

**FACT SHEET STATEMENT OF BASIS
HARLEY DOME 1 PRODUCED WATER TREATMENT FACILITY
UPDES PERMIT NUMBER: UT0025917
NEW PERMIT
MINOR INDUSTRIAL**

FACILITY CONTACTS

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DESCRIPTION OF FACILITY

Harley Dome 1 Produced Water Treatment Facility (HD1PWTF) consists of an aeration tank, a walnut shell filter, a pH adjustment tank, a ceramic microfiltration, granulated activated carbon, ion exchange, and reverse osmosis. Aeration is used to reduce volatile organic compounds and to aid in oxidation reactions. The walnut shell filter reduces free oil, grease, and other insoluble hydrocarbons. The ceramic microfiltration reduces the contaminants and suspended solids in the process water. Granular activated carbon reduces the concentration of soluble nonpolar, organic compounds. Ion exchange is used to reduce the concentration of divalent cations, including calcium, magnesium, barium, and strontium. Reverse osmosis reduces the concentration of any remaining contaminants; especially total dissolved solids, strontium, and boron.

HD1PWTF has a single injection well located on the site and operated under a UIC permit, which has already been issued by the State of Utah. Only water that is not suitable for treatment will be sent directly to injection. Byproducts from the treatment process, such as the brine stream from the reverse osmosis system, will also be injected. Prior to the injection, all water will be treated to meet UIC permit requirements.

The facility is located at 100 West Highway 6, Westwater, UT 84515 in Grand County, Utah at latitude 39°10'26" and longitude 109°08'03". The facility has a Standard Industrial Classification (SIC) code of 1389, for Oil and Gas Field Services, Not Elsewhere Classified.

DISCHARGE

HD1PWTF is a new facility that has yet to discharge. A scaled down pilot test project was set up to determine the concentration of any pollutants of concern, that might occur from this facility. Once the treatment facility is constructed HD1PWTF will have 2 months to optimize the treatment plant. After the optimization period is complete HD1PWTF will be required to sample the effluent and submit the analysis of the pollutants listed in 40 CFR Part 423 Appendix A (Priority Pollutants). This sampling shall be taken within 2 weeks of the completion of the optimization period. HD1PWTF will again be required to sample the Priority Pollutants 2 months after the previous sample. A testing method shall be used so that the minimum reporting level (MRL) is below the water quality standard. Based on either or both of these results, the permit limits may be revised.

DESCRIPTION OF DISCHARGE

HD1PWTF is a new discharger and has no history of discharging data.

<u>Outfall</u>	<u>Description of Discharge Point</u>
001	Located at latitude 39°10'35.96" and longitude 109°08'19.33". The discharge is to Coal Draw then to the Colorado River.
002	Located at latitude 39°10'40.5" and longitude 109°07'46.49". The discharge is to Bitter Creek then to the Colorado River.
003	Located at latitude 39°10'01.68" and longitude 109°07'58.70". The discharge is to Coal Draw then to the Colorado River.

All three discharge points will have the same permit requirements.

RECEIVING WATERS AND STREAM CLASSIFICATION

The final discharge is to Coal Draw, which is classified as 1C, 2A, 3B, and 4 and to Bitter Creek, which is classified as 2B, 3C, and 4 according to *Utah Administrative Code (UAC) R317-2-13*.

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

Class 2A -- Protected for frequent primary contact recreation where there is a high likelihood of ingestion of water or a high degree of bodily contact with the water. Examples include, but are not limited to, swimming, rafting, kayaking, diving, and water skiing.

Class 3B -- Protected for warm water species of game fish and other warm 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.

BASIS FOR EFFLUENT LIMITATIONS

HD1PWTF is utilizing the best available technology (BAT) in the treatment of the process wastewater. Because of this, there are some parameters that are not in the permit, since the BAT will remove almost all concentrations of some contaminants. HD1PWTF must operate all treatment

processes at all times. If HD1PWTF is not operating all treatment processes, the permit may be modified to include additional parameters. Effluent limits for pH and total suspended solids (TSS) are based on current Utah Secondary Treatment standards. The total dissolved solids (TDS) concentration limit is based on the Utah Water Quality Standard. The total ammonia limit is based on the wasteload analysis. The oil & grease limit is based on best professional judgment. Discharges from the HD1PWTF could potentially reach the Colorado River, which places it under the requirements of the Colorado River basin salinity control forum (CRBSCF). In accordance with the CRBSCF the effluent will be limited to a maximum discharge of 1.0 ton per day or 366 tons per year if the TDS discharge concentration is greater than 500 mg/L. If the TDS concentration is less than 500 mg/L, then no tonnage limit will be required. The permit limitations are:

Effluent Limitations, Outfalls 001, 002, 003			
Parameter	Monthly Average	Daily Minimum	Daily Maximum
Flow, MGD	0.65	NA	NA
TSS, mg/L	25	NA	35
Dissolved Oxygen, mg/L	NA	5.5	NA
Total Ammonia, mg/L	NA	NA	1.3
Total Dissolved Solids, mg/L a/	NA	NA	1200
Total Dissolved Solids, tons/day a/	NA	NA	1.0
Selenium, mg/L	.0046	NA	.0184
Oil & Grease, mg/L	NA	NA	10
pH, standard units	NA	6.5	9.0

NA – Not Applicable

- a/ If the TDS concentration is less than 500 mg/L, then no tonnage limit will be required. If the TDS concentration is greater than 500 mg/L then TDS will be limited to a maximum discharge of 1.0 ton per day or 366 tons per year, with daily maximum tonnages reported monthly. It is the permittee's responsibility to monitor and report the actual discharge of TDS for each monitoring period.

SELF-MONITORING AND REPORTING REQUIREMENTS

The following self-monitoring and reporting requirements are listed in the table below. The permit will require reports to be submitted monthly on Discharge Monitoring Report (DMR) forms due 28 days after the end of the monitoring period.

Parameter	Frequency	Sample Type	Units	Reporting Frequency
Total Flow	Continuous	Recorder	MGD	Monthly
TSS	Weekly	Composite	mg/L	Monthly
Dissolved Oxygen	Weekly	Grab	mg/L	Monthly
Total Ammonia	Weekly	Grab	mg/L	Monthly
TDS	Weekly	Grab	mg/L	Monthly
TDS	Weekly	Grab	Tons/Day	Monthly
Selenium	Weekly	Grab	mg/L	Monthly
WET, Acute Biomonitoring	2 x Year	Composite	Pass/Fail	Semiannually
Metals b/	2 x Year	Composite	mg/L	Semiannually
Oil & Grease	Weekly	Grab	mg/L	Monthly
pH	Weekly	Grab	SU	Monthly

The permittee is required to sample the effluent and submit the analysis of the pollutants listed in 40 CFR Part 423 Appendix A (Priority Pollutants) within the first two weeks of discharging after the optimization period of 2 months, for outfalls 001, 002, or 003. A second sampling of the effluent will be required 3 months after the 1st sample. A testing method shall be used so that the minimum reporting level (MRL) is below the water quality standard for each pollutant. Based on the results of any of these samples, the permit limits may be revised.

- b/ The metals to be tested are listed in 40 CFR 122 Appendix D Table III (Other Toxic Pollutants (Metals and Cyanide)).

STORM WATER REQUIREMENTS

The operator of an existing or new discharge composed entirely of storm water from an oil or gas exploration, production, processing, or treatment operation, or transmission facility is not required to submit a permit application, unless the facility:

- (a) Has had a discharge of storm water resulting in the discharge of a reportable quantity for which notification is or was required pursuant to 40 CFR 117.21 or 40 CFR 302.6 at any time since November 16, 1987; or
- (b) Has had a discharge of storm water resulting in the discharge of a reportable quantity for which notification is or was required pursuant to 40 CFR 110.6 at any time since November 16, 1987; or
- (c) Contributes to a violation of a water quality standard.

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

A nationwide effort to control toxic discharges where effluent toxicity is an existing or potential concern is regulated in accordance with the *State of Utah Permitting and Enforcement Guidance Document for Whole Effluent Toxicity Control (biomonitoring)*. 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*.

Since the permittee will be a new discharging facility the permit will require whole effluent toxicity (WET) biomonitoring testing. Acute toxicity testing will be required using one species 2 times per year, alternating between Ceriodaphnia dubia and Pimephales promelas (fathead minnow).

The permit will contain the standard requirements for accelerated testing upon failure of a WET test and a PTI (Preliminary Toxicity Investigation) and TRE (Toxicity Reduction Evaluation) as necessary.

ANTIDegradation REVIEWS

Antidegradation Reviews (ADR) are intended to ensure that waters that have better quality than required by the standards are not degraded unless the degradation is necessary for important social or economic reasons.

The objective of the Level 1 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 concentration remains below the water quality based effluent limits presented in this wasteload.

A Level II ADR is required for this discharge, as pollutant concentration and load to the receiving water bodies are being increased for the new outfall. An ADR Level I review was performed and the conclusion was that an ADR Level II review was required, because this is a new facility. HD1PWTF has completed an Antidegradation Level II Review. A copy of the ADR document is appended to this document.

The DWQ concurs with the findings of the Level I (compliance with water quality standards) and Level II Reviews.

PERMIT DURATION

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

Drafted by
Matthew Garn, P.E.
Environmental Engineer
Utah Division of Water Quality
Drafted on June 4, 2012

PUBLIC NOTICE

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