Official Draft Public Notice Version **April 20th, 2026**
The findings, determinations, and assertions contained in this document are not final and subject to change following the public comment period.

FACT SHEET
COURTHOUSE WASH WASTEWATER TREATMENT FACILITY
RENEWAL PERMIT: DISCHARGE
UPDES PERMIT NUMBER: UT0025828
MINOR MUNICIPAL

FACILITY CONTACTS

Person Name:	Larry Hall	Person Name:	Trent Taylor
Position:	Consultant	Position:	Manager/Owner
Phone Number:	(801) 209-6382	Phone Number:	(435) 979-0796

Person Name:	Nate Taylor
Position:	Owner
Phone Number:	(801) 830-9135

Permittee Name:	Arches Special Service District
Facility Name:	Courthouse Wash Wastewater Treatment Facility (CWW)
Mailing and Facility Address:	1863 North Hwy 191 Moab, UT 84532
Telephone:	(435) 259-2628
Actual Address:	1863 North Hwy 191 Moab, UT 84532

DESCRIPTION OF FACILITY

The Courthouse Wash Wastewater Treatment Facility (CWW) influent consists of two hotels and one business that conducts Colorado River guided tours. The discharge from the drinking water treatment plant consists of raw river water that overflows from the inlet raw water tank back to the discharge. The drinking water treatment process consists of a super settler, plate settler, and a membrane treatment system. A neutralization tank also collects water from acid and caustic cleaning processes of the membranes. The backwash from the membranes will also be discharged.

The wastewater from the site flows to a force main lift station, where it is pumped to an Orenco treatment system consisting of two 25,000-gallon settling tanks, a 25,000-gallon recirculation tank, six Advantex textile filter pods, a 25,000-gallon effluent storage tank, and an ultraviolet (UV) disinfection system. The influent settling tanks will be pumped of solids as needed. A neutralization tank also collects water from the acid and caustic cleaning processes of the membranes. The backwash from the membranes will also be discharged. The average daily flow from the combined discharge will be 130,000 gallons per day (gpd). The final discharge will be to the Colorado River and a large underground wastewater onsite disposal system.

SUMMARY OF CHANGES FROM PREVIOUS PERMIT

Permit Updates:

The Permittee is officially the Arches Special Service District.

CWW was upgraded to address previous exceedances of its Maximum Weekly Average Biological Oxygen Demand (BOD5) limit. As a result of these upgrades, wastewater flows increased from 30,000 gpd to 50,000 gpd.

Limitations on total suspended solids (TSS) and BOD5 percent removal were added in accordance with current Utah Secondary Treatment Standards, Utah Administrative Code (UAC) R317-1-3.2. This is a requirement for all municipal facilities.

Metals sampling frequency has been increased to Quarterly to gather enough data to run a Reasonable Potential Analysis during the next permit cycle.

Ammonia and Total Residual Chlorine (TRC):

Ammonia and TRC limits are included in the Wasteload Analysis (WLA) for this discharge because endangered species (ES) early life stages (ELS) are presumed present in the receiving waters or tributaries, and, according to the WLA, there is potential for toxicity. The Courthouse Wash is located just downstream from CWW. It is known as habitat for the endangered Colorado river natives, the Razorback Sucker (*Xyrauchen texanus*), Humpback Chub (*Gila cypha*), Colorado Pikeminnow (*Ptychocheilus lucius*) and Bonytail (*Gila elegans*). As a result of the presumption of ES ELS, no mixing zone was applied in the WLA. See WLA for more information on the mixing zone determination. Additionally, there is concern that ammonia and TRC at toxic levels from the CWW's discharge plume could circulate and backwater into Courthouse Wash.

After review of comments received on the original draft Permit during the Public Comment period (July 15, 2025, to August 29, 2025), the Division of Water Quality (DWQ) re-evaluated the removal of the mixing zone approach applied in the 2025 and determined it would be appropriate to first better understand how the discharge mixed in the Colorado before applying effluent limitations in the Permit. Further investigation is needed to determine the appropriateness of a mixing zone for these pollutants, with consideration for the protection of ES and the ELS present in the receiving waters or tributaries. This evaluation includes assessing whether the discharge, including mixing along the bank and across the wash under a range of river flows (including but not limited to 7Q10 or low flows, seasonal high flows, and intermediate flows), will protect receiving water quality, habitat, and sensitive aquatic life, and evaluating the potential for chronic ammonia toxicity under backwater conditions. The specific requirements and schedule for completing this evaluation, including submitting a study plan, conducting the study (modeling or observational), and submitting the final report, are defined in the Compliance Schedule in Part I.C.3. of the Permit. The ammonia and TRC limitations identified in the WLA have been removed from the draft Permit to allow time for further investigation.

If the results of this study indicate that protective measures are needed for ammonia and/or TRC, the Permit may be reopened and modified to include appropriate limits based on the study findings.

DISCHARGE

DESCRIPTION OF DISCHARGE

The final combined discharge is to the Colorado River behind the hotel on the west portion of the property.

Outfall	Description of Discharge Point
001	Internal discharge from wastewater treatment process located after the waste treatment unit before being combined with other waste streams. Located at latitude 38° 36' 17.1" N and longitude 109° 34' 57.4" W. This is a splitter box where Outfalls 001 and 002 combine. The final discharge is through an 8-inch pipe to the Colorado River. This pipe is the combined discharge from Outfall 001 and 002.
002	Located at latitude 38°36'16" N and longitude 109°34'57" W. The discharge is through an 8-inch pipe to the Colorado River. This pipe is the combined discharge from Outfall 001 and 002. It is recognized as Outfall 002 because the blended effluent represents the compliance point for Outfall 002.

RECEIVING WATERS AND STREAM CLASSIFICATION

The final discharge flows into the Colorado River, classified as 1C, 2A, 3B, and 4, according to UAC R317-2-13.

Class 1 -- Protected for use as a raw water source for domestic water systems.

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.

TOTAL MAXIMUM DAILY LOAD (TMDL) REQUIREMENTS

According to the Utah's 2024 303(d) Water Quality Assessment Report "2024 Integrated Report Version 1.0", the receiving water for the discharge, Colorado River from Green River confluence to Moab (UT14030005-003_00) was listed for selenium with an approved TMDL, which was completed in 2014. At this time, no selenium limitation has been included in this Permit.

BASIS FOR EFFLUENT LIMITATIONS

Limitations on TSS, BOD5, *E. coli*, pH, and percent removal for BOD5 and TSS are based on current Utah Secondary Treatment Standards, UAC R317-1-3.2. The oil and grease is based on best professional judgment (BPJ). The flow limitations are derived from the WLA, which is attached. BOD and TSS limitations are applied at Outfall 001, an internal outfall, as it is more appropriate to determine percent removal at this location, and Outfall 002. The remaining parameters are applied at Outfall 002, prior to discharge entering the receiving water. It has been determined that this discharge will not cause a violation

of water quality standards. An Antidegradation Level II review (ADR) was required since the Facility requests an increase in flow. The Permittee has provided the required ADR, and it will be attached to the final Fact Sheet.

CWW will be required to conduct daily sampling for TRC and a one-time sample of metals within the first 6 months after Permit issuance. This has been maintained from the previous Permit.

Salinity Control
Total dissolved solids (TDS) limitations are based on the Colorado River Basin Salinity Control Forum (CRBSCF) for mass loading values when applicable, as authorized in UAC R317-2-4. CRBSCF has established a policy for the reasonable increase of salinity for municipal discharges to any portion of the Colorado River stream system that has an impact on the lower main stem. The CRBSCF Policy entitled "NPDES Permit Program Policy for Implementation of Colorado River Salinity Standards" (Policy), with the most current version dated October 2017, allows for exceptions to the incremental increase in salinity of 400 mg/L or less, which is considered to be a reasonable incremental increase above the flow-weighted average salinity of the intake water supply.

CWW is likely not able to meet the ≥400 mg/L increase in TDS that is set as municipal criteria in the Colorado Basin Salinity, due to mixing at the outfall. However, CWW will be required to meet a 1.0 ton/day TDS for their outfall to the Colorado River. The exception is granted due to the intermittent nature of the discharge, as CWW can discharge to an onsite waste disposal system. This has been maintained from the previous Permit.

Technology-Based Phosphorus Effluent Limit Rule (TBPEL)
Water Quality adopted UAC R317-1-3.3, Technology-Based Phosphorus Effluent Limit (TBPEL) Rule in 2014. The TBPEL rule as it relates to "non-lagoon" wastewater treatment plants establishes new regulations for the discharge of phosphorus to surface waters and is self-implementing. The TBPEL rule includes the following requirements for non-lagoon wastewater treatment plants:

The TBPEL requires that all non-lagoon wastewater treatment works discharging wastewater to surface waters of the state shall provide treatment processes which will produce effluent less than or equal to an annual mean of 1.0 mg/L for total phosphorus. This TBPEL shall be achieved by January 1, 2020.

The TBPEL discharging treatment works are required to implement, at a minimum, monthly monitoring of the following beginning July 1, 2015:

R317-1-3.3, D, 1. Influent for total phosphorus (as P) and total Kjeldahl nitrogen (as N) concentrations;

R317-1-3.3, D, 2. Effluent for total phosphorus and orthophosphate (as P), ammonia, nitrate-nitrite and total Kjeldahl nitrogen (an N);

In R317-1-3.3, D, 3, the rule states that all monitoring shall be based on 24-hour composite samples collected using an automatic sampler or a minimum of four grab samples collected a minimum of two hours apart.

On September 30, 2019, the Permittee was issued an extension of their variance to the TBEL rule (DWQ-2019-011926). This will be extended for this duration Permit renewal and evaluated during the next renewal. The variance was granted based on their demonstration that CWW contributes a small percentage

of the phosphorus loading in the Colorado River, which is not listed for impairment due to any nutrient load, and therefore, the TBPEL is unnecessary to protect water downstream. However, CWW will be required to conduct all monthly monitoring required by the TBPEL rule.

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 the 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. There was not enough data to perform RP for this renewal. Quarterly Metals sampling has been added to this Permit so RP can be completed next permit cycle.

The Permit limitations are:

Parameter	Effluent Limitations *a, *f			
	Maximum Monthly Avg	Maximum Weekly Avg	Daily Minimum	Daily Maximum
Outfall 001				
Total Flow, gpd *b	50,000	--	--	--
BOD_5, mg/L	25	35	--	--
BOD_5 Min. % Removal	85	--	--	--
TSS, mg/L	25	35	--	--
TSS Min. % Removal	85	--	--	--
Outfall 002				
Total Flow, gpd *b	100,000	--	--	--
BOD_5, mg/L	25	35	--	--
TSS, mg/L	25	35	--	--
TDS, tons/day	--	--	--	1.0
pH, Standard Units	--	--	6.5	9.0
Oil & Grease, mg/L	--	--	--	10.0
E. coli. No/100mL	126	158	--	--

SELF-MONITORING AND REPORTING REQUIREMENTS
Due to the percent removal requirements and increased metals sampling, the following self-monitoring requirements are not the same as in the previous Permit. 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.

CWW's monitoring and reporting requirements are:

Self-Monitoring and Reporting Requirements *a			
Parameter	Frequency	Sample Type	Units
Outfall 001			

Total Flow *b, *c	Continuous	Recorder	gpd
BOD_5,			
Influent	Monthly	Composite	mg/L
Effluent	Monthly	Composite	mg/L
TSS,			
Influent	Monthly	Composite	mg/L
Effluent	Monthly	Composite	mg/L
Phosphorus, Total *d			
Influent	Monthly	Composite	mg/L
Effluent	Monthly	Composite	mg/L
Total Kjeldahl Nitrogen, TKN (as N) *d			
Influent	Monthly	Composite	mg/L
Effluent	Monthly	Composite	mg/L
Orthophosphate, (as P) *d			
Effluent	Monthly	Composite	mg/L
Nitrate, NO3 *d	Monthly	Composite	mg/L
Nitrite, NO2 *d	Monthly	Composite	mg/L
Metals, Effluent *e	Quarterly	Composite	mg/L
Outfall 002			
Total Flow *b, *c	Continuous	Recorder	gpd
BOD_5, Effluent	Monthly	Grab	mg/L
TSS, Effluent	Monthly	Grab	mg/L
TRC	Daily	Grab	mg/L
TDS			
Effluent	Monthly	Grab	tons/day
pH	Monthly	Grab	SU
E. coli	Monthly	Grab	No./100mL
Oil & Grease	When Sheen Observed	Grab	mg/L
Ammonia	Monthly	Grab	mg/L
Iron *g	Monthly	Grab	mg/L
Aluminum *g	Monthly	Grab	mg/L

*a See Definitions, *Part VIII*, for the 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 These reflect changes required with the adoption of UAC R317-1-3.3, Technology-based Phosphorus Effluent Limits rule.

*e See table below for requirements.

Metals to be Monitored for Reasonable Potential Analysis		
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

*f The onsite waste disposal system should be used to capacity before any discharges to the Colorado River.

*g Additional Reasonable Potential Analysis monitoring at this location is necessary because of the potential use of these metals in the drinking water treatment system.

Compliance monitoring samples for both outfalls are taken at a splitter box upstream of the Colorado River Outfall location. In the image below, the Outfall 001 sampling location is on the top right, and the Outfall 002 sampling location is on the bottom right. The flow combines and exits the pipe on the left into the river. DWQ has determined the location listed below to be representative of discharge. This box is located at latitude 38° 36' 17.1" N and longitude 109° 34' 57.4" W.

BIOSOLIDS

The State of Utah has adopted the 40 CFR 503 federal regulations for the disposal of sewage sludge (biosolids) by reference. However, the Facility does not receive, generate, treat, or dispose of biosolids. Therefore, 40 CFR 503 does not apply.

STORM WATER

Separate storm water permits may be required based on the types of activities occurring on site.

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

Arches Special Service District has not been designated for an Approved POTW Pretreatment Program (Program). This is due to the flow through the plant being less than five (5) MGD and no known Significant Industrial Users. The determination that Arches Special Service District does not have SIUs is based on the review of the UPDES Permit Application and a review of the service area. Industrial Users discharging to the Arches Special Service District POTW include restaurants and hotels.

Although Arches Special Service District does not need to develop a Program, information regarding Industrial Users discharging to the Publicly Owned Treatment Works (POTW) must be submitted as stated in Part II of the permit. This information will assist in determining the needs of DWQ to help Arches Special Service District implement the Pretreatment Standards and requirements. If an Industrial User begins to discharge or an existing Industrial User changes its discharge, Arches Special Service District must submit the updated information within 60 days of any changes occurring per the requirements of Part II of the permit.

Any wastewater discharged to the POTW from an Industrial User is subject to Federal, State and local regulations. Pursuant to Section 307 of the Clean Water Act, Arches Special Service District and the Industrial Users discharging to the POTW shall comply with all applicable Federal General Pretreatment Regulations promulgated, found in 40 CFR 403, and the State Pretreatment Requirements found in UAC R317-8-8.

Local Limits must be submitted to DWQ for review. If Local Limits are developed, Arches Special Service District must perform an annual evaluation of the need to revise or develop technically based Local Limits for pollutants of concern to implement the general and specific prohibitions in 40 CFR, Part 403.5(a) and Part 403.5(b). This evaluation may indicate that present Local Limits are sufficiently protective, need to be revised or should be developed.

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 municipal facility that will be discharging an infrequent amount of effluent, in which toxicity is neither an existing concern, nor likely to be present. Based on this consideration, there is no reasonable potential for toxicity in the Permittee's discharge (per 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.

LARGE UNDERGROUND WASTEWATER OPERATING PERMIT REQUIREMENTS

Until such a time as this Permit expires or is modified or revoked, the permit is authorized to operate a large underground wastewater disposal System in conformance with all the requirements, limitations, and conditions set forth in Utah Administrative Code R317-5, with the attached schedules as follows:

Schedule A

Waste Disposal Limitations

1. The Permittee is authorized to operate and maintain a large underground wastewater disposal system that has been constructed in accordance with plans and specifications approved by the DWQ and with the following conditions:

   a. System Type: ☐ Conventional Gravity; ☐ Conventional with Pump-to Gravity; ☒ Pressure Distribution; ☒ Alternative (describe): Packed Bed Media System.

   b. Maximum Daily Design Flow of 50,000 (gpd) Treatment – 10,000 (gpd) onsite disposal.

   c. Components of wastewater disposal system: ☒ Septic Tanks; ☒ Enhanced Treatment Unit; ☒ Grease Trap; ☒ Pump Tank with Floats; ☒ Control Panel; ☒ Distribution Box; ☒ Pressure Distribution; ☐ Drip Irrigation; ☒ Trenches; ☐ Deep Trench; ☐ Bed; ☐ Mound; ☐ Other (describe):_____

   d. Drainfield media: ☐ Gravel; ☒ Gravelless Chambers

   e. Effluent parameters will meet R317-4 for domestic wastewater or additional treatment may be required.

2. Discharge of untreated or partially treated sewage or septic tank effluent directly or indirectly onto the ground surface or into the surface waters of the state constitutes a public health hazard and is prohibited. This permit does not relieve the permittee from responsibility for compliance with any other applicable federal, state, or local law(s), rule(s) or standard(s).

3. No cooling water, air conditioner water, ground water, oil, hazardous materials, roof drainage, storm water runoff, or other aqueous or non-aqueous substance which is, in the judgment of the Division, detrimental to the performance of the system or to groundwater, shall be discharged into the wastewater treatment system.

4. No activities shall be conducted that could cause an adverse impact on existing or potential beneficial uses of groundwater.

SCHEDULE B

Required Servicing and Inspections

1. ☐ Annually; ☒ Semi-Annually (Every 6 Months);
   ☐ Other (specify):_____

2. All servicing and inspections must be conducted by a certified maintenance person per R317-11. Level 2 is required for conventional systems and Level 3 for all other LUWDS.

   Name of Person Performing Maintenance on this system:_____
   ☐ Level 2; ☒ Level 3

3. If Sample results exceed Operating Parameters (other than Flow of wastewater) in UAC R317-4-13 Table 7.3, report to the Division within 5 days and follow the rules found in UAC R317-5-9.2.(D).

Inspection Components

TYPE OF SYSTEM	Measure and record depth of sludge/scum levels, pump when necessary: • Septic Tank • Pump Tank • Grease Trap	Inspect and Clean when necessary, with date performed: • Pump/Floats • Control Panel • Pump Filter	Flush/ clean pressure laterals, measurement of height; inspect for ponding or surfacing in dispersal area; reset squirt height for equal pressure- and date inspected	Manufacturers Recommendations: • Recirc Tank • Pre-Treatment Unit • Misc. • And date inspected
Conventional Gravity or Pump-to Gravity.				
Pressure System	**X**	**X**	**X**	**X**
Mound, At-Grade				
Packed Bed	**X**	**X**	**X**	**X**

Minimum Frequency of Periodic Inspections

TYPE OF SYSTEM	Every 12 Months	Every 6 Months
Conventional System (Gravity or Pump-to Gravity): 5,000 – 15,000 gal/day 15,000 + gal/day		**X**
At-Grade Alternative System (first 5 years only)		
Mound (pressure)		
Packed Bed		**X**
Treatment System (to lower waste strength levels)		**X**

* Or more per manufacturer requirements

Minimum Monitoring and Reporting Requirements

Item or Parameter	Minimum Frequency	Type of Sample	Operating Parameters
Approved Drainfield Design Flow (gpd)	Monthly	Measurement based on meter reading	Approved design flow (gpd)
Turbidity or BOD/COD and TSS	Semiannual	Grab	Concentration (mg/L)
Total Inorganic Nitrogen (TIN)	Semiannual	Grab	Concentration (mg/L)
E. Coli	Semiannual	Grab	No./100 mL

Reporting

Monitoring, maintenance practices, solids handling and results shall be reported on Division approved forms. Reports must be submitted by **August 1, following the "reporting year" period of July 1 to June 30.**

Mail Reports to (permitting agency): Division of Water Quality, c/o Engineering Section, P O Box 144870, Salt Lake City, UT 84114-4870. Office: 801-536-4300 Fax: 801-536-4301

SCHEDULE C

Special and General Conditions

1. All septage/sludge shall be managed by a licensed liquid waste operator as defined in R317-550. The solids from CBN will be regularly pumped from the primary settling tank and then hauled to Moab City's wastewater treatment plant.

2. Any observations of excessive kitchen wastes, surfacing sewage, etc., must be reported to the Division within 5 working days.

3. The permittee must maintain all treatment and control facilities in good working order and in conformance with permit requirements.

PERMIT DURATION

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

Drafted and Reviewed by
Lonnie Shull, Discharge Permit Writer
Daniel Griffin, Biosolids
Jennifer Robinson, Pretreatment
Lonnie Shull, Biomonitoring
Carl Adams, Storm Water
Amy Dickey, TMDL/Watershed
Christopher Shope, Wasteload Analysis
Robert Beers, LUWDS
Utah Division of Water Quality, (801) 536-4300

1st PUBLIC NOTICE

Began: July 15, 2025
Ended: August 28, 2025

2nd 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 DWQ webpage.

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

The Permittee submitted comments during the first Public Notice Comment Period. As a result, the draft Permit documents were modified and sent back to Public Notice. The DWQ Comment Response Document

will be available upon the conclusion of all Public Notice comment periods.

DWQ-2025-007958

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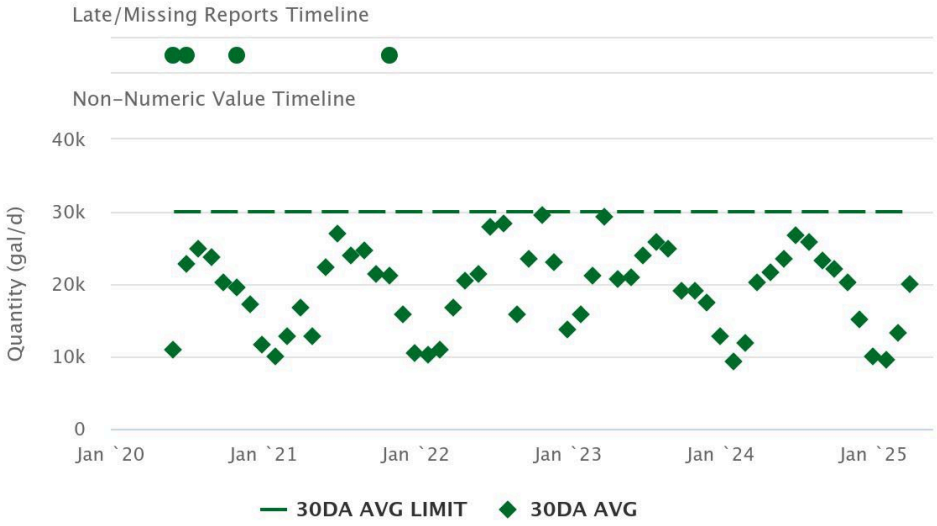
ATTACHMENT 1

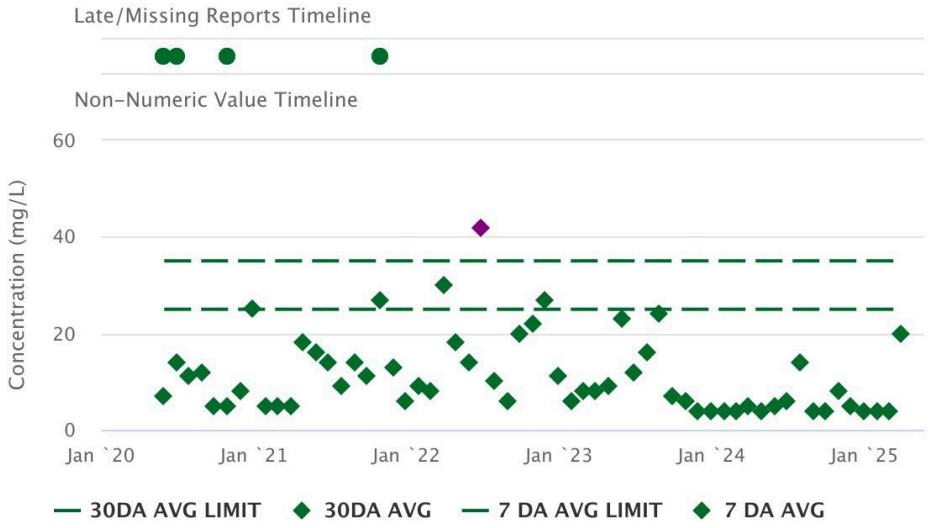
Effluent Monitoring Data

COURTHOUSE WASH WATER LLC (UT0025828) 001 - Flow rate - Effluent Gross - Quantity

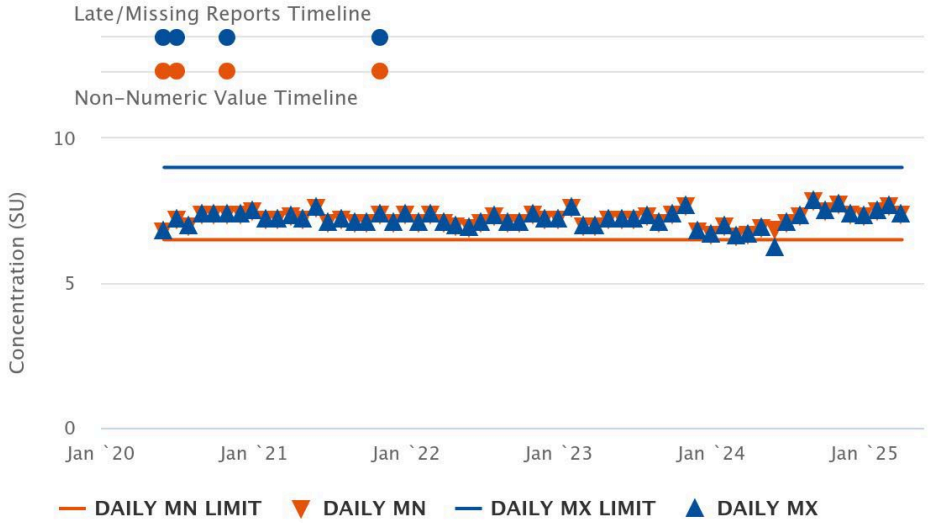


COURTHOUSE WASH WATER LLC (UT0025828) 001 - BOD, 5-day, 20 deg. C - Effluent Gross - Concentration

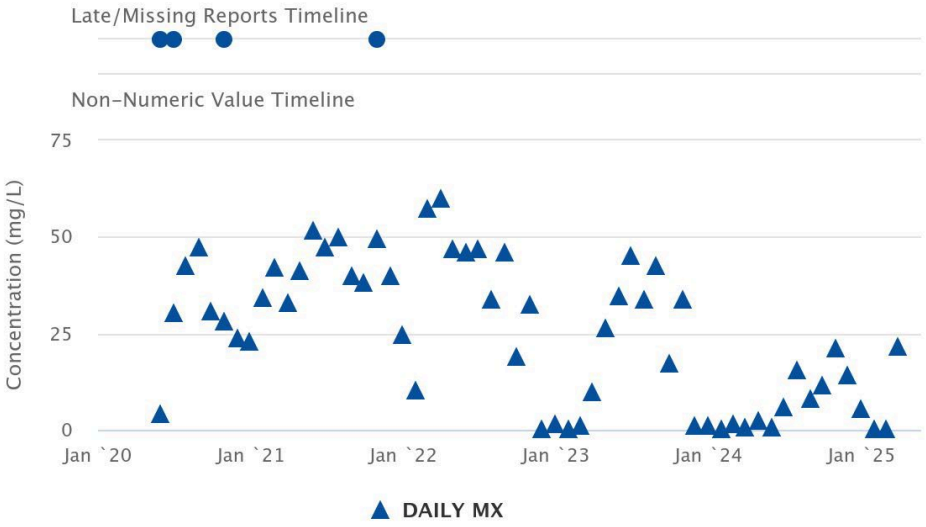
COURTHOUSE WASH WATER LLC (UT0025828) 001 – Solids, total suspended – Effluent Gross – Concentration



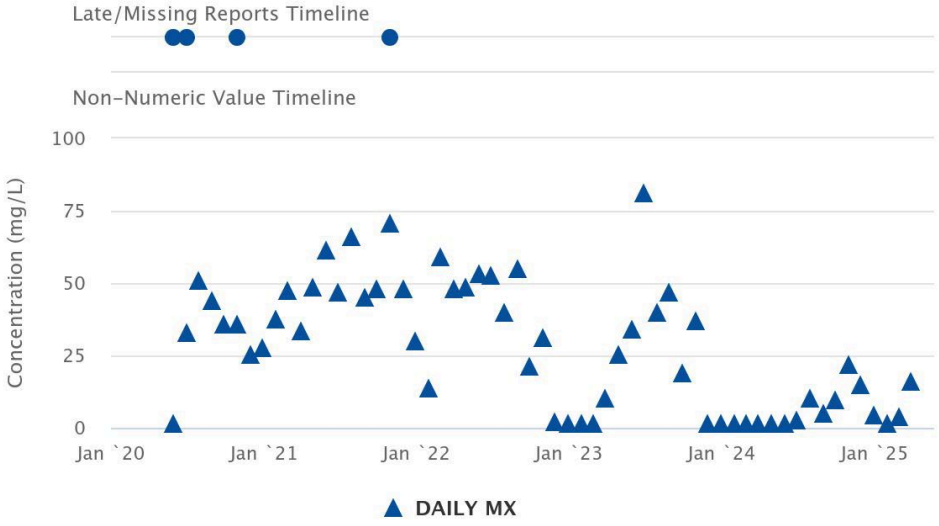
COURTHOUSE WASH WATER LLC (UT0025828) 001 – pH – Effluent Gross – Concentration



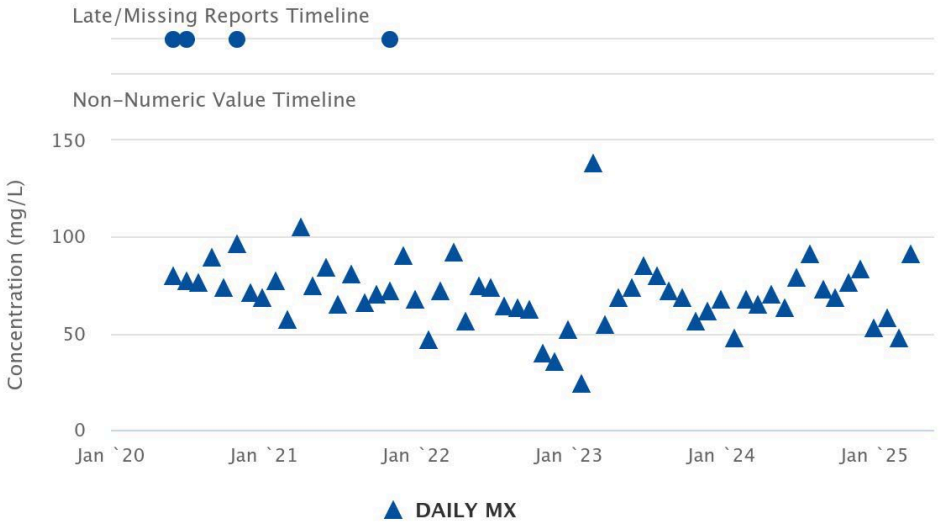
COURTHOUSE WASH WATER LLC (UT0025828) 001 – Nitrogen, ammonia total [as N] – Effluent Gross – Concentration



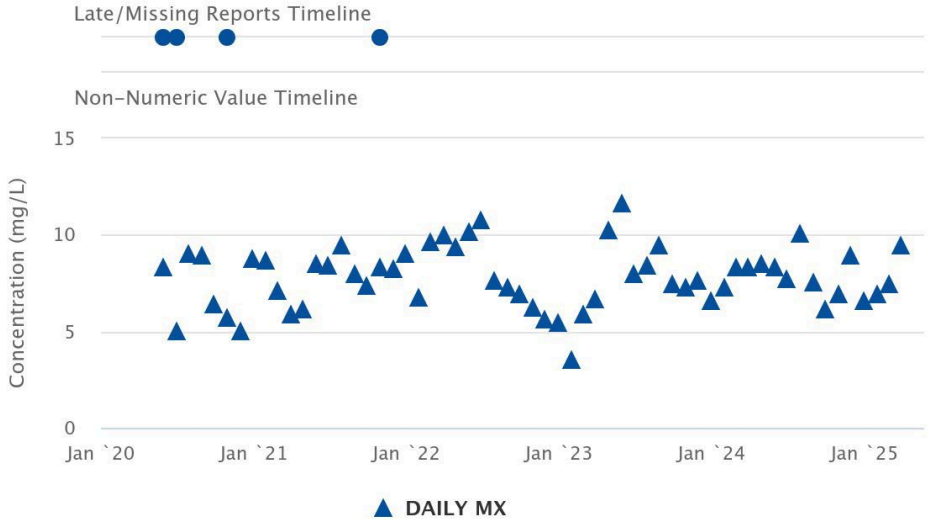
COURTHOUSE WASH WATER LLC (UT0025828) 001 – Nitrogen, Kjeldahl, total [as N] – Effluent Gross – Concentration



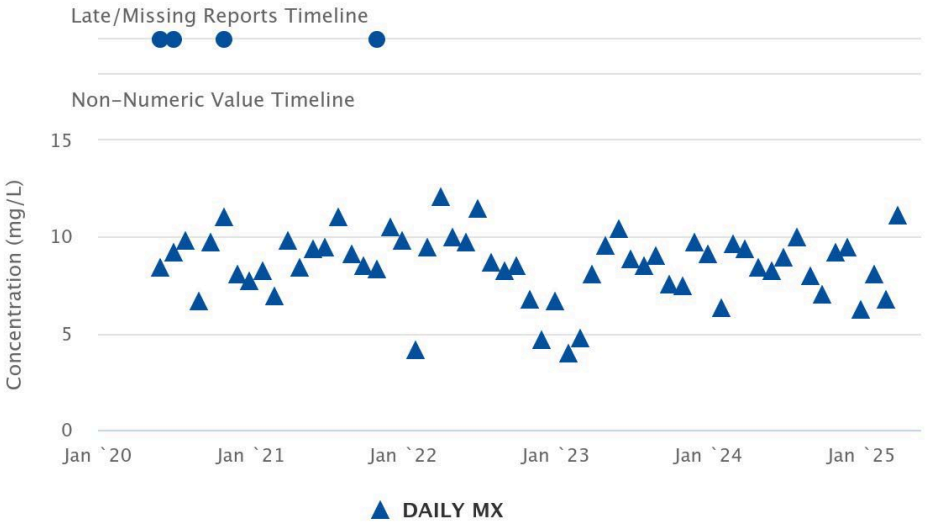
COURTHOUSE WASH WATER LLC (UT0025828) 001 – Nitrogen, Kjeldahl, total [as N] – Raw Sewage Influent – Concentration



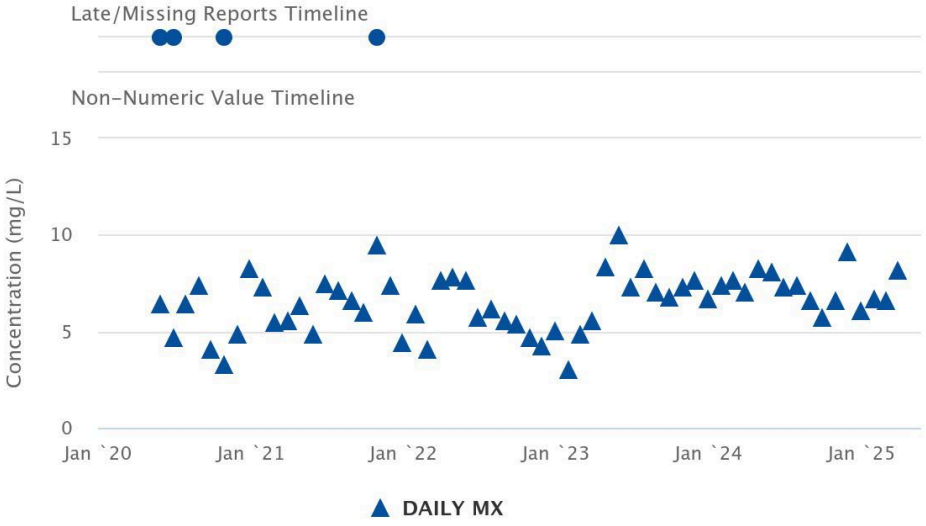
COURTHOUSE WASH WATER LLC (UT0025828) 001 – Phosphorus, total [as P] – Effluent Gross – Concentration



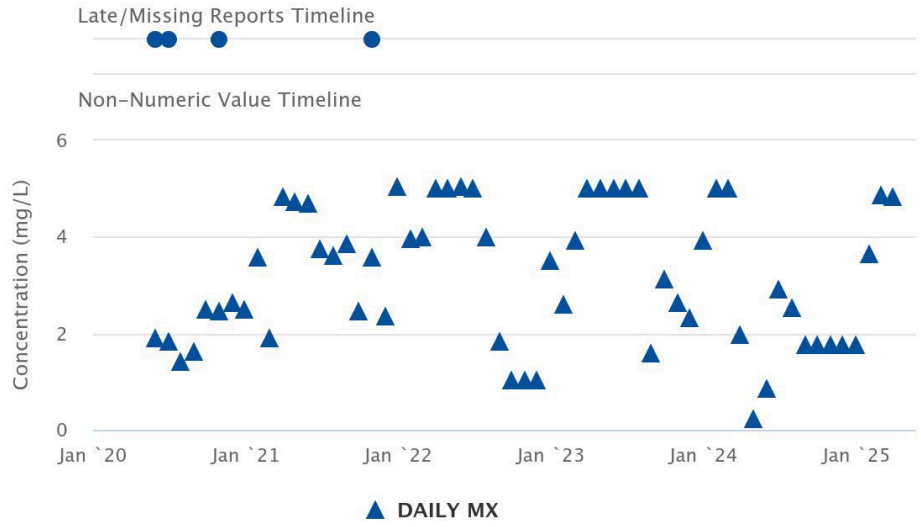
COURTHOUSE WASH WATER LLC (UT0025828) 001 – Phosphorus, total [as P] – Raw Sewage Influent – Concentration



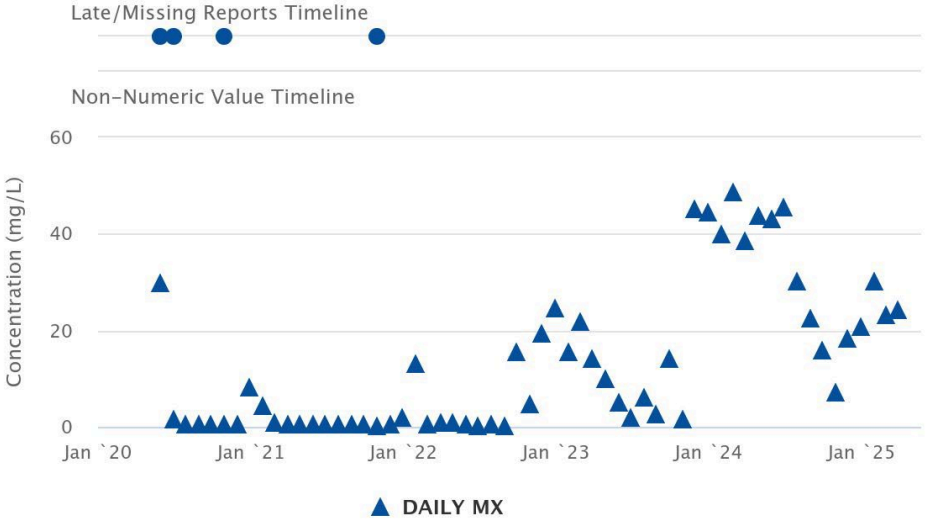
COURTHOUSE WASH WATER LLC (UT0025828) 001 – Phosphate, ortho [as P] – Effluent Gross – Concentration



COURTHOUSE WASH WATER LLC (UT0025828) 001 - Chlorine, total residual - Effluent Gross - Concentration

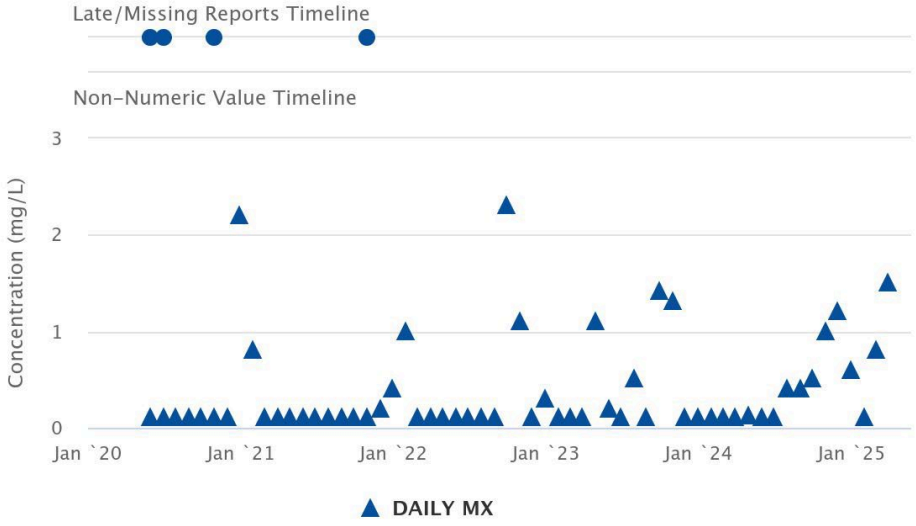


COURTHOUSE WASH WATER LLC (UT0025828) 001 - Nitrogen, nitrate total [as NO3] - Effluent Gross - Concentration

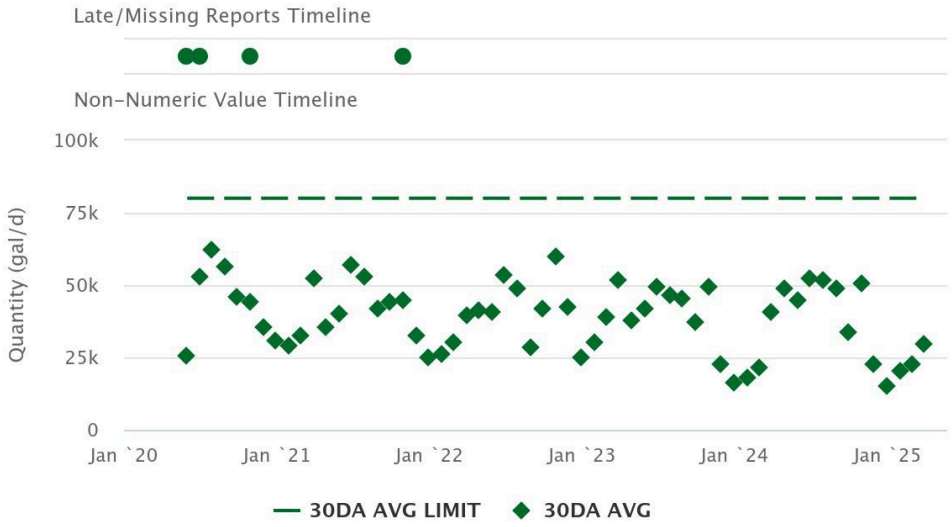


COURTHOUSE WASH WATER LLC (UT0025828) 001 – E. coli – Effluent Gross – Concentration

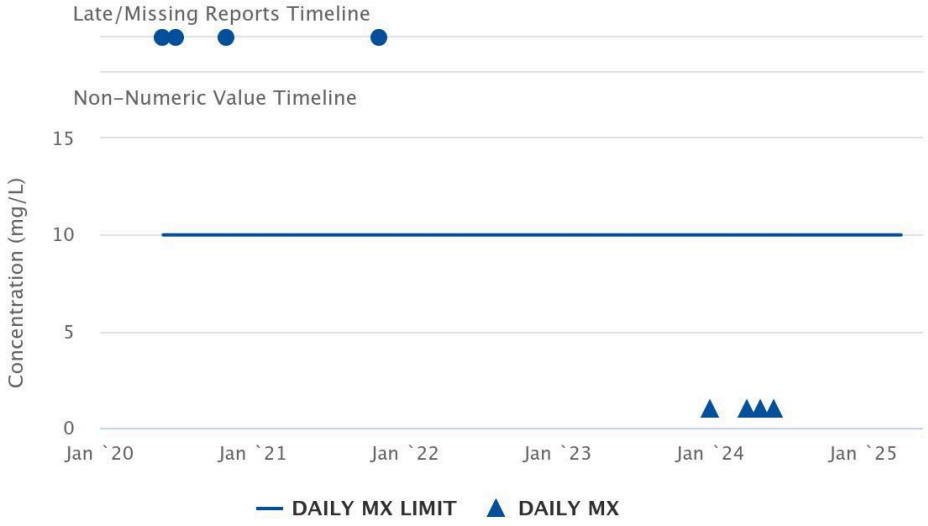
COURTHOUSE WASH WATER LLC (UT0025828) 001 – Nitrogen, nitrite total [as NO2] – Effluent Gross – Concentration



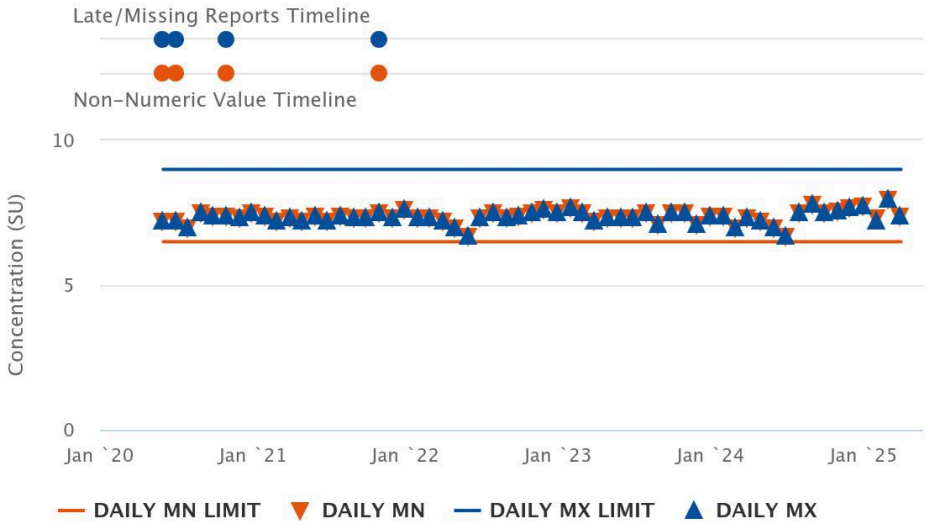
COURTHOUSE WASH WATER LLC (UT0025828) 002 - Flow rate - Effluent Gross - Quantity



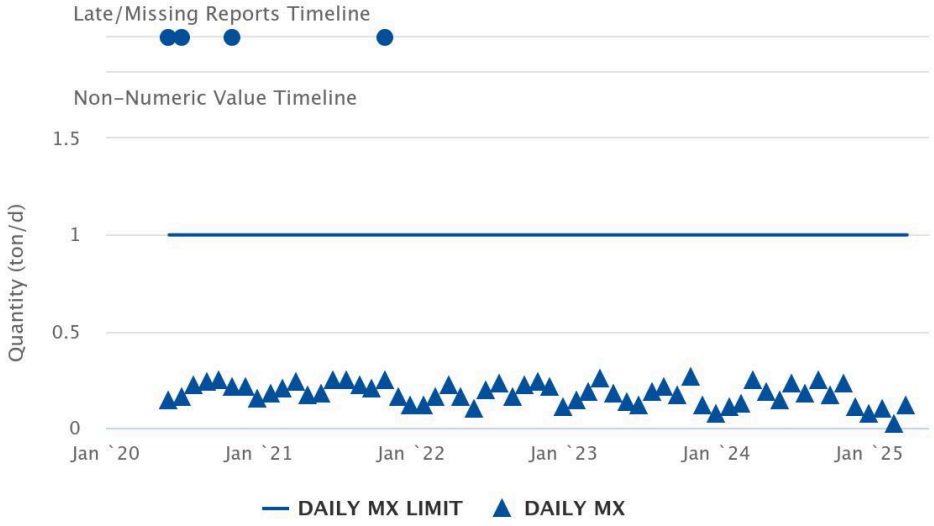
COURTHOUSE WASH WATER LLC (UT0025828) 002 - Oil & Grease - Effluent Gross - Concentration



COURTHOUSE WASH WATER LLC (UT0025828) 002 – pH – Effluent Gross – Concentration



COURTHOUSE WASH WATER LLC (UT0025828) 002 – Solids, total dissolved – Effluent Gross – Quantity



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ATTACHMENT 2

Wasteload Analysis

Utah Division of Water Quality
Statement of Basis
ADDENDUM
Wasteload Analysis and Antidegradation Level I Review

Date: **October 23, 2024**

Prepared by: **Christopher L. Shope**
Standards and Technical Services

Facility: **Courthouse Wash Wastewater Facility**
UPDES Permit No. UT-0025828

Receiving water: **Colorado River (1C, 2A, 3B, 4)**

This addendum summarizes the wasteload analysis that was performed to determine water quality based effluent limits (WQBEL) for this discharge. Wasteload analyses are performed to determine point source effluent limitations necessary to maintain designated beneficial uses by evaluating projected effects of discharge concentrations on in-stream water quality. The wasteload analysis also takes into account downstream designated uses (UAC R317-2-8). Projected concentrations are compared to numeric water quality standards to determine acceptability. The numeric criteria in this wasteload analysis may be modified by narrative criteria and other conditions determined by staff of the Division of Water Quality (DWQ).

Discharge

Outfall 002 WWTP effluent discharge is the combined flow of 0.05 MGD from the wastewater system and 0.05 MGD from the water treatment plant. This is a total design flow of 0.10 MGD for Outfall 002 and is consistent with the discharge provided from the Permit Writer.

Receiving Water
The receiving water for Outfall 002 is the Colorado River.

Per UAC R317-2-13.1(b), the designated beneficial use of the assessment unit in the immediate downstream area is: *Colorado River and tributaries, from Lake Powell to state line except as listed below: 1C,2A,3B,4*.

- *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.*

Typically, the critical flow for the wasteload analysis is considered the lowest stream flow averaged over seven consecutive days with a ten year return frequency (7Q10). The USGS 09180500 COLORADO RIVER NEAR CISCO, UT stream gauge located approximately 31 miles upgradient was initially used to evaluate ambient or background flow conditions. The stream gauge has a daily average flow record from 1913 to 1917 and 1922 to present. Therefore, DWQ used the minimum of the 7Q10 over the entire period to estimate the seasonal critical flow in the receiving water (Table 1). The average annual critical low flow condition is 736.0 ft3/s.

Table 1: Seasonal Flow Data at USGS 09180500 COLORADO RIVER NEAR CISCO, UT.

Season	Minimum 7Q10 flow (ft3/s)
Summer	736.0
Fall	1265.7
Winter	1567.1
Spring	1350.0
Annual Overall	**736.0**

Ambient, upstream, background receiving water quality was also characterized using data from USGS 09182880 COLORADO RIVER AT HIGHWAY BRIDGE NR MOAB, UT stream gauge less than one mile upgradient of the site. The average seasonal value was calculated for each constituent with available data in the receiving water. Effluent discharge parameters, where available, were characterized using data supplied in the permit application at monitoring site Outfall 002. As no effluent data was supplied, information from the 2019 Wasteload Analysis was used. It should be noted that only discharge, TDS, nitrate, sulfate, and sulfide data were provided.

Per R317-2-5.1.b., individual mixing zones may be further limited or disallowed in consideration of the factors in the area affected by the discharge which includes, biologically important areas such as fish spawning/nursery areas or segments with occurrences of federally listed threatened or endangered species. According to US Fish and Wildlife Service (US FWS), endangered species in this area include, Razorback Sucker (*xyrauchen texanus*), Humpback Chub (*Gila cypha*), Colorado Pikeminnow (*Ptychocheilus Lucius*), and Bonytail (*Gila elegans*). Because the critical habitat of these species is potentially affected, authorized additional study is required from agencies including but not limited to US EPA, US FWS, Utah Division of Wildlife Resources. Therefore, no mixing zone is granted at this time and effluent limits must be met at the point of discharge (end-of-pipe).

Total Maximum Daily Load (TMDL)

According to the Utah's 2021 303(d) Water Quality Assessment Report "Combined 2018/2020 Integrated Report Version 1.0", the receiving water for the discharge, Colorado River from Green River confluence to Moab (UT14030005-003_00) was listed for selenium with an approved TMDL.

DWQ completed a TMDL for selenium in the Colorado River Watershed in 2014 (UDWQ, 2014). The TMDL allocated a selenium load to the Moab Wastewater Treatment Plant that was derived by applying the in-stream chronic selenium standard (4.6 ug/l) times the plant's design flow rate. Using this approach for the facility (4.6 ug/l x 0.10 MGD x 3.79 conversion factor) would yield a selenium load of 1.7 g/d.

Mixing Zone

The maximum allowable mixing zone is 15 minutes of travel time for acute conditions, not to exceed 50% of stream width, and for chronic conditions is 2500 ft, per UAC R317-2-5. Water quality standards must be met at the end of the mixing zone. Individual mixing zones may be further limited or disallowed in consideration of the following factors in the area affected by the discharge: Zone of passage for migrating fish or other species (including access to tributaries).

As stated previously, individual mixing zones may be disallowed in consideration of site-specific factors. For the project location, biologically important areas such as fish spawning/nursery areas or segments with occurrences of federally listed threatened or endangered species are present (R317-2-5.1.b.). According to US Fish and Wildlife Service (US FWS), endangered species in this area include, Razorback Sucker (*xyrauchen texanus*), Humpback Chub (*Gila cypha*), Colorado Pikeminnow (*Ptychocheilus Lucius*), and Bonytail (*Gila elegans*). Because the critical habitat of these species is potentially affected, authorized additional study is required from agencies including but not limited to US EPA, US FWS, Utah Division of Wildlife Resources. Therefore, no mixing zone is granted at this time and effluent limits must be met at the point of discharge (end-of-pipe).

Parameters of Concern

The potential parameters of concern identified for the discharge/receiving water were total dissolved solids (TDS**)**, total suspended solids (TSS), aluminum, antimony, arsenic, barium, beryllium, boron, cadmium, chromium, copper, fluoride, iron, lead, mercury, nickel, selenium, silver, zinc, nitrate, ammonia, and E. coli as determined in consultation with the UPDES Permit Writer and the Watershed Protection Specialist.

Wasteload Allocation Methods

Effluent limits were determined for conservative constituents using a simple mass balance mixing analysis (UDWQ, 2021). The mass balance analysis is summarized in the Wasteload Addendum.

The water quality standard for chronic ammonia toxicity is dependent on temperature and pH, and the water quality standard for acute ammonia toxicity is dependent on pH. However, temperature, pH, and ammonia concentration of the effluent were not provided. The AMMTOX Model developed by University of Colorado and adapted by Utah DWQ and EPA Region VIII was used to determine ammonia effluent limits (Lewis et al., 2002). The analysis is summarized in the Wasteload Addendum.

Models and supporting documentation are available for review upon request.

Antidegradation Level I Review

The objective of the Level I 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 remains below the WQBELs presented in this wasteload.

A Level II Antidegradation Review (ADR) is required for this facility because the facility is requesting an effluent dishcharge (0.10 MGD) greater than the permitted effluent discharge (0.05 MGD).

Documents:

WLA Document*: Courthouse_Wash_ELS_EOP_WLA_2022.docx*
Wasteload Analysis and Addendums: *Courthouse_Wash_ELS_EOP_WLA_2022.xlsm*

References:

Lewis, B., J. Saunders, and M. Murphy. 2002. Ammonia Toxicity Model (AMMTOX, Version2): A Tool for Determining Effluent Ammonia Limits. University of Colorado, Center for Limnology.

Utah Division of Water Quality. 2014, *TMDL for Selenium in the Colorado River Watershed*

Utah Division of Water Quality. 2021. *Combined 2018/2020 Integrated Report Version 1.0*

Utah Division of Water Quality. 2021. *Utah Wasteload Analysis Procedures Version 2.0*.

WASTELOAD ANALYSIS [WLA] Date: 10/23/2024

Appendix A: Mass Balance Mixing Analysis for Conservative Constituents

Discharging Facility:	Canyonlands by Dany and Night, Moab UT		
UPDES No:	UT-0025828		
Permit Flow [MGD]:	0.10	Annual	Max. Daily
	0.10	Annual	Max. Monthly
Receiving Water:	Colorado River		
Stream Classification:	1C, 2A, 3B, 4		
Stream Flows [cfs]:	0.0	All Seasons	Critical Low Flow
Fully Mixed:	YES		
Acute River Width:	100%		
Chronic River Width:	100%		

Modeling Information

A mass balance mixing analysis was used to determine the effluent limits.

All model numerical inputs, intermediate calculations, outputs and graphs are available for discussion, inspection and copy at the Division of Water Quality.

Effluent Limitations

Current State water quality standards are required to be met under a variety of conditions including in-stream flows targeted to the 7-day, 10-year low flow (R317-2-9).

Other conditions used in the modeling effort reflect the environmental conditions expected at low stream flows.

The calculations in this wasteload analysis utilize the maximum effluent discharge flow of 0.1 MGD. If the discharger is allowed to have a flow greater than 0.1 MGD during 7Q10 conditions, and effluent limit concentrations as indicated, then water quality standards will be violated. In order to prevent this from occuring, the permit writers must include the discharge flow limititation as indicated above; or, include loading effluent limits in the permit.

Effluent Limitations for Protection of Drinking Water (Class 1C Waters) (R317-2-14.1)

Physical Parameter	Concentration Minimum	Maximum
pH	6.5	9.0

Bacteriological

E. coli (30 Day Geometric Mean)	206	(#/100 mL)
E. coli (Maximum)	668	(#/100 mL)

Metals-Dissolved Maximum

Parameter	Standard'	Maximum Background	Limit
Arsenic (µg/L)	10.0		10.0
Barium (µg/L)	1000.0		1000.0
Beryllium (µg/L)	4.0		4.0
Cadmium (µg/L)	10.0		10.0
Chromium (µg/L)	50.0		50.0
Lead (µg/L)	15.0		15.0
Mercury (µg/L)^	2.000		2.000
Selenium (µg/L)	50.0		50.0
Silver (µg/L)	50.0		50.0

Inorganics-Maximum

Parameter	Standard'	Maximum Background	Limit
Bromate (mg/L)	0.01		0.01
Chlorite (mg/L)	1.0		1.0

Fluoride (mg/L)	4.0	4.0
Nitrates as N (mg/L)	10.0	10.0

Radiological	Maximum Concentration
Parameter	Standard
Gross Alpha (pCi/L)	15

Effluent Limitations for Protection of Recreation (Class 2A Waters) (R317-2-14.2)

Physical	Concentration	
Parameter	Minimum	Maximum
pH	6.5	9.0
Turbidity Increase (NTU)		10.0

Bacteriological		
E. coli (30 Day Geometric Mean)	126	(#/100 mL)
E. coli (Maximum)	409	(#/100 mL)

Effluent Limitations for Protection of Aquatic Wildlife (Class 3B Waters) (R317-2-14.2)

Physical	Concentration	
Parameter	Minimum	Maximum
pH	6.5	9.0
Turbidity Increase (NTU)		10.0
Temperature (deg C)		27
Temperature Change (deg C)		4

Dissolved Oxygen (mg/L)	Minimum Concentration	
	ELS Present	Others Present
Instantaneous	5.0	3.0
30-day Average	5.5	5.5
7-day Average	6.0	4

Inorganics	Chronic (30-day ave)	Acute (1-hour ave)
Parameter		Standard
Phenol (mg/L)		0.010
Hydrogen Sulfide (Undissociated-mg/L)		0.002
Total Residual Chlorine (mg/L)	0.011	0.019

Ammonia-Total (mg/L)

	Chronic (30-day ave)			Acute (1-hour ave)		
	ELS Present					
Season	Standard	Background	Limit	Standard	Background	Limit
Summer	1.3		1.3	7.0		7.0
Fall	2.0		2.0	6.5		6.5
Winter	2.2		2.2	7.5		7.5
Spring	2.6		2.6	9.1		9.1

	ELS Absent					
Season	Standard	Background	Limit	Standard	Background	Limit
Summer	1.3		1.3	7.0		7.0
Fall	3.0		3.0	6.5		6.5
Winter	3.6		3.6	7.5		7.5
Spring	2.6		2.6	9.1		9.1

Metals-Total Recoverable

	Chronic (4-day ave)			Acute (1-hour ave)		
Parameter	Standard'	Background	Limit	Standard'	Background	Limit
Aluminum (µg/L)	87.0		87.0	750.0		750.0
Arsenic (µg/L)	150.0		150.0	340.0		340.0
Cadmium (µg/L)	2.4		2.4	7.4		7.4
Chromium VI (µg/L)	11.0		11.0	16.0		16.0
Chromium III (µg/L)	268.2		268.2	5,612		5,612
Copper (µg/L)	30.5		30.5	51.7		51.7

Cyanide (µg/L)[2]	5.2	5.2	22.0	22.0
Iron (µg/L)			1,000	1,000
Lead (µg/L)	18.6	18.6	476.8	476.8
Mercury (µg/L)[2]	0.012	0.012	2.4	2.4
Nickel (µg/L)	168.5	168.5	1,516	1,516
Selenium (µg/L)	4.6	4.6	18.4	18.4
Silver (µg/L)			41.1	41.1
Tributylin (µg/L)[2]	0.072	0.072	0.46	0.46
Zinc (µg/L)	387.8	387.8	387.8	387.8

1: Based upon a Hardness of 400 mg/l as CaCO3

2: Background concentration assumed 67% of chronic standard

Organics [Pesticides]

	Chronic (4-day ave)		Acute (1-hour ave)	
Parameter	**Standard**	**Limit**	**Standard**	**Limit**
Aldrin (µg/L)			1.5	1.5
Chlordane (µg/L)	0.0043	0.0043	1.2	1.2
DDT, DDE (µg/L)	0.001	0.001	0.55	0.55
Diazinon (µg/L)	0.17	0.17	0.17	0.17
Dieldrin (µg/L)	0.0056	0.0056	0.24	0.24
Endosulfan, a & b (µg/L)	0.056	0.056	0.11	0.11
Endrin (µg/L)	0.036	0.036	0.086	0.086
Heptachlor & H. epoxide (µg/L)	0.0038	0.0038	0.26	0.26
Lindane (µg/L)	0.08	0.08	1.0	1.0
Methoxychlor (µg/L)			0.03	0.03
Mirex (µg/L)			0.001	0.001
Nonylphenol (µg/L)	6.6	6.6	28.0	28.0
Parathion (µg/L)	0.0130	0.0130	0.066	0.066
PCB's (µg/L)	0.014	0.014		
Pentachlorophenol (µg/L)	15.0	15.0	19.0	19.0
Toxephene (µg/L)	0.0002	0.0002	0.73	0.73

Radiological

	Maximum Concentration
Parameter	**Standard**
Gross Alpha (pCi/L)	15

Freshwater total ammonia criteria based on Title R317-2-14 Utah Administrative Code
Acute

INPUT				
	Summer	Fall	Winter	Spring
pH:	8.09	8.13	8.06	7.96
Beneficial use classification:	3B	3B	3B	3B

OUTPUT				
	Total ammonia nitrogen criteria (mg N/L):			
Acute:	**7.021**	**6.530**	**7.493**	**9.134**

Freshwater total ammonia criteria based on Title R317-2-14 Utah Administrative Code
Chronic

INPUT	Summer	Fall	Winter	Spring
Temperature (deg C):	21.99	8.11	4.03	14.57
pH:	8.09	8.13	8.06	7.96
Are fish early life stages present?	Yes	Yes	Yes	Yes

OUTPUT				
Total ammonia nitrogen criteria (mg N/L):				
Chronic - Fish Early Life Stages Present:	**1.306**	**1.995**	**2.226**	**2.582**

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ATTACHMENT 3

Level II ADR
(Will be attached to the final version)