge or discharges from other sources, is a cause of a violation of any requirement of the POTW's NPDES permit (including an increase in the magnitude or duration of a violation).

4. *Publicly Owned Treatment Works* or *POTW* means a treatment works as defined by section 212 of the CWA, which is owned by a State or municipality (as defined by section 502(4) of the CWA). This definition includes any devices and systems used in the storage, treatment, recycling and reclamation of municipal sewage or industrial wastes of a liquid nature. It also includes sewers, pipes and other conveyances only if they convey wastewater to a POTW Treatment Plant. The term also means the municipality as defined in section 502(4) of the CWA, which has jurisdiction over the Indirect Discharges to and the discharges from such a treatment works.

5. *Significant industrial user (SIU)* is defined as an industrial user discharging to a POTW that satisfies any of the following:

   a. Has a process wastewater flow of 25,000 gallons or more per average work day;

   b. Has a flow greater than five percent of the flow carried by the municipal system receiving the waste;

   c. Is subject to Categorical Pretreatment Standards, or

   d. Has a reasonable potential for adversely affecting the POTW's operation or for violating any pretreatment standard or requirement.

6. *User or Industrial User (IU)* means a source of Indirect Discharge.

III. BIOSOLIDS REQUIREMENTS

A. Biosolids Treatment and Disposal. The State of Utah has adopted the *40 CFR 503* federal regulations for the disposal of sewage sludge (biosolids) by reference. However, this facility does not receive, generate, treat or dispose of biosolids. Therefore 40 CFR 503 does not apply.

IV. STORM WATER REQUIREMENTS.

A. Industrial Storm Water Permit. Based on the type of industrial activities occurring at the facility, the permittee is required to maintain separate coverage or an appropriate exclusion under the Multi-Sector General Permit (MSGP) for Storm Water Discharges Associated with Industrial Activities (UTR000000). MSGP requirements only apply to storm water discharges from coal mining-related areas (SIC Major Group 12) if they are **not** subject to effluent limitations guidelines under 40 CFR Part 434. Only storm water discharges that are not included in the individual permit (Outfalls 001-007) are required to have additional MSGP requirements. If all storm water discharges are permitted in the individual permit, then no MSGP is required.

V. MONITORING, RECORDING & GENERAL REPORTING REQUIREMENTS

A. Representative Sampling. Samples taken in compliance with the monitoring requirements established under *Part I* shall be collected from the effluent stream prior to discharge into the receiving waters. Samples and measurements shall be representative of the volume and nature of the monitored discharge. Samples of biosolids shall be collected at a location representative of the quality of biosolids immediately prior to the use-disposal practice.

B. Monitoring Procedures. Monitoring must be conducted according to test procedures approved under *Utah Administrative Code ("UAC") R317-2-10 and 40CFR Part 503* utilizing sufficiently sensitive test methods, 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. 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.

E. Additional Monitoring by the Permittee. If the permittee monitors any parameter more frequently than required by this permit, using test procedures approved under *UAC R317-2-10* and *40 CFR 503* or as specified in this permit, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the DMR or the Biosolids Report Form. Such increased frequency shall also be indicated. Only those parameters required by the permit need to be reported.

F. 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.

G. Retention of Records. The permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, 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 five years from the date of the sample, measurement, report or application. This period may be extended by request of the Director at any time. A copy of this UPDES permit must be maintained on site during the duration of activity at the permitted location

H. Twenty-four Hour Notice of Noncompliance Reporting.

1. The permittee shall (orally) report any noncompliance including transportation accidents, spills, and uncontrolled runoff from biosolids transfer or land application sites which may seriously endanger health or environment, as soon as possible, but no later than twenty-four (24) hours from the time the permittee first became aware of circumstances. The report shall be made to the Division of Water Quality, (801) 536-4300, or 24-hour answering service (801) 536-4123.

2. The following occurrences of noncompliance shall be reported by telephone (801) 536-4300 as soon as possible but no later than 24 hours from the time the permittee becomes aware of the circumstances:

   a. Any noncompliance which may endanger health or the environment;

   b. Any unanticipated bypass, which exceeds any effluent limitation in the permit (See *Part VI.G, Bypass of Treatment Facilities.)*;

   c. Any upset which exceeds any effluent limitation in the permit (See *Part VI.H*, *Upset Conditions*.);

   d. Violation of a daily discharge limitation for any of the pollutants listed in the permit; or,

   e. Violation of any of the Table 3 metals limits, the pathogen limits, the vector attraction reduction limits or the management practices for biosolids that have been sold or given away.

3. A written submission shall also be provided within five days of the time that the permittee becomes aware of the circumstances. The written submission shall contain:

   a. A description of the noncompliance and its cause;

   b. The period of noncompliance, including exact dates and times;

   c. The estimated time noncompliance is expected to continue if it has not been corrected;

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

   e. Steps taken, if any, to mitigate the adverse impacts on the environment and human health during the noncompliance period.

4. The Director may waive the written report on a case-by-case basis if the oral report has been received within 24 hours by the Division of Water Quality, (801) 536-4300.

5. Reports shall be submitted to the addresses in *Part I.D*, *Reporting of Monitoring Results*.

I. 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 I.D* are submitted. The reports shall contain the information listed in *Part V.H.3*

J. 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, including but

not limited to, biosolids treatment, collection, storage facilities or area, transport vehicles and containers, and land application sites;

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, including, but not limited to, digested biosolids before dewatering, dewatered biosolids, biosolids transfer or staging areas, any ground or surface waters at the land application sites or biosolids, soils, or vegetation on the land application sites; and,

5. The permittee shall make the necessary arrangements with the landowner or leaseholder to obtain permission or clearance, the Director, or authorized representative, upon the presentation of credentials and other documents as may be required by law, will be permitted to enter without delay for the purposes of performing their responsibilities.

VI. 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 reissuance, 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 or the Act is subject to a fine not exceeding $25,000 per day of violation. Any person convicted under *UCA 19-5-115(2)* a second time shall be punished by a fine not exceeding $50,000 per day. Except as provided at *Part VI.G*, *Bypass of Treatment Facilities* and *Part VI.H*, *Upset Conditions*, 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. The permittee shall also take all reasonable steps to minimize or prevent any land application in violation of this permit.

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.

F. Removed Substances. Collected screening, grit, solids, sludge, or other pollutants removed in the course of treatment shall be disposed of in such a manner so as to prevent any pollutant from entering any waters of the state or creating a health hazard. Sludge/digester supernatant and filter backwash shall not directly enter either the final effluent or waters of the state by any other direct route.

G. Bypass of Treatment Facilities.

1. Bypass Not Exceeding Limitations. The permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to paragraph 2 and 3 of this section.

2. Prohibition of Bypass.

   a. Bypass is prohibited, and the Director may take enforcement action against a permittee for bypass, unless:

(1) Bypass was unavoidable to prevent loss of human life, personal injury, or severe property damage;

(2) There were no feasible alternatives to bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate backup equipment should have been installed in the exercise of reasonable engineering judgement to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance, and

(3) The permittee submitted notices as required under *section VI.G.3*.

b. The Director may approve an anticipated bypass, after considering its adverse effects, if the Director determines that it will meet the three conditions listed in *sections VI.G.2.a (1), (2) and (3)*.

3. Notice.

a. *Anticipated bypass*. Except as provided above in *section VI.G.2* and below in *section VI.G.3.b*, if the permittee knows in advance of the need for a bypass, it shall submit prior notice, at least ninety days before the date of bypass. The prior notice shall include the following unless otherwise waived by the Director:

(1) Evaluation of alternative to bypass, including cost-benefit analysis containing an assessment of anticipated resource damages:

(2) A specific bypass plan describing the work to be performed including scheduled dates and times. The permittee must notify the Director in advance of any changes to the bypass schedule;

(3) Description of specific measures to be taken to minimize environmental and public health impacts;

(4) A notification plan sufficient to alert all downstream users, the public and others reasonably expected to be impacted by the bypass;

(5) A water quality assessment plan to include sufficient monitoring of the receiving water before, during and following the bypass to enable evaluation of public health risks and environmental impacts; and,

(6) Any additional information requested by the Director.

b. *Emergency Bypass*. Where ninety days advance notice is not possible, the permittee must notify the Director, and the Director of the Department of Natural Resources, as soon as it becomes aware of the need to bypass and provide to the Director the information in *section VI.G.3.a.(1) through (6)* to the extent practicable.

c. *Unanticipated bypass*. The permittee shall submit notice of an unanticipated bypass to the Director as required under *Part IV.H*, Twenty Four Hour Reporting. The permittee shall also immediately notify the Director of the Department of Natural Resources, the public and downstream users and shall implement measures to minimize impacts to public health and environment to the extent practicable.

H. Upset Conditions.

1. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with technology-based permit effluent limitations if the requirements of paragraph 2 of this section are met. Director's administrative determination regarding a claim of upset cannot be judiciously challenged by the permittee until such time as an action is initiated for noncompliance.

2. Conditions necessary for a demonstration of upset. A permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:

   a. An upset occurred and that the permittee can identify the cause(s) of the upset;

   b. The permitted facility was at the time being properly operated;

   c. The permittee submitted notice of the upset as required under *Part V.H*, *Twenty-four Hour Notice of Noncompliance Reporting*; and,

   d. The permittee complied with any remedial measures required under *Part VI.D*, *Duty to Mitigate*.

3. Burden of proof. In any enforcement proceeding, the permittee seeking to establish the occurrence of an upset has the burden of proof.

I. Toxic Pollutants. The permittee shall comply with effluent standards or prohibitions established under Section 307(a) of *The Water Quality Act of 1987* for toxic pollutants within the time provided in the regulations that establish those standards or prohibitions, even if the permit has not yet been modified to incorporate the requirement.

J. Changes in Discharge of Toxic Substances. Notification shall be provided to the Executive Secretary as soon as the permittee knows of, or has reason to believe:

1. That any activity has occurred or will occur which would result in the discharge, on a routine or frequent basis, of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":

   a. One hundred micrograms per liter (100 ug/L);

   b. Two hundred micrograms per liter (200 ug/L) for acrolein and acrylonitrile; five hundred micrograms per liter (500 ug/L) for 2,4-dinitrophenol and for 2-methyl-4, 6-dinitrophenol; and one milligram per liter (1 mg/L) for antimony;

   c. Five (5) times the maximum concentration value reported for that pollutant in the permit application in accordance with *UAC R317-8-3.4(7)* or (10); or,

   d. The level established by the Executive Secretary in accordance with *UAC R317-8-4.2(6)*.

2. That any activity has occurred or will occur which would result in any discharge, on a non-routine or infrequent basis, of a toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":

a. Five hundred micrograms per liter (500 ug/L);

b. One milligram per liter (1 mg/L) for antimony:

c. Ten (10) times the maximum concentration value reported for that pollutant in the permit application in accordance with *UAC R317-8-3.4(9)*; or,

d. The level established by the Executive Secretary in accordance with *UAC R317-8-4.2(6)*.

VII. 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 only when the alteration or addition could significantly change the nature or increase the quantity of parameters discharged or pollutant sold or given away. This notification applies to pollutants, which are not subject to effluent limitations in the permit. In addition, if there are any planned substantial changes to the permittee's existing sludge facilities or their manner of operation or to current sludge management practices of storage and disposal, the permittee shall give notice to the Director of any planned changes at least 30 days prior to their implementation.

B. Anticipated Noncompliance. 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.

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 reissuance, 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 shall apply for and obtain a new permit. The application shall 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 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 specifies either an individual or a position having responsibility for the overall operation of the regulated facility, such as the position of plant manager, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters. 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 *paragraph VII.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 *paragraph VII.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 $10,000.00 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 under *UAC R317-8-3.2*, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the office of Director. As required by the *Act*, permit applications, permits and effluent data shall not be considered confidential.

J. Oil and Hazardous Substance Liability. Nothing in this permit shall be construed to preclude the permittee of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee is or may be subject under the *Act*.

K. 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.

L. Severability. The provisions of this permit are severable, and if any provisions 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.

M. Transfers. This permit may be automatically transferred to a new permittee if:

1. The current permittee notifies the Director at least 20 days in advance of the proposed transfer date;

2. The notice includes a written agreement between the existing and new permittee's 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.

N. State or Federal Laws. Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable state law or regulation under authority preserved by *UCA 19-5-117* and *Section 510* of the *Act* or any applicable Federal or State transportation regulations, such as but not limited to the Department of Transportation regulations.

O. Water Quality - Reopener Provision. This permit may be reopened and modified (following proper administrative procedures) to include the appropriate effluent limitations and compliance schedule, if necessary, if one or more of the following events occurs:

1. Water Quality Standards for the receiving water(s) to which the permittee discharges are modified in such a manner as to require different effluent limits than contained in this permit.
2. A final wasteload allocation is developed and approved by the State and/or EPA for incorporation in this permit.
3. Revisions to the current CWA § 208 areawide treatment management plans or promulgations/revisions to TMDLs (40 CFR 130.7) approved by the EPA and adopted by DWQ which calls for different effluent limitations than contained in this permit.

P. Biosolids – Reopener Provision. This permit may be reopened and modified (following proper administrative procedures) to include the appropriate biosolids limitations (and compliance schedule, if necessary), management practices, other appropriate requirements to protect public health and the environment, or if there have been substantial changes (or such changes are planned) in biosolids use or disposal practices; applicable management practices or numerical limitations for pollutants in biosolids have been promulgated which are more stringent than the requirements in this permit; and/or it has been determined that the permittees biosolids use or land application practices do not comply with existing applicable state of federal regulations.

Q. Toxicity Limitation - Reopener Provision. This permit may be reopened and modified (following proper administrative procedures) to include WET testing, a WET limitation, a compliance schedule, a compliance date, additional or modified numerical limitations, or any other conditions related to the control of toxicants if toxicity is detected during the life of this permit.

R. Storm Water-Reopener Provision. At any time during the duration (life) of this permit, this permit may be reopened and modified (following proper administrative procedures) as per *UAC R317.8*, to include, any applicable storm water provisions and requirements, a storm water pollution prevention plan, a compliance schedule, a compliance date, monitoring and/or reporting requirements, or any other conditions related to the control of storm water discharges to "waters-of-State".

VIII. DEFINITIONS

A. Wastewater.

1. The "7-day (and weekly) average", other than for *E. coli* bacteria, fecal coliform bacteria, and total coliform bacteria, is the arithmetic average of all samples collected during a consecutive 7-day period or calendar week, whichever is applicable. Geometric means shall be calculated for *E. coli* bacteria, fecal coliform bacteria, and total coliform bacteria. The 7-day and weekly averages are applicable only to those effluent characteristics for which there are 7-day average effluent limitations. The calendar week, which begins on Sunday and ends on Saturday, shall be used for purposes of reporting self-monitoring data on discharge monitoring report forms. Weekly averages shall be calculated for all calendar weeks with Saturdays in the month. If a calendar week overlaps two months (i.e., the Sunday is in one month and the Saturday in the following month), the weekly average calculated for that calendar week shall be included in the data for the month that contains Saturday.

2. The "30-day (and monthly) average," other than for *E. coli* bacteria, fecal coliform bacteria and total coliform bacteria, is the arithmetic average of all samples collected during a consecutive 30-day period or calendar month, whichever is applicable. Geometric means shall be calculated for *E. coli* bacteria, fecal coliform bacteria and total coliform bacteria. The calendar month shall be used for purposes of reporting self-monitoring data on discharge monitoring report forms.

3. "Act," means the *Utah Water Quality Act*.

4. "Acute toxicity" occurs when 50 percent or more mortality is observed for either test species at any effluent concentration (lethal concentration or "LC_{50}").

5. "Bypass," means the diversion of waste streams from any portion of a treatment facility.

6. "Chronic toxicity" occurs when the IC_{25}< 100% effluent. The 100% effluent is the concentration of the effluent in the receiving water, at the end of the mixing zone expressed as per cent effluent.

7. "IC_{25}" is the concentration of toxicant (given in % effluent) that would cause a 25% reduction in mean young per female, or a 25% reduction in overall growth for the test population.

8. "Composite Samples" shall be flow proportioned. The composite sample shall, as a minimum, contain at least four (4) samples collected over the compositing period. Unless otherwise specified, the time between the collection of the first sample and the last sample shall not be less than six (6) hours nor more than 24 hours. Acceptable methods for preparation of composite samples are as follows:

   a. Constant time interval between samples, sample volume proportional to flow rate at time of sampling;

   b. Constant time interval between samples, sample volume proportional to total flow (volume) since last sample. For the first sample, the flow rate at the time the sample was collected may be used;

c. Constant sample volume, time interval between samples proportional to flow (i.e., sample taken every "X" gallons of flow); and,

d. Continuous sample volume, with sample collection rate proportional to flow rate.

9. "CWA" means *The Federal Water Pollution Control Act*, as amended, by *The Clean Water Act of 1987*.

10. "Daily Maximum" (Daily Max.) is the maximum value allowable in any single sample or instantaneous measurement.

11. "EPA," means the United States Environmental Protection Agency.

12. "Director," means Director of the Division of Water Quality.

13. A "grab" sample, for monitoring requirements, is defined as a single "dip and take" sample collected at a representative point in the discharge stream.

14. An "instantaneous" measurement, for monitoring requirements, is defined as a single reading, observation, or measurement.

15. "Severe Property Damage," means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.

16. "Upset," means an exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventative maintenance, or careless or improper operation.

FACT SHEET STATEMENT OF BASIS
ALTON COAL DEVELOPMENT, LLC
UTAH POLLUTANT DISCHARGE ELIMINATION SYSTEM (UPDES)
PERMIT NUMBER: UT0025992
MINOR INDUSTRIAL FACILITY

FACILITY CONTACTS

Facility Contact:	B. Kirk Nicholes	Responsible Official:	Clark Atwood
Position:	Env. Specialist	Position:	Mine Manager/Safety Director
Phone:	(435) 691-1551	Phone:	(435) 691-2983

DESCRIPTION OF FACILITY

Facility Name:	Alton Coal Development, LLC – Coal Hollow Mine
Mailing Address:	463 North 100 West, Suite 1 Cedar City, Utah 84721
Physical Location:	2060 South Alton Road, Alton, Utah 84710.
Coordinates:	Latitude: 37º 24' 24.02 N., Longitude: 112º 27' 12.47 W.

Standard Industrial Classification (SIC): *1221 - Bituminous Coal and Lignite Surface Mining*

The Alton Coal Development, LLC (ACD, Alton Coal) operates a coal mine located approximately 30 miles south of Panguitch, Utah. ACD has previously mined the areas known as the South Private Lease (SPL) and North Private Lease (NPL) and is in the process of reclaiming these areas. ACD is currently mining within a portion of the Federal Lease that was contained in the original Coal Hollow Mine, which is located between the NPL and SPL. The NPL is approximately one-half mile southeast of Alton, Utah and the SPL is approximately 1.3 miles south of the NPL.

SUMMARY OF CHANGES FROM PREVIOUS PERMIT

Kanab Creek formerly had the state standard for Class 4 waters and was protected for agricultural uses including irrigation of crops and stock watering at 1,200 mg/L for TDS. A Site-Specific Standard (SSC) for Total Dissolved Solids (TDS) was developed and approved by EPA in February 2021 for Kanab Creek and tributaries. TDS limits were changed as follows:

1) Kanab Creek and tributaries from immediately below the confluence with Sink Valley Wash to the confluence of Simpson Hollow Wash;
   a) April through November, the TDS daily maximum is now 1,900 mg/l; and
   b) December through March, the TDS daily maximum is now 1,700 mg/l.
2) Kanab Creek and tributaries above Simpson Hollow Wash to the irrigation diversion at the confluence with Reservoir Canyon;
   a) April through November, the TDS daily maximum is now 1,400 mg/l;
   b) December through March, the TDS daily maximum is unchanged, 1,200 mg/l.

Stormwater provisions were removed from the individual permit. Permit coverage under the Multi Sector General Permit (MSGP) for Storm Water Discharges from Industrial Activities may be required based on the Standard Industrial Classification (SIC) code for the facility and the types of industrial activities occurring. See the Stormwater section of this fact sheet for more information.

Turbidity monitoring has been included in lieu of Total Suspended Solids (TSS) secondary treatment standards to reflect rule changes in *Utah Administrative Code (UAC) R317-1-3*, which clarifies that both TSS and BOD secondary standards are not required for Non-POTW facilities. Publicly Owned Treatment Works (POTWs) are facilities that receive and process domestic waste water. ACD is an industrial and Non-POTW type facility and therefore, secondary treatment standards do not apply. However, the Federal effluent limit guideline found in *40 Code of Federal Regulations (CFR) Part 434.45* for the TSS Daily Maximum limitation still applies and remains in the permit as appropriate.

DISCHARGE

DESCRIPTION OF DISCHARGE

The renewal permit for ACD will contains eight Outfalls from the Coal Hollow Mine. The new outfalls in the permit are as follows:

Outfall	Description of Discharge Point
001	Sediment pond #1 to Lower Robinson Creek, Latitude 37° 24’ 13” N, Longitude 112°27’13” W.
001B	Sediment pond #1B to Lower Robinson Creek, Latitude 37° 24’ 11” N, Longitude 112°27’16” W.
002	Sediment pond #2 to Lower Robinson Creek, Latitude 37° 24’ 10” N, Longitude 112°27’16” W.
003	Sediment pond #3 to Lower Robinson Creek, Latitude 37° 23’ 51” N, Longitude 112°27’53” W.
004	Sediment pond #4 to Sink Valley Wash, Latitude 37° 23’ 01” N, Longitude 112°27’03” W.
005	Sediment pond #5 to an unnamed tributary of Kanab Creek, Latitude 37° 25’ 18.07” N and Longitude 112° 28’ 35.82’ W.
006	Sediment pond #6 to an unnamed tributary of Kanab Creek, Latitude 37° 25’ 12.32’ N and Longitude 112° 28’25.42 W.
007	Sediment pond #7 to an unnamed tributary of Kanab Creek, Latitude 37° 25’ 13.95’ N. and Longitude 112° 28’ 8.40’ W.

RECEIVING WATERS AND STREAM CLASSIFICATION

Lower Robinson Creek, Sink Valley Wash and Kanab Creek are classified as 2B, 3C and 4.

> Class 2B – protected for secondary contact recreation such as boating, wading, or similar uses.
>
> Class 3C – protected for nongame fish and other aquatic life, including the necessary aquatic organisms in their food chain.
>
> Class 4 - protected for agricultural uses including irrigation of crops and stock watering.

WASTE LOAD ANALYSIS, ANTIDEGRADATION REVIEW AND REASONABLE POTENTIAL ANALYSIS

Effluent limitations were derived from either of two Wasteload Analyses (WLA), which are appended to this statement of basis as Addendum I. One WLA is for those points that discharge to unnamed tributaries to Kanab Creek and are ephemeral in nature, and the other WLA is for discharges directly to Kanab Creek. The WLAs incorporate Secondary Treatment Standards, Water Quality Standards, Anti-degradation Reviews (ADR) as appropriate, and designated uses into a water quality model that projects the effects of discharge concentrations on receiving water quality. Effluent limitations are those that the model demonstrates are sufficient to meet State water quality standards in the receiving waters. An ADR Level I review was performed and concluded that an ADR Level II review was not required at this time. The WLAs indicate that the effluent limitations should be sufficiently protective of water quality, in order to meet State water quality standards in the receiving waters.

Reasonable Potential Analysis

Since January 1, 2016, DWQ has conducted reasonable potential analysis (RP) on all new and renewal applications received after that date. RP for this permit renewal was conducted following DWQ's September 10, 2015 Reasonable Potential Analysis Guidance (RP Guidance). There are four outcomes defined in the RP Guidance: Outcome A, B, C, or D. These Outcomes provide a frame work for what routine monitoring or effluent limitations are required.

A quantitative RP analysis was performed on arsenic, chromium, copper iron, selenium, and nickel to determine if there was reasonable potential for the discharge to exceed the applicable water quality standards. Based on the RP analysis, the following parameters exceeded the most stringent chronic water quality standard or were determined to have a reasonable potential to exceed the standard: Iron and Selenium. A copy of the RP analysis is included at the end of this Fact Sheet.

BASIS FOR EFFLUENT LIMITATIONS

In accordance with regulations promulgated in *40 CFR Part 122.44* and in *UAC R317-8-4.2*, effluent limitations are derived from technology-based effluent limitations guidelines, Utah

Secondary Treatment Standards (*UAC R317-1-3.2*) or Utah Water Quality Standards (*UAC R317-2*). In cases where multiple limits have been developed, those that are more stringent apply. In cases where no underlying standards have been developed, Best Professional Judgment (BPJ) may be used where applicable to set effluent limits. "Best Professional Judgment" refers to a discretionary, best professional decision made by the permit writer based upon precedent, prevailing regulatory standards or other relevant information.

Permit limits can also be derived from the WLA, which incorporates Secondary Treatment Standards, Water Quality Standards, including Total Maximum Daily Load (TMDL) impairments as appropriate, Antidegradation Reviews and designated uses into a water quality model that projects the effects of discharge concentrations on receiving water quality. Effluent limitations are those that the model demonstrates are sufficient to meet State water quality standards in the receiving waters. During this UPDES renewal permit development, a WLA and ADR were performed. An ADR Level I review was performed and concluded that an ADR Level II review was not required this time since there are no proposed increases in total flows or parameter concentrations from the previous permit. The WLA indicates that the effluent limitations will be sufficiently protective of water quality, in order to meet State water quality standards in the receiving waters. The WLA and ADR are attached as an addendum to this FSSOB.

1) All of the discharges are intermittent in nature and generally occur only during wet weather runoff events. All of the receiving streams in the permit are also intermittent in nature.

2) ACD's discharge meets the EPA definition of "alkaline mine drainage." As such, it is subject to the technology based effluent limitations in *40 CFR Part 434.45*. Technology based limits used in the permit are listed below.

    a. Total suspended solids (TSS) daily maximum limit.

    b. For discharges composed of surface water or mine water commingled with surface water, *40 CFR Part 434.63* allows alternate effluent limits to be applied when discharges result from specific runoff events, detailed below and in the permit. ACD has the burden of proof that the described runoff event occurred.

        i. For runoff events (rainfall or snowmelt) less than or equal to a 10-year 24-hour precipitation event, settleable solids shall be substituted for TSS and shall be limited to 0.5 milliliters per liter (ml/L). All other effluent limitations must be achieved concurrently, as described in the permit.

3) Daily minimum and daily maximum limitations on pH are derived from *UAC R317-2-14, Table 2.14.1*.

4) Total dissolved solids (TDS) are limited according to Water Quality Standards and policies established by the Colorado River Basin Salinity Control Forum. TDS are limited by both mass loading and concentration requirements as described below:

a. Since discharges from ACD eventually reach the Colorado River, TDS mass loading is limited according to policies established by the Colorado River Basin Salinity Control Forum (Forum), as authorized in *UAC R317-2-4* to further control salinity in the Utah portion of the Colorado River Basin. On February 28, 1977 the Forum produced the *"Policy For Implementation of Colorado River Salinity Standards Through the NPDES Permit Program"* (Policy), with the most current subsequent triennial revision dated October 2020. The TDS loading requirement derived from Forum Policy and included in this permit is one ton (2,000 lbs.) per day or 366 tons per year as a sum from all discharge points, unless the concentration of TDS is 500 mg/L or less. If the concentration of TDS is less than or equal to 500 mg/L at all discharge points, no loading limit applies. If one ton per day or 366 tons per year cannot be achieved the permittee will be required to remove salinity/TDS in excess of one ton per day or 366 tons per year by developing a treatment process, participating in a salinity off-set program, or developing some type of mechanism to remove the salinity/TDS. The selection of a salinity control program, if needed, must be approved by the Director of the Division of Water Quality and implemented within one year of the effective date of approval.

b. Based on *UAC R317-2-14, Table 2.14.1* the concentration of TDS in water used for agricultural purposes shall not exceed 1200 mg/L, unless there is a designated site-specific standard for TDS which has been incorporated into the State Water Quality Standards. A site-specific standard has been developed for Kanab Creek and tributaries above Simpson Hollow Wash to irrigation diversion at confluence with Reservoir Canyon: April through November, daily maximum 1,400 mg/l. Additionally, there is a site-specific standard for Kanab Creek and tributaries from immediately below the confluence with Sink Valley Wash to the confluence of Simpson Hollow Wash: April through November, daily maximum 1,900 mg/l. December through March, daily maximum 1,700 mg/l. The daily maximum TDS effluent limitations have been set by these site-specific standards.

5) The limitation on total recoverable iron is water quality based and derived in the WLA. The iron limitation is based upon the State Water Quality Standard of 1.0 mg/L for dissolved iron (*UAC R317-2 Table 2.14.2*) and the WLA limitation of 1.0 for total recoverable iron. Total recoverable iron is a more stringent limitation than dissolved iron. Therefore, a permit limit of 1.0 mg/L for total recoverable iron will be included in the renewal permit and shall apply to each of the discharge points.

6) Oil and Grease are limited to 10 mg/L by BPJ, as this is consistent with other industrial facilities statewide.

7) Limitations on Boron and Selenium are based on Utah Water Quality Standards.

EFFLUENT LIMITATIONS, SELF-MONITORING, AND REPORTING REQUIREMENTS

The effluent limitations and monitoring requirements for Outfalls 001, 001b, 002, 003, 004, 005, 006, and 007 are as outlined below. Effluent self-monitoring requirements are developed from the

Utah Monitoring, Recording and Reporting Frequency Guidelines as effective December 1, 1991 along with the use of BPJ. Reports shall be made via NetDMR or on Discharge Monitoring Report (DMR) forms and are due 28 days after the end of the monthly monitoring period.

Effluent Characteristics	Effluent Limitations a/				Monitoring Requirements	
	30 Day Average	7 Day Average	Daily Minimum	Daily Maximum	Sample Frequency	Sample Type
Flow, [1]MGD b/	NA	[2]NA	NA	NA	Monthly	Measured
TSS, mg/L	NA	NA	NA	70	Monthly	Grab
Turbidity, NTU c/	NA	NA	NA	Report	Monthly	Grab
Total Iron, mg/L	NA	NA	NA	1.0	Monthly	Grab
Oil & Grease, mg/L d/	NA	NA	NA	10	Monthly	Grab
Oil and Grease, floating solids, visible foam, d/	NA	NA	NA	None	Monthly	Visual
pH, standard units	NA	NA	6.5	9.0	Monthly	Grab
Sanitary Waste e/	NA	NA	NA	None	Monthly	Visual
Total Selenium, mg/L	0.0046	NA	NA	0.020	Monthly	Grab
Boron mg/L	NA	NA	NA	0.75	Monthly	Grab
1 MGD: million gallons per day *2 NA: not applicable*						

a/ Samples collected in compliance with the monitoring requirements specified above shall be collected prior to mixing with the receiving water.

b/ For intermittent discharges, the duration of the discharge shall also be reported.

c/ Turbidity monitoring shall be conducted monthly whenever possible from all discharging Outfalls to ensure that there is not an increase of more than 10 NTU over the receiving waters, if applicable.

d/ In addition to monthly sampling for oil and grease, a visual inspection for oil and grease, floating solids, and visible foam shall be performed at least monthly. There shall be no sheen, floating solids, or visible foam in other than trace amounts. If sheen is observed, a sample of the effluent shall be collected immediately thereafter and oil and grease shall not exceed 10 mg/L in concentration

e/ There shall be no discharge of sanitary waste.

Specific Effluent limitations for Total Dissolved Solids. The following effluent limitations will apply to Total Dissolved Solids.

Effluent Characteristics	Effluent Limitations /a				Monitoring Requirements	
	30 Day Average	7 Day Average	Daily Minimum	Daily Maximum	Sample Frequency	Sample Type
TDS lbs/day f/	NA	NA	NA	2,000	Monthly	Grab

Outfalls 001, 001b, 002, 003, 004						
TDS mg/L Irrigation Season (April – November) Non-Irrigation Season (December – March)	NA	NA	NA	1,900 1,700	Monthly	Grab
Outfalls 005, 006, 007						
TDS mg/L Irrigation Season (April – November) Non-Irrigation Season (December – March)	NA	NA	NA	1,400 1,200	Monthly	Grab

a/ Samples collected in compliance with the monitoring requirements specified above shall be collected prior to mixing with the receiving water.

f/ A limit of one ton per day (2,000 lbs per day) or 366 tons per year as a sum from all discharge points is required of the permittee, unless a concentration of 500 mg/L or less is achieved at all discharge points. If 500 mg/L or less is achieved at all discharge points, then no loading limit applies. If the permittee cannot achieve the 500 mg/L concentration requirement, or the one ton per day or 366 tons per year loading limit, then the permittee will be required to remove salinity/TDS in excess of one ton per day or 366 tons per year by developing a treatment process, participating in a salinity off-set program, or developing some type of mechanism to remove the salinity/TDS. The selection of a salinity control method, if needed, must be approved by the Director of the Division of Water Quality and implemented within one year of that approval.

Special Metals Sampling Requirements for Outfalls 005, 006 and 007. The following monitoring requirements will apply to Outfalls 005, 006, and 007.

Effluent Characteristics	Effluent Limitations /a				Monitoring Requirements	
	30 Day Average	7 Day Average	Daily Minimum	Daily Maximum	Sample Frequency	Sample Type
Total Cadmium, mg/L	NA	NA	NA	Report	Monthly	Grab
Total Chromium, mg/L	NA	NA	NA	Report	Monthly	Grab
Total Copper, mg/L	NA	NA	NA	Report	Monthly	Grab
Total Mercury, mg/L	NA	NA	NA	Report	Monthly	Grab
Total Nickel, mg/L	NA	NA	NA	Report	Monthly	Grab
Total Lead, mg/L	NA	NA	NA	Report	Monthly	Grab
Total Silver, mg/L	NA	NA	NA	Report	Monthly	Grab
Total Zinc, mg/L	NA	NA	NA	Report	Monthly	Grab

a/ Samples collected in compliance with the monitoring requirements specified above shall be collected prior to mixing with the receiving water.

Wet Weather Limitations Any overflow, increase in volume of a discharge or discharge from a bypass system caused by precipitation within a 24-hour period less than or equal to the 10-year, 24-hour precipitation event (or snow-melt of equivalent volume) at surface water runoff pond outfalls only may comply with the following limitation instead of the otherwise applicable limitation (for TSS) contained in the Permit *Part I.C.2*:

Effluent Characteristics	Daily Maximum
Settleable solids (SS), mL/L	0.5

In addition to the monitoring requirements specified under the Permit *Part I.C*, all effluent samples collected during storm water discharge events may also be analyzed for settleable solids. Such analyses shall be conducted by grab samples.

The operator shall have the burden of proof that the increase in discharge was caused by the applicable precipitation event described in the Permit *Part 1.C.5*. The alternate limitations in *Part 1.C.5* shall not apply to treatment systems that treat exclusively underground mine water.

BIOSOLIDS

The State of Utah has adopted the *40 CFR 503* federal regulations for the disposal of sewage sludge (biosolids) by reference. However, this facility does not receive, generate, treat or dispose of biosolids. Therefore 40 CFR 503 does not apply.

STORM WATER

Separate storm water permits may be required based on the types of activities occurring on site.

Permit coverage under the Multi Sector General Permit (MSGP) for Storm Water Discharges from Industrial Activities is required based on the Standard Industrial Classification (SIC) code for the facility and the types of industrial activities occurring. If the facility has storm water discharges from coal mining-related areas (SIC Major Group 12) that are not subject to effluent limitation guidelines under *40 CFR Part 434* and is not already covered, it has 30 days from when this permit is issued to submit the appropriate Notice of Intent (NOI) for the MSGP or exclusion documentation. Previously storm water discharge requirements and coverage were combined in this individual permit. These have been separated to provide consistency among permittees, electronic reporting for storm water discharge monitoring reports, and increase flexibility to changing site conditions.

Information on storm water permit requirements can be found at http://stormwater.utah.gov.

PRETREATMENT REQUIREMENTS

This facility does not discharge process wastewater to a sanitary sewer system. Any process wastewater that the facility may discharge to the sanitary sewer, either as a direct discharge or as a hauled waste, is subject to federal, state, and local pretreatment regulations. Pursuant to section 307 of the Clean Water Act, the permittee shall comply with all applicable federal general pretreatment regulations promulgated, found in 40 CFR 403, the state's pretreatment requirements found in UAC R317-8-8, and any specific local discharge limitations developed by the Publicly Owned Treatment Works (POTW) accepting the waste.

In addition, in accordance with 40 CFR 403.12(p)(1), the permittee must notify the POTW, the EPA Regional Waste Management Director, and the State hazardous waste authorities, in writing, if they discharge any substance into a POTW which if otherwise disposed of would be considered a hazardous waste under 40 CFR 261. This notification must include the name of the hazardous waste, the EPA hazardous waste number, and the type of discharge (continuous or batch).

TOTAL MAXIMUM DAILY LOAD REQUIREMENTS

According to the Utah's 2016 303(d) Water Quality Assessment Report dated December 7, 2016, the receiving water for the discharge, Kanab Creek and tributaries from the state line to the confluence with Fourmile Hollow near the White Cliffs to Reservoir Canyon (UT15010003-003_00) was listed as "Not Supporting" for Total Boron, Dissolved Selenium, and TDS with impaired beneficial uses 3C and 4. DWQ has not completed a TMDL for Total Boron, Dissolved Selenium, or TDS in Kanab Creek and has set the development priority as "Low". The limits for boron and selenium will be at the Water Quality Standard. The TDS limit will be set by the site-specific standard.

BIOMONITORING REQUIREMENTS

A nationwide effort to control toxic discharges where effluent toxicity is an existing or potential concern is regulated in accordance with the Utah Pollutant Discharge Elimination System Permit and Enforcement Guidance Document for Whole Effluent Toxicity Control (biomonitoring), dated February 2018. Authority to require effluent biomonitoring is provided in Permit Conditions, UAC R317-8-4.2, Permit Provisions, UAC R317-8-5.3 and Water Quality Standards, UAC R317-2-5 and R317 -2-7.2.

Alton Coal is a minor industrial facility that will be discharging an infrequent amount of effluent, in which toxicity is neither an existing concern, nor likely to be present. Based on these considerations, and the absence of receiving stream water quality monitoring data, there is no reasonable potential for toxicity in the permittee's discharge (per State of Utah Permitting and Enforcement Guidance Document for WET Control). As such, there will be no numerical WET limitations or WET monitoring requirements in this permit. However, the permit will contain a toxicity limitation re-opener provision that allows for modification of the permit should additional information indicate the presence of toxicity in the discharge.

PERMIT DURATION

It is recommended that this permit be effective for a duration of five (5) years.

Drafted by
Lonnie Shull, Discharge, Biomonitoring
Jeff Studenka, Discharge, Colorado River Salinity Control
Daniel Griffin, Biosolids
Jennifer Robinson, Pretreatment
Chris Bittner, Water Quality Standards
Amy Dickey, TMDL/Watershed Protection
Carl Adams, Storm Water
Chris Shope, Wasteload Analysis
Utah Division of Water Quality (801) 536-4300
May 3, 2021

PUBLIC NOTICE INFORMATION (updated June 29, 2021)

Began: May 25, 2021
Ended: June 25, 2021

Comments received at: 195 North 1950 West
PO Box 144870
Salt Lake City, UT 84114-4870

The Public Notice of the draft permit was published on DWQ's website for at least 30 days.

During the public comment period provided under R317-8-6.5, any interested person may submit written comments on the draft permit and may request a public hearing, if no hearing has already been scheduled. A request for a public hearing shall be in writing and shall state the nature of the issues proposed to be raised in the hearing. All comments will be considered in making the final decision and shall be answered as provided in R317-8-6.12.

RESPONSIVENESS SUMMARY

No comments were received during the public comment period. Staff recommends re-issuing the permit as drafted.

ADDENDUM TO FSSOB

ATTACHMENTS (2): I. Wasteload Analysis and Antidegradation Review
II. Reasonable Potential Analysis Summary

DWQ-2021-006042

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ATTACHMENT 1

Wasteload Analysis

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Utah Division of Water Quality
Statement of Basis
ADDENDUM
Wasteload Analysis and Antidegradation Level I Review

Date: **April 12, 2021**

Prepared by: **Christopher L. Shope, PhD**
Standards and Technical Services Section

Facility: **Alton Coal Development, LLC**
UPDES No. UT0025992

Receiving water: **Kanab Creek; unnamed tributaries to Kanab Creek (2B, 3C, 4)**

This addendum summarizes the wasteload analysis that was performed to determine water quality based effluent limits (WQBEL) for this discharge. Wasteload analyses are performed to determine point source effluent limitations necessary to maintain designated beneficial uses by evaluating projected effects of discharge concentrations on in-stream water quality. The wasteload analysis also takes into account downstream designated uses (UAC R317-2-8). Projected concentrations are compared to numeric water quality standards to determine acceptability. The numeric criteria in this wasteload analysis may be modified by narrative criteria and other conditions determined by staff of the Division of Water Quality.

Discharge

All discharges are from sedimentation impoundments according to "Water Flow Line Drawing" in the renewal application.

Coal Hollow Mine
Outfall 001: Discharge from Pond 1 to Lower Robinson Creek to Kanab Creek; 0.326 MGD
Outfall 001B: Discharge from Pond 1B to Lower Robinson Creek to Kanab Creek; 0.016 MGD
Outfall 002: Discharge from Pond 2 to Lower Robinson Creek to Kanab Creek; 0.114 MGD
Outfall 003: Discharge from Pond 3 to Lower Robinson Creek to Kanab Creek; 0.294 MGD
Outfall 004: Discharge from Pond 4 to Sink Valley Wash to Kanab Creek; 0.342 MGD
North Private Lease
Outfall 005: Discharge from Pond 5 to April Creek to Kanab Creek; 0.033 MGD
Outfall 006: Discharge from Pond 6 to unnamed tributary to Kanab Creek; 0.026 MGD
Outfall 007: Discharge from Pond 7 to unnamed tributary to Kanab Creek; 0.203 MGD
Outfall 008: Discharge from Pond 8 to Kanab Creek; 0.117 MGD

The summation of all Outfall discharges is 1.471 MGD.

Receiving Water
The receiving water for Outfalls 001, 001B, 002, 003, 004, 005, 006, and 007 are intermittent tributaries to Kanab Creek. The receiving water for Outfall 008 is Kanab Creek.

Per UAC R317-2-13.2(b), the designated beneficial uses for Kanab Creek and tributaries, from state line to irrigation diversion at confluence with Reservoir Canyon: 2B, 3C, 4

- *Class 2B - Protected for infrequent primary contact recreation. Also protected for secondary contact recreation where there is a low likelihood of ingestion of water or a low degree of bodily contact with the water. Examples include, but are not limited to, wading, hunting, and fishing.*

- *Class 3C - Protected for nongame fish and other aquatic life, including the necessary aquatic organisms in their food chain..*

- *Class 4 - Protected for agricultural uses including irrigation of crops and stock watering. Kanab Creek and tributaries above Simpson Hollow Wash to irrigation diversion at confluence with Reservoir Canyon: April through November, daily maximum 1,400 mg/l. Assessments shall be based on TDS concentrations measured in Kanab Creek.*

Typically, the critical flow for the wasteload analysis is considered the lowest stream flow for seven consecutive days with a ten year return frequency (7Q10). Due to a lack of flow records for Kanab Creek, the 20th percentile of flow measurements was calculated on an annual basis. The source of flow data was a combination of flow data from DWQ sampling at station 4951940 Kanab Ck at County Rd Xing BL Alton (2013-2019), and DOGM sampling site SW1 (2005-2009).

Table 1: Annual critical low flow(cfs) for all Outfalls

Season	Kanab Ck at County Rd Xing BL Alton
Summer	0.03
Fall	0.80
Winter	3.00
Spring	0.40
Annual	**0.30**

The annual critical flow for Outfalls 001, 001B, 002, 003, 004, 005, 006, 007, and 008 were effectively considered to be zero as the receiving waters (tributaries to Kanab Creek and Kanab Creek proper) are intermittent and have no flow for parts of the year. Water quality based effluent limits for these outfalls revert to end-of-pipe water quality standards.

Kanab Creek water quality was characterized based on samples collected from DWQ sampling station 4951940. Results were compared against sample results from several USGS sampling locations upstream.

TMDL

According to the Utah's 2016 303(d) Water Quality Assessment Report dated December 7, 2016, the receiving water for the discharge, Kanab Creek and tributaries from state line to the

confluence with Fourmile Hollow near the White Cliffs to Reservoir Canyon (UT15010003-003_00) was listed as "Not Supporting" for Total Boron, Dissolved Selenium, and TDS with impaired beneficial uses 3C and 4.

DWQ has not completed a TMDL for Total Boron, Dissolved Selenium, or TDS in Kanab Creek and has set the development priority as "Low". TDS Limits are set at the standard of 1200 mg/l.

Mixing Zone

The maximum allowable mixing zone is 15 minutes of travel time for acute conditions, not to exceed 50% of stream width, and 2,500 feet for chronic conditions, per UAC R317-2-5. Water quality standards must be met at the end of the mixing zone.

For the Outfalls, the effluent was consider to be totally mixed as the ratio of critical river flow to effluent discharge was 0.916 (<=2). Acute limits were calculated using 50% of the seasonal critical low flow. The annual critical flow for Outfalls 001, 001B, 002, 003, 004, 005, 006, 007, and 008 were effectively considered to be zero as the receiving waters (tributaries to Kanab Creek) are intermittent and have no flow for parts of the year. Water quality based effluent limits for these outfalls revert to end-of-pipe water quality standards and no mixing zone was considered.

Parameters of Concern

The potential parameters of concern identified for the discharge/receiving water were determined in consultation with the UPDES Permit Writer, the renewal application, and the industry SIC codes from https://www.osha.gov/data/sic-search. The potential parameters of concern identified for the discharge/receiving water were iron, TDS, TSS, and metals.

WET Limits

The percent of effluent in the receiving water in a fully mixed condition, and acute and chronic dilution in a not fully mixed condition are calculated in the WLA in order to generate WET limits. The LC_{50} (lethal concentration, 50%) percent effluent for acute toxicity and the IC_{25} (inhibition concentration, 25%) percent effluent for chronic toxicity, as determined by the WET test, needs to be below the WET limits, as determined by the WLA. The WET limit for LC_{50} is typically 100% effluent and does not need to be determined by the WLA.

Table 2: WET Limits for IC_{25} (all Outfalls)

Outfall	Percent Effluent
All Outfalls	86.3%

Wasteload Allocation Methods

Effluent limits were determined for conservative constituents using a simple mass balance mixing analysis (UDWQ, 2021). The mass balance analysis is summarized in the Wasteload Addendum.

The water quality standard for chronic ammonia toxicity is dependent on temperature and pH,

and the water quality standard for acute ammonia toxicity is dependent on pH. However, temperature and ammonia concentration of the effluent were not provided. The AMMTOX Model developed by University of Colorado and adapted by Utah DWQ and EPA Region VIII was used to determine ammonia effluent limits (Lewis et al., 2002). The analysis is summarized in the Wasteload Addendum.

Water quality models and supporting documentation are available for review upon request.

Antidegradation Level I Review

The objective of the Level I ADR is to ensure the protection of existing uses, defined as the beneficial uses attained in the receiving water on or after November 28, 1975. No evidence is known that the existing uses deviate from the designated beneficial uses for the receiving water. Therefore, the beneficial uses will be protected if the discharge remains below the WQBELs presented in this wasteload.

A Level II Antidegradation Review (ADR) is not required for this facility because the permittee is not requesting an increase in flow over that authorized in the existing permit.

Documents:

WLA Document: *Alton_Coal_WLA_2021.docx*
Wasteload Analysis and Addendums: *Alton_Coal_WLA_2021.xlsm*

References:

Lewis, B., J. Saunders, and M. Murphy. 2002. *Ammonia Toxicity Model (AMMTOX, Version2): A Tool for Determining Effluent Ammonia Limits*. University of Colorado, Center for Limnology.

Utah Division of Water Quality. 2021. *Utah Wasteload Analysis Procedures Version 2.0. https://documents.deq.utah.gov/water-quality/standards-technical-services/DWQ-2021-000684.pdf*

Utah Division of Water Quality
Salt Lake City, Utah

WASTELOAD ANALYSIS [WLA] = not included in the WLA
Addendum: Statement of Basis

12-Apr-21
4:00 PM

Facilities: **Alton Coal Development, Coal Hollow** **UPDES No: UT-0025992**
Discharging to: **Unnamed Trib. To Kanab Creek**

I. Introduction

Wasteload analyses are performed to determine point source effluent limitations necessary to maintain designated beneficial uses by evaluating projected effects of discharge concentrations on in-stream water quality. The wasteload analysis also takes into account downstream designated uses [R317-2-8, UAC]. Projected concentrations are compared to numeric water quality standards to determine acceptability. The anti-degradation policy and procedures are also considered. The primary in-stream parameters of concern may include metals (as a function of hardness), total dissolved solids (TDS), total residual chlorine (TRC), un-ionized ammonia (as a function of pH and temperature, measured and evaluated interms of total ammonia), and dissolved oxygen.

Mathematical water quality modeling is employed to determine stream quality response to point source discharges. Models aid in the effort of anticipating stream quality at future effluent flows at critical environmental conditions (e.g., low stream flow, high temperature, high pH, etc).

The numeric criteria in this wasteload analysis may always be modified by narrative criteria and other conditions determined by staff of the Division of Water Quality.

II. Receiving Water and Stream Classification

Unnamed Trib. To Kanab Creek: 2B,3C,4
Antidegradation Review: Level I review completed. Level II review is required.

III. Numeric Stream Standards for Protection of Aquatic Wildlife

Maximum Total Dissolved Solids 1400.0 mg/l Background

Acute and Chronic Heavy Metals (Dissolved)

Parameter	4 Day Average (Chronic) Standard Concentration		Load*	1 Hour Average (Acute) Standard Concentration		Load*
Aluminum	87.00	ug/l**	1.067 lbs/day	750.00	ug/l	9.199 lbs/day
Arsenic	150.00	ug/l	1.840 lbs/day	340.00	ug/l	4.170 lbs/day
Cadmium	2.40	ug/l	0.029 lbs/day	7.43	ug/l	0.091 lbs/day
Chromium III	269.65	ug/l	3.307 lbs/day	5641.68	ug/l	69.199 lbs/day
ChromiumVI	11.00	ug/l	0.135 lbs/day	16.00	ug/l	0.196 lbs/day
Copper	30.67	ug/l	0.376 lbs/day	52.00	ug/l	0.638 lbs/day
Iron				1000.00	ug/l	12.266 lbs/day
Lead	18.74	ug/l	0.230 lbs/day	480.78	ug/l	5.897 lbs/day
Mercury	0.0120	ug/l	0.000 lbs/day	2.40	ug/l	0.029 lbs/day
Nickel	169.47	ug/l	2.079 lbs/day	1524.29	ug/l	18.696 lbs/day
Selenium	4.60	ug/l	0.056 lbs/day	20.00	ug/l	0.245 lbs/day
Silver	N/A	ug/l	N/A lbs/day	41.53	ug/l	0.509 lbs/day
Zinc	389.97	ug/l	4.783 lbs/day	389.97	ug/l	4.783 lbs/day

* Allowed below discharge
**Chronic Aluminum standard applies only to waters with a pH < 7.0 and a Hardness < 50 mg/l as CaCO3

Metals Standards Based upon a Hardness of 402.61 mg/l as CaCO3

IV. Numeric Stream Standards for Protection of Agriculture

	4 Day Average (Chronic) Standard		1 Hour Average (Acute) Standard	
	Concentration	**Load***	**Concentration**	**Load***
Arsenic			100.0 ug/l	lbs/day
Boron			750.0 ug/l	lbs/day
Cadmium			10.0 ug/l	0.06 lbs/day
Chromium			100.0 ug/l	lbs/day
Copper			200.0 ug/l	lbs/day
Lead			100.0 ug/l	lbs/day
Selenium			50.0 ug/l	lbs/day
TDS, Summer			1400.0 mg/l	8.59 tons/day

V. Numeric Stream Standards for Protection of Human Health (Class 1C Waters)

	4 Day Average (Chronic) Standard		1 Hour Average (Acute) Standard	
Metals	**Concentration**	**Load***	**Concentration**	**Load***
Arsenic			ug/l	lbs/day
Barium			ug/l	lbs/day
Cadmium			ug/l	lbs/day
Chromium			ug/l	lbs/day
Lead			ug/l	lbs/day
Mercury			ug/l	lbs/day
Selenium			ug/l	lbs/day
Silver			ug/l	lbs/day
Fluoride (3)			ug/l	lbs/day
to			ug/l	lbs/day
Nitrates as N			ug/l	lbs/day

VI. Numeric Stream Standards the Protection of Human Health from Water & Fish Consumption [Toxics]

	Maximum Conc., ug/l - Acute Standards			
	Class 1C		**Class 3A, 3B**	
Metals				
Antimony	ug/l	lbs/day		
Arsenic	ug/l	lbs/day	4300.00 ug/l	53.39 lbs/day
Asbestos	ug/l	lbs/day		
Beryllium				
Cadmium				
Chromium (III)				
Chromium (VI)				
Copper				
Cyanide	ug/l	lbs/day	2.2E+05 ug/l	2731.65 lbs/day
Lead	ug/l	lbs/day		
Mercury			0.15 ug/l	0.00 lbs/day
Nickel			4600.00 ug/l	57.12 lbs/day
Selenium	ug/l	lbs/day		
Silver	ug/l	lbs/day		
Thallium			6.30 ug/l	0.08 lbs/day
Zinc				

There are additional standards that apply to this receiving water, but were not considered in this modeling/waste load allocation analysis.

VII. Mathematical Modeling of Stream Quality

Model configuration was accomplished utilizing standard modeling procedures. Data points were plotted and coefficients adjusted as required to match observed data as closely as possible.

The modeling approach used in this analysis included one or a combination of the following models.

(1) The Utah River Model, Utah Division of Water Quality, 1992. Based upon STREAMDO IV (Region VIII) and Supplemental Ammonia Toxicity Models; EPA Region VIII, Sept. 1990 and QUAL2E (EPA, Athens, GA).

(2) Utah Ammonia/Chlorine Model, Utah Division of Water Quality, 1992.

(3) AMMTOX Model, University of Colorado, Center of Limnology, and EPA Region 8

(4) Principles of Surface Water Quality Modeling and Control. Robert V. Thomann, et.al. Harper Collins Publisher, Inc. 1987, pp. 644.

Coefficients used in the model were based, in part, upon the following references:

(1) Rates, Constants, and Kinetics Formulations in Surface Water Quality Modeling. Environmental Research Laboratory, Office of Research and Development, U.S. Environmental Protection Agency, Athens Georgia. EPA/600/3-85/040 June 1985.

(2) Principles of Surface Water Quality Modeling and Control. Robert V. Thomann, et.al. Harper Collins Publisher, Inc. 1987, pp. 644.

VIII. Modeling Information

The required information for the model may include the following information for both the upstream conditions at low flow and the effluent conditions:

Flow, Q, (cfs or MGD)	D.O. mg/l
Temperature, Deg. C.	Total Residual Chlorine (TRC), mg/l
pH	Total NH3-N, mg/l
BOD5, mg/l	Total Dissolved Solids (TDS), mg/l
Metals, ug/l	Toxic Organics of Concern, ug/l

Other Conditions

In addition to the upstream and effluent conditions, the models require a variety of physical and biological coefficients and other technical information. In the process of actually establishing the permit limits for an effluent, values are used based upon the available data, model calibration, literature values, site visits and best professional judgement.

Model Inputs

The following is upstream and discharge information that was utilized as inputs for the analysis. Dry washes are considered to have an upstream flow equal to the flow of the discharge.

Current Upstream Information

	Stream Critical Low Flow cfs	Temp. Deg. C	pH	T-NH3 mg/l as N	BOD5 mg/l	DO mg/l	TRC mg/l	TDS mg/l
Summer (Irrig. Season)	0.0	21.9	8.3	0.03	0.10	8.65	0.00	1092.5
Fall	0.8	4.7	8.4	0.04	0.10	---	0.00	846.2
Winter	3.0	3.1	8.5	0.02	0.10	---	0.00	846.2
Spring	0.4	16.2	8.6	0.02	0.10	---	0.00	846.2

Dissolved Metals	Al ug/l	As ug/l	Cd ug/l	CrIII ug/l	CrVI ug/l	Copper ug/l	Fe ug/l	Pb ug/l
All Seasons	1.59*	0.53*	0.053*	0.53*	2.65*	0.53*	0.0	25.63

Dissolved Metals	Hg ug/l	Ni ug/l	Se ug/l	Ag ug/l	Zn ug/l	Boron ug/l	
All Seasons	0.0000	0.53*	4.60	0.1*	0.053*	10.0	* 1/2 MDL

Projected Discharge Information

Season	Flow, MGD	Temp.	TDS mg/l	TDS tons/day
Summer	1.47100	NA	609.92	3.74053
Fall	1.47100	NA		
Winter	1.47100	NA		
Spring	1.47100	NA		

All model numerical inputs, intermediate calculations, outputs and graphs are available for discussion, inspection and copy at the Division of Water Quality.

IX. Effluent Limitations

Current State water quality standards are required to be met under a variety of conditions including in-stream flows targeted to the 7-day, 10-year low flow (R317-2-9).

Other conditions used in the modeling effort coincide with the environmental conditions expected at low stream flows.

Effluent Limitation for Flow based upon Water Quality Standards

In-stream criteria of downstream segments will be met with an effluent flow maximum value as follows:

Season	Daily Average	
Summer	1.471 MGD	2.276 cfs
Fall	1.471 MGD	2.276 cfs
Winter	1.471 MGD	2.276 cfs
Spring	1.471 MGD	2.276 cfs

Flow Requirement or Loading Requirement

The calculations in this wasteload analysis utilize the maximum effluent discharge flow of 1.471 MGD. If the discharger is allowed to have a flow greater than 1.471 MGD during 7Q10 conditions, and effluent limit concentrations as indicated, then water quality standards will be violated. In order to prevent this from occuring, the permit writers must include the discharge flow limititation as indicated above; or, include loading effluent limits in the permit.

Utah Division of Water Quality
Salt Lake City, Utah

Effluent Limitation for Whole Effluent Toxicity (WET) based upon WET Policy

Effluent Toxicity will not occur in downstream segements if the values below are met.

WET Requirements	LC50 >	EOP	Effluent	[Acute]
	IC25 >	98.8%	Effluent	[Chronic]

Effluent Limitations for Total Dissolved Solids based upon Water Quality Standards

Season		Concentration		Load	
Summer	Maximum, Acute	1403.8	mg/l	8.61	tons/day
Fall	Maximum, Acute	1406.8	mg/l	8.63	tons/day
Winter	Maximum, Acute	1411.1	mg/l	8.65	tons/day
Spring	4 Day Avg. - Chronic	1405.4	mg/l	8.62	tons/day

Colorado Salinity Forum Limits — Determined by Permitting Section

Effluent Limitations for Total Recoverable Metals based upon Water Quality Standards

In-stream criteria of downstream segments for Dissolved Metals will be met with an effluent limitation as follows (based upon a hardness of 402.61 mg/l):

	4 Day Average Concentration		Load		1 Hour Average Concentration		Load	
Aluminum	N/A		N/A		759.2	ug/l	9.3	lbs/day
Arsenic	151.84	ug/l	1.2	lbs/day	344.2	ug/l	4.2	lbs/day
Cadmium	2.43	ug/l	0.0	lbs/day	7.5	ug/l	0.1	lbs/day
Chromium III	272.96	ug/l	2.2	lbs/day	5,711.1	ug/l	70.1	lbs/day
Chromium VI	11.09	ug/l	0.1	lbs/day	16.1	ug/l	0.2	lbs/day
Copper	31.04	ug/l	0.2	lbs/day	52.6	ug/l	0.6	lbs/day
Iron	N/A		N/A		1,012.3	ug/l	12.4	lbs/day
Lead	18.65	ug/l	0.1	lbs/day	486.4	ug/l	6.0	lbs/day
Mercury	0.01	ug/l	0.0	lbs/day	2.4	ug/l	0.0	lbs/day
Nickel	171.55	ug/l	1.4	lbs/day	1,543.0	ug/l	18.9	lbs/day
Selenium	4.60	ug/l	0.0	lbs/day	20.2	ug/l	0.2	lbs/day
Silver	N/A	ug/l	N/A	lbs/day	42.0	ug/l	0.5	lbs/day
Zinc	394.77	ug/l	3.1	lbs/day	394.8	ug/l	4.8	lbs/day
Cyanide	5.26	ug/l	0.0	lbs/day	22.3	ug/l	0.3	lbs/day

Effluent Limitations for Heat/Temperature based upon Water Quality Standards

Summer	23.9 Deg. C.	75.0 Deg. F
Fall	7.4 Deg. C.	45.3 Deg. F
Winter	7.7 Deg. C.	45.9 Deg. F
Spring	18.5 Deg. C.	65.4 Deg. F

Effluent Targets for Pollution Indicators Based upon Water Quality Standards

In-stream criteria of downstream segments for Pollution Indicators will be met with an effluent limit as follows:

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Salt Lake City, Utah

	1 Hour Average Concentration		Loading	
Gross Beta (pCi/l)	50.0	pCi/L		
BOD (mg/l)	5.0	mg/l	61.3	lbs/day
Nitrates as N	4.0	mg/l	49.1	lbs/day
Total Phosphorus as P	0.05	mg/l	0.6	lbs/day
Total Suspended Solids	90.0	mg/l	1103.9	lbs/day

Note: Pollution indicator targets are for information purposes only.

Effluent Limitations for Protection of Human Health [Toxics Rule]
Based upon Water Quality Standards (Most stringent of 1C or 3A & 3B as appropriate.)

In-stream criteria of downstream segments for Protection of Human Health [Toxics]
will be met with an effluent limit as follows:

	Maximum Concentration Concentration		Load	
Metals				
Antimony		ug/l		lbs/day
Arsenic		ug/l		lbs/day
Asbestos		ug/l		lbs/day
Beryllium				
Cadmium				
Chromium (III)				
Chromium (VI)				
Copper		ug/l		lbs/day
Cyanide		ug/l		lbs/day
Lead				
Mercury		ug/l		lbs/day
Nickel		ug/l		lbs/day
Selenium				
Silver				
Thallium		ug/l		lbs/day
Zinc				

Metals Effluent Limitations for Protection of All Beneficial Uses
Based upon Water Quality Standards and Toxics Rule

	Class 4 Acute Agricultural ug/l	Class 3 Acute Aquatic Wildlife ug/l	Acute Toxics Drinking Water Source ug/l	Acute Toxics Wildlife ug/l	1C Acute Health Criteria ug/l	Acute Most Stringent ug/l	Class 3 Chronic Aquatic Wildlife ug/l
Aluminum		759.2				759.2	N/A
Antimony				4352.9		4352.9	
Arsenic	101.2	344.2			0.0	101.2	151.8
Asbestos						0.00E+00	
Barium						0.0	
Beryllium						0.0	
Cadmium	10.1	7.5			0.0	7.5	2.4
Chromium (III)		5711.1			0.0	5711.1	273.0
Chromium (VI)	101.2	16.1			0.0	16.15	11.09
Copper	202.5	52.6				52.6	31.0
Cyanide		22.3	222706.9			22.3	5.3
Iron		1012.3				1012.3	
Lead	100.9	486.4			0.0	100.9	18.7
Mercury		2.43		0.15	0.0	0.15	0.012

Nickel		1543.0	4656.6		1543.0	171.5
Selenium	50.6	20.2		0.0	20.2	4.6
Silver		42.0		0.0	42.0	
Thallium			6.4		6.4	
Zinc		394.8			394.8	394.8
Boron	759.2				759.2	

Summary Effluent Limitations for Metals [Wasteload Allocation, TMDL]
[If Acute is more stringent than Chronic, then the Chronic takes on the Acute value.]

	WLA Acute ug/l	**WLA Chronic ug/l**	
Aluminum	759.2	N/A	
Antimony	4352.91		
Arsenic	101.2	151.8	Acute Controls
Asbestos	0.00E+00		
Barium			
Beryllium			
Cadmium	7.5	2.4	
Chromium (III)	5711.1	273	
Chromium (VI)	16.1	11.1	
Copper	52.6	31.0	
Cyanide	22.3	5.3	
Iron	1012.3		
Lead	100.9	18.7	
Mercury	0.152	0.012	
Nickel	1543.0	172	
Selenium	20.2	4.6	
Silver	42.0	N/A	
Thallium	6.4		
Zinc	394.8	394.8	
Boron	759.23		

X. Antidegradation Considerations

The Utah Antidegradation Policy allows for degradation of existing quality where it is determinec that such lowering of water quality is necessary to accommodate important economic or social development in the area in which the waters are protected [R317-2-3]. It has been determined that certain chemical parameters introduced by this discharge will cause an increase of the concentration of said parameters in the receiving waters. Under no conditions will the increase in concentration be allowed to interfere with existing instream water uses.

The antidegradation rules and procedures allow for modification of effluent limits less than those based strictly upon mass balance equations utilizing 100% of the assimilative capacity of the receiving water. Additional factors include considerations for "Blue-ribbon" fisheries, special recreational areas, threatened and endangered species, and drinking water sources.

An Antidegradation Level I Review was conducted on this discharge and its effect on the receiving water. Based upon that review, it has been determined that an Antidegradation Level II Review is not required.

XI. Colorado River Salinity Forum Considerations

Discharges in the Colorado River Basin are required to have their discharge at a TDS loading of less than 1.00 tons/day unless certain exemptions apply. Refer to the Forum's Guidelines for additional information allowing for an exceedence of this value.
This doesn't apply to facilities that do not discharge to the Colorado River Basin.

XII. Summary Comments

The mathematical modeling and best professional judgement indicate that violations of receiving water beneficial uses with their associated water quality standards, including important down-stream segments, will not occur for the evaluated parameters of concern as discussed above if the effluent limitations indicated above are met.

XIII. Notice of UPDES Requirement

This Addendum to the Statement of Basis does not authorize any entity or party to discharge to the waters of the State of Utah. That authority is granted through a UPDES permit issued by the Utah Division of Water Quality. The numbers presented here may be changed as a function of other factors. Dischargers are strongly urged to contact the Permits Section for further information. Permit writers may utilize other information to adjust these limits and/or to determine other limits based upon best available technology and other considerations provided that the values in this wasteload analysis [TMDL] are not compromised. See special provisions in Utah Water Quality Standards for adjustments in the Total Dissolved Solids values based upon background concentration.

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APPENDIX - Coefficients and Other Model Information

CBOD Coeff. (Kd)20 1/day	CBOD Coeff. FORCED (Kd)/day	CBOD Coeff. (Ka)T 1/day	REAER. Coeff. (Ka)20 (Ka)/day	REAER. Coeff. FORCED 1/day	REAER. Coeff. (Ka)T 1/day	NBOD Coeff. (Kn)20 1/day	NBOD Coeff. (Kn)T 1/day
2.000	0.000	1.057	569.725	0.000	409.923	0.400	0.137

Open Coeff. (K4)20 1/day	Open Coeff. (K4)T 1/day	NH3 LOSS (K5)20 1/day	NH3 (K5)T 1/day	NO2+NO3 LOSS (K6)20 1/day	NO2+NO3 (K6)T 1/day	TRC Decay K(Cl)20 1/day	TRC K(Cl)(T) 1/day
0.000	0.000	4.000	2.114	0.000	0.000	32.000	14.253

BENTHIC DEMAND (SOD)20 gm/m2/day	BENTHIC DEMAND (SOD)T gm/m2/day
1.000	0.417

K1 CBOD {theta}	K2 Reaer. {theta}	K3 NH3 {theta}	K4 Open {theta}	K5 NH3 Loss {theta}	K6 NO2+3 {theta}	K(Cl) TRC {theta}	S Benthic {theta}
1.0	1.0	1.1	1.0	1.0	1.0	1.1	1.1

Antidegredation Review

An antidegradation review (ADR) was conducted to determine whether the proposed activity complies with the applicable antidegradation requirements for receiving waters that may be affected. The Level I ADR evaluated the criteria of R317-2-3.5(b) and determined that a Level II antidegradation Review is not required.

ATTACHMENT 2

Reasonable Potential Analysis

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REASONABLE POTENTIAL ANALYSIS

Water Quality has worked to improve our reasonable potential analysis (RP) for the inclusion of limits for parameters in the permit by using an EPA provided model. As a result of the model, more parameters may be included in the permit. A Copy of the Reasonable Potential Analysis Guidance (RP Guide) is available at water Quality. There are four outcomes for the RP Analysis[1]. They are;

Outcome A: A new effluent limitation will be placed in the permit.
Outcome B: No new effluent limitation. Routine monitoring requirements will be placed or increased from what they are in the permit,
Outcome C: No new effluent limitation. Routine monitoring requirements maintained as they are in the permit,
Outcome D: No limitation or routine monitoring requirements are in the permit.

Initial screening for metals values that were submitted showed that a closer look at some of the metals is needed. The initial screening check for metals showed that the full model needed to be run on arsenic, cadmium, iron, and zinc. While the data from all outfalls were examined, only Outfall 007 had sufficient data to run the RP model. The RP model was run on arsenic, boron, chromium, copper, iron, lead, nickel and selenium. All other metals were not detected in sufficient quantity to run the RP model. The results of the models are: there is chronic RP at 95% and 99% confidence for iron and selenium. There was no RP for all other parameters (Outcome C).

RP input/output summary

RP Procedure Output	Outfall Number: 007 Data Units: µg/L	
Parameter	Arsenic (µg/L)	Boron (mg/L)
Distribution	Lognormal	Lognormal
Reporting Limit	10	11
Significant Figures	2	2
Effluent Data Points	10	16
Maximum Reported Effluent Conc.	0.011	0.18
Coefficient of Variation (CV)	1	0.432
Acute Criterion	0.19	NA
Chronic Criterion	0.34	0.75
Confidence Interval	95	95
Projected Maximum Effluent Conc. (MEC)	0.026	0.265
RP Multiplier	2.4	1.3
RP for Acute?	NO	NA
RP for Chronic?	NO	NO
Outcome	C	C

[1] See Reasonable Potential Analysis Guidance for definitions of terms

RP Procedure Output	Outfall Number: 007	
Parameter	Chromium (mg/l)	Copper (mg/L)
Distribution	Lognormal	Lognormal
Reporting Limit	0.0001	0.0001
Significant Figures	2	2
Effluent Data Points	5	11
Maximum Reported Effluent Conc.	0.0025	0.0057
Coefficient of Variation (CV)	0.65	0.51
Acute Criterion	0.8.134	0.079
Chronic Criterion	0.389	0.045
Confidence Interval	95	95
Projected Maximum Effluent Conc. (MEC)	0.0062	0.0089
RP Multiplier	2.5	1.6
RP for Acute?	NA	NO
RP for Chronic?	NO	NO
Outcome	C	C

RP Procedure Output	Outfall Number: 007	
Parameter	Iron (mg/L)	Selenium (µg/L)
Distribution	Lognormal	Lognormal
Reporting Limit	0.01	10
Significant Figures	2	2
Effluent Data Points	11	11
Maximum Reported Effluent Conc.	0.71	0.0038
Coefficient of Variation (CV)	0.884	0.48
Acute Criterion	NA	0.02
Chronic Criterion	1	0.0046
Confidence Interval	99	99
Projected Maximum Effluent Conc. (MEC)	0.026	0.0091
RP Multiplier	4.3	2.5
RP for Acute?	NA	NO
RP for Chronic?	YES	YES
Outcome	A	A

RP Procedure Output	Outfall Number: 007
Parameter	Nickel (Mg/L)
Distribution	Lognormal
Reporting Limit	0.001
Significant Figures	2
Effluent Data Points	12
Maximum Reported Effluent Conc.	0.0164
Coefficient of Variation (CV)	0.727
Acute Criterion	2.24
Chronic Criterion	0.2473
Confidence Interval	95
Projected Maximum Effluent Conc. (MEC)	0.029
RP Multiplier	1.77
RP for Acute?	NO
RP for Chronic?	NO
Outcome	C