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FACT SHEET AND STATEMENT OF BASIS
JORDANELLE SPECIAL SERVICE DISTRICT WATER RECLAMATION FACILITY
UTAH POLLUTANT DISCHARGE ELIMINATION SYSTEM (UPDES)
RENEWAL PERMIT: DISCHARGE, BIOSOLIDS & REUSE
UPDES PERMIT NUMBER: UT0025747
UPDES BIOSOLIDS PERMIT NUMBER: UTL-025747
MAJOR MUNICIPAL FACILITY

FACILITY CONTACTS

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DESCRIPTION OF FACILITY

The Jordanelle Special Service District Water Reclamation Facility (JSSDWRF) is a domestic wastewater treatment plant that has a maximum average monthly design flow rate of 1.0 million gallons per day (MGD) and a daily maximum design flow rate of 1.2 MGD. The JSSDWRF facility was built in 2008 to serve the future developments in the areas of the Jordanelle Reservoir and north of Heber City in Wasatch County, Utah. JSSDWRF only recently began operating and discharging in September of 2020 after remaining idled since new in 2008. The JSSDWRF treatment system consists of the following process; raw influent enters the facility and passes through fine screens, and then through a series of anaerobic and aerobic tanks (as a biological aid in the removal of phosphorus), then through a membrane bio-reactor (which includes the addition of alum and/or other chemical treatment for further phosphorus removal), and finally through an ultra violet (UV) disinfection system before discharging via the permitted Outfalls. The JSSDWRF solids waste handling consists of an aerated solids-handling basin and belt press for dewatering with all biosolids sent to an approved off-site disposal facility. This permit will once again authorize effluent discharges from JSSDWRF during the next five years as appropriate.

SUMMARY OF CHANGES FROM PREVIOUS PERMIT

There are a few proposed changes with this permit renewal. The first change is regarding the previously included Stormwater provisions, which have been removed as part of a Division of Water Quality (DWQ) programmatic separation of the previously combined UPDES permits. JSSDWRF may now be required to apply for and obtain separate UPDES Industrial Storm Water Permit coverage under the UPDES General Permit No. UTR000000, or an applicable exemption, as described further in the **STORMWATER** section of this Fact Sheet.

The second permit change is the addition of Reuse provisions as included in the permit and in this Fact Sheet. JSSD has requested the inclusion of Reuse provisions and submitted a Reuse Plan as part of the permit application information in order to potentially distribute treated effluent Reuse in the future.

Other permit changes include the addition of ammonia limits, which were not included previously, to account for any potential discharges to the Provo River, as well as the removal of the "Interim Limits" for both total phosphorus and total dissolved solids that were previously included for more flexibility during the initial startup operations.

Lastly, the dissolved oxygen minimum concentration limitation has been updated in the permit to reflect the current wasteload analysis for any potential discharges to the Provo River. Permit limitations are discussed further in the **BASIS FOR EFFLUENT LIMITATIONS** section of this Fact Sheet.

DISCHARGE INFORMATION

DESCRIPTION OF DISCHARGE OUTFALLS

Since initial startup in 2020, JSSDWRF has discharged exclusively to the irrigation canals via Outfalls 001 & 002. A description of the permitted discharging outfalls, including Reuse Outfalls are as follows:

Outfall Numbers	Location and Description of Outfalls
001	Located at latitude 40°34'24"N and longitude 111° 25'28"W and discharging to the Timpanagos Canal.
002	Located at latitude 40°34'04"N and longitude 111° 25'39"W and discharging to the Wasatch Canal.
003	Located at latitude 40°34'24"N and longitude 111° 25'40"W and discharging to the Provo River Return Canal.
004	Located at latitude 40°34'20"N and longitude 111° 25'42"W and discharging to the Provo River.

Reuse Outfall Numbers	Location of Effluent Reuse Discharge Outfall

001R	Located at latitude 40°34'24"N and longitude 111°25'28"W, as proposed for effluent reuse discharge to the Timpanogos Canal.
002R	Located at latitude 40°34'04"N and longitude 111°25'39"W, as proposed for effluent reuse discharge to the Wasatch Canal.

A signed memorandum of agreement between JSSDWRF, Central Utah Water Conservancy District (CUWCD), and the Department of Interior (DOI) allows JSSDWRF to discharge to the DOI owned canals that are operated by CUWCD (Outfalls 001 & 002). This agreement prohibits a direct discharge to the Provo River, but does allow for a direct discharge option in the event of an emergency or upon termination of the agreement (Outfalls 003 & 004). There is also a memorandum signed by the Heber Valley Special Service District (HVSSD), which allows JSSDWRF to divert flows in emergency type situations to the HVSSD treatment lagoons.

RECEIVING WATERS AND STREAM CLASSIFICATION

JSSDWRF is located near the Provo River, which is a drinking water source and classified as a blue-ribbon fishery. The discharge from JSSDWRF is located in the Provo River Watershed, with the ultimate receiving water being the Provo River, either via direct discharges or indirect discharges through return flows. The Provo River has been classified as Class 1C, 2B, 3A, and 4 according to *Utah Administrative Code (UAC) R317-2-13*.

Class 1C --	Protected for domestic purposes with prior treatment by treatment processes as required by the Utah Division of Drinking Water
Class 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.
	Beneficial Uses -- Protected for infrequent primary and secondary contact recreation, waterfowl, shore birds and other water-oriented wildlife including their necessary food chain.

TOTAL MAXIMUM DAILY LOAD (TMDL) REQUIREMENTS

According to the DWQ 2022 Integrated Report and 303(d) Water Quality Assessment, the Provo River from Deer Creek Reservoir to Jordanelle Reservoir (Provo River-4, UT16020203-004_00) is listed as impaired for pH, while the Deer Creek Reservoir (Deer Creek Reservoir, UT-L-16020203-001_00), located downstream of JSSDWRF, is listed as impaired for temperature and dissolved oxygen. A TMDL study addressing the dissolved oxygen impairment through the control of phosphorus loading to the watershed was completed in 2002. The TMDL as previously approved, set the wasteload-related endpoint for the in-stream total phosphorus concentration of 0.030 mg/l. For more detailed information, the TMDL study can be found at: https://documents.deq.utah.gov/water-quality/watershed-protection/total-maximum-daily-loads/DWQ-2015-006575.pdf.

Additionally, a TMDL study was completed in December 2021 for the Spring Creek (Heber) Assessment Unit (UT16020203-027), addressing an impairment for *E. coli*. Since JSSDWRF has the potential to

contribute to the Spring Creek watershed, *E. coli* was further evaluated in the effluent discharge. As part of the treatment system, the JSSDWRF has an ultraviolet light system in place for disinfection purposes, which essentially removes the *E. coli* concentrations. *E. coli* limits are included in the permit and are set at 126 MPN/100 mL as a monthly average and 157 MPN/100 mL as a weekly maximum average, which is below the *E. coli* water quality standards for Spring Creek as identified in the TMDL study. For more detailed information, the TMDL study can be found at: https://documents.deq.utah.gov/water-quality/watershed-protection/total-maximum-daily-loads/DWQ-2021-031624.pdf

BASIS FOR EFFLUENT LIMITATIONS

In accordance with regulations promulgated in *40 Code of Federal Regulations (40 CFR) Part 122.44* and in *UAC R317-8-4.2*, effluent limitations are derived from technology-based effluent limitations guidelines, Utah Secondary Treatment Standards as found in *UAC R317-1-3.2*, or Utah Water Quality Standards (WQS), as found in *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. Best Professional Judgment or BPJ, refers to a discretionary, best professional decision made by the permit writer based on precedent, prevailing regulatory standards or other relevant information.

Permit limits can also be derived from the Wasteload Analysis (WLA), which incorporates Secondary Treatment Standards, WQS, 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. An ADR Level I review was performed and concluded that an ADR Level II review was not required this time since there are no proposed increases in flow or concentrations from the existing permit limitations. The WLA indicates that the effluent limitations will be sufficiently protective of water quality, in order to meet State water quality standards in the receiving waters. The WLA and ADR are attached as an addendum to this Fact Sheet.

Limitations on total suspended solids (TSS), biochemical oxygen demand 5-day testing (BOD_5), *E. coli*, pH and percent removal for TSS and BOD_5 were initially based on Utah Secondary Treatment Standards, but more specifically, the permit limitations for TSS and BOD_5 concentration values that are more restrictive than secondary standards remain in the permit based upon the original ADR Level II review from 2008 and the best available treatment technology capabilities of the JSSDWRF.

The total ammonia (as Nitrogen) and dissolved oxygen (DO) limitations are based on the current WLA to be protective of the beneficial uses for any potential discharges to the Provo River.

As mentioned previously, the total phosphorus concentration limitations are based on the approved TMDL with endpoints as derived from best available treatment technology capabilities of the JSSDWRF. The total phosphorus annual loading limitation in the permit is a flow proportioned calculation based on CUWCD flow data of water from the Timpanogos and Wasatch Canals that are projected as potential return flows to the Provo River.

The Total Dissolved Solids (TDS) limitation is based upon the WQS for agriculture beneficial uses as found in *UAC R317-2-14*.

The oil & grease limitation is based upon BPJ of the permitting authority and is consistent with other similar UPDES permits statewide.

The Reuse effluent limitations are based on provisions found in *UAC R317-11-4*.

Reasonable Potential Analysis
Since January 1, 2016, DWQ has conducted reasonable potential analysis (RP) on all new and renewal applications received after that date. RP for this permit renewal was conducted following DWQ's September 10, 2015 Reasonable Potential Analysis Guidance (RP Guidance). There are four outcomes defined in the RP Guidance: Outcome A, B, C, or D. These Outcomes provide a framework for what routine monitoring or effluent limitations are required to be included in the permit.

A qualitative RP analysis was performed on the applicable metals constituents from the JSSDWRF discharge data since facility startup and optimization in late 2020. Although there have been only six (6) semi-annual metals sampling events through 2023 to evaluate, initial screening for metals values as submitted to DWQ showed that a closer look at any of the metals is not needed since all of the metals concentration results were either below the appropriate method detection limits and/or below the applicable water quality standards. Therefore, no RP currently exists at JSSDWRF for these metals parameters and a more quantitative RP analysis using the RP Model was not necessary at this time. Based on the RP Guidance, no additional metal effluent limits have been included in this renewal permit. This resulted in the following RP outcome; ***Outcome C: No new effluent limitation, routine monitoring requirements maintained as they are in the permit.*** Metals monitoring will continue, however, as detailed in the permit. This will be re-evaluated during the next permit cycle once additional metals monitoring data has been collected, as typically, at least 10 data points are recommended for a quantitative analysis using the RP Model. A copy of the RP analysis summary is included as an addendum to this Fact Sheet.

The permittee is expected to be able to continue complying with the permit effluent limitations as follows.

Parameter	Effluent Limitations *a (for all Outfalls unless stated otherwise)					
	Maximum Monthly Average	Maximum Weekly Average	90-day Average	Annual Maximum	Daily Minimum	Daily Maximum
Total Flow, MGD *b, *c	1.0	--	--	--	--	Report
BOD_5, mg/L *d BOD_5 Min. % Removal	10 85	10 --	-- --	-- --	-- --	-- --
TSS, mg/L *d TSS Min. % Removal	10 85	10 --	-- --	-- --	-- --	-- --
Total Ammonia (as N), mg/L (Outfalls 003 & 004)	4.5	--	--	--	--	8.7
E. coli, No./100mL	126	157	--	--	--	--
TDS, mg/L *d	--	--	--	--	--	1200
WET *e Acute Biomonitoring (Outfalls 003 & 004)	--	--	--	--	--	LC_{50}> 100% effluent
Oil & Grease, mg/L *f	--	--	--	--	--	10
pH, Standard Units	--	--	--	--	6.5	9.0
Dissolved Oxygen, mg/L (Outfalls 003 & 004)	--	--	--	--	6.5	--
Total Phosphorus, mg/L; *d May-October	--	--	0.03	--	--	0.08

November-April	--	--	0.06	--	--	0.10
Total Phosphorus, lbs/yr. *g	--	--	--	91	--	--

SELF-MONITORING AND REPORTING REQUIREMENTS

JSSDWRF has been reporting self-monitoring results on Discharge Monitoring Reports (DMRs) on a monthly basis as required. JSSDWRF effluent discharge data has been summarized and included as an attachment to this Fact Sheet. The following self-monitoring requirements are similar as in the previous permit with the exception that this permit now also includes monitoring for total ammonia, as well as the Reuse Outfalls monitoring. The permit requires reports to be submitted monthly as applicable, on DMRs via NetDMR due 28 days after the end of the monitoring period. Effective January 1, 2017, monitoring results must be submitted using NetDMR unless the permittee has successfully petitioned for an exception. Lab sheets for biomonitoring must be attached to the biomonitoring DMRs. Lab sheets for metals and toxic organics must also be attached to the DMRs.

Self-Monitoring and Reporting Requirements *a			
Parameter	Frequency	Sample Type	Units
Total Flow *b, *c	Continuous	Recorder	MGD
BOD_5			
Influent	2 x Week	Composite	mg/L
Effluent	2 x Week	Composite	mg/L
TSS			
Influent	2 x Week	Composite	mg/L
Effluent	2 x Week	Composite	mg/L
E. coli	2 x Week	Grab	No./100mL
pH	2 x Week	Grab	SU
Total Ammonia (as N)	2 x Week	Grab	mg/L
Dissolved Oxygen	2 x Week	Grab	mg/L
WET – Biomonitoring *e	Quarterly		
Ceriodaphnia - Acute	1st & 3rd Quarter	Composite	Pass/Fail
Fathead Minnows - Acute	2nd & 4th Quarter	Composite	Pass/Fail
Oil & Grease *f	Monthly When Sheen Observed	Grab	mg/L
TDS			
Influent	Monthly	Grab/Composite	mg/L
Effluent	Monthly	Grab/Composite	mg/L
Orthophosphate, (as P)			
Effluent	Monthly	Composite	mg/L
Total Phosphorus			
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, Effluent	Monthly	Composite	mg/L
Nitrite, NO2, Effluent	Monthly	Composite	mg/L

Metals *h Influent Effluent	 2 x Year 2 x Year	 Composite Composite	 mg/L mg/L
Organic Toxics *i Influent Effluent	 1st, 3rd & 5th year of permit cycle 1st, 3rd & 5th year of permit cycle	 Grab/Composite Grab/Composite	 mg/L mg/L

*a See Part VIII of the Permit 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 In addition to monitoring the final effluent discharge, influent samples shall be taken and analyzed for this constituent at the same frequency as required for this constituent in the discharge.

*e For Outfalls 003 & 004, the acute Ceriodaphnia will be tested during the 1st and 3rd quarters and the acute fathead minnows will be tested during the 2nd and 4th quarters. Discharges to either Outfalls 001 or Outfall 002 do not require WET biomonitoring.

*f Oil & Grease sampled when sheen is present or visible. If no sheen is present or visible, report NA.

*g For calculating the yearly Total Phosphorus load use the following equation: Total load for outfall 001*0.05 + total load for outfall 002*0.50 + total load for outfall 003 + total load for outfall 004. This flow proportioned data is based on average flow data from CUWCD, who operate the canals.

*h See Metals Monitoring table in Part II of the permit.

*i Testing shall be performed in the first, third and fifth year of the permit cycle with either grab or composite sample types. A list of the organics to be tested can be found in *40CFR122 appendix D table II*.

Effective immediately and lasting the duration of this permit, the permittee is authorized to discharge effluent for reuse from Outfalls 001R & 002R. Such discharges shall be limited and monitored by the permittee as specified below:

Parameter	Reuse Outfalls 001R & 002R Effluent Limitations *a, *p, *q				
	Max Monthly Average	Max Weekly Median	Max Daily Average	Minimum	Maximum
Turbidity, NTU *p	--	--	2	--	5
TRC, mg/L *m, *q	--	--	--	1	--
BOD_5, mg/L	10	--	--	--	--
E coli, No/100mL *o	--	ND	--	--	9
pH, Standard Units	--	--	--	6.0	9.0

Reuse Outfalls 001R & 002R Self-Monitoring and Reporting Requirements *a *n			
Parameter	Frequency	Sample Type	Units
Total Flow, *b, *c	Continuous	Recorder	MGD
Turbidity	Continuous	Recorder	mg/L
TRC *m, *q	Daily	Recorder	mg/L
BOD_5	Weekly	Composite	mg/L
E. coli	Daily	Grab	No./100mL
pH	Daily	Grab	SU

*a See Part VIII of the permit 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.

*m The facility is required to disinfect to destroy, inactivate or remove pathogenic microorganisms by chemical, physical or biological means. Disinfection may be accomplished by chlorination, ozonation, other chemical disinfectants, UV radiation, or other approved processes. Chlorine residual is recommended but no longer required. Sampling not required if chlorination is not being used. The total residual chlorine shall be measured continuously and shall at no time be less than 1.0 mg/l after 30 minutes contact time at peak flow. If an alternative disinfection process is used, it must be demonstrated to the satisfaction of the Director that the alternative process is comparable to that achieved by chlorination with a 1 mg/l residual after 30 minutes contact time. If the effectiveness cannot be related to chlorination, then the effectiveness of the alternative disinfection process must be demonstrated by testing for pathogen destruction as determined by the Director. A 1 mg/l total chlorine residual is recommended after disinfection and before the treated effluent goes into the distribution system.

*n Reuse monitoring results obtained during the previous month for reuse discharges shall be summarized for each month and reported on a Monthly Operational Report, or by NetDMR post-marked or entered into NetDMR no later than the 28th day of the month following the completed reporting period.

*o The weekly median E. coli concentration shall be non-detect (ND).

*p An alternative disposal option or diversion to storage must be automatically activated if turbidity exceeds the maximum instantaneous limit for more than 5 minutes, or chlorine residual drops below the instantaneous required value for more than 5 minutes, where chlorine disinfection is used.

*q The total residual chlorine shall be measured continuously and shall at no time be less than 1.0 mg/l after 30 minutes contact time at peak flow. If an alternative disinfection process is used, it must be demonstrated to the satisfaction of the Director that the alternative process is comparable to that achieved by chlorination with a 1 mg/l residual after 30 minutes contact time. If the effectiveness cannot be related to chlorination, then the effectiveness of the alternative disinfection process must be demonstrated by testing for pathogen destruction as determined by the Director. A 1 mg/l total chlorine residual is recommended after disinfection and before the treated effluent goes into the distribution system.

BIOSOLIDS

For clarification purposes, sewage sludge is considered solids, until treatment or testing shows that the solids are safe, and meet beneficial use standards. After the solids are tested or treated, the solids are then known as biosolids. Class A biosolids, may be used for high public contact sites, such as home lawns and gardens, parks, or playing fields, etc. Class B biosolids may be used for low public contact sites, such as farms, rangeland, or reclamation sites, etc.

DESCRIPTION OF TREATMENT AND DISPOSAL

JSSDWRF screens the influent to remove the larger pieces of debris and the solids are stabilized by activated sludge treatment with a mean cell residence time of approximately 14 days in a new, state of the art membrane bioreactor plant. After stabilization, the biosolids are de-watered by belt press and loaded into a hopper trailer to be hauled elsewhere for disposal. The biosolids are disposed of in the Intermountain Regional Landfill.

If the biosolids are hauled to another facility to meet land application requirements for sale or giveaway to the public, that facility must have a valid UPDES biosolids permit and will be responsible for meeting all requirements of *40 CFR 503*.

SELF-MONITORING REQUIREMENTS

Under *40 CFR 503.16(a)(1),* the self-monitoring requirements are based upon the amount of biosolids disposed per year and shall be monitored according to the chart below.

Minimum Frequency of Monitoring (40 CFR Part 503.16, 503.26. and 503.46)		
Amount of Biosolids Disposed Per Year		Monitoring Frequency
Dry US Tons	Dry Metric Tons	Per Year or Batch
> 0 to < 320	> 0 to < 290	Once Per Year or Batch
> 320 to < 1650	> 290 to < 1,500	Once a Quarter or Four Times
> 1,650 to < 16,500	> 1,500 to < 15,000	Bi-Monthly or Six Times
> 16,500	> 15,000	Monthly or Twelve Times

Annually JSSDWRF disposes of approximately 111 dry metric tons of biosolids and would therefore need to sample once per year.

Landfill Monitoring

Under *40 CFR 258,* the landfill monitoring requirements include a paint filter test. If the biosolids do not pass a paint filter test, the biosolids cannot be disposed in the sanitary landfill *(40 CFR 258.28(c)(1).*

BIOSOLIDS LIMITATIONS

Heavy Metals

Class A Biosolids for Home Lawn and Garden Use

The intent of the heavy metals regulations of Table 3, *40 CFR 503.13* is to ensure the heavy metals do not build up in the soil in home lawn and gardens to the point where the heavy metals become phytotoxic to plants. The permittee will be required to produce an information sheet (see *Part III. C*. of the permit) to

made available to all people who are receiving and land applying Class A biosolids to their lawns and gardens. If the instructions of the information sheet are followed to any reasonable degree, the Class A biosolids will be able to be land applied year after year, to the same lawns and garden plots without any deleterious effects to the environment. The information sheet must be provided to the public, because the permittee is not required, nor able to track the quantity of Class A biosolids that are land applied to home lawns and gardens.

Class A Requirements With Regards to Heavy Metals

If the biosolids are to be applied to a lawn or home garden, the biosolids shall not exceed the maximum heavy metals in Table 3 below. If the biosolids do not meet these requirements, the biosolids cannot be sold or given away for applications to home lawns and gardens.

Class B Requirements for Agriculture and Reclamation Sites

The intent of the heavy metals regulations of Tables 1, 2 and 3, of *40 CFR 503.13* is to ensure that heavy metals do not build up in the soil at farms, forest land, and land reclamation sites to the point where the heavy metals become phytotoxic to plants. The permittee will be required to produce an information sheet (see *Part III. C.* of the permit) to be handed out to all people who are receiving and land applying Class B biosolids to farms, ranches, and land reclamation sites (if biosolids are only applied to land owned by the permittee, the information sheet requirements are waived). If the biosolids are land applied according to the regulations of *40 CFR 503.13*, to any reasonable degree, the Class B biosolids will be able to be land applied year after year, to the same farms, ranches, and land reclamation sites without any deleterious effects to the environment.

Class B Requirements With Regards to Heavy Metals

If the biosolids are to be land applied to agricultural land, forest land, a public contact site or a reclamation site it must meet at all times:

> The maximum heavy metals listed in *40 CFR Part 503.13(b) Table 1* and the heavy metals loading rates in *40 CFR Part 503.13(b) Table 2*; or
>
> The maximum heavy metals in *40 CFR Part 503.13(b) Table 1* and the monthly heavy metals concentrations in *40 CFR Part 503.13(b) Table 3*.

Tables 1, 2, and 3 of Heavy Metal Limitations

Pollutant Limits, (40 CFR Part 503.13(b)) Dry Mass Basis				
Heavy Metals	Table 1	Table 2	Table 3	Table 4
	Ceiling Conc. Limits [1], (mg/kg)	CPLR [2], (mg/ha)	Pollutant Conc. Limits [3] (mg/kg)	APLR [4], (mg/ha-yr)
Total Arsenic	75	41	41	2.0
Total Cadmium	85	39	39	1.9
Total Copper	4300	1500	1500	75
Total Lead	840	300	300	15
Total Mercury	57	17	17	0.85
Total Molybdenum	75	N/A	N/A	N/A
Total Nickel	420	420	420	21
Total Selenium	100	100	100	5.0
Total Zinc	7500	2800	2800	140

Pollutant Limits, (40 CFR Part 503.13(b)) Dry Mass Basis				
Heavy Metals	Table 1	Table 2	Table 3	Table 4
	Ceiling Conc. Limits [1], (mg/kg)	CPLR [2], (mg/ha)	Pollutant Conc. Limits [3] (mg/kg)	APLR [4], (mg/ha-yr)
1, If the concentration of any 1 (one) of these parameters exceeds the Table 1 limit, the biosolids cannot be land applied or beneficially used in any way.				
2, CPLR - Cumulative Pollutant Loading Rate - The maximum loading for any 1 (one) of the parameters listed that may be applied to land when biosolids are land applied or beneficially used on agricultural, forestry, or a reclamation site.				
3, If the concentration of any 1 (one) of these parameters exceeds the Table 3 limit, the biosolids cannot be land applied or beneficially used in on a lawn, home garden, or other high potential public contact site. If any 1 (one) of these parameters exceeds the Table 3 limit, the biosolids may be land applied or beneficially reused on an agricultural, forestry, reclamation site, or other high potential public contact site, as long as it meets the requirements of Table 1, Table 2, and Table 4.				
4, APLR - Annual Pollutant Loading Rate - The maximum annual loading for any 1 (one) of the parameters listed that may be applied to land when biosolids are land applied or beneficially reused on agricultural, forestry, or a reclamation site, when they do not meet Table 3, but do meet Table 1.				

Any violation of these limitations shall be reported in accordance with the requirements of Part III.F.1. of the permit. If the biosolids do not meet these requirements they cannot be land applied.

Pathogens

The Pathogen Control class listed in the table below must be met;

Pathogen Control Class	
503.32 (a)(1) - (5), (7), (8), Class A	503.32 (b)(1) - (5), Class B
B Salmonella species –less than three (3) MPN[1] per four (4) grams total solids (DWB)[2] or Fecal Coliforms – less than 1,000 MPN per gram total solids (DWB).	Fecal Coliforms – less than 2,000,000 MPN or CFU[3] per gram total solids (DWB).
503.32 (a)(6) Class A—Alternative 4	
B Salmonella species –less than three (3) MPN per four (4) grams total solids (DWB) or less than 1,000 MPN Fecal Coliforms per gram total solids (DWB), And - Enteric viruses –less than one (1) plaque forming unit per four (4) grams total solids (DWB) And - Viable helminth ova –less than one (1) per four (4) grams total solids (DWB)	
1 - MPN – Most Probable Number	
2 - DWB – Dry Weight Basis	
3 - CFU – Colony Forming Units	

Class A Requirements for Home Lawn and Garden Use

If biosolids are land applied to home lawns and gardens, the biosolids need to be treated by a specific process to further reduce pathogens (PFRP), and meet a microbiological limit of less than less than 3 most probable number (MPN) of *Salmonella* per 4 grams of total solids (or less than 1,000 most probable number (MPN/g) of fecal coliform per gram of total solids) to be considered Class A biosolids. At this time the JSSDWRF does not intend to distribute biosolids to the public for use on the lawn and garden and thus is not required meet Class A Biosolids requirements currently.

The practice of sale or giveaway to the public is an acceptable use of biosolids of this quality as long as the biosolids continue to meet Class A standards with respect to pathogens. If the biosolids do not meet Class A pathogen standards the biosolids cannot be sold or given away to the public, and the permittee will need find another method of beneficial use or disposal.

If the Permittee intends to use another one of the listed alternatives in *40 CFR 503.32.(a)*, the Director and the EPA must be informed at least thirty (30) days prior to its use. This change may be made without additional public notice.

Pathogens Class B

If biosolids are to be land applied for agriculture or land reclamation the solids need to be treated by a specific process to significantly reduce pathogens (PSRP). At this time JSSDWRF does not intend to distribute bulk biosolids for land application and thus is not required meet Class B Biosolids requirements currently.

If the Permittee intends to use another one of the listed alternatives in *40 CFR 503.32.(b)*, the Director and the EPA must be informed at least thirty (30) days prior to its use. This change may be made without additional public notice

Vector Attraction Reduction (VAR)

If the biosolids are land applied, JSSDWRF will be required to meet VAR through the use of a method of listed under *40 CFR 503.33.* At this time JSSDWRF does not intend to distribute biosolids to the public for beneficial use, and will be disposing of them in a landfill. Under *40 CFR 503.33(b)(11)*

If the biosolids do not meet a method of VAR, the biosolids cannot be land applied.

If the Permittee intends to use another one of the listed alternatives in *40 CFR 503.33*, the Director and the EPA must be informed at least thirty (30) days prior to its use. This change may be made without additional public notice

Landfill Monitoring

Under *40 CFR 258,* the landfill monitoring requirements include a paint filter test to determine if the biosolids exhibit free liquid. If the biosolids do not pass a paint filter test, the biosolids cannot be disposed in the sanitary landfill *(40 CFR 258.28(c)(1).*

Record Keeping

The record keeping requirements from *40 CFR 503.17* are included under *Part III.G*. of the permit. The amount of time the records must be maintained are dependent on the quality of the biosolids in regards to the metals concentrations. If the biosolids continue to meet the metals limits of *Table 3* of *40 CFR 503.13*, and are sold or given away the records must be retained for a minimum of five years. If the biosolids are disposed in a landfill the records must retained for a minimum of five years.

Reporting

JSSDWRF must report annually as required in *40 CFR 503.18*. This report is to include the results of all monitoring performed in accordance with *Part III.B* of the permit, information on management practices, biosolids treatment, and certifications. This report is due no later than February 19 of each year. Each report is for the previous calendar year.

MONITORING DATA

METALS MONITORING DATA
JSSDWRF transfers all biosolids to a landfill and therefore is not required to report to DWQ any monitoring results as a condition of the permit.

STORM WATER

Separate Storm Water permits may be required based on the types of activities occurring on site. As mentioned previously, Storm Water provisions have been removed from this permit as part of a DWQ programmatic separation of the previously combined UPDES permits. Previously, storm water discharge requirements and coverage were combined in this individual UPDES permit. The permits have now been separated to provide consistency among permittees, electronic reporting for storm water discharge monitoring reports, and increase flexibility to changing site conditions. JSSDWRF may now be required to apply for and obtain separate UPDES Industrial Storm Water Permit coverage under the Multi Sector General Permit (MSGP) UPDES No. UTR000000, or an applicable exemption demonstration.

Permit coverage under the MSGP for Storm Water Discharges from Industrial Activities is likely required based on the Standard Industrial Classification (SIC) code for and size of the facility. If the facility is not already covered, it has 30 days from when this permit is issued to either submit the appropriate Notice of Intent (NOI) for the MSGP, or to submit the applicable exemption documentation.

Additionally. 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

The pretreatment requirements in the permit are to assist DWQ in understanding the sources discharging to the JSSDWRF Publicly Owned Treatment Works (POTW). The permittee has not been designated to develop an Approved POTW Pretreatment Program (Program). The following conditions indicate that a Program does not need to be developed by the PTOW: the flow through the plant is less than five (5) MGD, no known Categorical Industrial Users are discharging to the treatment facility, the POTW does not accept hauled waste, and there is no indication of Pass Through or Interference with the operation of the treatment facility such as upsets or violations of the UPDES permit limits.

JSSDWRF is not implementing a Program; however, industrial wastewater discharged to the POTW is subject to Federal, State, and local regulations. Pursuant to Section 307 of the Clean Water Act, JSSDWRF 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. This includes, although is not limited to, notifying DWQ of Industrial Users discharging to the POTW that could violate a Pretreatment

Standard or Requirement.

An industrial waste survey (IWS) is required of JSSDWRF, as stated in Part II of the permit and as included as an attachment to this Fact Sheet. The IWS is to assess the needs of JSSDWRF regarding pretreatment assistance. If an Industrial User begins to discharge or an existing Industrial User changes their discharge, JSSDWRF must resubmit an IWS within sixty days following the introduction or change as stated in Part II of the permit.

The permit requires influent and effluent monitoring of metals and organic toxics. The organic toxics are listed in UAC R317-8-7.5. Metals monitoring is required twice a year, and organic toxics monitoring is required in the 1st, 3rd, and 5th year of the permit cycle. For more information regarding sample requirements related to the pretreatment requirements, see Part II of the permit.

It is required that JSSDWRF submit for review and approval any Local Limits that are developed to DWQ for review. If Local Limits are developed, it is required that JSSDWRF perform an annual evaluation of the need to revise or develop technically based Local Limits for pollutants of concern to implement the general and specific prohibitions in 40 CFR Part 403.5(a) and Part 403.5(b). This evaluation may indicate that present Local Limits are sufficiently protective, need to be revised or should be developed.

BIOMONITORING REQUIREMENTS

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

The biomonitoring requirements remain unchanged from the previous permit and since the JSSDWRF is categorized as a major municipal discharger, the permit will once again require whole effluent toxicity (WET) biomonitoring testing from outfalls discharging directly to the Provo River (Outfalls 003 & 004). Upon any discharges from Outfalls 003 and/or 004, Acute WET testing will be required quarterly using both Ceriodaphnia dubia and the Pimephales promelas (fathead minnows) test species and alternated on a quarterly basis as detailed in the permit. The alternating of test species was previously granted by DWQ and remains in the permit based upon BPJ of the permitting authority to be consistent with other similar permits in Utah. The Acute WET testing, in lieu of Chronic WET testing in this case, is due to the high dilution effect of the receiving waters in accordance with DWQ's updated WET policy entitled, *Utah Pollutant Discharge Elimination System Permit and Enforcement Guidance Document for Whole Effluent Toxicity Control, dated February 2018*. The renewal permit will also once again contain the standard requirements for accelerated testing upon failure of a WET test, a Preliminary Toxicity Investigation (PTI) and Toxicity Reduction Evaluation (TRE) as necessary, and a toxicity limitation re-opener provision as appropriate in the event of any toxicity as detected in the effluent discharge.

PERMIT DURATION

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

Drafted and Reviewed by

Jeff Studenka, Discharge Permit Writer
Daniel Griffin, Biosolids
Jennifer Robinson, Pretreatment
Lonnie Shull, Biomonitoring
Jennifer Berjikian, Reuse
Jordan Bryant, Storm Water
Sandy Wingert, TMDL/Watershed
Suzan Tahir, Wasteload Analysis/ADR
Utah Division of Water Quality, (801) 536-4300
February 22, 2024

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 Noticed of the draft permit is to be published on DWQ website for at least 30 days as required.

During the public comment period provided under R317-8-6.5, any interested person may submit written comments on the draft permit and may request a public hearing, if no hearing has already been scheduled. A request for a public hearing shall be in writing and shall state the nature of the issues proposed to be raised in the hearing. All comments will be considered in making the final decision and shall be answered as provided in R317-8-6.12.

ADDENDUM TO FSSOB

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

Responsiveness Summary (for comments received)

ATTACHMENTS

1. Industrial Waste Survey
2. Effluent Monitoring Data Summary
3. Wasteload Analysis & Antidegradation Review
4. Reasonable Potential Analysis

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ATTACHMENT 1

Industrial Waste Survey

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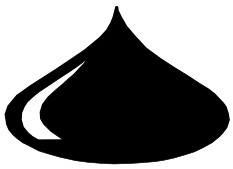
Industrial Pretreatment Wastewater Survey



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

Effluent Monitoring Data Summary

	Flow (MGD)	pH (s.u.)	BOD (mg/L)	D.O. (mg/L)	TDS (mg/L)	TSS (mg/L)	Phosphorus (mg/L)	E-cloi (#/100mL)	Ammonia (mg/L)
AVG	**0.399**	**7.57**	**4.4**	**7.69**	**1091**	**3.6**	**0.04**	**0**	**0.823**
Min	**0.150**	**6.6**	**2.5**	**7.32**	**708**	**2.0**	**0.01**	**0**	**0.001**
Max	**0.804**	**8.49**	**14.0**	**7.9**	**1320**	**9.0**	**0.24**	**0**	**13.4**

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ATTACHMENT 3

Wasteload Analysis and Antidegradation Review
(DWQ-2023-126142 & DWQ-2023-126151)

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ATTACHMENT 4

Reasonable Potential Analysis

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REASONABLE POTENTIAL ANALYSIS

The Division of Water Quality has worked to improve our reasonable potential analysis (RP) for the inclusion of limits for parameters in the permit by using an EPA provided model. As a result of the model, more parameters may be included in the renewal permit. A Copy of the Reasonable Potential Analysis Guidance (RP Guidance) is available at the Division of Water Quality. As listed below, there are four outcomes from the RP Analysis[1] that provide a frame work for what routine monitoring or effluent limitations are required.

Outcome A: A new effluent limitation will be placed in the permit.
Outcome B: No new effluent limitation. Routine monitoring requirements will be placed or increased from what they are in the permit,
Outcome C: No new effluent limitation. Routine monitoring requirements maintained as they are in the permit,
Outcome D: No limitation or routine monitoring requirements are in the permit.

The Initial RP Screening Table is included below for all metals parameters of concern. Note that the full RP analysis model was not necessary at this time due to the results of the initial screening results below.

RP Initial Screening Table for JSSDWRF Discharges (UT0025747)

Parameter	No. of Samples	MEC* mg/L	Water Quality Standard, units MAC**		Outcome/Result
			Acute mg/L	Chronic mg/L	
Total Arsenic	6	0.001	0.100	0.100	MEC < MAC***
Total Cadmium	6	<0.0002	0.0043	0.0005	MEC < MAC***
Total Chromium	5	0.0012	0.0160	0.0110	MEC < MAC***
Total Copper	6	<0.0010	0.0269	0.0169	MEC < MAC***
Total Lead	6	<0.0005	0.100	0.0077	MEC < MAC***
Total Mercury	6	<0.00015	0.00015	0.00012	MEC < MAC***
Total Molybdenum	6	0.05	NA	NA	NA
Total Nickel	6	0.0033	0.8433	0.094	MEC < MAC***
Total Selenium	6	0.0016	0.0200	0.0046	MEC < MAC***
Total Silver	6	<0.0005	0.0125	NA	MEC < MAC***
Total Zinc	5	0.05	0.2156	0.2156	MEC < MAC***
Total Cyanide	6	0.005	0.022	0.0052	MEC < MAC***

Notes:
NA – not applicable, no current Water Quality Standard.
*MEC – Maximum expected effluent concentration as determined from existing data set and initial metals screening.
**MAC – Maximum allowable concentration, UPDES permit effluent limits derived from the current wasteload allocation analysis (WLA).
***MEC < (less than) MAC. No Acute or Chronic limits required.

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

[1] See Reasonable Potential Analysis Guidance for definitions of terms

Summary: A qualitative RP analysis was performed on the applicable metals constituents from the JSSDWRF discharge data since facility startup and optimization in late 2020. Although there have been only six (6) semi-annual metals sampling events through 2023 to evaluate, initial screening for metals values that were submitted through the discharge monitoring reports showed that a closer look at any of the metals is not needed since all of the metals concentration results were either below the appropriate method detection limits and/or below the applicable water quality standards. Therefore, no RP currently exists at JSSDWRF for these metals parameters and a more quantitative RP analysis using the RP Model was not conducted at this time. Based upon the RP Guidance, no additional metal effluent limits have been included in this renewal permit. This resulted in the following RP outcome; ***Outcome C: No new effluent limitation, routine monitoring requirements maintained as they are in the permit.*** Metals monitoring will continue however, as detailed in the permit. This will be re-evaluated during the next permit cycle once additional metals monitoring data has been, as typically at least 10 data points are recommended for a quantitative analysis using the RP Model.