

**FACT SHEET AND STATEMENT OF BASIS
SAND HOLLOW GROUNDWATER TREATMENT PLANT
NEW PERMIT: DISCHARGE
UPDES PERMIT NUMBER: UT0026131
MINOR INDUSTRIAL**

FACILITY CONTACTS

Person Name: Corey Cram
Position: Associate General Manager of Project Development
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Person Name: David Jessop
Position: Operator
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Facility Name: Sand Hollow Groundwater Treatment Plant
Mailing and Facility Address: 533 East Waterworks Drive
St. George, Utah 84770

Actual Address: Sand Hollow Road, Washington County

DESCRIPTION OF FACILITY

The Sand Hollow Groundwater Treatment Plant will be a newly constructed facility designed to primarily treat arsenic and manganese in raw groundwater. Arsenic and other contaminants will be removed through filter media. The main treatment process involves pre-oxidation with chlorine, coagulation (ferric chloride), and pressure filtration with sand and anthracite media and air scour capabilities, followed by post-chlorination. Backwash flows will be pumped to a backwash clarifier. Water within the clarifier will be decanted and returned to the front of the plant. Periodically, the sludge in the tank bottom will be removed through a blowdown process and will be pumped to the drying beds for further processing. Water within the drying beds will be removed through evaporation. However, in the event that the water production exceeds the evaporation rate, decanted water will discharge to the west dam drain to Sand Hollow Reservoir. Dried Sludge will be removed and hauled to a local landfill. The discharge is not anticipated to be year-round, but only during periods of low evaporation and high water production.

DISCHARGE

DESCRIPTION OF DISCHARGE

Sand Hollow Groundwater Treatment Plant is a groundwater treatment facility that maintains a UPDES permit in the event that a discharge of drying bed decant water is necessary.

Outfall Number

Location of Discharge Outfall(s)

001

Located at latitude 37° 06' 52.0" N and
longitude 113° 23' 18.0" W Intermittent
discharge of decant drying water from drying
beds through an 8" pipe to Sand Hollow
Reservoir to the Northeast of the facility.

RECEIVING WATERS AND STREAM CLASSIFICATION

If a discharge were to occur, it would be pumped into then west dam drain to Sand Hollow Reservoir, which is a Class 1C, 2A, 3B, 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

Limitations on total suspended solids (TSS), biochemical oxygen demand (BOD5), E. coli, and pH are based on current Utah Secondary Treatment Standards, UAC R317-1-3.2. Limitations on dissolved oxygen (DO) and total residual chlorine (TRC) were based on the wasteload analysis (WLA). The oil and grease is based on best professional judgment (BPJ). Attached is a WLA for this discharge into Sand Hollow Reservoir.

Total Dissolved Solids (TDS) limitations are based upon Utah Water Quality Standards for concentration values and the Colorado River Basin Salinity Control Forum (CRBSCF) for mass loading values when applicable as authorized in UAC R317-2-4. In accordance with the CRBSCF the effluent will be limited to a maximum discharge of 1 ton per day. The Virgin River Watershed has an approved TMDL for TDS. Sand Hollow Reservoir is included in the approved TMDL for the Virgin River Watershed. The TMDL calls for a 24% reduction in TDS loading, but does not assign allocations to facilities. Since no allocations were identified in the TMDL, the facility will be required to meet the standard for TDS, which is 1,200 mg/L.

Since this is a new UPDES permit and the discharge will use assimilative capacity of the receiving water, a Level II Antidegradation review (ADR) was required. The level II ADR was public noticed from **Month day, 2020 to Month day, 2020** as part of this permit. The permittee is expected to be able to comply with these limitations. It has been determined that this discharge will not cause a violation of water quality

standards. The permit limitations are:

Parameter	Effluent Limitations ^a			
	Maximum Monthly Avg.	Maximum Weekly Avg.	Daily Minimum	Daily Maximum
Total Flow (GPD)	-	-	--	3,600
TSS, mg/L	25	35	--	--
BOD ₅ , mg/L	25	35	--	--
Dissolved Oxygen, mg/L	--	--	5.0	--
TRC, mg/L	--	--	--	0.280
<i>E. coli</i> , No./100mL	126	157	--	--
Oil & Grease, mg/L	--	--	--	10.0
pH, Standard Units	--	--	6.5	9
TDS, tons/day ^g	--	--	--	1.0
TDS, mg/L ^g	--	--	--	1,200

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 was not conducted following DWQ’s September 10, 2015 Reasonable Potential Analysis Guidance (RP Guidance) because there is inadequate data for use in a RP. As a result, monitoring for metals will be included in this permit. The monitoring will help establish a record of presence or absence of each pollutant. Monitoring for metals will be required 1 time during this permit cycle. To ensure that the metals sampling requirement is met during the permit cycle, the facility should consider collecting the samples as soon as they begin to discharge.

SELF-MONITORING AND REPORTING REQUIREMENTS

The permit will require reports to be submitted monthly and annually, as applicable, on Discharge Monitoring Report (DMR) forms due 28 days after the end of the monitoring period. Effective January 1, 2017, monitoring results must be submitted using NetDMR unless the permittee has successfully petitioned for an exception. Lab sheets for biomonitoring must be attached to the biomonitoring DMR. Lab sheets for metals and toxic organics must be attached to the DMRs.

The applicant identified Arsenic, TSS, Iron, and Manganese as pollutants of concern. Since this facility currently doesn’t discharge, the concentrations of the parameters of concern (POC) in the effluent are not known. Monitoring only for Arsenic, Iron, and Manganese were included in this permit to determine if a future limit will be required. Based on the results the facility may receive limits, continue monitoring only, or have the monitoring requirements removed. At this time no limit for Arsenic, Manganese, and Iron were included.

Self-monitoring and reporting requirements are listed below:

Self-Monitoring and Reporting Requirements ^a			
Parameter	Frequency	Sample Type	Units
Total Flow ^{b,c}	Continuous	Recorder	GPD
TSS	Monthly	Grab	mg/L
BOD ₅	Monthly	Grab	mg/L
<i>E. coli</i>	Monthly	Grab	No./100mL
pH	Monthly	Grab	SU
DO	Monthly	Grab	mg/L
TRC	Daily	Grab	mg/L
Oil & Grease ^d	When Sheen Observed	Grab	mg/L
Arsenic ^e	Monthly	Grab	mg/L
Manganese ^e	Monthly	Grab	mg/L
Iron ^e	Monthly	Grab	mg/L
TDS ^{f,g}	Monthly	Composite	tons/day
TDS ^{f,g}	Monthly	Composite	mg/L
Metals ^h	1 X in Permit Cycle	Composite	mg/L

Metals to be Monitored		
Parameter	Sample Type	Units
Total Arsenic	Composite	mg/L
Total Cadmium	Composite	mg/L
Total Chromium	Composite	mg/L
Total Copper	Composite	mg/L
Total Cyanide	Grab	mg/L
Total Lead	Composite	mg/L
Total Mercury	Grab/Composite	mg/L
Total Nickel	Composite	mg/L
Total Selenium	Composite	mg/L
Total Silver	Composite	mg/L
Total Zinc	Composite	mg/L

Table References

- a. See Definitions, Part VII, for definition of terms.
- b. Flow measurements of influent/effluent volume shall be made in such a manner that the permittee can affirmatively demonstrate that representative values are being obtained.
- c. If the rate of discharge is controlled, the rate and duration of discharge shall be reported.

- d. Oil & Grease sampled when sheen is present or visible. If no sheen is present or visible, report NA.
- e. Arsenic, Iron, Manganese are currently monitoring only. Monitoring is required for these parameters because they were identified as a pollutant of concern by the applicant. Data collected will be used to determine if a future limit is required, if more data is needed, or if there is no need for continued monitoring.
- f. If the facility is unable to collect a composite sample, then a grab should be taken.
 - a. The facility has both concentration and mass limits for Total Dissolved Solids (TDS). The Virgin River Watershed has an approved TMDL for TDS. TDS mass limitations are based on Colorado Basin Salinity Control Forum and concentration based limits are based on the approved TMDL for the Virgin River Watershed and reflects the standard.
 - b. Metals sampling shall occur 1 time during the 5-year permit cycle.

End Table References

PRETREATMENT REQUIREMENTS

Any wastewater discharged 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 CWA, the permittee shall comply with all applicable Federal Pretreatment Regulations promulgated at 40 CFR Part 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.

In addition, in accordance with 40 CFR Part 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 the permittee discharges any substance into a POTW which if otherwise disposed of would be considered a hazardous waste under 40 CFR Part 261. This notification must include the name of the hazardous waste, the EPA hazardous waste number, and the type of discharge (continuous or batch).

BIOSOLIDS

The State of Utah has adopted the 40 CFR 503 federal regulations for the disposal of sewage sludge (biosolids) by reference. However, since this facility is a drinking water plant, there is not any regular biosolids production. Therefore 40 CFR 503 does not apply at this time. In the future, if the sludge needs to be removed from the drying beds and is disposed in some way; the Division of Water Quality must be contacted prior to the removal of the sludge to ensure that all applicable state and federal regulations are

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.

The permittee is a minor industrial facility that will be discharging an infrequent amount of effluent which will be significantly diluted by Sand Hollow Reservoir. Additionally, based on the frequency and quantity of flow, it is not likely that the facility will be able to conduct sampling that would meet WET testing requirements, as outlined in the 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
Leanna Littler, Discharge
Daniel Griffin, Biosolids
Jennifer Robinson, Pretreatment
Lonnie Shull, Biomonitoring
Suzan Tahir, Wasteload Analysis
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Utah Division of Water Quality, (801) 536-4300

PUBLIC NOTICE

Began: Month Day, Year
Ended: Month Day, Year

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

The Public Noticed of the draft permit was published on the Department website.

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.

ADDENDUM TO FSSOB

During finalization of the Permit certain dates, spelling edits and minor language corrections were completed. Due to the nature of these changes they were not considered Major and the permit is not required to be re Public Noticed.

Responsiveness Summary

(Explain any comments received and response sent. Actual letters can be referenced, but not required to be included).

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ATTACHMENT 1

Wasteload Analysis

PVNDraft

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