Official Draft Public Notice Version **June 22nd, 2026**
The findings, determinations, and assertions contained in this document are not final and subject to change following the public comment period.

FACT SHEET
PRICE AVENUE DRINKING WATER WELL
RENEWAL PERMIT: DISCHARGE
UPDES PERMIT NUMBER: UT0026395
MINOR INDUSTRIAL

FACILITY CONTACTS

Operator Name:	South Salt Lake City
Contact:	Jason Taylor
Position:	Water Division Manager

Person Name:	Jason Taylor
Position:	Staff Engineer

Permittee Name:	South Salt Lake City
Facility Name:	Price Avenue Drinking Water Well
Mailing and Facility Address:	220 East Morris Avenue, Suite 200 South Salt Lake City, UT 84115
Telephone:	(801) 483-6014
Actual Address:	Approximately 3011 South West Temple Street

DESCRIPTION OF FACILITY

South Salt Lake City (Permittee) has drilled a new drinking water well (Price Avenue Well), and the existing storm drain capacity at the well's location is insufficient for the pump-to-waste function of the well. At the headworks of the well, the Permittee is planning to dose chlorine for secondary treatment, and phosphate to reduce corrosion within the distribution system. At most, the well will pump-to-waste once every 24 hours. Discharge duration and quantity will be directly related. It is estimated that 72,000 gallons of water will be discharged each day.

The well is designed to minimize the volume of chemically treated groundwater discharged to waste. During normal operation, treated water is pumped directly into the distribution system. Prior to the well pump shutdown, the chemical dosing systems are stopped while the well continues to pump for 10 minutes. This process fills the pipeline between the well and the discharge location with untreated water while pumping treated water into the system, ensuring that only a minimal volume of treated water remains in the line when the well is turned off.

When the well is restarted, the initial flow is directed to waste to Mill Creek. This flushes out both the small residual volume of treated water remaining from the previous cycle and the untreated water from the shutdown process. After 5 minutes of operation, chemical dosing is resumed, and once the treated water reaches just before the discharge point, valving is switched to direct the flow into the distribution system. This sequence ensures that treated water is only sent to the distribution system and that chemical discharge to waste is minimized.

During emergency power outage operations, the well will first pump treated water into the distribution system, then switch to pumping mostly untreated water to flush the well into the creek, and then switch back to the distribution system.

DISCHARGE

DESCRIPTION OF DISCHARGE

Outfall	Description of Discharge Point
001	Located at latitude 40° 42' 22.283" and longitude 111° 53' 37.87". Discharge from Price Avenue Well, a culinary drinking water well, to Mill Creek.

RECEIVING WATERS AND STREAM CLASSIFICATION

If a discharge were to occur, it would be to Mill Creek, which is a Class 2B, 3A, and 4 according to Utah Administrative Code R317-2-13:

Class 2B -- Protected for infrequent primary contact recreation. Also protected for secondary contact recreation where there is a low likelihood of ingestion of water or a low degree of bodily contact with the water. Examples include, but are not limited to, wading, hunting, and fishing.

Class 3A -- Protected for cold water species of game fish and other cold-water aquatic life, including the necessary aquatic organisms in their food chain.

Class 4 -- Protected for agricultural uses including irrigation of crops and stock watering.

TOTAL MAXIMUM DAILY LOAD (TMDL) REQUIREMENTS

According to Utah's 2024 303(d) Water Quality Assessment Report, the receiving water for the discharge, Mill Creek (UT16020204-017_00), is listed as impaired for benthic invertebrates. There is an approved TMDL for *E. coli* for this watershed. Furthermore, the immediate downstream receiving water, the Jordan River (UT16020204-004_00), is also impaired for benthic invertebrates and total dissolved solids (TDS).

Despite the downstream TDS impairment, the Utah Division of Water Quality (DWQ) has determined that numeric TDS limitations are not required for this discharge based on a lack of reasonable potential to cause or contribute to a violation of water quality standards. The Facility's expected effluent TDS of 400 mg/L is significantly lower than the 1,000 mg/L drinking water Maximum Contaminant Level (MCL), the 1,200 mg/L state agricultural criterion, and the most stringent seasonal wasteload allocation of 1,526.2 mg/L. At the permitted daily maximum flow of 72,000 gallons per day (GPD), the resulting mass load of 0.12 tons/day represents only 0.27% of the 44.03 tons/day load identified in the Wasteload Analysis (WLA) as protective of the reach. Because the discharge concentration is also lower than ambient upstream levels (562–708 mg/L), the discharge will not degrade downstream water quality.
The Permittee also introduces phosphate to reduce corrosion within the distribution system. Considering the quantity discharged compared to the receiving stream and downstream inputs, DWQ has determined that this source will not contribute to any impairment. In both cases, monthly monitoring will be required to verify these characteristics.

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 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 is also required since this is a new facility, 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 flow, total suspended solids (TSS), Dissolved Oxygen (DO), and Total Residual Chlorine (TRC) are based on the WLA. For TSS, the pollution indicator will be used as the limitation. The pH limitation is based on Utah water quality standards. The oil and grease limit is based on BPJ.

The TRC is based on the acute TRC water quality standard at end-of-pipe as calculated from the WLA Memo. This effluent limit is below the minimum quantification level (ML) of the most common and practical EPA approved TRC methods. The Division has determined the current acceptable ML to be 0.06 mg/L and the method detection limit (MDL) to be 0.02 mg/L when using the DPD colorimetric Method #4500 – CL G. Measured values greater than or equal to the ML of .06 mg/l will be considered violations of the permit, and values less than the ML of 0.06 mg/L will be considered to be in compliance with the permit. For purposes of calculating averages and reporting on the Discharge Monitoring Report (DMR) 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 .02 mg/L will be recorded as measured.

The Water Quality Board adopted UAC R317-1-3.3, Technology-Based Phosphorus Effluent Limit (TBPEL) Rule in 2014. The TBPEL rule relates to "non-lagoon" wastewater treatment plants establishes new regulations for the discharge of phosphorus to surface waters and is self-implementing. Since the Facility uses phosphate to reduce corrosion within the distribution system, phosphorus is a pollutant of concern in this discharge.

The TBPEL rule 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. The TBPEL discharging treatment works are required to implement, at a minimum, monthly monitoring.

In UAC R317-1-3.3(D)(2). it identifies total effluent sampling for total phosphorus and orthophosphate (as P), ammonia, nitrate-nitrite and total Kjeldahl nitrogen (an N). However, total phosphorus is only a pollutant

of concern because of the addition of phosphate for corrosion control. Since this is a drinking water well, other nutrients are not expected to be present in the discharge. Therefore, the Facility will only have to meet the 1.0 mg/L total phosphorus limit.

In UAC R317-1-3.3(D)(3) the rule states that all monitoring shall be based on 24-hour composite samples by use of an automatic sampler or a minimum of four grab samples collected a minimum of two hours apart. However, since the estimated discharge from this facility is only anticipated to be 15 minutes in duration, a grab sample is considered representative and 24-hour composite sampling is not required.

Reasonable Potential Analysis

Since January 1, 2016, DWQ has conducted reasonable potential analysis (RP) on all new and renewal applications received after that date. To complete RP, more than 10 data points per parameter are required. Since this was a new permit, there were not 10 data points; therefore, sufficient data is not available to perform RP. For this permit cycle, the Permittee will be required to complete, at a minimum, quarterly metals sampling. If additional sampling is performed, it shall be reported to DWQ. Fewer than 10 data points may affect RP outcomes, potentially requiring additional monitoring in the future. After at least 10 samples have been collected, the Permittee may request RP be run to evaluate the reasonable potential to discharge these pollutants. Metals sampling will only be required if the Facility is discharging.

The Permit limitations are:

Parameter	Effluent Limitations *a		
	Yearly Average	Daily Minimum	Daily Maximum
Total Flow, GPD	--	--	72,000
TSS, mg/L	--	--	90
DO, mg/L	--	6.5	--
TRC, mg/L			
Summer (Jul-Sep)	--	--	0.04
Fall (Oct-Dec)	--	--	0.04
Winter (Jan-Mar)	--	--	0.03
Spring (Apr-Jun)	--	--	0.04
Total Phosphorus (as P), mg/L	1.0	--	--
Oil & Grease, mg/L	--	--	10.0
pH, Standard Units	--	6.5	9

SELF-MONITORING AND REPORTING REQUIREMENTS

These are the self-monitoring requirements for the 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.

Self-Monitoring and Reporting Requirements *a			
Parameter	Frequency	Sample Type	Units
Total Flow *b, *c	Continuous	Recorder	GPD
TSS	Monthly	Grab	mg/L
pH	Monthly	Grab	SU
DO	Monthly	Grab	mg/L
TRC *d	Weekly	Grab	mg/L
Oil & Grease *e	Monthly	Grab	mg/L
Total Phosphorus (as P)	Monthly	Grab	mg/L
Total Phosphorus (as P)	Yearly Average	Calculate	mg/L
Total Dissolved Solids	Monthly	Grab	mg/L
Metals *f	Quarterly	Grab	mg/L
Organic Toxic Pollutants	Quarterly	Grab	mg/L

*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 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 DMR 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.

*e Oil & Grease shall be when sheen is present or visible. If no sheen is present or visible, report NA.

*f Metals must be analyzed using "sufficiently sensitive" methods per Part V.B. The Reporting Limit (RL) must be at or below the permit limit or WLA. If no limit is established, use the most sensitive method approved under 40 Code of Federal Regulations 136 that the laboratory can perform. Metals to be sampled for reasonable potential include;

Parameter
Total Arsenic
Total Cadmium
Total Chromium
Total Copper
Total Lead
Total Molybdenum
Total Nickel
Total Selenium
Total Silver
Total Zinc
Total Cyanide
Total Mercury

All Permit compliance monitoring will occur at the Outfall location listed in the DESCRIPTION OF DISCHARGE Section above.

BIOSOLIDS

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

STORM WATER

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

Permittee does not discharge process wastewater to a Publicly Owned Treatment Works (POTW). Any process wastewater that Permittee may discharge to a POTW, either as a direct discharge or as a hauled waste, is subject to federal, state, and local pretreatment regulations. Pursuant to section 307 of the Clean Water Act, the Mine shall comply with all applicable federal general pretreatment regulations promulgated, found in 40 CFR 403, the pretreatment requirements found in UAC R317-8-8, and any specific local discharge limitations developed by the POTW accepting the waste.

In addition, in accordance with 40 CFR 403.12(p)(1), Permittee must notify the POTW, the EPA Regional Waste Management Director, the DWQ Director and the State hazardous waste authorities in writing if the Permittee discharges any substance into a POTW that if otherwise disposed of would be considered a hazardous waste under 40 CFR 261. This notification must include the name of the hazardous waste, the EPA hazardous waste number, and the type of discharge (continuous or batch).

BIOMONITORING REQUIREMENTS

A nationwide effort to control toxic discharges where effluent toxicity is an existing or potential concern is regulated in accordance with the Utah Pollutant Discharge Elimination System Permit and Enforcement Guidance Document for Whole Effluent Toxicity Control (biomonitoring), dated February 2018. Authority to require effluent biomonitoring is provided in Permit Conditions, UAC R317-8-4.2, Permit Provisions, UAC R317-8-5.3 and Water Quality Standards, UAC R317-2-5 and R317 -2-7.2.

The Permittee is a minor industrial facility operated by a municipality that will be discharging an infrequent amount of effluent, in which toxicity is neither an existing concern, nor likely to be present. This discharge is to Mill Creek. 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
Lonnie Shull, Discharge Permit Writer,
Reasonable Potential Analysis, Biomonitoring
Daniel Griffin, Biosolids
Jennifer Robinson, Pretreatment
Jordan Bryant, Storm Water
Sandy Wingert, TMDL/Watershed Protection
Suzan Tahir, 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

TBD.

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ATTACHMENT 1

Wasteload Analysis
(DWQ-2026-003471)

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

Date:	**March 24, 2026**
Prepared by:	**Suzan Tahir** **Standards and Technical Services**
Facility:	**South Salt Lake City Drinking Well** **UPDES No. UT0026395**
Receiving water:	**Mill Creek→Jordan River**

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

Proposed Outfall 001	New drinking water well (Price Avenue Well)
Latitude/Longitude:	40.706190, -111.893853
Design Flow:	The mean annual design discharge is 6.9 MGD (10.7 cfs)
Operations:	South Salt Lake City has drilled a new drinking water well (Price Avenue Well). Existing storm drain infrastructure cannot accommodate pump-to-waste flows; therefore, discharge to Mill Creek via a newly designed and permitted discharge structure is being proposed.

Receiving Water

The receiving water for Outfall 001 is Mill Creek. Per UAC R317-2-13.5.a, the beneficial uses for Mill Creek (Mill Creek2-SLCity, Salt Lake County) and tributaries, from Interstate 15 to headwaters are 2B, 3A, 4.

- Class 2B*: Protected for infrequent primary contact recreation. Also protected for secondary contact recreation where there is a low likelihood of ingestion of water or a low degree of bodily contact with the water. Examples include, but are not limited to, wading, hunting, and fishing.*

- Class 3A: *Protected for cold water species of game fish and other cold water aquatic life, including the necessary aquatic organisms in their food chain.*

- Class 4*: Protected for agricultural uses including irrigation of crops and stock watering.*

Critical Flow

The critical flow for the wasteload analysis is the lowest stream flow for seven consecutive days with a ten-year return frequency (7Q10). Salt Lake County (SLCo) maintains a system for monitoring water level, discharge and precipitation data throughout Salt Lake County. Many of these gauges have shorter record periods compared to USGS gages, but they are very useful in calculating 7Q10 flows. The 7Q10 flows were calculated using data from Mill Creek @ 460 West (gauge #490, Latitude: 40.7062526, Longitude: -111.9046464), for the period 2015-2025.

(https://rain-flow.saltlakecounty.gov/dashboard/?dashboard=f9d8b446-42b3-4e8d-a5a0-d11210f82bac#widget_72ca8f52303e40b6b9cf62449649a3a5). For this preliminary wasteload winter season was the critical season having the lowest flow records.

Season	7Q10 (cfs)	Site
Summer	14.1	Mill Creek @ 460 Gauge Site #490
Fall	10.5	Mill Creek @ 460 Gauge Site #490
Winter	6.7	Mill Creek @ 460 Gauge Site #490
Spring	14.6	Mill Creek @ 460 Gauge Site #490

Receiving water quality

Receiving water quality data was characterized using data from monitoring station 4992550 ((MILL CK AT STATE ST (100 EAST)) for the period 1985-2026 and monitoring station 4992505 (MILL CK. AB CENTRAL VALLEY WWTP OUTFALL) for the period 2000-2026 Station 4992505 WAS used to characterize total dissolved solids concentrations in the receiving water body.

Assessment Category and Total Maximum Daily Load (TMDL)

The receiving water , Mill Creek (Mill Creek2-SLCity, Mill Creek and tributaries from Interstate 15 to USFS Boundary, UT16020204-017_00) is impaired for benthic invertebrate assessment as of Utah's 2024 303(d) Water Quality Assessment Report. There is an approved TMDL for E.coli.

Parameters of Concern

The potential parameter of concern identified for the discharge and receiving water body is total residual chlorine (TRC). Additional parameters of concern may become apparent as a result of reasonable potential analysis, technology-based standards, or other factors as determined by the UPDES Permit Writer.

Protection of Downstream Uses

Per UAC R317-2-8, *all actions to control waste discharges under these rules shall be modified as necessary to protect downstream designated uses*. For this discharge, numeric aquatic life use criteria (3A) apply to the immediate receiving water (Mill Creek). The further downstream receiving water for this discharge is the Jordan River (Jordan River-4, Jordan River from 2100 South to the confluence with Little Cottonwood Creek, UT16020204-004_00).This assessment unit is impaired for benthic invertebrate assessment and total dissolved solids (TDS).

Mixing Zone

Per R317-2-5, "Streams with a flow equal to or less than twice the flow of a point source discharge may be considered to be totally mixed." The mixing zone analysis in the model shows the discharge to be totally mixed.

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} is 64.6% effluent.

Season	IC_{25} % Effluent
Summer	43.2%
Fall	50.6%
Winter	64.6%
Spring	42.4%

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.

Antidegradation Level II Review

A Level II Antidegradation Review (ADR) is required for this discharge, as this preliminary wasteload is developed for a new facility and outfall.

Documents

WLA Documents:

- South SLC DrinkingWell_preWLA_2026.docx
- South SLC DrinkingWell_preWLA_2026.xlsm
- South SLC DrinkingWell_preWLA_SOB_2026.pdf

References:

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

Utah Division of Water Quality. 2024. *Final 2024 Integrated Report on Water Quality.*

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.

https://rain-flow.saltlakecounty.gov/upload/files/5a483d22-a7d1-418c-97ff-b427be45a917.txt

WASTELOAD ANALYSIS [WLA]
Addendum: Statement of Basis

24-Mar-26
10:00

Facilities: **South SLC Drinking Well** **UPDES No: UT-UT0026395**
Discharging to: **Mill Creek**

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

Mill Creek:	2B, 3A, 4
Antidegradation Review:	Level I review completed. Level II review required.

III. Numeric In-Stream Criteria 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)
Dissolved Oxygen (DO)	6.50 mg/l (30 Day Average) 5.00 mg/l (7Day Average) 4.00 mg/l (instantaneous)
Maximum Total Dissolved Solids	1200.0 mg/l

Acute and Chronic Heavy Metals (Dissolved)

Parameter	4 Day Average (Chronic) Standard Concentration	Load*	1 Hour Average (Acute) Standard Concentration	Load*
Aluminum	87.00 ug/l**	5.020 lbs/day	750.00 ug/l	43.276 lbs/day
Arsenic	150.00 ug/l	8.655 lbs/day	340.00 ug/l	19.618 lbs/day
Cadmium	2.15 ug/l	0.124 lbs/day	6.50 ug/l	0.375 lbs/day
Chromium III	241.09 ug/l	13.911 lbs/day	5044.18 ug/l	291.055 lbs/day
ChromiumVI	11.00 ug/l	0.635 lbs/day	16.00 ug/l	0.923 lbs/day
Copper	27.29 ug/l	1.575 lbs/day	45.72 ug/l	2.638 lbs/day
Iron			1000.00 ug/l	57.701 lbs/day
Lead	15.74 ug/l	0.908 lbs/day	404.00 ug/l	23.311 lbs/day
Mercury	0.0120 ug/l	0.001 lbs/day	2.40 ug/l	0.138 lbs/day
Nickel	150.96 ug/l	8.711 lbs/day	1357.83 ug/l	78.349 lbs/day
Selenium	4.60 ug/l	0.265 lbs/day	18.40 ug/l	1.062 lbs/day
Silver	N/A ug/l	N/A lbs/day	32.83 ug/l	1.894 lbs/day
Zinc	347.33 ug/l	20.041 lbs/day	347.33 ug/l	20.041 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 351.17 mg/l as CaCO3

Organics [Pesticides]

Parameter	4 Day Average (Chronic) Standard Concentration		Load*		1 Hour Average (Acute) Standard Concentration		Load*	
Aldrin					1.500	ug/l	0.087	lbs/day
Chlordane	0.004	ug/l	0.574	lbs/day	1.200	ug/l	0.069	lbs/day
DDT, DDE	0.001	ug/l	0.134	lbs/day	0.550	ug/l	0.032	lbs/day
Dieldrin	0.056	ug/l	7.481	lbs/day	0.240	ug/l	0.014	lbs/day
Endosulfan	0.056	ug/l	7.481	lbs/day	0.110	ug/l	0.006	lbs/day
Endrin	0.036	ug/l	4.809	lbs/day	0.086	ug/l	0.005	lbs/day
Guthion					0.010	ug/l	0.001	lbs/day
Heptachlor	0.004	ug/l	0.508	lbs/day	0.260	ug/l	0.015	lbs/day
Lindane	0.080	ug/l	10.687	lbs/day	1.000	ug/l	0.058	lbs/day
Methoxychlor					0.030	ug/l	0.002	lbs/day
Mirex					0.010	ug/l	0.001	lbs/day
Parathion					0.066	ug/l	0.004	lbs/day
PCB's	0.014	ug/l	1.870	lbs/day	N/A	ug/l	#VALUE!	lbs/day
entachlorophenol	15.00	ug/l	2003.887	lbs/day	19.000	ug/l	1.096	lbs/day
Toxephene	0.0002	ug/l	0.027	lbs/day	0.7300	ug/l	0.042	lbs/day

IV. Numeric Stream Standards for Protection of Agriculture

	4 Day Average (Chronic) Standard Concentration	Load*	1 Hour Average (Acute) Standard Concentration		Load*	
Arsenic			100.0	ug/l		lbs/day
Boron			750.0	ug/l		lbs/day
Cadmium			10.0	ug/l	0.29	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	34.62	tons/day

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

Metals	4 Day Average (Chronic) Standard Concentration	Load*	1 Hour Average (Acute) Standard Concentration	Load*
Arsenic			ug/l	lbs/day
Barium			ug/l	lbs/day
Cadmium			ug/l	lbs/day
Chromium			ug/l	lbs/day
Lead			ug/l	lbs/day
Mercury			ug/l	lbs/day
Selenium			ug/l	lbs/day
Silver			ug/l	lbs/day
Fluoride (3)			ug/l	lbs/day
to			ug/l	lbs/day
Nitrates as N			ug/l	lbs/day

Chlorophenoxy Herbicides

2,4-D	ug/l		lbs/day
2,4,5-TP	ug/l		lbs/day
Endrin	ug/l		lbs/day
hexane (Lindane)	ug/l		lbs/day
Methoxychlor	ug/l		lbs/day
Toxaphene	ug/l		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**		
Toxic Organics	[2 Liters/Day for 70 Kg Person over 70 Yr.]		[6.5 g for 70 Kg Person over 70 Yr.]		
Acenaphthene	ug/l	lbs/day	90.0 ug/l	12.02	lbs/day
Acrolein	ug/l	lbs/day	400.0 ug/l	53.44	lbs/day
Acrylonitrile	ug/l	lbs/day	7.0 ug/l	0.94	lbs/day
Benzene	ug/l	lbs/day	51.0 ug/l	6.81	lbs/day
Benzidine	ug/l	lbs/day	0.0 ug/l	0.00	lbs/day
Carbon tetrachlor	ug/l	lbs/day	5.0 ug/l	0.67	lbs/day
Chlorobenzene	ug/l	lbs/day	800.0 ug/l	106.87	lbs/day
1,2,4-Trichlorobenzene					
Hexachlorobenze	ug/l	lbs/day	0.0 ug/l	0.00	lbs/day
1,2-Dichloroethar	ug/l	lbs/day	2000.0 ug/l	267.18	lbs/day
1,1,1-Trichloroethane					
Hexachloroethan	ug/l	lbs/day	0.1 ug/l	0.01	lbs/day
1,1-Dichloroethane					
1,1,2-Trichloroeth	ug/l	lbs/day	8.9 ug/l	1.19	lbs/day
1,1,2,2-Tetrachlo	ug/l	lbs/day	3.0 ug/l	0.40	lbs/day
Chloroethane			0.0 ug/l	0.00	lbs/day
Bis(2-chloroethyl)	ug/l	lbs/day	2.2 ug/l	0.29	lbs/day
2-Chloroethyl viny	ug/l	lbs/day	0.0 ug/l	0.00	lbs/day
2-Chloronaphthal	ug/l	lbs/day	1000.0 ug/l	133.59	lbs/day
2,4,6-Trichlorophe	ug/l	lbs/day	2.8 ug/l	0.37	lbs/day
p-Chloro-m-cresol			0.0 ug/l	0.00	lbs/day
Chloroform (HM)	ug/l	lbs/day	2000.0 ug/l	267.18	lbs/day
2-Chlorophenol	ug/l	lbs/day	800.0 ug/l	106.87	lbs/day
1,2-Dichlorobenze	ug/l	lbs/day	3000.0 ug/l	400.78	lbs/day
1,3-Dichlorobenze	ug/l	lbs/day	10.0 ug/l	1.34	lbs/day
1,4-Dichlorobenze	ug/l	lbs/day	900.0 ug/l	120.23	lbs/day
3,3'-Dichlorobenz	ug/l	lbs/day	0.2 ug/l	0.02	lbs/day
1,1-Dichloroethyle	ug/l	lbs/day	20000.0 ug/l	2671.85	lbs/day
1,2-trans-Dichlorc	ug/l	lbs/day	4000.0 ug/l	534.37	lbs/day
2,4-Dichlorophen	ug/l	lbs/day	60.0 ug/l	8.02	lbs/day
1,2-Dichloropropa	ug/l	lbs/day	31.0 ug/l	4.14	lbs/day
1,3-Dichloropropy	ug/l	lbs/day	1700.0 ug/l	227.11	lbs/day
2,4-Dimethylphen	ug/l	lbs/day	3000.0 ug/l	400.78	lbs/day
2,4-Dinitrotoluene	ug/l	lbs/day	1.7 ug/l	0.23	lbs/day
2,6-Dinitrotoluene	ug/l	lbs/day	0.0 ug/l	0.00	lbs/day
1,2-Diphenylhydra	ug/l	lbs/day	0.2 ug/l	0.03	lbs/day
Ethylbenzene	ug/l	lbs/day	130.0 ug/l	17.37	lbs/day
Fluoranthene	ug/l	lbs/day	20.0 ug/l	2.67	lbs/day
4-Chlorophenyl phenyl ether					
4-Bromophenyl phenyl ether					
Bis(2-chloroisopro	ug/l	lbs/day	65000.0 ug/l	8.68E+03	lbs/day
Bis(2-chloroethox	ug/l	lbs/day	0.0 ug/l	0.00	lbs/day
Methylene chlorid	ug/l	lbs/day	1000.0 ug/l	133.59	lbs/day
Methyl chloride (H	ug/l	lbs/day	0.0 ug/l	0.00	lbs/day
Methyl bromide (H	ug/l	lbs/day	10000.0 ug/l	1335.92	lbs/day
Bromoform (HM)	ug/l	lbs/day	120.0 ug/l	16.03	lbs/day
Dichlorobromome	ug/l	lbs/day	27.0 ug/l	3.61	lbs/day
Chlorodibromome	ug/l	lbs/day	21.0 ug/l	2.81	lbs/day
Hexachlorobutadi	ug/l	lbs/day	0.0 ug/l	0.00	lbs/day
Hexachlorocyclop	ug/l	lbs/day	4.0 ug/l	0.53	lbs/day
Isophorone	ug/l	lbs/day	1800.0 ug/l	240.47	lbs/day
Naphthalene					
Nitrobenzene	ug/l	lbs/day	600.0 ug/l	80.16	lbs/day
2-Nitrophenol	ug/l	lbs/day	0.0 ug/l	0.00	lbs/day
4-Nitrophenol	ug/l	lbs/day	0.0 ug/l	0.00	lbs/day
2,4-Dinitrophenol	ug/l	lbs/day	14000.0 ug/l	1870.29	lbs/day
4,6-Dinitro-o-cres	ug/l	lbs/day	765.0 ug/l	102.20	lbs/day
N-Nitrosodimethy	ug/l	lbs/day	3.0 ug/l	0.40	lbs/day
N-Nitrosodipheny	ug/l	lbs/day	6.0 ug/l	0.80	lbs/day
N-Nitrosodi-n-pro	ug/l	lbs/day	0.5 ug/l	0.07	lbs/day
Pentachlorophen	ug/l	lbs/day	0.0 ug/l	0.01	lbs/day
Phenol	ug/l	lbs/day	3.0E+05 ug/l	4.01E+04	lbs/day
Bis(2-ethylhexyl)p	ug/l	lbs/day	0.4 ug/l	0.05	lbs/day
Butyl benzyl phth	ug/l	lbs/day	0.1 ug/l	0.01	lbs/day

Di-n-butyl phthala	ug/l	lbs/day	30.0	ug/l	4.01 lbs/day
Di-n-octyl phthlate					
Diethyl phthalate	ug/l	lbs/day	600.0	ug/l	80.16 lbs/day
Dimethyl phthlate	ug/l	lbs/day	2.0E+03	ug/l	2.67E+02 lbs/day
Benzo(a)anthrace	ug/l	lbs/day	0.0	ug/l	0.00 lbs/day
Benzo(a)pyrene (	ug/l	lbs/day	0.0	ug/l	0.00 lbs/day
Benzo(b)fluoranth	ug/l	lbs/day	0.0	ug/l	0.00 lbs/day
Benzo(k)fluoranth	ug/l	lbs/day	0.0	ug/l	0.00 lbs/day
Chrysene (PAH)	ug/l	lbs/day	0.1	ug/l	0.02 lbs/day
Acenaphthylene (PAH)					
Anthracene (PAH	ug/l	lbs/day	400.0	ug/l	53.44 lbs/day
Dibenzo(a,h)anth	ug/l	lbs/day	0.0	ug/l	0.00 lbs/day
Indeno(1,2,3-cd)p	ug/l	lbs/day	0.0	ug/l	0.00 lbs/day
Pyrene (PAH)	ug/l	lbs/day	30.0	ug/l	4.01 lbs/day
Tetrachloroethyle	ug/l	lbs/day	520.0	ug/l	69.47 lbs/day
Toluene	ug/l	lbs/day	520	ug/l	69.47 lbs/day
Trichloroethylene	ug/l	lbs/day	7.0	ug/l	0.94 lbs/day
Vinyl chloride	ug/l	lbs/day	1.6	ug/l	0.21 lbs/day
					lbs/day
Pesticides					lbs/day
Aldrin	ug/l	lbs/day	0.0	ug/l	0.00 lbs/day
Dieldrin	ug/l	lbs/day	0.0	ug/l	0.00 lbs/day
Chlordane	ug/l	lbs/day	0.0	ug/l	0.00 lbs/day
4,4'-DDT	ug/l	lbs/day	0.0	ug/l	0.00 lbs/day
4,4'-DDE	ug/l	lbs/day	0.0	ug/l	0.00 lbs/day
4,4'-DDD	ug/l	lbs/day	0.0	ug/l	0.00 lbs/day
alpha-Endosulfan	ug/l	lbs/day	30.0	ug/l	4.01 lbs/day
beta-Endosulfan	ug/l	lbs/day	40.0	ug/l	5.34 lbs/day
Endosulfan sulfat	ug/l	lbs/day	40.0	ug/l	5.34 lbs/day
Endrin	ug/l	lbs/day	0.0	ug/l	0.00 lbs/day
Endrin aldehyde	ug/l	lbs/day	1.0	ug/l	0.13 lbs/day
Heptachlor	ug/l	lbs/day	0.0	ug/l	0.00 lbs/day
Heptachlor epoxide					
PCB's					
PCB 1242 (Aroch	ug/l	lbs/day	0.0	ug/l	0.00 lbs/day
PCB-1254 (Aroch	ug/l	lbs/day	0.0	ug/l	0.00 lbs/day
PCB-1221 (Aroch	ug/l	lbs/day	0.0	ug/l	0.00 lbs/day
PCB-1232 (Aroch	ug/l	lbs/day	0.0	ug/l	0.00 lbs/day
PCB-1248 (Aroch	ug/l	lbs/day	0.0	ug/l	0.00 lbs/day
PCB-1260 (Aroch	ug/l	lbs/day	0.0	ug/l	0.00 lbs/day
PCB-1016 (Aroch	ug/l	lbs/day	0.0	ug/l	0.00 lbs/day
Pesticide					
Toxaphene	ug/l		0.0	ug/l	0.00 lbs/day
Dioxin					
Dioxin (2,3,7,8-TC	ug/l	lbs/day			

Metals						
Antimony	ug/l	lbs/day				
Arsenic	ug/l	lbs/day	640.00	ug/l	85.50	lbs/day
Asbestos	ug/l	lbs/day				
Beryllium						
Cadmium						
Chromium (III)						
Chromium (VI)						
Copper						
Cyanide	ug/l	lbs/day	4.0E+02	ug/l	53.44	lbs/day
Lead	ug/l	lbs/day				
Mercury			0.15	ug/l	0.02	lbs/day
Nickel			4600.00	ug/l	614.53	lbs/day
Selenium	ug/l	lbs/day				
Silver	ug/l	lbs/day				
Thallium			0.47	ug/l	0.06	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	14.08	16.1	8.0	0.25	1.00	---	0.00	708.0
Fall	10.47	10.9	7.8	0.84	1.00	---	0.00	627.0
Winter	6.69	7.6	8.0	0.36	1.00	9.33	0.00	678.0
Spring	14.56	14.1	8.0	0.58	1.00	---	0.00	562.0

	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	2.385*	0.795*	0.0795*	0.795*	3.975*	0.8*	1.25*	0.795*

	Hg	Ni	Se	Ag	Zn	Boron	
Dissolved Metals	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	
All Seasons	0.0000	0.795*	1.59*	0.15*	0.0795*	1.59*	* ~80% MDL

Projected Discharge Information

Season	Flow, MGD	Temp.
Summer	6.92000	15.0
Fall	6.92000	12.0
Winter	6.92000	10.0
Spring	6.92000	13.0

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	6.920 MGD	10.705 cfs
Fall	6.920 MGD	10.705 cfs
Winter	6.920 MGD	10.705 cfs
Spring	6.920 MGD	10.705 cfs

Flow Requirement or Loading Requirement

The calculations in this wasteload analysis utilize the maximum effluent discharge flow of 6.92 MGD. If the discharger is allowed to have a flow greater than 6.92 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 >	100.0%	Effluent	[Acute]
	IC25 >	43.2%	Effluent	[Chronic]

Effluent Limitation for Biological Oxygen Demand (30 Day Average BOD) based upon Water Quality Standards or Regulations

In-stream criteria of downstream segments for Dissolved Oxygen will be met with a 30 day average effluent BOD5 and CBOD5 limitation as follows:

Season	Concentration			
Summer	25.0	mg/l as BOD5	1442.5	lbs/day
Fall	25.0	mg/l as BOD5	1442.5	lbs/day
Winter	25.0	mg/l as BOD5	1442.5	lbs/day
Spring	25.0	mg/l as BOD5	1442.5	lbs/day

Effluent Limitation for Dissolved Oxygen (30 Day Average DO) based upon Water Quality Standards

In-stream criteria of downstream segments for Dissolved Oxygen will be met with a 30 day average effluent D.O. limitation as follows:

Season	ELS Absent Concentrations
Summer	6.5
Fall	6.5
Winter	6.5
Spring	6.5

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	6.25	mg/l as N	360.6	lbs/day
	1 Hour Avg. - Acute	10.90	mg/l as N	629.2	lbs/day
Fall	4 Day Avg. - Chronic	5.57	mg/l as N	321.1	lbs/day
	1 Hour Avg. - Acute	10.68	mg/l as N	616.1	lbs/day
Winter	4 Day Avg. - Chronic	4.46	mg/l as N	257.3	lbs/day
	1 Hour Avg. - Acute	8.35	mg/l as N	481.6	lbs/day
Spring	4 Day Avg. - Chronic	5.45	mg/l as N	314.2	lbs/day
	1 Hour Avg. - Acute	9.73	mg/l as N	561.5	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	0.02	mg/l	1.39	lbs/day
	1 Hour Avg. - Acute	0.04	mg/l	2.45	lbs/day
Fall	4 Day Avg. - Chronic	0.02	mg/l	1.19	lbs/day
	1 Hour Avg. - Acute	0.04	mg/l	2.11	lbs/day
Winter	4 Day Avg. - Chronic	0.02	mg/l	0.99	lbs/day
	1 Hour Avg. - Acute	0.03	mg/l	1.74	lbs/day
Spring	4 Day Avg. - Chronic	0.02	mg/l	1.41	lbs/day
	1 Hour Avg. - Acute	0.04	mg/l	2.50	lbs/day

Effluent Limitations for Total Dissolved Solids based upon Water Quality Standards

Season		Concentration		Load	
Summer	Maximum, Acute	1847.1	mg/l	53.29	tons/day
Fall	Maximum, Acute	1760.2	mg/l	50.78	tons/day
Winter	Maximum, Acute	1526.2	mg/l	44.03	tons/day
Spring	Maximum, Acute	2067.7	mg/l	59.66	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 351.17 mg/l):

	4 Day Average Concentration		Load		1 Hour Average Concentration		Load	
Aluminum*	N/A		N/A		1,241.6	ug/l	71.6	lbs/day
Arsenic*	346.24	ug/l	12.9	lbs/day	563.1	ug/l	32.5	lbs/day
Cadmium	4.88	ug/l	0.2	lbs/day	10.7	ug/l	0.6	lbs/day
Chromium III	557.15	ug/l	20.8	lbs/day	8,360.8	ug/l	482.4	lbs/day
Chromium VI*	20.24	ug/l	0.8	lbs/day	23.9	ug/l	1.4	lbs/day
Copper	62.13	ug/l	2.3	lbs/day	75.3	ug/l	4.3	lbs/day
Iron*	N/A		N/A		1,656.8	ug/l	95.6	lbs/day
Lead	35.40	ug/l	1.3	lbs/day	669.2	ug/l	38.6	lbs/day
Mercury*	0.03	ug/l	0.0	lbs/day	4.0	ug/l	0.2	lbs/day
Nickel	348.47	ug/l	13.0	lbs/day	2,250.2	ug/l	129.8	lbs/day
Selenium*	8.56	ug/l	0.3	lbs/day	29.5	ug/l	1.7	lbs/day
Silver	N/A	ug/l	N/A	lbs/day	54.4	ug/l	3.1	lbs/day
Zinc	804.04	ug/l	30.0	lbs/day	575.7	ug/l	33.2	lbs/day
Cyanide*	12.04	ug/l	0.4	lbs/day	36.5	ug/l	2.1	lbs/day

*Limits for these metals are based on the dissolved standard.

Effluent Limitations for Heat/Temperature based upon Water Quality Standards

Summer	20.7	Deg. C.	69.3	Deg. F
Fall	14.8	Deg. C.	58.7	Deg. F
Winter	10.8	Deg. C.	51.5	Deg. F
Spring	18.8	Deg. C.	65.8	Deg. F

Effluent Limitations for Organics [Pesticides] Based upon Water Quality Standards

In-stream criteria of downstream segments for Organics [Pesticides] will be met with an effluent limit as follows:

	4 Day Average Concentration		Load		1 Hour Average Concentration		Load	
Aldrin					1.5E+00	ug/l	1.34E-01	lbs/day
Chlordane	4.30E-03	ug/l	2.48E-01	lbs/day	1.2E+00	ug/l	1.07E-01	lbs/day
DDT, DDE	1.00E-03	ug/l	5.77E-02	lbs/day	5.5E-01	ug/l	4.91E-02	lbs/day
Dieldrin	5.60E-02	ug/l	3.23E+00	lbs/day	2.4E-01	ug/l	2.14E-02	lbs/day
Endosulfan	5.60E-02	ug/l	3.23E+00	lbs/day	1.1E-01	ug/l	9.82E-03	lbs/day
Endrin	3.60E-02	ug/l	2.08E+00	lbs/day	8.6E-02	ug/l	7.68E-03	lbs/day
Guthion	0.00E+00	ug/l	0.00E+00	lbs/day	1.0E-02	ug/l	8.93E-04	lbs/day
Heptachlor	3.80E-03	ug/l	2.19E-01	lbs/day	2.6E-01	ug/l	2.32E-02	lbs/day
Lindane	8.00E-02	ug/l	4.62E+00	lbs/day	1.0E+00	ug/l	8.93E-02	lbs/day
Methoxychlor	0.00E+00	ug/l	0.00E+00	lbs/day	3.0E-02	ug/l	2.68E-03	lbs/day
Mirex	0.00E+00	ug/l	0.00E+00	lbs/day	1.0E-02	ug/l	8.93E-04	lbs/day
Parathion	1.30E-02	ug/l	7.50E-01	lbs/day	6.6E-02	ug/l	5.89E-03	lbs/day
PCB's	1.40E-02	ug/l	8.08E-01	lbs/day	N/A	ug/l	#VALUE!	lbs/day
entachlorophenol	1.50E+01	ug/l	8.66E+02	lbs/day	1.9E+01	ug/l	1.70E+00	lbs/day
Toxephene	2.00E-04	ug/l	1.15E-02	lbs/day	7.3E-01	ug/l	6.52E-02	lbs/day

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		Loading	
Gross Beta (pCi/l)	50.0	pCi/L		
BOD (mg/l)	5.0	mg/l	288.5	lbs/day
Nitrates as N	4.0	mg/l	230.8	lbs/day
Total Phosphorus as P	0.05	mg/l	2.9	lbs/day
Total Suspended Solids	90.0	mg/l	5193.1	lbs/day

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		Maximum Concentration	
	Concentration		**Load**	
Toxic Organics				
Acenaphthene	2.08E+02	ug/l	1.20E+01	lbs/day
Acrolein	9.26E+02	ug/l	5.34E+01	lbs/day
Acrylonitrile	1.62E+01	ug/l	9.35E-01	lbs/day
Benzene	1.18E+02	ug/l	6.81E+00	lbs/day
Benzidine		ug/l		lbs/day
Carbon tetrachloride	1.16E+01	ug/l	6.68E-01	lbs/day
Chlorobenzene	1.85E+03	ug/l	1.07E+02	lbs/day
1,2,4-Trichlorobenzene				
Hexachlorobenzene	1.83E-04	ug/l	1.06E-05	lbs/day
1,2-Dichloroethane	4.63E+03	ug/l	2.67E+02	lbs/day
1,1,1-Trichloroethane				
Hexachloroethane	2.32E-01	ug/l	1.34E-02	lbs/day
1,1-Dichloroethane				
1,1,2-Trichloroethane	2.06E+01	ug/l	1.19E+00	lbs/day
1,1,2,2-Tetrachloroethane	6.95E+00	ug/l	4.01E-01	lbs/day
Chloroethane				
Bis(2-chloroethyl) ether	5.09E+00	ug/l	2.94E-01	lbs/day
2-Chloroethyl vinyl ether				
2-Chloronaphthalene	2.32E+03	ug/l	1.34E+02	lbs/day
2,4,6-Trichlorophenol	6.48E+00	ug/l	3.74E-01	lbs/day
p-Chloro-m-cresol				
Chloroform (HM)	4.63E+03	ug/l	2.67E+02	lbs/day
2-Chlorophenol	1.85E+03	ug/l	1.07E+02	lbs/day
1,2-Dichlorobenzene	6.95E+03	ug/l	4.01E+02	lbs/day
1,3-Dichlorobenzene	2.32E+01	ug/l	1.34E+00	lbs/day
1,4-Dichlorobenzene	2.08E+03	ug/l	1.20E+02	lbs/day
3,3'-Dichlorobenzidine	3.47E-01	ug/l	2.00E-02	lbs/day
1,1-Dichloroethylene	4.63E+04	ug/l	2.67E+03	lbs/day
1,2-trans-Dichloroethylene1				
2,4-Dichlorophenol	1.39E+02	ug/l	8.02E+00	lbs/day
1,2-Dichloropropane	7.18E+01	ug/l	4.14E+00	lbs/day
1,3-Dichloropropylene	3.94E+03	ug/l	2.27E+02	lbs/day
2,4-Dimethylphenol	6.95E+03	ug/l	4.01E+02	lbs/day
2,4-Dinitrotoluene	3.94E+00	ug/l	2.27E-01	lbs/day
2,6-Dinitrotoluene				
1,2-Diphenylhydrazine	4.63E-01	ug/l	2.67E-02	lbs/day
Ethylbenzene	3.01E+02	ug/l	1.74E+01	lbs/day
Fluoranthene	4.63E+01	ug/l	2.67E+00	lbs/day
4-Chlorophenyl phenyl ether				
4-Bromophenyl phenyl ether				
Bis(2-chloroisopropyl) ether	1.50E+05	ug/l	8.68E+03	lbs/day
Bis(2-chloroethoxy) methane				
Methylene chloride (HM)	2.32E+03	ug/l	1.34E+02	lbs/day
Methyl chloride (HM)				
Methyl bromide (HM)				
Bromoform (HM)	2.78E+02	ug/l	1.60E+01	lbs/day
Dichlorobromomethane(HM)	6.25E+01	ug/l	3.61E+00	lbs/day
Chlorodibromomethane (HM)	4.86E+01	ug/l	2.81E+00	lbs/day
Hexachlorocyclopentadiene	9.26E+00	ug/l	5.34E-01	lbs/day
Isophorone	4.17E+03	ug/l	2.40E+02	lbs/day
Naphthalene				
Nitrobenzene	1.39E+03	ug/l	8.02E+01	lbs/day
2-Nitrophenol				
4-Nitrophenol				
2,4-Dinitrophenol	3.24E+04	ug/l	1.87E+03	lbs/day
4,6-Dinitro-o-cresol	1.77E+03	ug/l	1.02E+02	lbs/day
N-Nitrosodimethylamine	6.95E+00	ug/l	4.01E-01	lbs/day
N-Nitrosodiphenylamine	1.39E+01	ug/l	8.02E-01	lbs/day
N-Nitrosodi-n-propylamine	1.18E+00	ug/l	6.81E-02	lbs/day
Pentachlorophenol	9.26E-02	ug/l	5.34E-03	lbs/day

Phenol	6.95E+05	ug/l	4.01E+04	lbs/day
Bis(2-ethylhexyl)phthalate	8.57E-01	ug/l	4.94E-02	lbs/day
Butyl benzyl phthalate	2.32E-01	ug/l	1.34E-02	lbs/day
Di-n-butyl phthalate	6.95E+01	ug/l	4.01E+00	lbs/day
Di-n-octyl phthlate				
Diethyl phthalate	1.39E+03	ug/l	8.02E+01	lbs/day
Dimethyl phthlate	4.63E+03	ug/l	2.67E+02	lbs/day
Benzo(a)anthracene (PAH)	3.01E-03	ug/l	1.74E-04	lbs/day
Benzo(a)pyrene (PAH)	3.01E-04	ug/l	1.74E-05	lbs/day
Benzo(b)fluoranthene (PAH)	3.01E-03	ug/l	1.74E-04	lbs/day
Benzo(k)fluoranthene (PAH)	3.01E-02	ug/l	1.74E-03	lbs/day
Chrysene (PAH)	3.01E-01	ug/l	1.74E-02	lbs/day
Acenaphthylene (PAH)				
Anthracene (PAH)				
Dibenzo(a,h)anthracene (PAH)	3.01E-04	ug/l	1.74E-05	lbs/day
Indeno(1,2,3-cd)pyrene (PAH)	3.01E-02	ug/l	1.74E-03	lbs/day
Pyrene (PAH)	6.95E+01	ug/l	4.01E+00	lbs/day
Tetrachloroethylene	1.20E+03	ug/l	6.95E+01	lbs/day
Toluene	1.20E+03	ug/l	6.95E+01	lbs/day
Trichloroethylene	1.62E+01	ug/l	9.35E-01	lbs/day
Vinyl chloride	3.70E+00	ug/l	2.14E-01	lbs/day
Pesticides				
Aldrin	1.78E-06	ug/l	1.03E-07	lbs/day
Dieldrin	2.78E-06	ug/l	1.60E-07	lbs/day
Chlordane	7.41E-04	ug/l	4.27E-05	lbs/day
4,4'-DDT	6.95E-05	ug/l	4.01E-06	lbs/day
4,4'-DDE	4.17E-05	ug/l	2.40E-06	lbs/day
4,4'-DDD	2.78E-04	ug/l	1.60E-05	lbs/day
alpha-Endosulfan	6.95E+01	ug/l	4.01E+00	lbs/day
beta-Endosulfan	9.26E+01	ug/l	5.34E+00	lbs/day
Endosulfan sulfate	9.26E+01	ug/l	5.34E+00	lbs/day
Endrin	6.95E-02	ug/l	4.01E-03	lbs/day
Endrin aldehyde	2.32E+00	ug/l	1.34E-01	lbs/day
Heptachlor	1.37E-05	ug/l	7.88E-07	lbs/day
Heptachlor epoxide				
PCB's				
PCB 1242 (Arochlor 1242)	1.04E-04	ug/l	6.01E-06	lbs/day
PCB-1254 (Arochlor 1254)	1.04E-04	ug/l	6.01E-06	lbs/day
PCB-1221 (Arochlor 1221)	1.04E-04	ug/l	6.01E-06	lbs/day
PCB-1232 (Arochlor 1232)	1.04E-04	ug/l	6.01E-06	lbs/day
PCB-1248 (Arochlor 1248)	1.04E-04	ug/l	6.01E-06	lbs/day
PCB-1260 (Arochlor 1260)	1.04E-04	ug/l	6.01E-06	lbs/day
PCB-1016 (Arochlor 1016)	1.04E-04	ug/l	6.01E-06	lbs/day

Pesticide				
Toxaphene	1.64E-03	ug/l	9.49E-05	lbs/day
Metals				
Antimony		ug/l		lbs/day
Arsenic		ug/l		lbs/day
Asbestos		ug/l		lbs/day
Beryllium				
Cadmium				
Chromium (III)				
Chromium (VI)				
Copper		ug/l		lbs/day
Cyanide		ug/l		lbs/day
Lead				
Mercury		ug/l		lbs/day
Nickel		ug/l		lbs/day
Selenium				
Silver				
Thallium		ug/l		lbs/day
Zinc				
Dioxin				
Dioxin (2,3,7,8-TCDD)	3.24E-08	ug/l	1.87E-09	lbs/day

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		1241.6				1241.6	N/A
Antimony				1481.8		1481.8	
Arsenic	231.5	563.1				231.5	346.2
Asbestos							
Barium							
Beryllium						0.0	
Cadmium	23.0	10.7				10.7	4.9
Chromium (III)		8360.8				8360.8	557.1
Chromium (VI)	230.5	23.9				23.91	20.24
Copper	462.0	75.3				75.3	62.1
Cyanide		36.5	926.1			36.5	12.0
Iron		1656.8				1656.8	
Lead	230.5	669.2				230.5	35.4
Mercury		3.98		0.35		0.35	0.028
Nickel		2250.2		10650.1		2250.2	348.5
Selenium	113.7	29.5				29.5	8.6
Silver		54.4				54.4	
Thallium				1.1		1.1	
Zinc		575.7				575.7	804.0
Boron	1736.4					1736.4	
Sulfate	4587.1					4587.1	

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	1241.6	N/A	
Antimony	1481.76		
Arsenic	231.5	346.2	Acute Controls
Asbestos			
Barium			
Beryllium			
Cadmium	10.7	4.9	
Chromium (III)	8360.8	557	
Chromium (VI)	23.9	20.2	
Copper	75.3	62.1	
Cyanide	36.5	12.0	
Iron	1656.8		
Lead	230.5	35.4	
Mercury	0.347	0.028	
Nickel	2250.2	348	
Selenium	29.5	8.6	
Silver	54.4	N/A	
Thallium	1.1		
Zinc	575.7	804.0	Acute Controls
Boron	1736.43		
Sulfate	4587.1		N/A at this Waterbody

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.

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 required. The proposed permit is a renewal with proposed increase in flow or concentration over that which was approved in the previous permit.

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.

LEVEL II ANTIDEGRADATION REVIEW FORM
UTAH DIVISION OF WATER QUALITY

Instructions

The objective of antidegradation rules and policies is to protect existing high quality waters and set forth a process for determining where and how much degradation is allowable for socially and/or economically important reasons. In accordance with Utah Administrative Code (UAC R317-2-3), an antidegradation review (ADR) is a permit requirement for any project that will increase the level of pollutants in waters of the state. The rule outlines requirements for Level I and Level II ADRs, as well as public comment procedures. This review form is intended to assist the applicant and Division of Water Quality (DWQ) staff in complying with the rule but is not a substitute for the complete rule in R317-2-3.5. Additional details can be found in the *Utah Antidegradation Implementation Guidance* and relevant sections of the guidance are cited in this review form.

ADRs should be among the first steps of an application for a UPDES permit because the review helps establish treatment expectations. The level of effort and amount of information required for the ADR depends on the nature of the project and the characteristics of the receiving water. To avoid unnecessary delays in permit issuance, the Division of Water Quality (DWQ) recommends that the process be initiated at least one year prior to the date a final approved permit is required.

DWQ will determine if the project will impair beneficial uses (Level I ADR) using information provided by the applicant and whether a Level II ADR is required. The applicant is responsible for conducting the Level II ADR. For the permit to be approved, the Level II ADR must document that all feasible measures have been undertaken to minimize pollution for socially, environmentally or economically beneficial projects resulting in an increase in pollution to waters of the state.

For permits requiring a Level II ADR, this antidegradation form must be completed and approved by DWQ before any UPDES permit can be issued. Typically, the ADR form is completed in an iterative manner in consultation with DWQ. The applicant should first complete the statement of social, environmental and economic importance (SEEI) in Part C and determine the parameters of concern (POC) in Part D. Once the POCs are agreed upon by DWQ, the alternatives analysis and selection of preferred alternative in Part E can be conducted based on minimizing degradation resulting from discharge of the POCs. Once the applicant and DWQ agree upon the preferred alternative, the review is considered complete, and the form must be signed, dated, and submitted to DWQ.

Utah Division of Water Quality
Level II Antidegradation Review Form

Part A: Application Information

Facility Name:	Price Avenue Well Discharge
Facility Owner:	South Salt Lake City Public Works
Facility Location:	40.706190, -111.893853
Form Prepared By:	Sterling Woodruff, P.E.
Outfall Number:	001
Receiving Water:	Mill Creek

Designated Beneficial Uses of the Receiving Water (R317-2-13):
Domestic Water Supply: ☐ 1C
Recreation: ☐ 2A ☒ 2B
Aquatic Life: ☒ 3A ☐ 3B ☐ 3C ☐ 3D ☐ 3E
Agricultural Water Supply: ☒ 4
Great Salt Lake: ☐ 5A ☐ 5B ☐ 5C ☐ 5D ☐ 5E

Antidegradation Category of Receiving Water (R317-2-12):
☐ 1 ☐ 2 ☒ 3

UPDES Permit Number:

Effluent Flow Reviewed: 72,000 gallons over 15-30 minutes (intermittent discharge based on drinking water well discharge at startup, estimated to be no more than once per day)
Typically, this is the maximum monthly average discharge at design capacity. Exceptions should be noted.

What is the application for? (check all that apply)

☒ A UPDES permit for a new facility, project, or outfall.

☐ A UPDES permit renewal with an expansion or modification of an existing wastewater treatment works.

☐ A UPDES permit renewal requiring limits for a pollutant not covered by the previous permit and/or an increase to existing permit limits.

☐ A UPDES permit renewal with no changes in facility operations.

Part B. Determination of Need for Level II Review

This section of the form is intended to help applicants determine if a Level II ADR is required for specific permitted activities. In addition, the Executive Secretary may require a Level II ADR for an activity with the potential for major impact on the quality of waters of the state (R317-2-3.5a.1).

B1. The UPDES permit is new or is being renewed and the proposed effluent concentration and loading limits are higher than the concentration and loading limits in the previous permit and any previous antidegradation review(s).

☒ **Yes** (Proceed to Part B2 of the Form)

☐ **No** No Level II ADR is required and there is no need to proceed further with review questions.

B2. Will any pollutants use assimilative capacity of the receiving water, i.e. do the pollutant concentrations in the effluent exceed those in the receiving waters at critical conditions? For most pollutants, effluent concentrations that are higher than the ambient concentrations require an antidegradation review. For a few pollutants, such as dissolved oxygen, an antidegradation review is required if the effluent concentrations are less than the ambient concentrations in the receiving water. (Refer to Section 3.3 of Implementation Guidance)

☒ **Yes** (Proceed to Part B3 of the Form)

☐ **No** No Level II ADR is required and there is no need to proceed further with review questions.

B3. Are water quality impacts of the proposed project temporary and limited (Section 3.3.3 of Implementation Guidance)? Proposed projects that will have temporary and limited effects on water quality can be exempted from a Level II ADR.

☐ **Yes** Identify the reasons used to justify this determination in Part B3.1 and proceed to Part G. No Level II ADR is required.

☒ **No** A Level II ADR is required (Proceed to Part C)

B3.1 Complete this question only if the applicant is requesting a Level II review exclusion for temporary and limited projects (see R317-2-3.5(b)(3) and R317-2-3.5(b)(4)). For projects requesting a temporary and limited exclusion please indicate the factor(s) used to justify this determination (check all that apply and provide details as appropriate) (Section 3.3.3 of Implementation Guidance):

☐ Water quality impacts will be temporary and related exclusively to sediment or turbidity and fish spawning will not be impaired.

Factors to be considered in determining whether water quality impacts will be temporary and limited:

a) The length of time during which water quality will be lowered:
b) The percent change in ambient concentrations of pollutants:
c) Pollutants affected:
d) Likelihood for long-term water quality benefits:
e) Potential for any residual long-term influences on existing uses:
f) Impairment of fish spawning, survival and development of aquatic fauna excluding fish removal efforts:

Additional justification, as needed:

LEVEL II ANTIDEGRADATION REVIEW

Part C, D, E, and F of the form constitute the Level II ADR Review. The applicant must provide as much detail as necessary for DWQ to perform the antidegradation review. Questions are provided for the convenience of applicants; however, for more complex permits it may be more effective to provide the required information in a separate report. Applicants that prefer a separate report should record the report name here and proceed to Part G of the form.

Optional Report Name: ☐

Part C. Statement of Social, Economic and Environmental Importance

This section determines whether the degradation from the project is necessary to accommodate important social and/or economic development in the area in which the waters are located. The applicant must provide as much detail as necessary for DWQ to concur that the project is socially and economically necessary when answering the questions in this section. More information is available in Section 6.2 of the Implementation Guidance.

C1. Describe the proposed project or activity that requires a discharge of pollutants to waters of the State of Utah.

The project consists of the operation of a municipal groundwater production well that requires periodic pump-to-waste discharge during startup, maintenance, and operational flushing events. While the produced groundwater is of high quality and suitable for drinking water use, the distribution system requires the addition of chlorine for disinfection and phosphate for corrosion control. As a result, intermittent discharges to Mill Creek may contain low concentrations of residual chlorine and phosphorus. Operational practices will minimize chemical dosing prior to discharge to reduce pollutant loading to the receiving water.

C2. Describe the social and economic benefits that would be realized through the proposed project, including the number and nature of jobs created and anticipated tax revenues.

The proposed project provides substantial social and economic benefits by improving the reliability and resiliency of South Salt Lake City's public drinking water system. The well will serve as a redundant water supply source, enhancing the City's ability to meet peak demand, emergency response needs (including fire protection), and long-term system reliability.

The project will reduce dependence on imported water supplies from the Jordan Valley Water Conservancy District, helping stabilize long-term water costs and improve local control over water resources. This increased reliability supports ongoing redevelopment within South Salt Lake City, which is transitioning from a largely built-out community to one focused on reinvestment and infrastructure modernization. The availability of a secure municipal water supply is essential for supporting residential and commercial redevelopment and maintaining economic vitality.

C3. Describe any environmental benefits to be realized through implementation of the proposed project.

Environmental benefits of the project include the use of a local groundwater source, which reduces reliance on imported surface water supplies and associated energy use for conveyance and treatment. The project incorporates operational controls to minimize the discharge of chemical residuals, thereby limiting potential impacts to water quality.

Additionally, the discharge consists primarily of clean groundwater and contributes flow to Mill Creek, which ultimately supports downstream hydrology and contributes to flows reaching the Great Salt Lake system. By carefully managing discharge quality and quantity, the project minimizes environmental impacts while supporting sustainable water resource use.

C4. Describe any social and economic losses that may result from the project, including impacts to recreation or commercial development.

No significant long-term social or economic losses are anticipated as a result of this project. The discharge is intermittent, low volume, and managed to minimize impacts to water quality and beneficial uses. Recreational and commercial uses of Mill Creek are not expected to be adversely affected. The project will be operated and maintained by South Salt Lake City using existing resources, with no anticipated burden on the public or local economy.

C5. Summarize any supporting information from the affected communities on preserving assimilative capacity to support future growth and development.

The project is consistent with local planning objectives and supports the City's long-term growth and redevelopment goals. South Salt Lake City is a largely developed community undergoing significant reinvestment and redevelopment of aging infrastructure. Maintaining reliable and locally controlled water supply sources is critical to supporting this redevelopment while preserving water system resilience.

The project helps provide sufficient water infrastructure to be in place to meet current and future demands without over-reliance on external suppliers, thereby preserving flexibility in regional water resource management and supporting sustainable community development.

C6. Describe any structures or equipment associated with the project that will be placed within or adjacent to the receiving water.

The discharge system includes a gooseneck outlet pipe that conveys flow to a concrete energy dissipation structure located adjacent to Mill Creek. The structure is designed to reduce flow velocity and allow turbulent energy to dissipate prior to discharge into the creek. Flow is then conveyed through a pipe into the receiving water.

All structures associated with the discharge have been designed in accordance with Salt Lake County Flood Control standards to provide channel stability, minimize erosion, and protect the integrity of the receiving water. The design minimizes physical disturbance to the creek and prevents degradation of streambank and channel conditions.

Part D. Parameters of Concern

This section identifies and ranks the parameters of concern from increasing to decreasing potential threat to beneficial uses of the receiving waters. Parameters of concern are constituents in the effluent at concentrations greater than ambient concentrations in the receiving water. The applicant is responsible for identifying parameter concentrations in the effluent and UDWQ will provide parameter concentrations for the receiving water through the wasteload allocation. More information is available in Section 4 of the Implementation Guidance.

D1. Parameters of Concern:

Rank	Pollutant	Ambient		Effluent	
		Concentration/ Units	Basis	Concentration/ Units	Basis
1	Total Residual Chlorine	0 mg/L	Typical ambient in Mill Creek; assumed negligible	≤0.02 mg/L	Residual disinfection; minimized operationally
2	Total Phosphorus	0.02 mg/L	Typical ambient for Mill Creek (WLA/monitoring data)	~0.05 mg/L	Residual Phosphate from Operations
3	Dissolved Oxygen	~8-10 mg/L	Typical ambient stream conditions	Variable (near saturation)	Potential minor variation due to conveyance conditions
4	Total Suspended Solids	< 1 NTU	Typical baseflow conditions	~3 NTU	Minor disturbance during startup and flushing
5	TDS	Unknown	Unknown	~400 mg/L	Groundwater water sample test
6	pH	~7-8.5	Assumed value	~ 7-8.5	Within drinking water standards

D2. Parameters Present in the Effluent Not Considered Parameters of Concern:

Pollutant	Ambient Concentration	Effluent Concentration	Justification

Iron	Unknown	0.41 mg/L	Naturally occurring in groundwater, sample within drinking water standards
Manganese	Unknown	0.021 mg/L	Naturally occurring in groundwater, sample within drinking water standards
Temperature	Seasonal Variation	~60°F	Consistent groundwater temperatures.

Part E. Alternative Analysis

Level II ADRs require the applicant to determine whether there are feasible less-degrading alternatives to the proposed project. For new and expanded discharges, the Alternatives Analysis must be prepared under the supervision of and stamped by a Professional Engineer registered with the State of Utah. DWQ may grant an exception from this requirement under certain circumstances, such as the alternatives considered potentially feasible do not include engineered treatment alternatives.More information regarding the requirements for the Alternatives Analysis is available in Section 5 of the Implementation Guidance.

E1. Attach as an appendix to this form a report that describes the following factors for all alternative treatment options 1) a technical description of the treatment process, including construction costs and continued operation and maintenance expenses, 2) the mass and concentration of discharge constituents, and 3) a description of the reliability of the system, including the frequency where recurring operation and maintenance may lead to temporary increases in discharged pollutants. Most of this information is typically available from a Capital Facility Plan, if available.

Report Name: Price Ave Well Discharge Alternatives Analysis

E2. Describe the proposed method and cost of the baseline treatment alternative. The baseline treatment alternative is the minimum treatment required to meet water quality based effluent limits (WQBEL) as determined by the preliminary or final wasteload analysis (WLA) and any secondary or categorical effluent limits.

Baseline treatment consists of operational controls to prevent the discharge of chlorinated water, including suspension of chlorine dosing and flushing of the system prior to any discharge event. These practices minimize or eliminate total residual chlorine prior to discharge. Pump variability control measures will also be implemented to reduce short-term hydraulic impacts to the receiving water. Operational procedures will allow chlorine residuals to dissipate or be flushed from the system prior to discharge. If monitoring indicates residual chlorine is present, additional operational adjustments will be implemented to maintain compliance with permit requirements.

E3. Were any of the following alternatives feasible and affordable?

Utah Division of Water Quality
Level II Antidegradation Review Form

Alternative	Feasible	Reason Not Feasible/Affordable
Pollutant Trading	☐ Yes ☒ No	Not applicable to this type of intermittent, low-load potable water discharge and no established trading framework is available for this parameter.
Water Recycling/Reuse	☐ Yes ☒ No	Not feasible due to the intermittent and unpredictable nature of discharge events and lack of storage or consistent reuse demand within the service area.
Land Application	☐ Yes ☒ No	Not feasible due to urban site constraints, lack of available land, and potential for runoff, ponding, or nuisance conditions.
Connection to Other Facilities	☐ Yes ☒ No	Not feasible due to flow capacity required in storm drain infrastructure, cost of installation, and lack of treatment benefit for relatively clean water.
Upgrade to Existing Facility	☐ Yes ☒ No	Not applicable as there is no existing treatment facility associated with the well discharge.
Total Containment	☐ Yes ☒ No	Not feasible due to limited site area, urban constraints, infrastructure requirements, operational complexity, and cost for capturing intermittent, short-duration discharge events.
Improved O&M of Existing Systems	☒ Yes ☐ No	Feasible and implemented through operational controls including suspension of chemical dosing and system flushing prior to discharge to minimize pollutant loading.
Seasonal or Controlled Discharge	☒ Yes ☐ No	Feasible and implemented by controlling discharge timing and rate to reduce potential impacts to the receiving water.
New Construction	☐ Yes ☒ No	Not feasible because construction of treatment or storage facilities would not provide additional environmental benefit relative to operational controls and would result in disproportionate cost for a low-volume, intermittent discharge.
No Discharge	☐ Yes ☒ No	Not feasible because periodic discharge is necessary for proper operation, maintenance, and protection of the municipal water system, including flushing and startup conditions.

E4. From the applicant's perspective, what is the preferred treatment option?

The preferred alternative is controlled discharge of groundwater with implementation of operational measures to prevent the presence of chlorine residuals and minimize phosphate discharge prior to release. These measures include suspension of chemical dosing and flushing of the system prior to discharge events.

E5. Is the preferred option also the least polluting feasible alternative?

☒ **Yes**

☐ **No**

If no, what were less degrading feasible alternative(s)?

If no, provide a summary of the justification for not selecting the least polluting feasible alternative and if appropriate, provide a more detailed justification as an attachment.

E6. Describe any optional mitigation to compensate for the proposed water quality degradation?

Mitigation measures include:

- Suspension of chlorine and phosphate dosing prior to discharge events
- Flushing of the system to remove residual treated water prior to discharge
- Controlled discharge rates to minimize short-term hydraulic impacts to Mill Creek
- Use of an energy dissipation structure to reduce flow velocity and prevent erosion
- Operational monitoring to verify that discharge water quality is consistent with expected conditions

Part F. Public Notice

Level II ADRs require an opportunity for the public and interested parties to review and comment on the documentation. UDWQ conducts the mandatory Public Notice once the Level II ADR has been reviewed and is considered complete, which typically occurs with the environmental determination or the draft UPDES permit. Level II ADRs are public noticed for a minimum 30 day comment period. More information is available in Section 3.7.1 of the Implementation Guidance.

F1. Does the applicant want to conduct optional public review(s) of components of the Level II ADR in addition to the mandatory public review?

- ☐ **Statement of Social, Economic and Environmental Importance**
- ☐ **Parameters of Concern**
- ☐ **Alternatives Analysis**

Part G. Certification of Antidegradation Review

G1. Applicant's Certification

The form must be signed by the same responsible person who signed the accompanying UPDES permit application per UAC R317-8-3.1(3) or 401 Certification.

Based on my inquiry of the person(s) who manage the system or who prepared the documentation, the information in this form and associated documents is, to the best of my knowledge and belief, true, accurate, and complete.

Print Name: Jacob Moser

Signature: _____

Date: 05/08/2026

G2. Professional Engineer's Certification

The Alternatives Analysis must be prepared under the supervision of and stamped by a Professional Engineer registered with the State of Utah. UDWQ may grant an exception from this requirement under certain circumstances, such as the alternatives considered potentially feasible do not include engineered treatment alternatives.

The Alternatives Analysis was prepared under my supervision and the information in this form and associated documents is, to the best of my knowledge and belief, true, accurate, and complete. Apply the Professional Engineer stamp below.

Print Name: Sterling Woodruff

Professional Engineer License Number: 14191484-2202

Signature: Sterling J Woodruff

Date: 5/7/2026