Official Draft Public Notice Version **February 11, 2026**
The findings, determinations, and assertions contained in this document are not final and subject to change following the public comment period.

FACT SHEET
MONTICELLO CITY WASTEWATER TREATMENT PLANT
RENEWAL PERMIT: DISCHARGE & REUSE
UPDES PERMIT NUMBER: UT0024503
MINOR MUNICIPAL

FACILITY CONTACTS

Person Name:	Kaeden Kulow
Position:	City Manager
Phone Number:	(435) 587-2271

Person Name:	Chris Baird
Position:	Public Works Director
Phone Number:	(435) 459-1370

Person Name:	George Rice
Position:	Water Reclamation Operator
Phone Number:	(435) 587-2271

Permittee Name:	Monticello City
Facility Name:	Monticello City Wastewater Treatment Plant
Mailing and Facility Address:	P.O. Box 457 Monticello, Utah 84535
Telephone:	(435) 587-2271
Actual Address:	3300 North 1200 West

DESCRIPTION OF FACILITY

The Monticello Wastewater Treatment Facility (Facility) was designed to store the effluent during the non-irrigation months and use the water for irrigation during the cultivating season. The Facility is a 38.5-acre, 5 cell, non-aerated, lagoon system, with the first 4 cells having a water depth from 3 to 6 feet and the final cell (winter storage pond) having a maximum water depth of 12 feet. The first two cells of the Facility are run in parallel, and the remaining cells are run in series. The average design flow is 0.32 million gallons a day (MGD), and the design population equivalent is 3,000. Monticello City's population is estimated to be about 1,900 people. The Facility is located approximately two miles southeast of downtown Monticello City in San Juan County, Utah. Designed as total containment lagoons, the Facility has only had to discharge to waters of the State in years where the precipitation is higher than average and the irrigation demand was less than expected. The Facility does not anticipate discharging in the next five years. If water needs to be discharged, it is discharged into Montezuma Creek through an outfall located at latitude 38°51'30" and longitude 109°18'30", outfall STORET Number 495382.

SUMMARY OF CHANGES FROM PREVIOUS PERMIT

Effluent limitations for dissolved oxygen (DO) and total residual chlorine (TRC) were updated in accordance with values found in the 2025 wasteload analysis (WLA) completed for this Permit renewal. TRC limitations became more stringent due to a decrease in flow in the receiving waterbody. Additionally, an Oil and Grease limitation was added to be consistent with similar UPDES individual permits.

Reuse discharge was once again included in this Permit renewal; however, the Permittee may not discharge effluent for reuse until they have provided confirmation of Water Rights to the Division of Water Quality (DWQ) and DWQ sends written authorization to discharge from Outfall 001R. Reuse discharge may eventually be moving to a DWQ Operating Permit.

DISCHARGE

DESCRIPTION OF DISCHARGE

The Facility is a total containment lagoon/reuse Facility and has been reporting self-monitoring results on Discharge Monitoring Reports (DMRs) on a monthly basis. It has not discharged during the last Permit cycle. The Facility maintains a UPDES Permit in the event that a discharge from the Facility is necessary.

Outfall	Description of Discharge Point
001	Located at latitude 38°51'30" and longitude 109°18'30". The discharge enters Montezuma Creek from a ten-inch concrete pipe approximately 1/4 mile south of the Facility.

001R	Description of Area for Use
	Located at latitude 37° 51'31" and longitude 109°18'15". Discharge to an agricultural area ¾ a mile west of the Facility.

RECEIVING WATERS AND STREAM CLASSIFICATION

If a discharge were to occur, it would discharge into Montezuma Creek, 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.

TOTAL MAXIMUM DAILY LOAD (TMDL) REQUIREMENTS

According to the Utah's Final 2024 Integrated Report on Water Quality dated April 30, 2024 (UDWQ, 2024), the receiving water for Outfall 001 discharge "*San Juan River and Tributaries, from Lake Powell to state line except As listed below* (AU name: *Montezuma Creek-2*, AU ID: *UT14080203-003_00*)" was listed

as "Not Supporting" for Benthic Macroinvertebrates Bioassessments The report further states "TMDL Needed"; however, the priority is set to "Low".

WATER RIGHTS STATE ENGINEER APPROVAL
The Permittee shall provide the State Engineer-approved Water Rights before effluent may be discharged for reuse. The Project Reuse Plan is undergoing review within DWQ and must meet applicable requirements found in UAC R317-3-11.

BASIS FOR EFFLUENT LIMITATIONS
In accordance with regulations promulgated in 40 Code of Federal Regulations Part 122.44 and 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) as applicable. 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. BPJ 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 WLA, which incorporates Secondary Treatment Standards, Water Quality Standards, including any applicable TMDL impairments as appropriate, Antidegradation Reviews (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 as appropriate and determined that this discharge will not cause a violation of water quality standards. An ADR Level I review was performed and concluded that an ADR Level II review was not required at this time since water quality will not be further lowered by the proposed activity, as per UAC R317-2-3.5.b.1.(b). 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 with ADR information is attached to this Fact Sheet.

Limitations on total suspended solids (TSS), biochemical oxygen demand (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 BPJ. Limitations on flow, DO, and TRC are derived from the attached WLA for this discharge into Montezuma Creek. The Permittee is expected to be able to comply with these limitations.

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. 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 2023, states that the incremental increase in salinity shall be 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. However, the Policy also states that the requirements for establishing incremental increase may be waived in those cases where the incremental salt load reaching the main stem of the Colorado River is less than one ton per day or 366 tons per year.

Reuse effluent limitations for BOD5, TSS, E. coli, and pH are based on the Water Quality Limits set forth in UAC R317-3-11.5-C for Type II reuse. The Permittee is expected to be able to comply with these

limitations.

Reasonable Potential Analysis
Since January 1, 2016, DWQ has conducted reasonable potential analysis (RP) on all new and renewal applications received after that date. Following DWQ's September 10, 2015, Reasonable Potential Analysis Guidance (RP Guidance), RP for this Permit renewal was not conducted because of insufficient discharge data.

The Permit limitations are:

Parameter	Table 1: Effluent Limitations[a]				
	Maximum Monthly Avg	Maximum Weekly Avg	Yearly Average	Daily Minimum	Daily Maximum
Total Flow, MGD	--	--	--	--	0.32
BOD_5 mg/L BOD_5 Min. % Removal	25 85	35 --	-- --	-- --	-- --
TSS, mg/L TSS Min. % Removal	25 85	35 --	-- --	-- --	-- --
DO, mg/L	--	--	--	5.5	--
TRC, mg/L Summer (Jul-Sep) Fall (Oct-Dec) Winter (Jan-Mar) Spring (Apr-Jun)	 0.020 0.011 0.021 0.027	 -- -- -- --	 -- -- -- --	 -- -- -- --	 0.035 0.019 0.037 0.048
E. coli, No./100mL	126	158	--	--	--
Oil & Grease, mg/L	--	--	--	--	10
pH, Standard Units	--	--	--	6.5	9
TDS, mg/L[d]	<400 mg/L increase	--	--	--	--

The Permit limitations for Outfall 001R (Reuse) are:

Parameter	Table 3: Type II Outfall 001R Effluent Limitations[a]				
	Max Monthly Average	Max Weekly Median	Max Daily Average	Minimum	Maximum
BOD_5, mg/L	25	--	--	--	--
TSS, mg/L	25	35	--	--	--
E coli, No/100mL	--	126	--	--	500
pH, Standard Units	--	--	--	6.0	9.0

SELF-MONITORING AND REPORTING REQUIREMENTS
The following self-monitoring requirements are the same as in the previous Permit. The Permit requires reports to be submitted monthly and annually, as applicable, on DMR forms due 28 days after the end of the monitoring period. Effective January 1, 2017, monitoring results shall be submitted using NetDMR unless the Permittee has successfully petitioned for an exception. Lab sheets for biomonitoring, metals and toxic organics shall be attached to the DMRs.

Table 2: Self-Monitoring and Reporting Requirements[a]			
Parameter	Frequency	Sample Type	Units
Total Flow[b][c]	Continuous	Recorder	MGD
BOD_5, Influent[e]	Monthly	Grab	mg/L
Effluent	Monthly	Grab	mg/L
TSS, Influent[e]	Monthly	Grab	mg/L
Effluent	Monthly	Grab	mg/L
E. coli	Monthly	Grab	No./100mL
pH	Monthly	Grab	SU
Total Ammonia (as N)	Monthly	Composite	mg/L
DO	Monthly	Grab	mg/L
TRC[f]	Daily	Grab	mg/L
Oil & Grease[g]	When Sheen Observed	Grab	mg/L
Orthophosphate (as P)			
Effluent	Monthly	Composite	mg/L
Total Phosphorus (as P)			
Influent	Monthly	Composite	mg/L
Effluent	Monthly	Composite	mg/L
Total Kjeldahl Nitrogen TKN (as N)			
Influent	Monthly	Composite	mg/L
Effluent	Monthly	Composite	mg/L
Nitrate, NO3	Monthly	Composite	mg/L
Nitrite, NO2	Monthly	Composite	mg/L
TDS	Monthly	Composite	mg/L

The following is a summary of the Type II reuse self-monitoring and reporting requirements.

Table 4: Type II Reuse Outfall 001R Self-Monitoring and Reporting Requirements[a][h]			
Parameter	Frequency	Sample Type	Units
Total Flow[b][c]	Continuous	Recorder	MGD
BOD_5	Monthly	Grab	mg/L
TSS	Monthly	Grab	mg/L
E. coli	Monthly	Grab	No./100mL
pH	Monthly	Grab	SU
Cell Depth	Monthly	Measure	Feet
Free Board	Monthly	Measure	Feet

Notes Tables 1, 2, 3, and 4

a. See Definitions, *Part VIII*, 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. The effluent shall not exceed the culinary source water intake by more than 400 mg/L of TDS. If the 400 mg/L incremental increase for TDS cannot be achieved, the Permittee may formally request the Director for an alternative limitation of 1 ton/day TDS loading or 366 tons/year.

e. In addition to monitoring the final discharge, influent samples shall be taken and analyzed for this constituent at the same frequency as required for effluent discharge. During months where a discharge will not occur, influent samples shall be taken and analyzed at the frequency stipulated in **Table 2**.
f. Analytical results less than 0.06 mg/l shall not be considered out of compliance with the Permit. For purposes of calculating averages and reporting on the Discharge Monitoring Report form, the following will apply:
   1) analytical values less than 0.02 mg/L shall be considered zero; and
   2) analytical values less than 0.06 mg/L and equal to or greater than 0.02 mg/L will be recorded as measured.
g. Oil and grease shall be sampled when sheen is present or visible. If no sheen is present or visible, report NA.
h. Reuse monitoring results obtained during the previous month for reuse discharges shall be summarized for each month and reported on NetDMR.

Management Practices for Land Application of Treated Effluent:

(1) The application of treated effluent to frozen, ice-covered, or snow-covered land is prohibited.
(2) No person shall apply treated effluent where the slope of the site exceeds 6 percent.
(3) The use shall? not result in a surface water runoff.
(4) The use shall not result in the creation of an unhealthy or nuisance condition, as determined by the local health department.
(5) Any irrigation with treated effluent shall be at least 300 feet from a potable well.
(6) For Type I reuse, any irrigation shall be at least 50 feet from any potable water well.
(7) For Type II reuse, any irrigation shall be at least 300 feet from any potable water well.
(8) For Type II reuse, spray irrigation shall be at least 100 feet from areas intended for public access. This distance may be reduced or increased by the Director.
(9) Impoundments of treated effluent, if not sealed, shall be at least 500 feet from any potable well.
(10) Public access to effluent storage and irrigation or disposal sites shall be restricted by a stock-tight fence or other comparable means which shall be posted and controlled to exclude the public.

BIOSOLIDS

The State of Utah has adopted the 40 C.F.R. § 503 federal regulations for the disposal of sewage sludge (biosolids) by reference. However, since this Facility is a lagoon, there is not any regular sludge production. Therefore 40 C.F.R. § 503 shall not apply at this time. In the future, if the sludge needs to be removed from the lagoons and is disposed in some way, the DWQ must be contacted prior to the removal of the sludge to ensure that all applicable state and federal regulations are met

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

Monticello does not have 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.

Monticello does not need to develop a Program; however, 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 assist Monticello with implementing the Pretreatment Standards and Requirements. If an Industrial User begins to discharge or an existing Industrial User changes its discharge, Monticello must submit the information stated in Part II within sixty days of the permit renewal. Also, updates must be submitted within 60 days of any changes occurring with an existing Industrial User or a new Industrial User that begins discharging to the POTW.

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, Monticello 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.

It is required that any Local Limits be submitted to DWQ for review. If Local Limits are developed, it is required that Monticello 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 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 these considerations, and the absence of receiving stream water quality monitoring data, 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.

PERMIT DURATION

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

Drafted and Reviewed by
Lindsay Cowles, Discharge Permit Writer, Reuse
Daniel Griffin, Biosolids
Jennifer Robinson, Pretreatment
Lonnie Shull, Biomonitoring
Carl Adams, Storm Water
Lucy Parham, TMDL/Watershed Protection
Chrisopher Shope, PhD, Wasteload Analysis/ADR
Utah Division of Water Quality, (801) 536-4300

PUBLIC NOTICE INFORMATION (to be updated after)

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 Notice of the draft Permit was published on State of Utah and/or DWQ's website for at least 30 days as required.

During the public notice and comment period provided under UAC 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 UAC R317-8-6.12.

ADDENDUM TO FACT SHEET

During finalization of the Permit certain dates, spelling edits and minor language corrections were completed. Due to the nature of these changes, they are considered minor changes and the Permit is not required to be re Public Noticed as provided in UAC R317-8-5.6(3)

Responsiveness Summary

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

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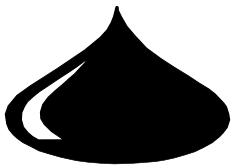
ATTACHMENT 1

Industrial Waste Survey

Industrial Pretreatment Wastewater Survey



Do you periodically experience any of the following treatment works problems:

foam, floaties or unusual colors
plugged collection lines caused by grease, sand, flour, etc.
discharging excessive suspended solids, even in the winter
smells unusually bad
waste treatment Facility doesn't seem to be treating the waste right

Perhaps the solution to a problem like one of these may lie in investigating the types and amounts of wastewater entering the sewer system from industrial users.

An industrial user (IU) is defined as a non-domestic user discharging to the waste treatment Facility which meets any of the following criteria:

1. **has a lot of process wastewater (5% of the flow at the waste treatment Facility or more than 25,000 gallons per work day.)**

   Examples: Food processor, dairy, slaughterhouse, industrial laundry.

2. **is subject to Federal Categorical Pretreatment Standards**;

   Examples: metal plating, cleaning or coating of metals, blueing of metals, aluminum extruding, circuit board manufacturing, tanning animal skins, pesticide formulating or packaging, and pharmaceutical manufacturing or packaging,

3. **is a concern to the POTW.**

   Examples: septage hauler, restaurant and food service, car wash, hospital, photo lab, carpet cleaner, commercial laundry.

All users of the water treatment Facility are **prohibited** from making the following types of discharges:

1. A discharge which creates a fire or explosion hazard in the collection system.

2. A discharge which creates toxic gases, vapor or fumes in the collection system.

3. A discharge of solids or thick liquids which creates flow obstructions in the collection system.

4. An acidic discharge (low pH) which causes corrosive damage to the collection system.

5. Petroleum oil, nonbiodegradable cutting oil, or products of mineral oil origin in amounts that will cause problems in the collection system or at the waste treatment Facility.

6. Waste haulers are prohibited from discharging without permission. (No midnight dumping!)

When the solution to a sewer system problem may be found by investigating the types and amounts of wastewater entering the sewer system discharged from IUs, it's appropriate to conduct an Industrial Waste Survey.

An Industrial Waste Survey consists of:

Step 1: Identify Industrial Users

Make a list of all the commercial and industrial sewer connections.

Sources for the list:

business license, building Permits, water and wastewater billing, Chamber of Commerce, newspaper, telephone book, yellow pages.

Split the list into two groups:

domestic wastewater only--no further information needed
everyone else (IUs)

Step 2: Preliminary Inspection

Go visit each IU identified on the "everybody else" list.

Fill out the **Preliminary Inspection Form** during the site visit.

Step 3: Informing the State

Please fax or send a copy of the Preliminary inspection form (both sides) to:

Jennifer Robinson

Division of Water Quality
288 North 1460 West
P.O. Box 144870
Salt Lake City, UT 84114-4870

Phone: (801) 536-4383
Fax: (801) 536-4301
E-mail: jenrobinson@utah.gov

PRELIMINARY INSPECTION FORM

INSPECTION DATE ___ / ____ /

Name of Business **Person Contacted** _____
Address _____ **Phone Number** _____

_____

Description of Business _____

Principal product or service: _____

Raw Materials used: _____

_____

Production process is: [ ] Batch [ ] Continuous [ ] Both

Is production subject to seasonal variation? [ ] yes [ ] no
If yes, briefly describe seasonal production cycle.

_____

This Facility generates the following types of wastes (check all that apply):

1. [ ] Domestic wastes (Restrooms, employee showers, etc.)
2. [ ] Cooling water, non-contact
3. [ ] Boiler/Tower blowdown
4. [ ] Cooling water, contact
5. [ ] Process
6. [ ] Equipment/Facility washdown
7. [ ] Air Pollution Control Unit
8. [ ] Storm water runoff to sewer
9. [ ] Other describe

Wastes are discharged to (check all that apply):

[ ] Sanitary sewer **[ ] Storm sewer**
[ ] Surface water **[ ] Ground water**
[ ] Waste haulers **[ ] Evaporation**
[ ] Other (describe)
Name of waste hauler(s), if used

_____

Is a grease trap installed? Yes No
Is it operational? Yes No

Does the business discharge a lot of process wastewater?

- **More than 5% of the flow to the waste treatment Facility? Yes No**
- **More than 25,000 gallons per work day? Yes No**

Does the business do any of the following:

[ ] Adhesives
[ ] Aluminum Forming
[ ] Battery Manufacturing
[ ] Copper Forming
[ ] Electric & Electronic Components
[ ] Explosives Manufacturing
[ ] Foundries
[ ] Inorganic Chemicals Mfg. or Packaging
[ ] Industrial Porcelain Ceramic Manufacturing
[ ] Iron & Steel
[ ] Metal Finishing, Coating or Cleaning
[ ] Mining
[ ] Nonferrous Metals Manufacturing
[ ] Organic Chemicals Manufacturing or Packaging
[ ] Paint & Ink Manufacturing
[ ] Pesticides Formulating or Packaging
[ ] Petroleum Refining
[ ] Pharmaceuticals Manufacturing or Packaging
[ ] Plastics Manufacturing
[ ] Rubber Manufacturing
[ ] Soaps & Detergents Manufacturing
[ ] Steam Electric Generation
[ ] Tanning Animal Skins
[ ] Textile Mills

[ ] Car Wash
[ ] Carpet Cleaner
[ ] Dairy
[ ] Food Processor
[ ] Hospital
[ ] Laundries
[ ] Photo Lab
[ ] Restaurant & Food Service
[ ] Septage Hauler
[ ] Slaughter House

Are any process changes or expansions planned during the next three years? Yes No
If yes, attach a separate sheet to this form describing the nature of planned changes or expansions.

_____
Inspector

_____
Waste Treatment Facility

Please send a copy of the preliminary inspection form (both sides) to:

Jennifer Robinson
Division of Water Quality
P. O. Box 144870
Salt Lake City, Utah 84114-4870

Phone: (801) 536-4383
Fax: (801) 536-4301
E-Mail: jenrobinson@utah.gov

	Industrial User	Jurisdiction	SIC Codes	Categorical Standard Number	Total Average Process Flow (gpd)	Total Average Facility Flow (gpd)	Facility Description
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							

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ATTACHMENT 2

Wasteload Analysis

State of Utah
SPENCER J. COX
Governor

DEIDRE HENDERSON
Lieutenant Governor

Department of
Environmental Quality

Tim Davis
Executive Director

DIVISION OF WATER QUALITY
John K. Mackey, P.E.
Director

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

Date: **December 18, 2025**

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

Facility: **Monticello City Waste Water Treatment Facility**
UPDES Permit No. UT-0024503

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.

Discharge

There are two effluent discharge points listed in the application (Figure 1). The system is designed to store the effluent during the non-irrigation seasons and use the effluent under reuse during the cultivation season.

- Outfall 001 discharges treated effluent to Montezuma Creek at a flow of 0.32 MGD
- Outfall 001R discharges treated effluent to irrigation fields at a flow of 0.32 MGD

Receiving Water

The effluent from Outfall 001 will discharge into Montezuma Creek.

Per UAC R317-2-13.1.a, the designated beneficial uses *San Juan River and Tributaries, from Lake Powell to state line except As listed below:* are *1C, 2A, 3B, 4*.

- *Class 1C - 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.*

Water Quality Standards

Numeric criteria based on designated beneficial uses are specified in UAC R317-2-14. In addition, narrative water quality standards must not be violated per UAC R317-2-7.2:

> *It shall be unlawful, and a violation of these rules, for any person to discharge or place any waste or other substance in such a way as will be or may become offensive such as unnatural deposits, floating debris, oil, scum or other nuisances such as color, odor or taste; or cause conditions which produce undesirable aquatic life or which produce objectionable tastes in edible aquatic organisms; or result in concentrations or combinations of substances which produce undesirable physiological responses in desirable resident fish, or other desirable aquatic life, or undesirable human health effects, as determined by bioassay or other tests performed in accordance with standard procedures; or determined by biological assessments in Subsection R317-2-7.3.*

Critical Low Flow

Typically, the critical flow for the receiving water in a wasteload analysis is considered the lowest stream flow for seven consecutive days with a ten-year return frequency (7Q10). Due to exceptionally limited upstream flow data for Montezuma Creek, the 20th percentile of flow was calculated using monitoring location DWQ 4953720 MONTEZUMA CK AB MONTICELLO WWTP. Seasonal upstream, background critical flow conditions are provided in Table 1.

Table 1-Seasonal upstream critical flow conditions and DWQ 4953720.

Season	20th % (ft^3/s)
Summer	0.43
Fall	0.00
Winter	0.50
Spring	0.80
Average	0.70

Upstream receiving water quality concentration for the parameters of interest at Outfall 001 were estimated from both monitoring location USGS 09378200 MONTEZUMA CREEK AT GOLF COURSE AT MONTICELLO, UT and monitoring location DWQ 4953720 MONTEZUMA CK AB MONTICELLO WWTP.

Effluent discharge flow and water quality conditions were characterized using data from the Discharge Monitoring Report (DMR) and monitoring station DWQ 4953710 MONTICELLO WWTP for the period 1975-2025.

Total Maximum Daily Load (TMDL)

According to the Utah's Final 2024 Integrated Report on Water Quality dated April 30, 2024 (UDWQ, 2024), the receiving water for Outfall 001 discharge "*San Juan River and Tributaries, from Lake Powell to state line except As listed below* (AU name: *Montezuma Creek-2*, AU ID: *UT14080203-003_00*)" was listed as "Not Supporting" for Benthic Macroinvertebrates Bioassessments The report further states "TMDL Needed"; however, the priority is set to "Low".

Mixing Zone

Per UAC R317-2-5, the maximum allowable mixing zone is 15 minutes of travel time for acute conditions, not to exceed 50% of stream width, and 2,500 feet for chronic conditions. Water quality standards must be met at the end of the regulatory mixing zone.

For Outfall 001, the effluent flow into Montezuma Creek is allowed a mixing zone. The actual length of the mixing zone was not delineated as part of this wasteload analysis; however, it was presumed to remain within the maximum allowable mixing zone dimensions. Acute limits were calculated using 50% of the annual critical low flow.

Parameters of Concern

The potential parameters of concern identified for the discharge/receiving water were determined in consultation with the UPDES Permit Writer, the Utah Water Quality Assessment Reports, and the industry SIC codes from https://www.osha.gov/data/sic-search. The potential parameters of concern for this facility include: total suspended solids (TSS), dissolved oxygen (DO), biochemical oxygen demand (BOD_5), total phosphorus (TP), total nitrogen (TN), and total ammonia (TAN).

WET Limits

The percent of effluent in the receiving water in a fully mixed condition, and acute and chronic dilution in a not fully mixed condition are calculated in the WLA in order to generate WET limits. The LC_{50} (lethal concentration, 50%) percent effluent for acute toxicity and the IC_{25} (inhibition concentration, 25%) percent effluent for chronic toxicity, as determined by the WET test, needs to be below the WET limits, as determined by the WLA. The WET limit for LC_{50} is typically 100% effluent and does not need to be determined by the WLA. The IC_{25} WET limits are provided in Table 2.

Table 2-Seasonal IC25 WET limits for Outfall 001.

Season	% effluent
Summer	53.5
Fall	100.0
Winter	49.8
Spring	38.2

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 Addendums.

The Utah Rivers Model was used to evaluate the DO sag and implications on nutrients and BOD_5. The 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. 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). This analysis is further summarized in the Wasteload Addendum.

Models and supporting documentation are available for review upon request.

Location Map

Figure 1-Location map of outfalls, monitoring locations, and surface water channels.

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.

Typically, a Level II Antidegradation Review (ADR) is required because the receiving waterbody is classified as a 1C drinking water source. However, the Level II ADR appears to have been completed in 2010. This should be verified. The proposed permit is a simple renewal of an existing UPDES permit. No increase in flow or concentration of pollutants over those authorized in the existing permit is being requested. Therefore, a Level II ADR is not required.

Documents:
WLA Document*: 251218-Monticello City WLA_2025.docx*
Wasteload Analysis and Addendums: *250516-Monticello City WLA_2025.xlsm*

References:
Utah Division of Water Quality. 2024. Final 2024 Integrated Report on Water Quality. https://lf-public.deq.utah.gov/WebLink/DocView.aspx?id=87957&repo=Public&searchid=fcd9ea4c-51e1-4227-aa29-fb1921c2cc19&cr=1

Utah Division of Water Quality. 2021. Utah Wasteload Analysis Procedures Version 2.0. https://documents.deq.utah.gov/water-quality/standards-technical-services/DWQ-2021-000684.pdf

Utah Division of Water Quality
Salt Lake City, Utah

WASTELOAD ANALYSIS [WLA]
Addendum: Statement of Basis

5/16/2025
4:00 PM

Facilities: **Monticello City WWTF** **UPDES No: UT-7UT0024503**
Discharging to: **Montezuma Creek to San Juan River to Colorado River**

I. Introduction

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 [R317-2-8, UAC]. Projected concentrations are compared to numeric water quality standards to determine acceptability. The anti-degradation policy and procedures are also considered. The primary in-stream parameters of concern may include metals (as a function of hardness), total dissolved solids (TDS), total residual chlorine (TRC), un-ionized ammonia (as a function of pH and temperature, measured and evaluated interms of total ammonia), and dissolved oxygen.

Mathematical water quality modeling is employed to determine stream quality response to point source discharges. Models aid in the effort of anticipating stream quality at future effluent flows at critical environmental conditions (e.g., low stream flow, high temperature, high pH, etc).

The numeric criteria in this wasteload analysis may always be modified by narrative criteria and other conditions determined by staff of the Division of Water Quality.

II. Receiving Water and Stream Classification

Montezuma Creek to San Juan River to Co 1C,2A,3B,4
Antidegradation Review: Level I review completed. Level II review is required.

III. Numeric Stream Standards for Protection of Aquatic Wildlife

Total Ammonia (TNH3)	Varies as a function of Temperature and pH Rebound. See Water Quality Standards
Chronic Total Residual Chlorine (TRC)	0.011 mg/l (4 Day Average) 0.019 mg/l (1 Hour Average)
Chronic Dissolved Oxygen (DO)	5.5 mg/l (30 Day Average) 6.0 mg/l (7Day Average) 3.0 mg/l (1 Day Average)
Maximum Total Dissolved Solids	1200.0 mg/l

Acute and Chronic Heavy Metals (Dissolved)

	4 Day Average (Chronic) Standard		1 Hour Average (Acute) Standard	
Parameter	**Concentration**	**Load***	**Concentration**	**Load***
Aluminum	87.00 ug/l**	0.232 lbs/day	750.00 ug/l	2.001 lbs/day
Arsenic	150.00 ug/l	0.400 lbs/day	340.00 ug/l	0.907 lbs/day
Cadmium	1.72 ug/l	0.005 lbs/day	4.94 ug/l	0.013 lbs/day
Chromium III	191.52 ug/l	0.511 lbs/day	4007.07 ug/l	10.693 lbs/day
ChromiumVI	11.00 ug/l	0.029 lbs/day	16.00 ug/l	0.043 lbs/day
Copper	21.46 ug/l	0.057 lbs/day	35.08 ug/l	0.094 lbs/day
Iron			1000.00 ug/l	2.669 lbs/day
Lead	11.01 ug/l	0.029 lbs/day	282.49 ug/l	0.754 lbs/day
Mercury	0.0120 ug/l	0.000 lbs/day	2.40 ug/l	0.006 lbs/day
Nickel	119.02 ug/l	0.318 lbs/day	1070.50 ug/l	2.857 lbs/day
Selenium	4.60 ug/l	0.012 lbs/day	20.00 ug/l	0.053 lbs/day
Silver	N/A ug/l	N/A lbs/day	20.25 ug/l	0.054 lbs/day
Zinc	273.73 ug/l	0.730 lbs/day	273.73 ug/l	0.730 lbs/day

* Allowed below discharge
**Chronic Aluminum standard applies only to waters with a pH < 7.0 and a Hardness < 50 mg/l as CaCO3

Metals Standards Based upon a Hardness of 265.14 mg/l as CaCO3

IV. Numeric Stream Standards for Protection of Agriculture

	4 Day Average (Chronic) Standard		1 Hour Average (Acute) Standard	
	Concentration	**Load***	**Concentration**	**Load***
Arsenic			100.0 ug/l	lbs/day
Boron			750.0 ug/l	1.00 lbs/day
Cadmium			10.0 ug/l	0.01 lbs/day
Chromium			100.0 ug/l	lbs/day
Copper			200.0 ug/l	lbs/day
Lead			100.0 ug/l	lbs/day
Selenium			50.0 ug/l	lbs/day
TDS, Summer			1200.0 mg/l	1.60 tons/day

V. Numeric Stream Standards for Protection of Human Health (Class 1C Waters)

	4 Day Average (Chronic) Standard		1 Hour Average (Acute) Standard	
Metals	**Concentration**	**Load***	**Concentration**	**Load***
Arsenic			50.0 ug/l	0.249 lbs/day
Barium			1000.0 ug/l	4.986 lbs/day
Cadmium			10.0 ug/l	0.050 lbs/day
Chromium			50.0 ug/l	0.249 lbs/day
Lead			50.0 ug/l	0.249 lbs/day
Mercury			2.0 ug/l	0.010 lbs/day
Selenium			10.0 ug/l	0.050 lbs/day
Silver			50.0 ug/l	0.249 lbs/day
Fluoride (3)			1.4 ug/l	0.007 lbs/day
to			2.4 ug/l	0.012 lbs/day
Nitrates as N			10.0 ug/l	0.050 lbs/day

VI. Numeric Stream Standards the Protection of Human Health from Water & Fish Consumption [Toxics]

	Maximum Conc., ug/l - Acute Standards			
	Class 1C		**Class 3A, 3B**	
Metals				
Antimony	14.0 ug/l	0.07 lbs/day		
Arsenic	50.0 ug/l	0.25 lbs/day	4300.00 ug/l	21.44 lbs/day
Asbestos	7.00E+06 ug/l	3.49E+04 lbs/day		
Beryllium				
Cadmium				
Chromium (III)				
Chromium (VI)				
Copper				
Cyanide	1.30E+03 ug/l	6.48 lbs/day	2.2E+05 ug/l	1096.91 lbs/day
Lead	700.0 ug/l	3.49 lbs/day		
Mercury			0.15 ug/l	0.00 lbs/day
Nickel			4600.00 ug/l	22.94 lbs/day
Selenium	0.1 ug/l	0.00 lbs/day		
Silver	610.0 ug/l	3.04 lbs/day		
Thallium			6.30 ug/l	0.03 lbs/day
Zinc				

There are additional standards that apply to this receiving water, but were not considered in this modeling/waste load allocation analysis.

VII. Mathematical Modeling of Stream Quality

Model configuration was accomplished utilizing standard modeling procedures. Data points were plotted and coefficients adjusted as required to match observed data as closely as possible.

The modeling approach used in this analysis included one or a combination of the following models.

(1) The Utah River Model, Utah Division of Water Quality, 1992. Based upon STREAMDO IV (Region VIII) and Supplemental Ammonia Toxicity Models; EPA Region VIII, Sept. 1990 and QUAL2E (EPA, Athens, GA).

(2) Utah Ammonia/Chlorine Model, Utah Division of Water Quality, 1992.

(3) AMMTOX Model, University of Colorado, Center of Limnology, and EPA Region 8

(4) Principles of Surface Water Quality Modeling and Control. Robert V. Thomann, et.al. Harper Collins Publisher, Inc. 1987, pp. 644.

Coefficients used in the model were based, in part, upon the following references:

(1) Rates, Constants, and Kinetics Formulations in Surface Water Quality Modeling. Environmental Research Laboratory, Office of Research and Development, U.S. Environmental Protection Agency, Athens Georgia. EPA/600/3-85/040 June 1985.

(2) Principles of Surface Water Quality Modeling and Control. Robert V. Thomann, et.al. Harper Collins Publisher, Inc. 1987, pp. 644.

VIII. Modeling Information

The required information for the model may include the following information for both the upstream conditions at low flow and the effluent conditions:

Flow, Q, (cfs or MGD)	D.O. mg/l
Temperature, Deg. C.	Total Residual Chlorine (TRC), mg/l
pH	Total NH3-N, mg/l
BOD5, mg/l	Total Dissolved Solids (TDS), mg/l
Metals, ug/l	Toxic Organics of Concern, ug/l

Other Conditions

In addition to the upstream and effluent conditions, the models require a variety of physical and biological coefficients and other technical information. In the process of actually establishing the permit limits for an effluent, values are used based upon the available data, model calibration, literature values, site visits and best professional judgement.

Model Inputs

The following is upstream and discharge information that was utilized as inputs for the analysis. Dry washes are considered to have an upstream flow equal to the flow of the discharge.

Current Upstream Information

	Stream Critical Low Flow cfs	Temp. Deg. C	pH	T-NH3 mg/l as N	BOD5 mg/l	DO mg/l	TRC mg/l	TDS mg/l
Summer (Irrig. Season)	0.4	18.1	7.3	0.05	0.50	6.59	0.00	263.7
Fall	0.0	4.9	7.3	0.05	0.50	---	0.00	306.0
Winter	0.5	2.9	7.0	0.05	0.50	---	0.00	306.0
Spring	0.8	11.5	7.6	0.05	0.50	---	0.00	306.0

	Al	As	Cd	CrIII	CrVI	Copper	Fe	Pb
Dissolved Metals	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
All Seasons	1.59*	0.50	0.50	2.50	2.65*	5.00	15.0	2.50

Dissolved Metals	Hg ug/l	Ni ug/l	Se ug/l	Ag ug/l	Zn ug/l	Boron ug/l	
All Seasons	0.0000	5.00	0.50	1.00	2.50	10.0	* 1/2 MDL

Projected Discharge Information

Season	Flow, MGD	Temp.	TDS mg/l	TDS tons/day
Summer	0.32000	15.1	330.00	0.44026
Fall	0.32000	10.3		
Winter	0.32000	5.5		
Spring	0.32000	13.9		

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

IX. 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 coincide with the environmental conditions expected at low stream flows.

Effluent Limitation for Flow based upon Water Quality Standards

In-stream criteria of downstream segments will be met with an effluent flow maximum value as follows:

Season	Daily Average	
Summer	0.320 MGD	0.495 cfs
Fall	0.320 MGD	0.495 cfs
Winter	0.320 MGD	0.495 cfs
Spring	0.320 MGD	0.495 cfs

Flow Requirement or Loading Requirement

The calculations in this wasteload analysis utilize the maximum effluent discharge flow of 0.32 MGD. If the discharger is allowed to have a flow greater than 0.32 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 Limitation for Whole Effluent Toxicity (WET) based upon WET Policy

Effluent Toxicity will not occur in downstream segements if the values below are met.

WET Requirements LC50 > EOP Effluent [Acute]
IC25 > 53.5% Effluent [Chronic]

Season	Receiving Water Flow (cfs)	Effluent Flow (MGD)	Effluent Flow (cfs)	Combined Flow (cfs)	Totally Mixed	Chronic IC25 % Effluent	Acute LC50 % Effluent
Summer	0.43	0.3	0.5	0.9	YES	53.5%	EOP
Fall	0.00	0.3	0.5	0.5	YES	100.0%	EOP
Winter	0.50	0.3	0.5	1.0	YES	49.8%	EOP
Spring	0.80	0.3	0.5	1.3	YES	38.2%	EOP

Effluent Limitation for Biological Oxygen Demand (BOD) based upon Water Quality Standards or Regulations

In-stream criteria of downstream segments for Dissolved Oxygen will be met with an effluent BOD limitation as follows:

Season	Concentration	
Summer	25.0 mg/l as BOD5	66.7 lbs/day
Fall	25.0 mg/l as BOD5	66.7 lbs/day
Winter	25.0 mg/l as BOD5	66.7 lbs/day
Spring	25.0 mg/l as BOD5	66.7 lbs/day

Effluent Limitation for Dissolved Oxygen (DO) based upon Water Quality Standards

In-stream criteria of downstream segments for Dissolved Oxygen will be met with an effluent D.O. limitation as follows:

Season	**Concentration**
Summer	5.50
Fall	5.50
Winter	5.50
Spring	5.50

Effluent Limitation for Total Ammonia based upon Water Quality Standards

In-stream criteria of downstream segments for Total Ammonia will be met with an effluent limitation (expressed as Total Ammonia as N) as follows:

Season		**Concentration**		**Load**	
Summer	4 Day Avg. - Chronic	10.3	mg/l as N	27.5	lbs/day
	1 Hour Avg. - Acute	81.3	mg/l as N	216.9	lbs/day
Fall	4 Day Avg. - Chronic	12.0	mg/l as N	32.1	lbs/day
	1 Hour Avg. - Acute	46.9	mg/l as N	125.2	lbs/day
Winter	4 Day Avg. - Chronic	13.1	mg/l as N	34.8	lbs/day
	1 Hour Avg. - Acute	41.3	mg/l as N	110.1	lbs/day
Spring	4 Day Avg. - Chronic	6.1	mg/l as N	16.3	lbs/day
	1 Hour Avg. - Acute	23.6	mg/l as N	63.0	lbs/day

Acute limit calculated with an Acute Zone of Initial Dilution (ZID) to be equal to 100.%.

Effluent Limitation for Total Residual Chlorine based upon Water Quality Standards

In-stream criteria of downstream segments for Total Residual Chlorine will be met with an effluent limitation as follows:

Season		**Concentration**		**Load**	
Summer	4 Day Avg. - Chronic	0.020	mg/l	0.05	lbs/day
	1 Hour Avg. - Acute	0.035	mg/l	0.09	lbs/day
Fall	4 Day Avg. - Chronic	0.011	mg/l	0.03	lbs/day
	1 Hour Avg. - Acute	0.019	mg/l	0.05	lbs/day
Winter	4 Day Avg. - Chronic	0.021	mg/l	0.06	lbs/day
	1 Hour Avg. - Acute	0.037	mg/l	0.10	lbs/day
Spring	4 Day Avg. - Chronic	0.027	mg/l	0.07	lbs/day
	1 Hour Avg. - Acute	0.048	mg/l	0.13	lbs/day

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Salt Lake City, Utah

Effluent Limitations for Total Dissolved Solids based upon Water Quality Standards

Season		Concentration		Load	
Summer	Maximum, Acute	2013.3	mg/l	2.69	tons/day
Fall	Maximum, Acute	1976.5	mg/l	2.64	tons/day
Winter	Maximum, Acute	2005.2	mg/l	2.68	tons/day
Spring	4 Day Avg. - Chronic	2058.2	mg/l	2.75	tons/day

Colorado Salinity Forum Limits — Determined by Permitting Section

Effluent Limitations for Total Recoverable Metals based upon Water Quality Standards

In-stream criteria of downstream segments for Dissolved Metals will be met with an effluent limitation as follows (based upon a hardness of 265.14 mg/l):

	4 Day Average Concentration		4 Day Average Load		1 Hour Average Concentration		1 Hour Average Load	
Aluminum	N/A		N/A		1,399.4	ug/l	3.7	lbs/day
Arsenic	279.86	ug/l	0.5	lbs/day	634.9	ug/l	1.7	lbs/day
Cadmium	2.78	ug/l	0.0	lbs/day	8.8	ug/l	0.0	lbs/day
Chromium III	355.71	ug/l	0.6	lbs/day	7,485.5	ug/l	20.0	lbs/day
Chromium VI	17.10	ug/l	0.0	lbs/day	26.4	ug/l	0.1	lbs/day
Copper	35.76	ug/l	0.1	lbs/day	61.2	ug/l	0.2	lbs/day
Iron	N/A		N/A		1,855.6	ug/l	5.0	lbs/day
Lead	18.40	ug/l	0.0	lbs/day	525.7	ug/l	1.4	lbs/day
Mercury	0.02	ug/l	0.0	lbs/day	4.5	ug/l	0.0	lbs/day
Nickel	218.06	ug/l	0.4	lbs/day	1,996.0	ug/l	5.3	lbs/day
Selenium	8.16	ug/l	0.0	lbs/day	36.9	ug/l	0.1	lbs/day
Silver	N/A	ug/l	N/A	lbs/day	37.0	ug/l	0.1	lbs/day
Zinc	509.32	ug/l	0.9	lbs/day	509.3	ug/l	1.4	lbs/day
Cyanide (free)	9.72	ug/l	0.0	lbs/day	41.1	ug/l	0.1	lbs/day

Effluent Limitations for Heat/Temperature based upon Water Quality Standards

Summer	25.0 Deg. C.	77.0 Deg. F
Fall	8.9 Deg. C.	47.9 Deg. F
Winter	10.3 Deg. C.	50.5 Deg. F
Spring	20.9 Deg. C.	69.6 Deg. F

Effluent Targets for Pollution Indicators Based upon Water Quality Standards

In-stream criteria of downstream segments for Pollution Indicators will be met with an effluent limit as follows:

	1 Hour Average Concentration		1 Hour Average Loading	
Gross Beta (pCi/l)	50.0	pCi/L		
BOD (mg/l)	5.0	mg/l	13.3	lbs/day
Nitrates as N	4.0	mg/l	10.7	lbs/day
Total Phosphorus as P	0.05	mg/l	0.1	lbs/day
Total Suspended Solids	90.0	mg/l	240.2	lbs/day

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Note: Pollution indicator targets are for information purposes only.

Effluent Limitations for Protection of Human Health [Toxics Rule]
Based upon Water Quality Standards (Most stringent of 1C or 3A & 3B as appropriate.)

In-stream criteria of downstream segments for Protection of Human Health [Toxics]
will be met with an effluent limit as follows:

	Maximum Concentration			
	Concentration		**Load**	
Metals				
Antimony	26.16	ug/l	0.07	lbs/day
Arsenic	93.00	ug/l	0.25	lbs/day
Asbestos	1.31E+07	ug/l	3.49E+04	lbs/day
Beryllium				
Cadmium				
Chromium (III)				
Chromium (VI)				
Copper	2429.20	ug/l	6.48	lbs/day
Cyanide	1308.03	ug/l	3.49	lbs/day
Lead	0.00		0.00	
Mercury	0.26	ug/l	0.00	lbs/day
Nickel	1139.86	ug/l	3.04	lbs/day
Selenium	0.00		0.00	
Silver	0.00		0.00	
Thallium	3.18	ug/l	0.01	lbs/day
Zinc				

Metals Effluent Limitations for Protection of All Beneficial Uses
Based upon Water Quality Standards and Toxics Rule

	Class 4 Acute Agricultural ug/l	**Class 3 Acute Aquatic Wildlife ug/l**	**Acute Toxics Drinking Water Source ug/l**	**Acute Toxics Wildlife ug/l**	**1C Acute Health Criteria ug/l**	**Acute Most Stringent ug/l**	**Class 3 Chronic Aquatic Wildlife ug/l**
Aluminum		1399.4				1399.4	N/A
Antimony			26.2	8035.1		26.2	
Arsenic	186.9	634.9	93.0		0.0	93.0	279.9
Asbestos			1.31E+07			1.31E+07	
Barium					1868.6	1868.6	
Beryllium						0.0	
Cadmium	18.3	8.8			0.0	8.8	2.8
Chromium (III)		7485.5			0.0	7485.5	355.7
Chromium (VI)	184.7	26.4			0.0	26.45	17.10
Copper	369.4	61.2	2429.2			61.2	35.8
Cyanide		41.1	411095.7			41.1	9.7
Iron		1855.6				1855.6	
Lead	184.7	525.7			0.0	184.7	18.4
Mercury		4.48	0.3	0.28	0.0	0.26	0.022
Nickel		1996.0	1139.9	8595.6		1139.9	218.1
Selenium	93.0	36.9			0.0	36.9	8.2
Silver		37.0			0.0	37.0	
Thallium			3.2	11.8		3.2	
Zinc		509.3				509.3	509.3
Boron	1401.5					1401.5	

Summary Effluent Limitations for Metals [Wasteload Allocation, TMDL]
[If Acute is more stringent than Chronic, then the Chronic takes on the Acute value.]

	WLA Acute ug/l	WLA Chronic ug/l	
Aluminum	1399.4	N/A	
Antimony	26.16		
Arsenic	93.0	279.9	Acute Controls
Asbestos	1.31E+07		
Barium			
Beryllium			
Cadmium	8.8	2.8	
Chromium (III)	7485.5	356	
Chromium (VI)	26.4	17.1	
Copper	61.2	35.8	
Cyanide	41.1	9.7	
Iron	1855.6		
Lead	184.7	18.4	
Mercury	0.262	0.022	
Nickel	1139.9	218	
Selenium	36.9	8.2	
Silver	37.0	N/A	
Thallium	3.2		
Zinc	509.3	509.3	
Boron	1401.46		

Other Effluent Limitations are based upon R317-1.

E. coli 126.0 organisms per 100 ml

X. Antidegradation Considerations

The Utah Antidegradation Policy allows for degradation of existing quality where it is determined that such lowering of water quality is necessary to accommodate important economic or social development in the area in which the waters are protected [R317-2-3]. It has been determined that certain chemical parameters introduced by this discharge will cause an increase of the concentration of said parameters in the receiving waters. Under no conditions will the increase in concentration be allowed to interfere with existing instream water uses.

The antidegradation rules and procedures allow for modification of effluent limits less than those based strictly upon mass balance equations utilizing 100% of the assimilative capacity of the receiving water. Additional factors include considerations for "Blue-ribbon" fisheries, special recreational areas, threatened and endangered species, and drinking water sources.

An Antidegradation Level I Review was conducted on this discharge and its effect on the receiving water. Based upon that review, it has been determined that an Antidegradation Level II Review is not required because it is a consistent permit renewal.

XI. Colorado River Salinity Forum Considerations

Discharges in the Colorado River Basin are required to have their discharge at a TDS loading of less than 1.00 tons/day unless certain exemptions apply. Refer to the Forum's Guidelines for additional information allowing for an exceedence of this value.
This doesn’t apply to facilities that do not discharge to the Colorado River Basin.

XII. Summary Comments

The mathematical modeling and best professional judgement indicate that violations of receiving water beneficial uses with their associated water quality standards, including important down-stream segments, will not occur for the evaluated parameters of concern as discussed above if the effluent limitations indicated above are met.

XIII. Notice of UPDES Requirement

Utah Division of Water Quality
Salt Lake City, Utah

This Addendum to the Statement of Basis does not authorize any entity or party to discharge to the waters of the State of Utah. That authority is granted through a UPDES permit issued by the Utah Division of Water Quality. The numbers presented here may be changed as a function of other factors. Dischargers are strongly urged to contact the Permits Section for further information. Permit writers may utilize other information to adjust these limits and/or to determine other limits based upon best available technology and other considerations provided that the values in this wasteload analysis [TMDL] are not compromised. See special provisions in Utah Water Quality Standards for adjustments in the Total Dissolved Solids values based upon background concentration.

Utah Division of Water Quality
801-538-6052
File Name: 250516-Monticello City_WLA_2025.xlsm

APPENDIX - Coefficients and Other Model Information

CBOD Coeff. (Kd)20 1/day	CBOD Coeff. FORCED (Kd)/day	CBOD Coeff. (Ka)T 1/day	REAER. Coeff. (Ka)20 (Ka)/day	REAER. Coeff. FORCED 1/day	REAER. Coeff. (Ka)T 1/day	NBOD Coeff. (Kn)20 1/day	NBOD Coeff. (Kn)T 1/day
2.000	0.000	1.831	447.593	0.000	427.703	0.400	0.345

Open Coeff. (K4)20 1/day	Open Coeff. (K4)T 1/day	NH3 LOSS (K5)20 1/day	NH3 (K5)T 1/day	NO2+NO3 LOSS (K6)20 1/day	NO2+NO3 (K6)T 1/day	TRC Decay K(Cl)20 1/day	TRC K(Cl)(T) 1/day
0.000	0.000	4.000	3.663	0.000	0.000	32.000	28.619

BENTHIC DEMAND (SOD)20 gm/m2/day	BENTHIC DEMAND (SOD)T gm/m2/day
1.000	0.886

K1 CBOD {theta}	K2 Reaer. {theta}	K3 NH3 {theta}	K4 Open {theta}	K5 NH3 Loss {theta}	K6 NO2+3 {theta}	K(Cl) TRC {theta}	S Benthic {theta}
1.0	1.0	1.1	1.0	1.0	1.0	1.1	1.1

Antidegredation Review

An antidegradation review (ADR) was conducted to determine whether the proposed activity complies with the applicable antidegradation requirements for receiving waters that may be affected. The Level I ADR evaluated the criteria of R317-2-3.5(b) and determined that a Level II antidegradation Review is not required because there is not a change to potential contaminants or increased effluent flow.

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

INPUT	Summer	Fall	Winter	Spring
pH:	7.30	7.30	7.00	7.60
Beneficial use classification:	3B	3B	3B	3B

OUTPUT				
Total ammonia nitrogen criteria (mg N/L):				
Acute (Class 3A):	17.506	17.506	24.103	11.375
Acute (Class 3B, 3C, 3D):	**26.214**	**26.214**	**36.093**	**17.032**

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

INPUT	Summer	Fall	Winter	Spring
Temperature (deg C):	18.08	4.85	2.93	11.52
pH:	7.30	7.30	7.00	7.60
Are fish early life stages present?	Yes	Yes	Yes	Yes

OUTPUT				
Total ammonia nitrogen criteria (mg N/L):				
Chronic - Fish Early Life Stages Present:	**4.035**	**5.077**	**5.910**	**3.976**
Chronic - Fish Early Life Stages Absent:	4.035	8.244	9.596	4.824

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