Official Draft Public Notice Version **April 30, 2021**
The findings, determinations, and assertions contained in this document are not final and subject to change following the public comment period.

FACT SHEET AND STATEMENT OF BASIS
DUCHESNE VALLEY WATER TREATMENT PLANT
DISCHARGE RENEWAL PERMIT
UPDES PERMIT NUMBER: UT0025801
MINOR INDUSTRIAL FACILITY

FACILITY CONTACTS

Person Name:	Chuck Hale
Position:	Facility Manager
Person Name:	Mike Rau
Position:	Water Quality Manager
Facility Name:	Central Utah Water Conservancy District Duchesne Valley Water Treatment Plant
Mailing Address:	PO Box 912 Duchesne, UT 84021
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DESCRIPTION OF FACILITY

Central Utah Water Conservancy District owns and operates the Duchesne Valley Water Treatment Plant (DVWTP) located on the east side of the Starvation Reservoir in Duchesne, Utah. The DVWTP is a direct filtration drinking water treatment plant that was constructed in the early 1980's and is designed to discharge an annual average of 0.65 million gallons per day (MGD) and falls under the Standard Industrial Category #4941, for Water Supply. The DVWTP process starts with pumping raw water from Starvation Reservoir up to the treatment plant where either aluminum sulfate (alum) or ferric chloride (ferric) is then rapidly mixed with the raw water (coagulation) to neutralize the surface charge of particles found in the raw water. The water is then mechanically mixed (flocculation) to form larger particles which can then be removed next in the duel media filtration process. After the filtration and disinfection process, the high-quality treated drinking water then enters finished water storage reservoirs to await delivery to the consumer.

Regarding DVWTP effluent discharges, when the filtration process has collected or filtered a pre-determined amount of material from the water, the filtration process is stopped and clean drinking water is pumped in the reverse direction through the filter media to wash out all the collected particles within the filter. This (backwash) water then flows to one of two 1.1-million-gallon capacity drying/settling basins, where the backwash particles in the water settle out in the basin, and the clarified decant water flows, at a selected rate, from the top water level in the basin through adjustable gates and then flows back to Starvation Reservoir via pipeline to Outfall 001 located at latitude 40° 11' 45" & longitude 110° 26' 10".

SUMMARY OF CHANGES FROM PREVIOUS PERMIT

The only changes proposed with this renewal permit are the removal of Secondary Treatment Standards which no longer apply to Non-POTW facilities, as well as the inclusion of Turbidity monitoring, both as described in the Self-Monitoring & Reporting Requirements section of the permit and this Fact Sheet. All other permit provisions remain unchanged.

DISCHARGE INFORMATION

DESCRIPTION OF DISCHARGE OUTFALL(S)

A description of the permitted discharging outfalls are as follows:

Outfall	Description of Discharge Point
001	Located at latitude 40° 11' 45" and longitude 110° 26' 10". The discharge is gravity flow through a 10-inch diameter pipe leading from the settling basin to Starvation Reservoir.

RECEIVING WATERS AND STREAM CLASSIFICATION

The discharge flows into the Starvation Reservoir. Starvation Reservoir is Class 1C, 2A, 2B, 3A, 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 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.

BASIS FOR EFFLUENT LIMITATIONS

In accordance with regulations promulgated in *40 Code of Federal Regulations (CFR) Part 122.44* and in *Utah Administrative Code* (*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 limits or multiple limits have been developed, Best Professional Judgment (BPJ) of the permitting authority may be used where applicable. "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 Wasteload Analysis (WLA), which incorporates Secondary Treatment Standards, Water Quality Standards, including Total Maximum Daily Load (TMDL) impairments as appropriate, Antidegradation Review (ADR) 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 completed. 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 flow or concentrations from the existing DVWTP operations. 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 Fact Sheet.

The following list is the basis of the effluent limitations for the applicable permit parameters:

1) Daily minimum and daily maximum limitations for pH are derived from Utah Water Quality Standards in *UAC R317-2-14.*

2) Limitations for Total Dissolved Solids (TDS) are based on the State Water Quality Standard for concentrations, as authorized in *UAC R317-2-14*, as well as the Colorado River Basin Salinity Control Forum (CRBSCF) for loading, as authorized in *UAC R317-2-4*. Discharges from the permittee eventually reach the Colorado River, which places it under the guidance of the CRBSCF. Total dissolved solids are limited in loading by the CRBSCF and in February 1977 they produced the *"Policy For Implementation of Colorado River Salinity Standards Through the NPDES Permit Program"* (Policy). This Policy is still in effect, and recently updated in October 2020. Therefore, discharges from DVWTP will be limited to a maximum discharge of 1.0 ton per day TDS or 366 tons per year if the 1-ton/day limitation cannot be met.

3) Limitations on Iron and Aluminum for both concentration and loading are water quality based as derived from the previous permit development and 2016 WLA, which are more stringent than the limitations for those parameters as derived from the current 2021 WLA. Since DVWTP has consistently met all previous permit limitations, as well as to avoid EPA's Anti-Backsliding Policy for any potential increased permit limitations, the more stringent limitations from the previous permit and WLA will remain in the permit based upon BPJ of the permitting authority.

The parameters of concern (POCs) are the same as previous permits and are based upon the DVWTP process utilizing either aluminum sulfate, or ferric chloride to treat the raw water of Starvation Reservoir as mentioned previously. Therefore, aluminum and iron, along with TDS and pH as mentioned above, are once again the primary POCs for this renewal permit.

Total Maximum Daily Load (TMDL)
According to the Utah's 2016 303(d) Water Quality Assessment Report, the receiving water for the discharge; Starvation Reservoir (UT-L-14060004-006_00) was not assessed against water quality standards for its beneficial uses due to insufficient data to make the assessment. Therefore, a TMDL does not exist for the receiving waters and no additional potential POCs are being included at this time. Also, a limitation on Effluent Flow has not been previously included and is not required since both the concentration and loading limitations are included for the applicable POCs.

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 qualitative RP analysis was performed on the parameters of concern, as derived from the current permit and WLA, to determine if there was reasonable potential for the discharge to exceed the applicable water quality standards. Based on the RP analysis it was determined not to include any additional effluent limits in this 2021 renewal permit. This is because all the data points reviewed did not exceed, or come close to exceeding the applicable Water Quality Standards, Therefore, no RP currently exists at the facility for the identified POCs and a more quantitative RP analysis was not necessary at this time. The result is *RP Outcome C: No new effluent limitation. Routine monitoring requirements maintained as they are in the permit*. A copy of the RP analysis is included at the end of this Fact Sheet.
The permit limitations are as follows:

Parameter	Effluent Limitations *a				
	Maximum Monthly Avg	Maximum Weekly Avg	Yearly Average	Daily Minimum	Daily Maximum
Total Flow, MGD *b	Report	--	Report	--	Report
pH, Standard Units	--	--	--	6.5	9
Aluminum, mg/L *c	3.9	--	--	--	7.24
Aluminum, lbs/day *c	3.2	--	--	--	6.0
Iron, mg/L *d	--	--	--	--	0.17
Iron, lbs/day *d	--	--	--	--	0.14
TDS, mg/L *e	--	--	--	--	1200
TDS, tons/day *e	--	--	--	--	1.0
TDS, tons/yr *e	--	--	366	--	--
Turbidity, NTU *f	--	--	--	--	Report
WET, Chronic Biomonitoring *g	--	--	--	--	$IC_{25} > 2\%$ effluent

SELF-MONITORING AND REPORTING REQUIREMENTS

The following self-monitoring requirements are very similar as in the previous permit with a couple changes. As mentioned previously, Turbidity monitoring has been included in lieu of TSS secondary treatment standards to reflect rule changes in *UAC R317-1-3,* which clarifies that both TSS and BOD secondary treatment standards are not required for Non-POTW facilities. Publicly Owned Treatment Works (POTWs) are facilities that receive and process domestic waste water, therefore DVWTP is a Non-POTW facility as classified and secondary treatment standards do not apply. The permit requires that the self-monitoring reports are to be submitted monthly as appropriate, and on Discharge Monitoring Report (DMR) forms due 28 days after the end of each monitoring period. Effective January 1, 2017, monitoring results must be submitted electronically using NetDMR unless the permittee has successfully petitioned for an exception. Lab reports for biomonitoring, as well as lab reports for metals and toxic organics, if required in the future must be submitted with the applicable DMRs. A review of the past 5 years of DMR data reveals that the DVWTP has had no permit exceedances and should be able to continue complying with the permit provisions as included herein.

Self-Monitoring and Reporting Requirements *a			
Parameter	Frequency	Sample Type	Units
Total Flow *b	Continuous	Recorder	MGD
pH	Weekly	Grab	SU
Aluminum *c	Monthly	Grab	mg/L
Iron *d	Monthly	Grab	mg/L
Total Dissolved Solids *e	Monthly	Grab	mg/L
Turbidity *f	Monthly	Grab	NTU
WET – Biomonitoring *g			
Ceriodaphnia - Chronic	1st & 3rd Quarter	Composite	Pass/Fail
Fathead Minnows - Chronic	2nd & 4th Quarter	Composite	Pass/Fail

*a See Permit Definitions, *Part VIII*, for definition of terms.
*b If the flow rate of discharge is controlled, the rate and duration of discharge shall be reported.
*c Aluminum monitoring is not required if no Alum is used in the treatment process.

*d Iron monitoring is not required if no Ferric Chloride is used in the treatment process.

*e In addition to the total dissolved solids (TDS) effluent concentration limitation, TDS effluent loading is limited to one-ton/day. If the one-ton/day effluent loading limitation cannot be met, then the permittee is limited to 366-tons/year total TDS effluent loading from the facility. It is the responsibility of the permittee to maintain annual TDS loading information and upon request the permittee shall submit to the Director the annual TDS loading information.

*f Turbidity monitoring shall be conducted monthly whenever possible from the discharge to ensure that there is not an increase of more than 10 NTU over the receiving waters, if applicable.

*g Chronic Biomonitoring of the effluent shall be conducted quarterly with alternating species as detailed above.

STORM WATER

Separate storm water permits may be required based on the types of activities occurring on site. The facility's SIC code is 4941: Water Supply, and there is no bulk storage of any contaminants at the facility. Therefore, a separate storm water industrial UPDES permit is not required.

Permit coverage under the Construction General Storm Water Permit (CGP) is required for any construction at the facility which disturb an acre or more, or is part of a common plan of development or sale that is an acre or greater. A Notice of Intent (NOI) is required to obtain a construction storm water permit prior to the period of construction.

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

PRETREATMENT REQUIREMENTS

There is no discharge of process wastewater to any municipal wastewater treatment facility. Any process wastewater that the facility may discharge to the public sanitary sewer, either as 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 in 40 CFR Section 403, the State 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).

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 (DWQ WET policy). 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 renewal permit will once again require Whole Effluent Toxicity (WET) Chronic testing. Although Acute WET testing is the minimally required method as derived from the DWQ WET policy based upon the effluent dilution ratio being >20:1 into the receiving waters of Starvation Reservoir, Chronic WET testing will remain in the permit based upon best professional judgment of the permitting authority to be more protective of the receiving water. The permittee previously performed both Acute and Chronic WET testing for the initial 5-year permit cycle and after no WET failures of any kind, requested a reduction to Chronic WET testing only and with alternating species. Chronic toxicity tests will remain quarterly, alternating between *Ceriodaphnia dubia and Pimephales promelas (fathead minnows) species*, as detailed in the permit. Alternating the testing species, as well as alternating the composite sampling to one day instead of three days have been previously granted to the permittee, and will continue in this permit renewal once again as requested by the permittee. This is based upon the absence of toxicity as confirmed through testing over the previous 5-year permit cycles and the permitting authority's best professional judgment.

The permit will once again contain the standard requirements for accelerated testing frequency, as well as a Toxicity Reduction Evaluation (TRE) as necessary. The permit will also contain a toxicity limitation re-opener provision. This provision allows for modification of the permit at any time to include WET limitations and/or increased WET monitoring, 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
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April 19, 2021

PUBLIC NOTICE INFORMATION (to be updated after)

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

Written Comments will be received at: 195 North 1950 West
PO Box 144870
Salt Lake City, UT 84114-4870
Or electronically at: https://deq.utah.gov/water-quality/water-quality-electronic-submissions
The Public Notice of the draft permit and the draft permit documents will be published on the DWQ website for at least 30 days as required per UAC R317-8-6.5.

During the public comment period provided under UAC R317-8-6.5, any interested person may submit written comments on the draft permit and/or 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 UAC R317-8-6.12.

ADDENDUM TO FSSOB

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

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ATTACHMENT 1

Wasteload Analysis & Antidegradation Review

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ATTACHMENT 2

Reasonable Potential Analysis

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REASONABLE POTENTIAL ANALYSIS

DWQ has worked to improve our reasonable potential (RP) analysis for the inclusion of limits for parameters in the permit by utilizing an EPA approved method and RP guidance document. As a result, more parameters and/or limits may be included in the renewal permit. There are four resulting outcomes for the RP Analyses[1] as listed below;

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.

The Initial RP Screening Table is included below for all existing permit parameters of concern (POCs), as derived from the UPDES permit, the WLA, and/or applicable TMDL information. Note that the full RP analysis model was not utilized at this time due to the results of the initial screening results below.

RP Initial Screening Table for DVWTP (UT0025801)
2016-2020 Data Summary Results & RP Analysis (Outfall 001)

Parameter	No. of Samples	MEC* mg/L	Water Quality Standards MAC**		Result
			Current WLA Acute mg/L	Current WLA Chronic mg/L	
Aluminum	0	NA	8.72	4.71	MEC ≤ MAC
Iron	60	0.13	0.259	--	MEC ≤ MAC
TSS	60	4	25	35	MEC ≤ MAC
BOD5	60	5	25	35	MEC ≤ MAC
TDS	60	420	1200 (WQS)	1200 (WQS)	MEC ≤ MAC
pH, SU	>200	7.3 - 8.6 (SU)	6.5 (min)	9.0 (max)	MEC ≤ MAC

Notes: NA = not applicable. Alum not used for treatment, only Ferric Chloride.
*MEC = Maximum expected effluent concentration as determined from existing data set.
**MAC = Maximum allowable concentration from Water Quality Standards and/or Wasteload Analysis.
MEC less than or equal (≤) to MAC, no additional Acute or Chronic limits required.
MEC > MAC = RP identified, include appropriate limits, if applicable.

Result: From the table above, the RP analysis results of the discharge for the listed POCs is: MEC ≤ MAC, Therefore no additional Acute or Chronic limits required. This equates to ***RP Outcome C: No new effluent limitation. Routine monitoring requirements maintained as they are in the permit.***

Summary: Based upon the policy "Reasonable Potential Analysis Guidance" developed by the Utah Division of Water Quality on September 10, 2015 and subsequently implemented beginning January 1, 2016 for all new and renewal permits; it was determined not to include any additional effluent limits in this 2021 renewal permit. This is because all the data points reviewed did not exceed, or come close to exceeding the applicable Water Quality Standards, Therefore, no RP currently exists at the facility for the identified POCs and a more quantitative RP analysis was not necessary at this time.

[1] Outcome definitions taken from the 2015 DWQ Reasonable Potential Analysis Guidance.

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