

**Official Draft Public Notice Version November 15, 2021**  
**The findings, determinations, and assertions contained in this document are not final and subject to change following the public comment period.**

**FACT SHEET AND STATEMENT OF BASIS**  
**JORDAN BASIN WASTEWATER RECLAMATION FACILITY**  
**RENEWAL PERMIT: DISCHARGE AND BIOSOLIDS**  
**UPDES PERMIT NUMBER: UT0025852**  
**UPDES BIOSOLIDS PERMIT NUMBER: UTL-025852**  
**MAJOR MUNICIPAL**

**FACILITY CONTACTS**

Person Name: Ken Brand  
Position: Facility Manager  
Phone Number: (801) 202-2730

Person Name: Joel Thompson  
Position: Operations Supervisor  
Phone Number: (385) 202-2769

Facility Name: Jordan Basin Water Reclamation Facility (JBWRF)  
Mailing and Facility Address: PO Box 629  
Riverton, Utah 84065  
Telephone: (801) 571-1166  
Actual Address: 13826 South Jordan Basin Lane  
Riverton, Utah 84065

**DESCRIPTION OF FACILITY**

The Jordan Basin Water Reclamation Facility (JBWRF) was completed in June 2012. The JBWRF serves the communities of Draper, Riverton, South Jordan, Sandy, Herriman, Bluffdale, and unincorporated areas of Salt Lake County. Previously, these flows reported to the South Valley Water Reclamation Facility (SVWRF).

The JBWRF is a membrane bio-reactor (MBR) treatment plant that incorporates biological phosphorus and nitrogen removal and micro-filtration. Disinfection is provided by an ultra violet disinfection system. The 30-day average design flow of phase one of the water reclamation facility is 15 MGD with a peak hourly flow of 27 MGD. At build out, the facility will have a capacity of 30 MGD.

**SUMMARY OF CHANGES FROM PREVIOUS PERMIT**

There are multiple changes from previous permit.

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). RP indicated a need for increased monitoring of copper. See Attachment 3 for details.

Limitations on Ammonia (as N) will no longer be load based, but concentration based. Monitoring of this parameter shall be 5 x week, as determined by design flow MGD. Also, WET Biomonitoring limit increased to IC25 >46% effluent, as determined by the WLA developed for this permit renewal.

The last twelve months of flow data was reviewed. Based on this review frequency monitoring for BOD<sub>5</sub>, TSS, and *E.coli*, has been increased to five times a week (5 x weekly).

JBWRF will produce Type A biosolids in the near future, which JBWRF hopes to sell to local farmers.

This permit will no longer cover Storm Water – a separate permit, the Multi-Sector General Permit (MSGP) for Storm Water Discharges Associated with Industrial Activities (UTR000000) must be obtained.

## DISCHARGE

### DESCRIPTION OF DISCHARGE

JBWRF has been reporting self-monitoring results on Discharge Monitoring Reports on a monthly basis. There have been no violations during the last permit cycle.

<u>Outfall</u>	<u>Description of Discharge Point</u>
001	Located at latitude N40°30'18.29" and longitude W111°55'0.29". The discharge is through two 42-inch diameter gravity flow concrete pipes from the disinfection building to the Jordan River.

### **RECEIVING WATERS AND STREAM CLASSIFICATION**

The final discharge is to the Jordan River, which is classified 2B, 3B, and 4 according to *Utah Administrative Code (UAC) 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 3B -- Protected for warm water species of game fish and other warm water aquatic life, including the necessary aquatic organisms in their food chain.
- Class 4 -- Protected for agricultural uses including irrigation of crops and stock watering.

### **TOTAL MAXIMUM DAILY LOAD (TMDL) REQUIREMENTS**

A QUAL2Kw model of the Jordan River was populated and calibrated as part of the TMDL study (Stantec Consulting 2010, UDWQ 2010). The model was subsequently validated to a synoptic survey conducted by UDWQ and the Jordan River/Farmington Bay Water Quality Council (JRFBWQC) during July 2014 (UDWQ 2015). The model validation identified areas for future improvement of the model; however, the model was considered suitable for application to the wasteload allocation for ammonia. Due to ongoing studies related to the TMDL, this wasteload allocation used for permit development does not address parameters related to dissolved oxygen, including biochemical oxygen demand (BOD), dissolved oxygen (DO), total nitrogen (TN), and total phosphorus (TP).

**BASIS FOR EFFLUENT LIMITATIONS**

Limitations on total suspended solids (TSS), *E. coli*, pH and percent removal for biochemical oxygen demand (BOD<sub>5</sub>) and TSS are based on current Utah Secondary Treatment Standards, UAC R317-1-3.2. The oil and grease is based on best professional judgment (BPJ). All other parameters were determined by the WLA (attached) for discharge into the Jordan River. It has been determined that this discharge will not cause a violation of water quality standards. The permittee is expected to be able to comply with these limitations.

**Reasonable Potential Analysis**

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

A quantitative RP analysis was performed on cyanide, arsenic, cadmium, chromium, copper, lead, molybdenum, nickel, silver, zinc, selenium, and mercury to determine if there was reasonable potential for the discharge to exceed the applicable water quality standards. Based on the RP analysis, the following parameters exceeded the most stringent chronic water quality standard or were determined to have a reasonable potential to exceed the standard: copper. As a result, increased monitoring for copper is required at this time. A copy of the RP analysis is included at the end of this Fact Sheet.

The permit limitations are:

Parameter	Effluent Limitations *a				
	Maximum Monthly Avg	Maximum Weekly Avg	Yearly Average	Daily Minimum	Daily Maximum
Total Flow	15	--	--	--	--
BOD <sub>5</sub> , mg/L	15	21	--	--	--
BOD <sub>5</sub> Min. % Removal	85	--	--	--	--
TSS, mg/L	25	35	--	--	--
TSS Min. % Removal	85	--	--	--	--
Dissolved Oxygen, mg/L	--	--	--	5.0	--
Total Ammonia (as N), mg/L					
Summer (Jul-Sep)	3.0	--	--	--	6.0
Fall (Oct-Dec)	2.5	--	--	--	6.0
Winter (Jan-Mar)	3.0	--	--	--	9.0
Spring (Apr-Jun)	2.5	--	--	--	8.0
<i>E. coli</i> , No./100mL	126	157	--	--	--
Total Phosphorus, mg/L (Final)	--	--	1.0	--	--
WET, Chronic Biomonitoring	--	--	--	--	IC <sub>25</sub> > 46% effluent
Oil & Grease, mg/L	--	--	--	--	10.0
pH, Standard Units	--	--	--	6.5	9

**SELF-MONITORING AND REPORTING REQUIREMENTS**

The following self-monitoring requirements are different than the previous permit – total ammonia (as N), BOD<sub>5</sub>, TSS, *E.coli*, and temperature will now need to be sampled 5 x Weekly and copper will be monitored on a monthly basis. The permit will require reports to be submitted monthly and annually, as applicable, on Discharge Monitoring Report (DMR) forms due 28 days after the end of the monitoring period. Effective January 1, 2017, monitoring results must be submitted using NetDMR unless the permittee has successfully petitioned for an exception. Lab sheets for biomonitoring must be attached to the biomonitoring DMR. Lab sheets for metals and toxic organics must be attached to the DMRs.

Self-Monitoring and Reporting Requirements *a			
Parameter	Frequency	Sample Type	Units
Total Flow *b, *c	Continuous	Recorder	MGD
BOD <sub>5</sub> , Influent *d	5 x Weekly	Composite	mg/L
Effluent	5 x Weekly	Composite	mg/L
TSS, Influent *d	5 x Weekly	Composite	mg/L
Effluent	5 x Weekly	Composite	mg/L
<i>E. coli</i>	5 x Weekly	Grab	No./100mL
pH	5 x Weekly	Grab	SU
Total Ammonia (as N)	5 x Weekly	Grab	mg/L
DO	5 x Weekly	Grab	mg/L
WET – Biomonitoring *f			
Ceriodaphnia - Chronic	2 <sup>nd</sup> & 4 <sup>th</sup> Quarter	Composite	Pass/Fail
Fathead Minnows - Chronic	1 <sup>st</sup> & 3 <sup>rd</sup> Quarter	Composite	Pass/Fail
Oil & Grease *e	When Sheen Observed	Grab	mg/L
Orthophosphate (as P), *i			
Effluent	Monthly	Composite	mg/L
Total Phosphorus (as P), *i			
Influent	Monthly	Composite	mg/L
Effluent	Monthly	Composite	mg/L
Total Kjeldahl Nitrogen			
TKN (as N), *i, *j			
Influent	Monthly	Composite	mg/L
Effluent	Monthly	Composite	mg/L
Nitrate, NO <sub>3</sub> *i, *j	Monthly	Composite	mg/L
Nitrite, NO <sub>2</sub> *i, *j	Monthly	Composite	mg/L
TDS, mg/L *j	Monthly	Composite	mg/L
Temperature *j	5 x Weekly	Grab	°C
Metals, Influent *g, *h	Quarterly	Composite	mg/L
Effluent	Quarterly	Composite	mg/L
Copper, Influent *g	Monthly	Composite	mg/L
Effluent	Monthly	Composite	mg/L
Organic Toxics, Influent	Yearly		
Effluent	Yearly	Grab	mg/L

\*a See Definitions, *Part VIII*, of 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 discharge, influent samples shall be taken and analyzed for this constituent at the same frequency as required for this constituent in the discharge.
- \*e Oil & Grease sampled when sheen is present or visible. If no sheen is present or visible, report NA.
- \*f The chronic Ceriodaphnia will be tested during the 2<sup>nd</sup> and 4<sup>th</sup> quarters, and the chronic fathead minnows will be tested during the 1<sup>st</sup> and 3<sup>rd</sup> quarters.
- \*g Metals results were reviewed for the last 36 months. No limits are required at this time, however monitoring frequency for copper has been increased.
- \*h In the case of mercury sampling is composite/grab, in the case of cyanide sampling is grab (see permit Part II.F.).
- \*i These reflect changes required with the adoption of UCA R317-1-3.3, Technology-based Phosphorus Effluent Limits rule.
- \*j Pollutants are being sampled in support of the work being done for the TMDL currently underway for the Jordan River. The Pollutants Of Concern (POC) will be monitored and reported (on a monthly basis by the facility on Discharge Monitoring Report, but will not have a limit associated with them /or at the end of each Calendar year of sampling for these POC's), JBWRF will report the results of all sampling done for the POC. If JBWRF decides to sample more frequently for these POC's, the additional data will be welcome.

## **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.

### **SUBSTANTIAL BIOSOLIDS TREATMENT CHANGES**

The facility used to waste solids from the basins to three centrifuges and moved them by auger conveyor to roll off bins which are transferred to ET Technologies and landfills for final treatment and disposal. As of December 2020, the facility wastes the solids to an aerated holding basin then to the centrifuges. From the centrifuges the solids now go to a thermal dryer for drying and then to holding before being sent to ET Technologies.

The new process has been successful at reducing the total mass of biosolids sent to the landfill, and is allowing the facility to produce biosolids that meet Class A standards which will allow for unrestricted distribution to the public. In the wake of this, Jordan Basin is going to increase the sampling of the biosolids so they can verify the process and then look for opportunities to beneficially reuse the biosolids. They have proven they can meet the requirements for Class A Biosolids and are authorized to distribute them accordingly.

**DESCRIPTION OF TREATMENT AND DISPOSAL**

The Permittee submitted their 2020 annual biosolids report in February 2021. The report states the Permittee produced 3,440.3 dry metric tons (DMT) of solids.

JBWRF is a membrane bio-reactor (MBR) treatment plant. The 30-day average design flow of phase one of the new water reclamation facility will be 15 MGD with a peak hourly flow of 27 MGD. At build out, the facility will have a capacity of 30 MGD. Previously, the facility wasted solids from the basins to three centrifuges and moved them by auger conveyor to roll off bins which were then transferred to ET Technologies for final treatment and disposal. As of December 2020, the facility wastes the solids to an aerated holding basin then to the centrifuges. From the centrifuges the solids now go to a thermal dryer for drying and then to holding. Right now, these solids are still sent to ET Technologies, but soon they will be distributed to the public.

The last inspection conducted at JBWRF was May 3, 2021. The inspection showed that JBWRF is in compliance with all aspects of the biosolids management program.

**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

In 2020, the JBWRF disposed 3440.3 DMT of biosolids, therefore they need to sample at least six times a year. However, JBWRF transfers the biosolids to E.T. Technologies Soil Regeneration for disposal, and as long as they continue to do this, they are only required to sample once a year according to 40 CFR 258. If they switch treatment and disposal methods in the future to land application, they will return to the required frequency under 40 CFR 503 of six times 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)*). JBWRF disposed of 3440.3 DMT of biosolids at the municipal landfill.

**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 be 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 for 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 1 and the monthly average pollutant concentrations in Table 3 (see Table 1 and 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, 3 and 4, 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, 3 and 4 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 <sup>1, 2</sup> (mg/kg)	CPLR <sup>3</sup> , (mg/ha)	Pollutant Conc. Limits <sup>1, 2</sup> , (mg/kg)	APLR <sup>4</sup> , (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

<sup>1</sup> The limitations represent the maximum allowable levels of heavy metals in any biosolids intended for land application

<sup>2</sup> These limitations represent the maximum allowable levels of heavy metals based on an average of all samples taken during a 30-day period.

<sup>3</sup> CPLR -- Cumulative Pollutant Loading Rate

<sup>4</sup> APLR – Annual Pollutant Loading Rate

Pollutant Limits, (40 CFR Part 503.13(b)) Dry Mass Basis				
Heavy Metals	Table 1	Table 2	Table 3	Table 4
	Ceiling Conc. Limits <sup>1, 2</sup> (mg/kg)	CPLR <sup>3</sup> , (mg/ha)	Pollutant Conc. Limits <sup>1, 2</sup> , (mg/kg)	APLR <sup>4</sup> , (mg/ha-yr)
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

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 <sup>5</sup> per four (4) grams total solids (DWB) <sup>6</sup> or Fecal Coliforms – less than 1,000 MPN per gram total solids (DWB).	Fecal Coliforms – less than 2,000,000 MPN or CFU <sup>7</sup> 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)	

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. JBWRF will achieve PFRP through a method of Heat Drying.

1. Heat Drying-

Heat drying—Sewage sludge is dried by direct or indirect contact with hot gases to reduce the moisture content of the sewage sludge

<sup>5</sup> MPN – Most Probable Number

<sup>6</sup> DWB – Dry Weight Basis.

<sup>7</sup> CFU – Colony Forming Units



to 10 percent or lower. Either the temperature of the sewage sludge particles exceeds 80 degrees Celsius or the wet bulb temperature of the gas in contact with the sewage sludge as the sewage sludge leaves the dryer exceeds 80 degrees Celsius.

This method is found under *(40 CFR 503.32(a)(7))*.

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.

#### 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). The PSRP may be accomplished through composting:

1. Under *40 CFR 503.32 (b)(2)*, JBWRF may test the biosolids and must meet a microbiological limit of less than 2,000,000 MPN of fecal coliform per gram for the biosolids to be considered Class B biosolids with respect to pathogens.
2. Under *40 CFR 503.32 (b)(3)* The PSRP may be accomplished through anaerobic digesters that have a minimum retention time of 15 days at 95° F (35° C) or 60 days at 68° F (20°C).
3. Under *40 CFR 503.32 (b)(3)* the PSRP may be accomplished through composting. To achieve this, the temperature must be above 40° C (104° F) or higher, and remain at 40° C or higher for a minimum of five days. For four hours, during the five days, the temperature needs to exceed 55° C (113° F).

#### Vector Attraction Reduction (VAR)

If the biosolids are land applied JBWRF will be required to meet VAR through the use of a method of listed under *40 CFR 503.33*. JBWRF intends to meet the vector attraction reduction requirements through the methods listed below.

1. Facility is meeting vector attraction reduction through *40 CFR Part 503.33(b)(8)* “The percent solids of sewage sludge that contains un-stabilized solids generated in a primary wastewater treatment process shall be equal to or greater than 90 percent based on the moisture content and total solids prior to mixing with other materials.”
2. Facility may transfer wastes to another facility (E.T. Technologies) where they are stabilized and used as cover on the Salt Lake County Landfill.

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**

JBWRF 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**

JBWRF was required to sample for metals at least once in 2020, although they sampled quarterly. All biosolids transferred to ET Technologies in 2020 met Table 3 of 40 CFR 503.13, therefore the JBWRF biosolids qualify as EQ with regards to metals. The monitoring data is below.

**JBWRF Metals Monitoring Data 2020**

JBWRF Metals Monitoring Data, 2020			
Parameter	Table 3, mg/kg (Exceptional Quality)	Average, mg/kg	Maximum, mg/kg
Arsenic	41.0	8.875	10.4
Cadmium	39.0	0.4395	0.557
Copper	1,500.0	361.25	467
Lead	300.0	5.515	6.73
Mercury	17.0	0.25	0.59
Molybdenum	75.0	6.7325	7.44
Nickel	400.0	8.4525	9.46
Selenium	36.0	8.1075	10.4
Zinc	2,800.0	427.25	502

**PATHOGEN MONITORING DATA (Anaerobic Cake)**

JBWRF was not required to monitor for pathogens. Therefore, there is not any monitoring data.

## **STORM WATER**

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

Permit coverage under the Multi Sector General Permit (MSGP) for Storm Water Discharges from Industrial Activities is required based on the Standard Industrial Classification (SIC) code for the facility and the types of activities occurring. If the facility is not already covered, it has 30 days from when this permit is issued to submit the appropriate Notice of Intent (NOI) for the MSGP or exclusion documentation. Previously storm water discharge requirements and coverage were combined in this individual permit. These have been separated to provide consistency among permittees, electronic reporting for storm water discharge monitoring reports, and increase flexibility to changing site conditions.

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, regarding administering an approved pretreatment program, remain the same as in the current permit. Any changes to the pretreatment program, must be submitted for approval to the Division of Water Quality prior to implementing the change, 40 CFR 403.18. Authority to require a pretreatment program is provided for in 19-5-108 UCA, 1953 ann. and UAC R317-8-8.

Sampling of metals will be conducted quarterly and the sampling of organic toxics yearly, see Part II of the UPDES Permit. This is consistent with the UPDES Pretreatment Guidance for Sampling of POTWs, which is based on the design flow of the wastewater treatment plant. Additional requirements have been added to the permit to ensure that if the allowable headworks loading is above the value calculated for the local limit development that additional monitoring and notification must occur.

Local limits must be developed per 40 CFR 403.5(a) and 403.5(b). This evaluation may indicate that present local limits are sufficiently protective, or that the local limits must be revised. The permittee will be required to perform an annual evaluation of the need to revise or develop technically based local limits to implement the general and specific prohibitions of 40 CFR Part 403.5(a) and Part 403.5(b). This evaluation may indicate that present local limits are sufficiently protective, or that they must be revised. The initial evaluation is due twelve months after the effective date of the permit. As part of this evaluation, the permit requires influent and effluent monitoring for metals and organic toxics as stated in the permit the most sensitive method should be used for analyzing pollutants of concern as determined by the local limit development. The permittee should utilize the EPA Local Limits Development Guidance to justify the re-evaluation of the local limits. Information is provided in Chapter 7 of the EPA Local Limits Development Guidance 2004 to assist with the development of revising the local limits.

## **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.

**PERMIT DURATION**

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

Drafted and Reviewed by  
Danielle Lenz, Discharge and Reasonable Potential Analysis  
Daniel Griffin, Biosolids  
Jennifer Robinson, Pretreatment  
Lonnie Shull, Biomonitoring  
Carl Adams, Storm Water  
Sandy Wingert, TMDL/Watershed  
Nick von Stackelberg, Wasteload Analysis  
Utah Division of Water Quality, (801) 536-4300

**PUBLIC NOTICE**

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

Comments will be received at: 195 North 1950 West  
PO Box 144870  
Salt Lake City, UT 84114-4870

The Public Noticed of the draft permit was published in the DWQ webpage.

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

**ADDENDUM TO FSSOB**

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

**RESPONSIVENESS SUMMARY**

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

This Page Intentionally Left Blank

PND Draft

**ATTACHMENT 1**

*Effluent Monitoring Data*

PND Draft

This Page Intentionally Left Blank

## Effluent Monitoring Data.

Month	Flow		pH	TDS	<i>E. coli</i> *		BOD5**		TSS***	
	Ave	Max	Max	Ave	Acute	Chronic	Weekly Max	Monthly Ave	Weekly Max	Monthly Ave
May-18	10.42	11.02	7.28	1034	1	1	5	5	2	2
Jun-18	10.32	11	7.34	966	1	1	5	5	2	2
Jul-18	12.63	13.49	7.64	1012	1	1	5	5	2	2
Aug-18	13.11	13.96	7.39	940	3.1	1	5	5	2	2
Sep-18	12.77	13.5	7.41	1010	1	1	5	5	2	2
Oct-18	13.14	14.33	7.37	954	1	1	5	5	2	2
Nov-18	13	14.3	7.36	960	1	1	5	5	2	2
Dec-18	12.84	13.91	7.28	1028	1	1	5	5	2	2
Jan-19	13.55	14.48	7.36	970	1	1	5	5	2	2
Feb-19	14.06	15.22	7.35	1144	1	1	5	5	2	2
Mar-19	13.87	14.78	7.33	1060	1	1	5	5	2	2
Apr-19	13.53	14.35	7.32	1054	1	1	5	5	3	2
May-19	13.33	14.15	7.36	1014	1	1	5	5	2	2
Jun-19	13.1	13.65	7.34	920	1	1	5	5	2	2
Jul-19	13.28	13.92	7.3	1002	1	1	5	5	2	2
Aug-19	13.65	14.45	7.37	960	1	1	14	4.86	2	2
Sep-19	13.64	14.63	7.4	998	1	1	5	5	2	2
Oct-19	13.19	14.22	7.37	946	1	1	5	5	2	2
Nov-19	13.05	14.46	7.35	876	1	1	5	5	2	2
Dec-19	12.85	13.85	7.28	938	1	1	5	5	2	2
Jan-20	12.57	13.41	7.29	920	1	1	5	5	2	2
Feb-20	12.77	13.86	7.28	874	1	1	5	5	2	2
Mar-20	13.1	13.65	7.32	964	1	1	5	5	2	2
Apr-20	12.66	13.37	7.43	1016	1	1	5	5	2	2
May-20	13.07	13.66	7.44	978	1	1	5	5	2	2
Jun-20	13.41	14.39	7.37	994	1	1	5	5	2	2
Jul-20	13.8	15.34	7.36	974	1	1	5	5	2	2
Aug-20	14	14.66	7.41	980	1.1	1	5	5	2	2
Sep-20	13.94	14.64	7.46	968	6.3	1.09	6	5	2	2
Oct-20	13.56	14.65	7.38	980	1	1	5	5	2	2
Nov-20	13.64	14.76	7.38	930	1	1	5	5	2	2
Dec-20	13.55	14.31	7.35	974	1	1	5	5	2	2
Jan-21	13.42	14.03	7.29	992	1	1	5	5	2	2
Feb-21	13.52	14.39	7.28	1000	1	1	5	5	2	2
Mar-21	13.19	14.17	7.43	940	1	1	5	5	2	2
Apr-21	13.18	14.28	7.38	908	1	1	5	5	2	2
May-21	13.34	14.17	7.42	1044	1	1	5	5	2	2
Jun-21	13.28	13.75	7.39	940	1	1	5	5	2	2

\* All 1 values are < 1.

\*\* All 5 values are <5.

\*\*\* All 2 values are <2.



WET Results

Month	WET Test	Pass / Fail
Jun-18	Chronic Ceriodaphnia	Pass
Sep-18	Chronic Pimephales Promelas	Pass
Dec-18	Chronic Ceriodaphnia	Pass
Mar-19	Chronic Pimephales Promelas	Pass
Jun-19	Chronic Ceriodaphnia	Pass
Sep-19	Chronic Pimephales Promelas	Pass
Dec-19	Chronic Ceriodaphnia	Pass
Mar-20	Chronic Pimephales Promelas	Pass
Jun-20	Chronic Ceriodaphnia	Pass
Sep-20	Chronic Pimephales Promelas	Pass
Dec-20	Chronic Ceriodaphnia	Pass
Mar-21	Chronic Pimephales Promelas	Pass
Jun-21	Chronic Ceriodaphnia	Pass

**ATTACHMENT 2**

*Wasteload Analysis*

PND Draft

This Page Intentionally Left Blank

**ATTACHMENT 3**

*Reasonable Potential Analysis*

PND Draft

This Page Intentionally Left Blank

## REASONABLE POTENTIAL ANALYSIS

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 Guide) is available at water Quality. There are four outcomes for the RP Analysis<sup>8</sup>. They are;

- 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.

Initial screening for metals values that were submitted through the discharge monitoring reports showed that a closer look at some of the metals is needed. The initial screening check for metals showed that the full model needed to be run on cyanide, arsenic, cadmium, chromium, copper, lead, molybdenum, nickel, silver, zinc, selenium, and mercury. Based on DMR data, Total Dissolved Solids (TDS) also needed to modeled for RP.

The RP model was run on arsenic, cadmium, chromium, cyanide, lead, molybdenum, nickel, selenium, silver, and zinc using the most recent data back through 2018. This resulted in 13 data points for each constitute. The results of the models are that there is not acute or chronic RP at 95% confidence or 99% confidence (Outcome C from Reasonable Potential Guide).

The RP model was run on TDS using the most recent data back through 2018. This resulted in 38 data points. The results of the models are that there is RP at 95% confidence and 99% confidence. TDS monitoring is required at this time.

The RP model was run on copper using the most recent data back through 2018. This resulted in 13 data points. The results of the models are that there is acute or chronic RP at 99% confidence (Outcome B from Reasonable Potential Guide), but not at 95% confidence. This result indicates that the increased monitoring for copper required at this time.

A Summary of the RP Model inputs and outputs are included in the tables below.

### Outfall 001 RP Input/Output Summary Tables

RP Procedure Output	Outfall Number: 001 Data Units: mg/L	
Parameter	Cyanide	
Distribution	Lognormal	
Reporting Limit	0.0010	
Significant Figures	2	
Maximum Reported Effluent Conc.	<0.005	
Coefficient of Variation (CV)	0.29	
Acute Criterion	0.0348	
Chronic Criterion	0.0113	
Confidence Interval	95	99
Projected Maximum Effluent Conc. (MEC)	0.0063	0.0084

<sup>8</sup> See Reasonable Potential Analysis Guidance for definitions of terms

RP Multiplier	1.3	1.7
RP for Acute?	NO	NO
RP for Chronic?	NO	NO
RP for Human Health?	NO	NO
Outcome	C	

RP Procedure Output	Outfall Number: 001 Data Units: mg/L	
Parameter	Arsenic	
Distribution	Lognormal	
Reporting Limit	0.0010	
Significant Figures	2	
Maximum Reported Effluent Conc.	0.0051	
Coefficient of Variation (CV)	0.67	
Acute Criterion	0.2164	
Chronic Criterion	0.3105	
Confidence Interval	95	99
Projected Maximum Effluent Conc. (MEC)	0.0084	0.0150
RP Multiplier	1.7	3.0
RP for Acute?	NO	NO
RP for Chronic?	NO	NO
RP for Human Health?	NO	NO
Outcome	C	

RP Procedure Output	Outfall Number: 001 Data Units: mg/L	
Parameter	Cadmium	
Distribution	Lognormal	
Reporting Limit	0.0010	
Significant Figures	2	
Maximum Reported Effluent Conc.	0.0002	
Coefficient of Variation (CV)	NA	
Acute Criterion	0.0104	
Chronic Criterion	0.0046	
Confidence Interval	95	99
Projected Maximum Effluent Conc. (MEC)	0.0002	0.0002
RP Multiplier	1.0	1.0
RP for Acute?	NO	NO
RP for Chronic?	NO	NO
RP for Human Health?	NO	NO
Outcome	C	

RP Procedure Output	Outfall Number: 001 Data Units: mg/L	
Parameter	Chromium	
Distribution	Lognormal	
Reporting Limit	0.0010	
Significant Figures	2	
Maximum Reported Effluent Conc.	0.0055	
Coefficient of Variation (CV)	0.79	
Acute Criterion	0.023	
Chronic Criterion	0.0192	
Confidence Interval	95	99
Projected Maximum Effluent Conc. (MEC)	0.0098	0.0190
RP Multiplier	1.8	3.5
RP for Acute?	NO	NO
RP for Chronic?	NO	NO
RP for Human Health?	NO	NO
Outcome	C	

RP Procedure Output	Outfall Number: 001 Data Units: mg/L	
Parameter	Copper	
Distribution	Lognormal	
Reporting Limit	0.0010	
Significant Figures	2	
Maximum Reported Effluent Conc.	0.0286	
Coefficient of Variation (CV)	0.81	
Acute Criterion	0.0726	
Chronic Criterion	0.0584	
Confidence Interval	95	99
Projected Maximum Effluent Conc. (MEC)	0.0510	0.1000
RP Multiplier	1.8	3.6
RP for Acute?	NO	YES
RP for Chronic?	NO	YES
RP for Human Health?	NO	NO
Outcome	B	

RP Procedure Output	Outfall Number: 001 Data Units: mg/L	
Parameter	Copper	
Distribution	Lognormal	
Reporting Limit	0.0010	
Significant Figures	2	
Maximum Reported Effluent Conc.	0.0057*	
Coefficient of Variation (CV)	0.47	
Acute Criterion	0.0726	



Chronic Criterion	0.0584	
Confidence Interval	95	99
Projected Maximum Effluent Conc. (MEC)	0.0084	0.0130
RP Multiplier	1.5	2.3
RP for Acute?	NO	NO
RP for Chronic?	NO	NO
RP for Human Health?	NO	NO
Outcome	C	

\* 0.0286 mg/L, identified as an outlier using the EPA ProUCL model, was removed when running this model.

RP Procedure Output	Outfall Number: 001 Data Units: mg/L	
Parameter	Lead	
Distribution	Lognormal	
Reporting Limit	0.0010	
Significant Figures	2	
Maximum Reported Effluent Conc.	<0.0005	
Coefficient of Variation (CV)	NA	
Acute Criterion	0.2162	
Chronic Criterion	0.0345	
Confidence Interval	95	99
Projected Maximum Effluent Conc. (MEC)	0.0005	0.0005
RP Multiplier	1.0	1.0
RP for Acute?	NO	NO
RP for Chronic?	NO	NO
RP for Human Health?	NO	NO
Outcome	C	

RP Procedure Output	Outfall Number: 001 Data Units: mg/L	
Parameter	Mercury	
Distribution	Lognormal	
Reporting Limit	0.0010	
Significant Figures	2	
Maximum Reported Effluent Conc.	0.000004	
Coefficient of Variation (CV)	0.69	
Acute Criterion	0.000325	
Chronic Criterion	0.000026	
Confidence Interval	95	99
Projected Maximum Effluent Conc. (MEC)	0.0000	0.0000
RP Multiplier	1.7	3.1

RP for Acute?	NO	NO
RP for Chronic?	NO	NO
RP for Human Health?	NO	NO
Outcome	C	

RP Procedure Output	Outfall Number: 001 Data Units: mg/L	
Parameter	Molybdenum	
Distribution	Lognormal	
Reporting Limit	0.0010	
Significant Figures	2	
Maximum Reported Effluent Conc.	0.0073	
Coefficient of Variation (CV)	0.77	
Acute Criterion	NA	
Chronic Criterion	NA	
Confidence Interval	95	99
Projected Maximum Effluent Conc. (MEC)	0.0130	0.0250
RP Multiplier	1.8	3.4
RP for Acute?	NA	NA
RP for Chronic?	NA	NA
RP for Human Health?	NA	NA
Outcome	C	

RP Procedure Output	Outfall Number: 001 Data Units: mg/L	
Parameter	Nickel	
Distribution	Lognormal	
Reporting Limit	0.0010	
Significant Figures	2	
Maximum Reported Effluent Conc.	0.0069	
Coefficient of Variation (CV)	0.80	
Acute Criterion	2.1711	
Chronic Criterion	0.327	
Confidence Interval	95	99
Projected Maximum Effluent Conc. (MEC)	0.0120	0.0250
RP Multiplier	1.8	3.6
RP for Acute?	NO	NO
RP for Chronic?	NO	NO
RP for Human Health?	NO	NO
Outcome	C	

RP Procedure Output	Outfall Number: 001 Data Units: mg/L	
Parameter	Selenium	

Distribution	Lognormal	
Reporting Limit	0.0010	
Significant Figures	2	
Maximum Reported Effluent Conc.	0.0024	
Coefficient of Variation (CV)	0.53	
Acute Criterion	0.031	
Chronic Criterion	0.0087	
Confidence Interval	95	99
Projected Maximum Effluent Conc. (MEC)	0.0036	0.0059
RP Multiplier	1.5	2.5
RP for Acute?	NO	NO
RP for Chronic?	NO	NO
RP for Human Health?	NO	NO
Outcome	C	

RP Procedure Output	Outfall Number: 001 Data Units: mg/L	
Parameter	Silver	
Distribution	Lognormal	
Reporting Limit	0.0010	
Significant Figures	2	
Maximum Reported Effluent Conc.	<0.005	
Coefficient of Variation (CV)	0.71	
Acute Criterion	0.053	
Chronic Criterion	NA	
Confidence Interval	95	99
Projected Maximum Effluent Conc. (MEC)	0.0085	0.0160
RP Multiplier	1.7	3.2
RP for Acute?	NO	NO
RP for Chronic?	NA	NA
RP for Human Health?	NO	NO
Outcome	C	

RP Procedure Output	Outfall Number: 001 Data Units: mg/L	
Parameter	Zinc	
Distribution	Lognormal	
Reporting Limit	0.0010	
Significant Figures	2	
Maximum Reported Effluent Conc.	0.04	
Coefficient of Variation (CV)	0.56	
Acute Criterion	0.5507	
Chronic Criterion	0.7501	
Confidence Interval	95	99

Projected Maximum Effluent Conc. (MEC)	0.0610	0.1000
RP Multiplier	1.5	2.6
RP for Acute?	NO	NO
RP for Chronic?	NO	NO
RP for Human Health?	NO	NO
Outcome	C	

RP Procedure Output	Outfall Number: 001 Data Units: mg/L	
Parameter	TDS	
Distribution	Lognormal	
Reporting Limit	0.0010	
Significant Figures	2	
Maximum Reported Effluent Conc.	1144	
Coefficient of Variation (CV)	0.053	
Criterion	1200	
Confidence Interval	95	99
Projected Maximum Effluent Conc. (MEC)	1200	1200
RP Multiplier	1.0	1.1
RP?	YES	YES

Metals Monitoring and RP Check

Effluent												
Metal	Arsenic	Cadmium	Chromium (VI)	Copper	Cyanide	Lead	Mercury	Moly.	Nickel	Selenium	Silver	Zinc
ARP Val	0.2164	0.0104	0.023	0.0726	0.0348	0.2162	0.000325	NA	2.1711	0.031	0.053	0.5507
CRP Val	0.3105	0.0046	0.0192	0.0584	0.0113	0.0345	0.000026	NA	0.327	0.0087	NA	0.7501
Metals, mg/L	0.0019	<0.0002	0.0023	0.0051	<0.002	<0.0005	<0.000001	0.0047	0.0045	0.0013	<0.0005	0.04
	0.0051	<0.0002	0.0055	0.0057	0.003	<0.0005	<0.000001	0.0068	0.0048	0.0013	<0.0005	0.03
	0.003	<0.0002	0.0016	0.0041	0.003	<0.0005	<0.000001	0.0066	0.0033	0.0009	<0.0005	0.02
	0.0023	<0.0002	0.0016	0.0045	0.002	<0.0005	0.000001	0.0051	0.004	0.0017	<0.0005	<0.01
	0.0047	<0.0002	0.005	0.0039	0.002	<0.0005	3.2E-06	0.0073	0.0069	0.0024	<0.0005	0.02
	0.0043	<0.0002	<0.0005	0.0042	0.003	<0.0005	1.1E-06	0.0058	0.003	0.0014	<0.0005	0.03
	0.0005	<0.0002	0.0006	<0.001	0.002	<0.0005	<0.000001	<0.0005	0.0008	<0.0005	<0.0005	<0.01
	0.0026	0.0002	0.0016	0.0036	<0.002	<0.0005	<0.000001	0.0055	0.0012	0.0008	<0.0005	0.04
	0.0027	<0.0002	0.0035	0.0034	<0.002	<0.0005	<5E-07	0.0042	0.0008	<0.0005	<0.0005	0.04
	0.005	<0.0002	0.0015	0.0051	<0.002	<0.0005	0.000001	0.0051	0.0017	0.0009	<0.0005	0.04
	0.0042	<0.0002	0.0015	0.0286	0.005	<0.0005	0.000004	0.0052	0.0017	0.0008	<0.0005	0.04
	0.0027	<0.0002	0.0016	0.0038	<0.002	<0.0005	<5E-07	0.0041	0.0016	0.0014	<0.0005	0.04
	0.0027	<0.0002	0.0014	0.0034	0.002	<0.0005	0.0000005	0.0045	0.0013	<0.0005	<0.0005	0.04
Max	0.0051	0.0002	0.0055	0.0286	<0.005	<0.0005	0.000004	0.0073	0.0069	0.0024	<0.005	0.04
A RP?	NO	NO	NO	NO	NO	NO	NO	NA	NO	NO	NO	NO
C RP?	NO	NO	NO	YES	NO	NO	NO	NA	NO	NO	NA	NO