

**FACT SHEET STATEMENT OF BASIS
CANYON FUEL COMPANY, LLC. – SUFCO MINE
UTAH POLLUTANT DISCHARGE ELIMINATION SYSTEM (UPDES)
PERMIT NUMBER: UT0022918
MAJOR INDUSTRIAL RENEWAL**

FACILITY CONTACTS

Facility Contact:	Mike Davis	Responsible Official:	John Byars
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DESCRIPTION OF FACILITY

Facility Name:	Canyon Fuel Company, LLC – SUFCO Mine
Mailing Address:	597 South S.R. 24 Salina, Utah 84654
Physical Location:	Convulsion Canyon east of Salina, Utah off I-70 from Exit #73
Coordinates:	Latitude: 38° 54' 54", Longitude: 111° 24' 54"
Standard Industrial Classification (SIC):	1222 - Bituminous Coal Underground Mining (NAICS 212112)

Canyon Fuel Company, LLC – SUFCO Mine (SUFCO) is an active underground coal mining facility. Since the last permit renewal SUFCO has built an additional settling pond at the 002 discharge point. These ponds will be operated in series with the 002 discharge point coming from the new second sedimentation pond. The discharge still goes to East Spring Canyon drainage which is a tributary of Quitchupah Creek. The existing permit was modified to reflect the new location of the 002 discharge point on March 1, 2011. No other changes have occurred at the mine over the last five year permit cycle.

DESCRIPTION OF DISCHARGE

SUFCO has three discharge points known as Outfalls 001, 002 and 003. Outfall 003 discharges mine water on a continuous basis from a mine breakout point into Quitchupah Creek. The water discharged from 003 drops down a steep canyon slope with final impact on some boulders before entering Quitchupah Creek (see pictures attached after the Addendums). Outfall 002, which drains the entire disturbed area of the surface facilities, is from a second sedimentation pond in a series of two sedimentation ponds. This sedimentation pond water is aerated by flowing through a

rock bed between the sedimentation ponds (see pictures attached after the Addendums). Discharge is to the South Fork of the North Fork of Quitcupah Creek. Outfall 001 is associated with previous mine dewatering operations and has not discharged in several years and is not anticipated to discharge into the foreseeable future. If discharge were to occur, it would also go to the South Fork of the North Fork of Quitcupah Creek. The outfalls as described in the proposed UPDES permit are as follows:

<u>Outfall</u>	<u>Description of Discharge Point</u>
001	Discharge of mine water from an eight-inch pipe. Located at latitude 38°54'54" and longitude 111°24'54".
002	Discharge from an eighteen-inch pipe serving as a discharge point from the second sedimentation overflow pond, located at latitude 38°54'32" and longitude 111°24'57".
003	A twenty-four inch discharge pipe at a mine breakout at least 50 feet above the creek. Located at latitude 38°57'26" and longitude 111°23'06".

RECEIVING WATERS AND STREAM CLASSIFICATION

The South Fork of the North Fork and the North Fork of Quitcupah Creek are classified under *Utah Administrative Code (UAC) R317-2-13* as follows:

Class 2B – protected for secondary contact recreation such as boating, wading, or similar uses.

Class 3A - protection for cold water species of game fish and other cold water 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 AND ANTIDegradation REVIEW

Effluent limitations may be derived using a Waste Load Analysis (WLA), which is appended to this statement of basis as Addendum I. The WLA incorporates 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. 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. The WLA indicates that the effluent limitations should be sufficiently protective of water quality, in order to meet State water quality standards in the receiving waters.

BASIS FOR EFFLUENT LIMITATIONS

In accordance with regulations promulgated in *40 Code of Federal Regulations (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.

- 1) SUFCO'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 (Outfall 001), *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. SUFCO 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.
- 2) TSS 30-day and 7-day averages are based on Utah Secondary Treatment Standards.
- 3) Daily minimum and daily maximum limitations on pH are derived from Utah Secondary Treatment Standards and Water Quality Standards.
- 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:

Since discharges from SUFCO 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 2008. SUFCO in its present permit did not receive a tonnage limit at 003 or 001 (normally no discharge) as a result of a study submitted in the early 1990s based on the salinity forum policy at that time (similar to Sections I.A.1.a.i and I.A.1.b. of Appendix B of the October 2008 revision). However SUFCO was given a concentration limitation of 1200 mg/L at 003 based on the Utah Water Quality Standards. SUFCO was able to meet this concentration limit at 003 as observed from DMR data presented in Addendum II. SUFCO was also given a 2000 pounds per day limit at discharge point 002 which SUFCO was able to meet with one exception in 2006 (see DMR data in Addendum II). It is also pertinent to mention that there is a site specific TDS requirement of 10,044 tons of TDS per year for SUFCO as contained in the “*Price River, San Rafael River and Muddy Creek TMDLs for Dissolved Solids –West Colorado Watershed Management Unit, Utah*” April 2004, p. 56, Table 4-2.

- a. A Waste Load Analysis (WLA) was completed for Outfalls 002 and 003. Based on the WLA for 003 a TDS effluent concentration of 1216 mg/L will be included in the renewal permit. In addition, based on the WLA for Outfall 002 a concentration limit of 1289 mg/L will be included in the renewal permit. Based on DMR data in Addendum II, SUFCO cannot consistently meet a TDS concentration of 1289 mg/L at Outfall 002. The requirement to meet this concentration limitation at 002 will be suspended in lieu of the following requirements:
 - i. Within six months of the effective date of the renewal permit, SUFCO will be required to identify what actions are needed to meet an effluent limitation of 1289 mg/L at Outfall 002. In addition, SUFCO must also identify the time frame to implement whatever is needed (structural and/or non-structural). The permit limitation of 1289 mg/L will be held in abeyance until final implementation is achieved.
 - b. Regarding TDS loading, 002 will be limited to a one ton per day limit which is a continuation of the loading limit at 002 from the previous permit. There will be no loading limit at Outfall 003, however the renewal permit will require that SUFCO complete a new study or up-date the existing one based on the requirements in Sections I.A.1.a.i and I.A.1.b. of Appendix B of the October 2008 revision of the Salinity Forum requirements. This new study or up-date of the existing one shall be completed within eighteen months of the effective date of this renewal permit and the study plan shall be approved by the Executive Secretary. This renewal permit may be reopened and the TDS loading limitations modified pending the results of this study.
- 5) The limitation on total 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 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.

EFFLUENT LIMITATIONS, SELF-MONITORING, AND REPORTING REQUIREMENTS

The effluent limitations and monitoring requirements for Outfalls 001 through 003 are as outlined below. Effluent self-monitoring requirements are developed in the *Utah Monitoring, Recording and Reporting Frequency Guidelines* as effective December 1, 1991. Reports shall be made via NetDMR or on Discharge Monitoring Report (DMR) forms and are due 28 days after the end of the monitoring period (month, quarter, year, etc.). Lab sheets for biomonitoring must be attached to the biomonitoring DMR.

Effluent Characteristics	Effluent Limitations				Monitoring Requirements	
	30 Day Average	7 Day Average	Daily Minimum	Daily Maximum	Sample Frequency	Sample Type
Flow, ¹ MGD	Report	² NA	NA	a/	2/Month	Measured
TSS, mg/L	25	35	NA	70	2/Month	Grab
Total Iron, mg/L	NA	NA	NA	1.0	2/Month	Grab
Oil & Grease, mg/L b/	NA	NA	NA	10	Monthly	Grab
TDS, mg/L	Report	NA	NA	c/	2/Month	Grab
TDS lbs/day	NA	NA	NA	c/	2/Month	Grab
pH, standard units	NA	NA	6.5	9.0	2/Month	Grab
Sanitary Waste d/	NA	NA	NA	None	2/Month	Visual
Oil and Grease, floating solids, visible foam, b/	NA	NA	NA	None	2/Month	Visual
Acute Whole Effluent Toxicity ³	NA	NA	NA	Pass	Semi-annual	Grab
Chronic Whole Effluent Toxicity ³	NA	NA	NA	Pass	Semi-annual	Grab

¹ MGD: million gallons per day ² NA: not applicable ³See Biomonitoring Requirements

a/ The daily maximum flow allowed at Outfall 002 is 0.5 MGD, and the daily maximum flow allowed at Outfall 003 is 5.5 MGD. No discharge from Outfall 001 is expected, but if it occurs the discharge shall be monitored as required in the table above.

b/ 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 twice per month. 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.

- c/ **Concentration:** The TDS concentration from Outfalls 001 and 003 shall not exceed 1216 mg/L as a daily maximum limit. See part I.D.3.a of the permit for a compliance schedule relating to the effluent limitation of 1289 mg/L at Outfall 002.
Loading: Outfall 002 will be limited to a TDS mass loading of 2000 pounds per day (one ton per day) and there will be no mass loading at Outfalls 001 and 003. See part I.D.3.b of the permit for a compliance schedule relating to a study to determine appropriate TDS loading for all discharge points at SUFCO.
- d/ There shall be no discharge of sanitary waste.

SIGNIFICANT CHANGES FROM PREVIOUS PERMIT

A daily maximum flow limit is included in the permit for Outfalls 002 and 003. An oil and grease sample shall be taken once per month from each Outfall. Twice per month the effluents from each outfall shall be visually observed for a visible sheen, floating solids or visible foam. If any of these are noted a sample for oil and grease shall be taken immediately and the concentration shall not exceed 10 mg/L. A TDS concentration limit of 1289 mg/L will be held in abeyance at 002 until final implementation of some type of treatment system or process. A compliance schedule will be approved by the Executive Secretary. Also, a TDS loading study or revision of the old TDS loading study (indicating that more than one ton per day can be discharged) needs to be completed within the first three years of the permit cycle. The study plan shall be approved by the Executive Secretary.

STORM WATER REQUIREMENTS

The storm water requirements are based on the UPDES Multi-Sector General Permit (MSGP) for Storm Water Discharges for Industrial Activity, General Permit No. UTR000000. All sections of the MSGP that pertain to discharges from wastewater treatment plants have been included and sections which are redundant or do not pertain have been deleted.

The permit requires the preparation and implementation of a storm water pollution prevention plan for all areas within the confines of the plant. Required elements of this plan are:

- 1) Development of a pollution prevention team,
- 2) Development of drainage maps and material stockpiles,
- 3) An inventory of exposed material,
- 4) Spill reporting and response procedures,
- 5) A preventative maintenance program,
- 6) Employee training,
- 7) Certification that storm water discharges are not mixed with non-storm water discharges,

- 8) Compliance site evaluations and potential pollutant source identification, and
- 9) Visual examinations of storm water discharges.

This plan is required to be maintained on-site to reflect current site conditions and made available for review upon request and/or inspections.

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.

BIOMONITORING REQUIREMENTS

As part of a nationwide effort to control toxic discharges, biomonitoring requirements are being included in permits for facilities where effluent toxicity is an existing or potential concern. In Utah, this is done in accordance with the *State of Utah Permitting and Enforcement Guidance Document for Whole Effluent Toxicity Control (Biomonitoring (2/1991))*. Authority to require effluent biomonitoring is provided in UAC R317-8, *Utah Pollutant Discharge Elimination System* and UAC R317-2, *Water Quality Standards*.

A review of the past four years of WET testing reports indicates that SUFCO has not failed an acute WET test during that time period. Because of this the acute biomonitoring frequency could be reduced. Based on the State policy mentioned in the paragraph above and the fact that SUFCO is discharging into a creek classified as a cold water fishery and at the 7Q10 of that creek SUFCO's discharge makes up 98 % of the flow in the creek, chronic biomonitoring is required. Based on BPJ acute WET testing shall be reduced to semi-annual and chronic WET testing shall be completed on a semi-annual basis alternating with acute WET testing. Alternating species shall be used for both the acute and chronic testing. No acute or chronic WET limits will be included in the renewal permit. However, a WET re-opener clause is included in the permit if testing demonstrates acute or chronic toxicity.

PERMIT DURATION

As stated in *UAC R317-8-5.1(1)*, UPDES permits shall be effective for a fixed term not to exceed five (5) years.

Drafted by Mike Herkimer
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February 28, 2011

ADDENDUMS

- I. Waste Load Analysis, Anti-Degradation Review (ADR)
- II. Available DMR Data from Outfalls 001-003 from 2006 through 2010

ADDENDUM I

Wasteload Analysis and Anti-degradation Review

ADDENDUM II

Available DMR Data for The 2005 -2010 Permit Cycle

Outfalls 001 and 002