Official Draft Public Notice Version **May 30, 2017**
The findings, determinations, and assertions contained in this document are not final and subject to change following the public comment period.

# FACT SHEET STATEMENT OF BASIS (FSSOB)
# PACIFICORP DEER CREEK MINE
# UTAH POLLUTANT DISCHARGE ELIMINATION SYSTEM (UPDES)
# PERMIT NUMBER: UT0023604
# PERMIT MODIFICATION TO COVER ADDITION OF A DISCHARGE POINT
# MINOR INDUSTRIAL FACILITY

## FACILITY CONTACTS

Facility Contact: Ken Fleck
Position: Geology and Environmental Affairs Manager
(435) 687- 4712

## DESCRIPTION OF PERMIT MODIFICATION

Facility Name: Pacificorp Deer Creek Mine
Mailing Address: P.O. Box 310
Huntington Utah 84528
Physical Location: 15 North Main Street, Hunntington, Utah 84528
Coordinates: Latitude: 39° 23' 23 N., Longitude: 111° 5' 23 W.

Standard Industrial Classification (SIC): *1222 - Bituminous Coal Underground Mining*

Deer Creek Mine is an underground coal mine which ceased production in January of 2015. The Deer Creek portals and south half of the mine were sealed on April 18, 2015. Discharge from the mine at Outfalls 001 and 002 ceased at the time of mine closure. Sealing the Deer Creek portal divided the underground workings into two halves each of which are filling up with water. Eventually there will be discharge from the Deer Creek portal where during the sealing a discharge collecting system and piping was installed to allow post mine gravity discharge flow from Outfall 002. Water from the northern half of the mine will eventually flow out by gravity through the Rilda Canyon Portals. Outfall flow to Rilda Canyon is estimated to be about 300 to 500 gallons per minute (GPM). In the north half of the mine there is more pyrite in the coal and the discharge from the Rilda Canyon portal may contain elevated levels of iron which is expected to dissipate over time.

Discharge is not allowed in the Rilda Canyon area because it is within Forest Service boundaries (UAC R317-2-3.2). Therefore, the facility decided to build a pipeline from the Rilda Canyon Portal area to the raw water pond at the Huntington Power Plant. The water would then be used consumptively for cooling water at the plant. The projected life of the power plant is through the year 2043. At that time if a discharge is still occurring from Rilda Canyon Portals, the discharge will be moved from the power plant to Huntington Creek. PacifiCorp's intent is to consumptively use the water at the Huntington plant; however, before the end of plant life, it may become necessary to discharge water at that time. As a result the facility is applying for a modification to

the Deer Creek Portal UPDES permit (UT0023604) to add an additional discharge point labeled Outfall 003 for discharge to Huntington Creek.

The existing Deer Creek Mine UPDES permit has two discharge points. Outfall 001 is a sedimentation pond which is now in the process of reclamation and will be completely removed during the 2017 and 2018 field seasons. Outfall 002 is discharge from the mine which has been sealed with a water collection system and piping to allow post mine gravity discharge flow at Outfall 002.

## DESCRIPTION OF DISCHARGE

The modified permit for the Deer Creek Mine will contain the addition of Outfall 003 and will have a total of three discharge points. The outfalls in the modified permit are as follows:

| Outfall | Description of Discharge Point |
|---|---|
| 001 | Sedimentation pond for surface water runoff, discharge to Deer Creek at Latitude 39° 21' 36" N, Longitude 111°06'35"W.. |
| 002 | Mine water discharge to Deer Creek at , Latitude 39° 21' 36" N, Longitude 111°06'57"W. |
| 003 | Mine water discharge from first right portal to Rilda Canyon to Huntington Creek at Latitude 39° 23' 23" N, Longitude 111°05'23"W. |

## RECEIVING WATERS AND STREAM CLASSIFICATION

Huntington Creek is the receiving stream for the new Outfall 003 and Deer Creek for the existing Outfalls 001 and 002. Based on Utah Administrative Code (UAC) R317-2-12.2, Huntington Creek has the follow classifications:

Class 1C - Protected for domestic purposes with prior treatment by treatment processes as required by the Utah Division of Drinking Water.

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

Class 3A -Protected 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, ANTIDEGRADATION REVIEW AND REASONABLE POTENTIAL ANALYSIS FOR OUTFALL 003

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 required. 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.

A Level II ADR was required since it is a new outfall and discharge to Huntington Creek. The completed Level II ADR is attached as an Addendum to this FSSOB. The selected treatment alternative, which was determined to be the least degrading, feasible alternative, was in-mine sedimentation. In addition, the water from the Rilda Canyon portal will be consumptively used by the Huntington Power Plant during the operational life of the facility.

Since January 1, 2016, DWQ has conducted reasonable potential analysis (RP) on all applications received after that date. RP for this permit modification 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 qualitative RP review was performed on Outfall 003 for the following total metals: arsenic, cadmium, chromium, copper, lead, mercury, nickel, selenium, silver, zinc, boron and iron. The review was conducted to determine if a quantitative reasonable potential was required to determine if the discharge has potential to exceed the applicable water quality standards. The qualitative RP review only requires a quantitative RP analysis to be completed on total iron. Thus the other metals will be monitored quarterly in accordance with the Division's monitoring frequency guidelines. Deer Creek will be required to use the method of analysis providing the lowest detection limit possible using standard methods and certified laboratories.

A quantitative RP analysis was performed on total iron 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: none.

**BASIS FOR EFFLUENT LIMITATIONS AT OUTFALL 003**

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 limitation 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.

1) Deer Creek Mines'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.

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, *UAC R317-1-3.2*.

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 Deer Creek Mine 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 2014. The TDS loading required by the salinity forum, and included in this permit is one ton per day 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 as a thirty day average no loading limit applies for that Outfall. The one ton per day loading limit applies only to those Outfalls exceeding 500 mg/L as a thirty day average. Those Outfalls exceeding 500 mg/L as a thirty day average, collectively, need to meet the one ton per day limit. If one ton per day cannot be achieved the permittee will be required to remove salinity/TDS in excess of one ton per day 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. At the present time there are no site specific standards for Huntington Creek in the area where Outfall 003 will discharge. The permittee will be required to meet a daily maximum TDS concentration of 1200 mg/L at Outfall 003.

5) The limitation on total recoverable iron is taken from 40 CFR 434 Subpart E, Post-Mining Areas. The limit is 7.0 mg/L as a daily maximum and 3.5 mg/L for a monthly average.

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

7) Dissolved oxygen will be limited to 6.5 mg/L as a minimum thirty day average.

8) Discharge rate from Outfall 003 is projected to be about 300 to 500 gpm or 0.72 million gallons per day.

**EFFLUENT LIMITATIONS, SELF-MONITORING, AND REPORTING REQUIREMENTS FOR OUTFALL 003**

The effluent limitations and monitoring requirements for Outfall 003 is 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 and are due 28 days after the end of the monthly monitoring period.

| Effluent Characteristics | Effluent Limitations | | | | Monitoring Requirements | |
|---|---|---|---|---|---|---|
| | 30 Day Average | 7 Day Average | Daily Minimum | Daily Maximum | Sample Frequency | Sample Type |
| Flow, [1]MGD | 0.72a/ | [2]NA | NA | NA | Monthly | Measured |
| TSS, mg/L | 25 | 35 | NA | NA | Monthly | Grab |
| Total Iron, mg/L | 3.5 | NA | NA | 7.0 | Monthly | Grab |
| Dissolved oxygen mg/L | 6.5b/ | NA | NA | NA | Monthly | Grab |
| Oil & Grease, mg/L c/ | NA | NA | NA | 10 | Monthly | Grab |
| TDS, mg/L | NA | NA | NA | 1200 | Monthly | Grab |
| TDS lbs/day d/ | NA | NA | NA | 2000d/ | Monthly | Grab |
| pH, standard units | NA | NA | 6.5 | 9.0 | Monthly | Grab |
| Sanitary Waste e/ | NA | NA | NA | None | Monthly | Visual |
| Oil and Grease, floating | NA | NA | NA | None | Monthly | Visual |

| | | | | | | |
|---|---|---|---|---|---|---|
| solids, visible foam, c/ | | | | | | |
| Total Arsenic, mg/L f/ | NA | NA | NA | NA | Quarterly | Grab |
| Total Cadmium, mg/L f/ | NA | NA | NA | NA | Quarterly | Grab |
| Total Chromium, mg/L f/ | NA | NA | NA | NA | Quarterly | Grab |
| Total Copper, mg/L f/ | NA | NA | NA | NA | Quarterly | Grab |
| Total Lead, mg/L f/ | NA | NA | NA | NA | Quarterly | Grab |
| Total Mercury, mg/L f/ | NA | NA | NA | NA | Quarterly | Grab |
| Total Nickel, mg/L f/ | NA | NA | NA | NA | Quarterly | Grab |
| Total Selenium, mg/L f/ | NA | NA | NA | NA | Quarterly | Grab |
| Total Silver, mg/L f/ | NA | NA | NA | NA | Quarterly | Grab |
| Total Zinc, mg/L f/ | NA | NA | NA | NA | Quarterly | Grab |
| Total Boron, mg/L f/ | NA | NA | NA | NA | Quarterly | Grab |
| [1] *MGD: million gallons per day* [2] *NA: not applicable* | | | | | | |

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

b/ Dissolved oxygen is a thirty day minimum average.

c/ 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.

d/ 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 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 2014. The TDS loading required by the salinity forum, and included in this permit is one ton per day 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 cannot be achieved the permittee will be required to remove salinity/TDS in excess of one ton per day 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.

e/ There shall be no discharge of sanitary waste.

f/ The permittee is required to get the lowest detection limit possible using standard methods

and certified laboratories.

The permitee is required to sample and submit results for one acute WET test of discharge water from Outfall 003. The sample should be collected prior to discharge into Huntington Creek. This UPDES permit may be re-opened and modified (See Part V.P of this permit) based on the results of this sample. The permittee should contact State certified WET laboratories for direction on sampling. Use of a grab sample is appropriate.

## STORM WATER REQUIREMENTS

Storm water requirements for all outfalls are contained in the existing permit. These are sufficient to cover the areas associated with Outfall 003.

## 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. This includes the notification to the POTW, the EPA Regional Waste Management Director, and the State hazardous waste authorities if hazardous waste is discharged by the permittee to a POTW, 40 CFR 403.12 (p)(1).

## 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*.

Deer Creek is a minor facility discharging ground water from an inactive mine. The northern portion of the mine has deposits elevated in pyrite which causes total iron content to be elevated in the effluent. The discharge from Outfall 003 only makes up 8.4 % of the final flow downstream after mixing. Therefore, if any WET testing is done it will be acute. All mine discharges are required to complete at least one WET test. The northern section of the mine has undergone sampling for metals and organics for Reasonable Potential analysis and indicates no potential for toxicity in the effluent. However, Deer Creek will be required to obtain at least one acute WET test of the mine water discharge. This acute WET test shall be taken prior to discharge into Huntington Creek.

## PERMIT DURATION

This modified permit will be in effect until midnight January 31, 2020, the expiration date of the originally issued individual permit.

Drafted by Mike Herkimer
Environmental Scientist
Utah Division of Water Quality
March 20, 2017

## ADDENDUMS

I. Waste Load Analysis
II. Anti-Degradation II Review (ADR II)
III. RP analysis.

The draft Fact Sheet and Statement of Basis, wasteload allocation and draft permit were public noticed in the and under "Public Participation" on the Division of Water Quality Web Site, www.waterquality.utah.gov, from through . comments were received.

Permit Writer: _____ Date: _____

DWQ-2017-002340

**ADDENDUM I**

Wasteload Analysis

**ADDENDUM II**

ADR II

**ADDENDUM III**

RP analysis