

**Official Draft Public Notice Version June 23, 2020**

**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  
ST. GEORGE REGIONAL WATER RECLAMATION FACILITY  
RENEWAL PERMIT: DISCHARGE & BIOSOLIDS  
UPDES PERMIT NUMBER: UT0024686  
UPDES BIOSOLIDS PERMIT NUMBER: UTL-024686  
MAJOR MUNICIPAL**

**FACILITY CONTACTS**

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Facility Name:	City of St. George		
Mailing Address:	3780 South 1550 West St. George, Utah 84790		
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Actual Address:	2176 West 3780 South St. George Washington County		

**DESCRIPTION OF FACILITY**

St. George Regional Water Reclamation Facility (SGWRF) is located at 2176 West 3780 South, St. George, Utah and serves St. George and the surrounding areas of Ivins, Santa Clara and Washington City. The facility began discharging in 1990 with a 5 MGD design capacity, was upgraded in 1994 to an 8.5 MGD capacity, and the latest upgrade was completed in 1999 bringing the plant design capacity to an average daily flow of 17 MGD. The plant is currently under Phase 2 of an upgrade to increase the capacity to 25 MGD.

The facility abandoned the original Outfall 001 and 002 during a plant Phase 1 in 2019. The current Outfall 001 discharge point is located directly south of the old outfalls at the southeast side of the treatment plant, the north bank of the Virgin River, approximately three miles (3 miles) southwest of where the Virgin River crosses under the I-15 Interstate Highway, in Washington County, Utah. Outfall 001 has a 66 inch discharge pipe at latitude 37°02'20" and longitude 113°37'50", with STORET Number 495006. Outfall 001R is Type I Reuse for irrigation of local parks and golf courses at latitude 37°02'19" and longitude 113°37'53".

The treatment facilities consist of four 88 inch influent screw pumps, three mechanical bar screens, two Vortex/stacked tray grit chambers, one bio selector, four oxidation ditches, six clarifiers, three low pressure ultraviolet disinfection systems, and one cascade aeration systems. Sludge is currently wasted from the clarifiers into two gravity thickeners. The sludge is then transferred to the post auto-thermal thermophilic aerobic digestion (ATAD) holding tank and then pumped into the solids building feeding three centrifuges for de-watering purposes. The sludge is transported to the County Landfill for burial.

Phase 1 and Phase 2 of the plant upgrades the Headworks to a design of a maximum daily average of 50 MGD, 4 screw pumps each rated at 16.7 MGD, 3 bar screens each rated at 25 MGD and a grit washer rated at 50 MGD. The UV disinfection will go from divided trains to a combined process with three UV channels each rated at 25 MGD and with one discharge point to the Virgin River with a maximum daily average of 50 MGD.

Phase 2 is an upgrade of the biological process with the addition of nutrient removal systems beginning fall 2020. The upgrade will have improvements to the Bio-Selector, train 1 and 2 RAS/WAS pump station, solids holding basin and electrical. The odor control biofilter will be replaced, all four oxidation ditches will be converted and there will be a new blower building and two new secondary clarifiers.

#### **SUMMARY OF CHANGES FROM PREVIOUS PERMIT**

An Antidegradation Level II review was completed for the Phase 2 upgrade and limits have been determined for the upgraded facility. The 2018 Reasonable Potential analysis (RP) was used for this permit issuances. RP has been completed for metal parameters. Silver no longer has a limit but will be required to be monitored. Boron has been added as a parameter of concern from the Reasonable Potential evaluation and has been added as a monitoring parameter. No limit has been established at this time. Based on new information from the DWQ TMDL section the total dissolved solids has been relaxed.

On December 16, 2014, the Utah Water Quality Board adopted *Utah Administrative Code (UAC) R317-1-3.3, Technology-Based Limits for Controlling Phosphorus Pollution*. The Technology-Based Phosphorus Effluent Limits (TBPEL) establishes new regulations for the discharge of phosphorus to surface waters and is self-implementing. The TBPEL rule includes the following requirements for non-lagoon wastewater treatment plants:

The TBPEL requires that all non-lagoon wastewater treatment works discharging wastewater to surface waters of the state shall provide treatment processes which will product effluent less than or equal to an annual mean of 1.0 mg/L for total phosphorus. This TBPEL shall be achieved by January 1, 2020 unless a variance has been granted by DWQ. On January 18, 2019, DWQ approved the SGWRF variance request not to extend beyond **January 1, 2025** and with an interim total phosphorus annual average limit of **2.5 mg/L** beginning January 1, 2020. This permit modification is incorporating the approved variance with the interim limits and dates that were previously public noticed in the local newspaper, in which no comments were received.

Industrial storm water provisions have been removed from the permit. The facility will be required to obtain coverage or an appropriate exclusion under the Multi-Sector General Permit (MSGP) for Storm Water Discharges Associated with Industrial Activities. Please see the Storm Water section of this Fact Sheet for more information.

## **DISCHARGE**

### **DESCRIPTION OF DISCHARGE**

The City of St. George has been reporting self-monitoring results on Discharge Monitoring Reports on a monthly basis. There were no significant violations reported on the DMRs in the last five years.

<b>Outfall</b>	<b>Description of Discharge Point</b>
001	The 66 inch discharge pipe is located on the southeast side of the treatment plant, about 400 feet from the north bank of the Virgin River, approximately three (3) miles southwest of where the Virgin River crosses under the I-15 Interstate Highway, in Washington County, Utah at approximately latitude 37°02'20" and longitude 113°37'50".
001R	Located at latitude 37°02'19" and longitude 113°37'53". The Type I effluent is used by St. George irrigation to irrigate public parks and golf courses in the area.

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

The discharge flows directly into the Virgin River which is a Class 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.

### **BASIS FOR EFFLUENT LIMITATIONS**

Limitations on Total Suspended Solids (TSS), E-coli, pH and percent removal for 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).

### **Parameters of Concern**

The potential parameters of concern are total suspended solids, dissolved oxygen, BOD<sub>5</sub>, total phosphorus, total nitrogen, total ammonia, dissolved metals and pH.

### **Colorado River Basin Salinity Forum**

SGWRF is required to comply with the Colorado River Basin Salinity Forum (Forum) policies, as per UAC R317-2-4, to further control TDS loading within the Colorado River Basin of Utah. In accordance with Forum policy, on October 29, 1996 SGWRF submitted to DWQ a TDS demonstration which stated that it was not practicable to meet the 400 mg/L incremental increase requirement of the Forum policy and were subsequently given a variance. Although SGWRF must continue to implement the following TDS practices as stated in the permit:

1. Continue monitoring and reporting both the influent and effluent TDS on a weekly basis.

2. Continue to minimize the groundwater entering into your collection system as practicable through appropriate operation and maintenance procedures.
3. Through written communication, encourage those systems discharging into your system to undertake to minimize the groundwater entering their systems and report to you on the same way.
4. Through written communication, and any other suitable means, encourage appropriate dischargers to your system to minimize their TDS loadings through good housekeeping procedures.

Type I reuse limitations for Outfall OO1R are based upon UAC R317-3-11.

### 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. The RP calculations were performed and determined there no RP parameters requiring limits or additional monitoring.

The permit limitations are:

Table 1					
Interim limits until January 1, 2025					
Parameter	Outfall 001 Effluent Limitations <sup>a</sup>				
	Maximum Monthly Avg	Maximum Weekly Avg	Yearly Average	Daily Minimum	Daily Maximum
Flow, MGD	17	--	--	--	--
BOD <sub>5</sub> , mg/L	17	35	--	--	--
BOD <sub>5</sub> Min. % Removal	85	--	--	--	--
TSS, mg/L	25	35	--	--	--
TSS Min. % Removal	85	--	--	--	--
<i>E. coli</i> , No./100mL	126	157	--	--	--
Dissolved Oxygen, (DO) mg/L	--	--	--	5.5	--
Total Ammonia (as N), mg/L					
Summer (Jul-Sep)	2.77	--	--	--	17.2
Fall (Oct-Dec)	5.5	--	--	--	16.9
Winter (Jan-Mar)	10.3	--	--	--	27.8
Spring (Apr-Jun)	8.4	--	--	--	23.2
WET, Chronic Biomonitoring	--	--	--	--	IC <sub>25</sub> > 43.4% effluent
Oil & Grease, mg/L	--	--	--	--	10.0
TDS, mg/L <sup>ε, i</sup>					2360
pH, Standard Units	--	--	--	6.5	9.0
Total Phosphorus, mg/L	--	--	2.5	--	--

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

Table 2					
Parameter	Outfall 001R Effluent Limitations <sup>a, n</sup>				
	Max Monthly Average	Max Weekly Median	Max Daily Average	Minimum	Maximum
Turbidity, NTU <sup>o</sup>	--	--	2	--	5
TRC, mg/L <sup>o</sup>	--	--	--	1	--
BOD <sub>5</sub> , mg/L	10	--	--	--	--
<i>E. coli</i> , No/100mL <sup>m</sup>	--	ND	--	--	9
pH, Standard Units	--	--	--	6.0	9.0

Table 3					
Interim limits beginning January 1, 2025					
Parameter	Outfall 001 Effluent Limitations <sup>a</sup>				
	Maximum Monthly Avg	Maximum Weekly Avg	Yearly Average	Daily Minimum	Daily Maximum
Flow, MGD	25.2	--	--	--	--
BOD <sub>5</sub> , mg/L					
Summer (Jul-Sep)	9	--	--	--	--
Fall – Spring (Oct-Jun)	15	--	--	--	--
BOD <sub>5</sub> Min. % Removal	85	--	--	--	--
TSS, mg/L	25	35	--	--	--
TSS Min. % Removal	85	--	--	--	--
<i>E. coli</i> , No./100mL	126	157	--	--	--
Dissolved Oxygen, (DO) mg/L	--	--	--	6	--
Total Ammonia (as N), mg/L					
Summer (Jul-Sep)	1.0	--	--	--	14.7
Fall (Oct-Dec)	3.0	--	--	--	14.2
Winter (Jan-Mar)	3.0	--	--	--	13.5
Spring (Apr-Jun)	2.0	--	--	--	12.3
WET, Chronic Biomonitoring	--	--	--	--	IC <sub>25</sub> > 43.4% effluent
Oil & Grease, mg/L	--	--	--	--	10.0
TDS, mg/L <sup>g, i</sup>					2360
pH, Standard Units	--	--	--	6.5	9.0
Total Phosphorus, mg/L	--	--	1	--	--

**SELF-MONITORING AND REPORTING REQUIREMENTS**

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.

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

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

<b>Table 5</b>			
<b>Parameter</b>	<b>Reuse Outfall 001R Self-Monitoring and Reporting Requirements<sup>a, 1</sup></b>		
	<b>Frequency</b>	<b>Sample Type</b>	<b>Units</b>
Total Flow <sup>b, c</sup>	Continuous	Recorder	MGD
Turbidity	Continuous	Recorder	mg/L
BOD <sub>5</sub>	Weekly	Composite	mg/L
<i>E. coli</i> <sup>m</sup>	Daily	Grab	No./100mL
pH	Daily	Grab	SU

**Table References**

- a. See Definitions, *Part VIII*, for definition of terms.
- b. Flow measurements of influent/effluent volume shall be made in such a manner that the permittee can affirmatively demonstrate that representative values are being obtained.
- c. If the rate of discharge is controlled, the rate and duration of discharge shall be reported.
- d. 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. SGWRF is required to comply with the Colorado River Basin Salinity Forum (Forum) policies, as per UAC R317-2-4. On October 29, 1996 SGWRF submitted to DWQ a TDS demonstration which stated that it was not practicable to meet the 400 mg/L incremental increase requirement of the Forum and were subsequently given a variance. Although SGWRF must:
  1. Continue monitoring and reporting both the influent and effluent TDS on a weekly basis.
  2. Continue to minimize the groundwater entering into your collection system as practicable through appropriate operation and maintenance procedures,
  3. Through written communication, encourage those systems discharging into your system to undertake to minimize the groundwater entering their systems and report to you on the same
  4. Through written communication, and any other suitable means, encourage appropriate dischargers to your system to minimize their TDS loadings through good housekeeping procedures.
  5. Submit, with your next renewal application, a report summarizing efforts taken to undertake item 2, 3 and 4 above stating the average TDS level each year, and discuss the reasons for any increase in the average TDS level.
- f. Oil & Grease sampled when sheen is present or visible. If no sheen is present or visible, report 9 under NODI in NetDMR.
- g. Metals results were reviewed for the last 36 months. Reasonable Potential was calculated for Boron, a limit is not required but quarterly monitoring will be required.

- h. The chronic Ceriodaphnia will be tested during the 2<sup>nd</sup> and 4<sup>th</sup> quarters of the calendar year, and the chronic fathead minnows will be tested during the 1<sup>st</sup> and 3<sup>rd</sup> quarters.
- i. See Part II of this permit for additional requirements regarding sampling for metals and organic toxics.
- j. These reflect changes required with the adoption of UCA R317-1-3.3, Technology-based Phosphorus Effluent Limits rule.
- k. Temperature and boron are being sampled in response to 303(d) listing of the receiving segment of the Virgin River. TMDL development may take place in the future but it is not currently a priority for DWQ. 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), SGWRF will report the results of all sampling done for the POC. If SGWRF decides to sample more frequently for these POC's, the additional data will be welcome.
- l. Reuse monitoring results obtained during the previous month for reuse discharges shall be summarized for each month and reported on a Monthly Operational Report, post-marked no later than the 28th day of the month following the completed reporting period.
- m. The weekly median *E. coli* concentration shall be non-detect.
- n. 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.
- A 1 mg/l total chlorine residual is recommended after disinfection and before the treated effluent goes into the distribution system.
- o. Effective January 1, 2020, SGRWRF shall report the calculated TBPEL Reuse Average Annual Discharge Concentration for the annual average concentration for total phosphorus.
- i. SGRWRF shall comply with the effluent limitations for the annual average total phosphorus concentrations based on the calculated TBPEL Reuse Average Annual Discharge Concentration.
  - ii. Definitions
    1. "Monthly Average Mass Loading" in lbs/d means the pounds per day of a pollutant discharged on average during a calendar month, calculated as the average monthly discharge concentration (mg/L) times the average monthly surface water discharge flow rate to (mgd) times 8.34 conversion factor.
    2. "Monthly Average Plant Flow" in mgd means the average of daily plant flows over a calendar month, calculated as the sum of all surface water and reuse outfalls daily discharges measured during a calendar month divided by the number of daily discharges measured during the month.
    3. "Annual Average Mass Loading" in lbs/d means the average of monthly mass loading per day over calendar year, calculated as the sum of monthly average mass loadings measured during a calendar year divided by the number of monthly average plant flows measured during the year.
    4. "Annual Average Plant Flow" in mgd means the average of monthly average plant flows per day over a calendar year, calculated as the sum

of monthly average plant flows measured during a calendar year divided by the number of monthly average plant flows measured during the year.

5. "TBPEL Historic Average Annual Reuse Flow" in mgd means the annual average reuse flow when the TBPEL variance request was filed. St. George's TBPEL Historic Average Annual Reuse Flow Rate is 1.5 mgd.
6. "TBPEL Reuse Average Annual Discharge Concentration" in mg/L means the equivalent concentration if the load discharged to the receiving water were carried by the full plant flow without the historic reuse flows over a calendar year, calculated as the annual average mass loading (lbs/d) divided by 8.34 conversion factor divided by the expression of the annual average plant flows (mgd) minus the TBPEL historic annual average reuse flows (mgd).

<sup>p</sup> Equation for TBPEL Reuse Average Annual Discharge Concentration:

1. 
$$C_r = \frac{\sum_h^i \dot{m}_m}{8.34 * (Q_a - Q_h)}$$
2.  $C_r$  = TBPEL Reuse Alternative Average Annual Discharge for facility (mg/L).
3.  $\dot{m}_m$  = Monthly average mass loading (lbs/d)
4.  $n$  = Number of monthly average plant flows measured during the year
5.  $Q_a$  = Annual Average Plant Flow - discharge rate of effluent to surface waters and reuse (mgd).
6.  $Q_h$  = TBPEL Historic Annual Average Reuse Flow (mgd). St. George's TBPEL Historic Annual Average Reuse Flow Rate is 1.5 mgd.

<sup>q</sup> Management Practices for Land Application of Treated Effluent:

- i. The application of treated effluent to frozen, ice-covered, or snow covered land is prohibited.
- ii. No person shall apply treated effluent where the slope of the site exceeds 6 percent.
- iii. The use should not result in a surface water runoff.
- iv. The use must not result in the creation of an unhealthy or nuisance condition, as determined by the local health department.
- v. Any irrigation with treated effluent must be at least 300 feet from a potable well.
- vi. For Type I reuse, any irrigation must be at least 50 feet from any potable water well.
- vii. For Type II reuse, any irrigation must be at least 300 feet from any potable water well.
- viii. For Type II reuse, spray irrigation must be at least 100 feet from areas intended for public access. This distance may be reduced or increased by the Director.
- ix. Impoundments of treated effluent, if not sealed, must be at least 500 feet from any potable well.
- x. Public access to effluent storage and irrigation or disposal sites shall be restricted by a stock-tight fence or other comparable means which shall be posted and controlled to exclude the public (Compliance Schedule for a Particular Parameter if necessary).

### **End Table References**

## **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**

The solids are stabilized in the oxidation ditches with mean cell residence time of approximately 45 days. They solids are separated from the wastes water in the final clarifiers where the waste activated sludge is sent off to the sludge thickeners. From here they are sent to the centrifuges for dewatering to 15% to 20% solids. The dewatered sludge is then sent off to the local landfill for disposal.

The 2017 Annual Biosolids Report was received on February 15, 2018. In 2017 Saint George produced 3197 dry metric tons (DMT) of biosolids. The biosolids met the heavy metals requirements to be considered Exceptional Quality but does not meet Class A or Class B pathogen reduction requirements for beneficial reuse. All of the biosolids were disposed of at the Washington County Landfill.

The last inspection conducted at the site was February 26, 2018. The inspection showed that Saint George was 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.

<b>Minimum Frequency of Monitoring (40 CFR Part 503.16, 503.26. and 503.46)</b>		
<b>Amount of Biosolids Disposed Per Year</b>		<b>Monitoring Frequency</b>
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 2017, Saint George disposed of 3197 DMT of biosolids, therefore they need to sample at least six times a 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)*). Saint George disposed of 3197 DMT of biosolids at the Washington County 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 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 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 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

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

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;

<b>Pathogen Control Class</b>	
<b>Class A</b>	<b>Class B</b>
B Salmonella species –less than three (3) MPN <sup>3</sup> per four (4) grams total solids (or less than 1,000 fecal coliforms per gram total solids)	Fecal Coliforms –less than 2,000,000 colony forming units (CFU) per gram total solids
Enteric viruses –less than one (1) MPN (or plaque forming unit) per four (4) grams total solids	
Viable helminth ova –less than one (1) MPN per four (4) grams total solids	

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.

Saint George does not intend to give away biosolids for land application on home lawns or gardens, and will therefore not be required to meet PFRP. If the permittee changes their intentions in the future, they will need to meet a specific PFRP, the Director and the EPA must be informed at least thirty (30) days

<sup>1</sup> CPLR -- Cumulative Pollutant Loading Rate

<sup>2</sup> APLR – Annual Pollutant Loading Rate

<sup>3</sup> MPN –Most Probable Number

prior to its use. This change may be made without additional public notice

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). Saint George does not intend to land apply the biosolids and will therefore not be required to meet PSRP. If the permittee intends to land apply in the future, they will need to meet a specific PSRP, 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 Saint George will be required to meet VAR through the use of a method of listed under *40 CFR 503.33*. Saint George does not intend to land apply the biosolids and will therefore not be required to meet VAR. If the permittee intends to land apply in the future, they need to meet 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.

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

Saint George 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.

## **STORM WATER**

### **STORMWATER REQUIREMENTS**

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 industrial 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, Part II of the UPDES Permit, have been modified to add additional language to clarify requirements. The changes are consistent with requirements found in the *R317-8-8 and 40 CFR 403*.

The pretreatment requirements remain the same with the permittee administering an approved pretreatment program. Authority to require a pretreatment program is provided for in *19-5-108 UCA, 1953 ann.* and *UAC R317-8-8*.

All changes to the program must be submitted for approval to the Division of Water Quality. If the change is deemed a substantial change, then the Division of Water Quality must approve the change prior to the implementation of the change. The permittee may not implement a substantial modification prior to approval by the Director.

The sampling of metals will be required quarterly and the sampling of organic toxics will be required yearly, see Part II of the UPDES Permit. This is consistent with the guidance developed by the Division of Water Quality. Additional requirements have been added to the permit to ensure that if the allowable headworks loading for a parameter of concern is above the value calculated for the local limit development that additional monitoring and notification must occur. Notification must be to the pretreatment coordinator and can be via email.

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. As part of this evaluation, the permit requires quarterly influent and effluent monitoring for metals and yearly organic toxics listed in *R317-8-7.5* and sludge monitoring for potential pollutants listed in *40 CFR 503*.

### **BIOMONITORING REQUIREMENTS**

A nationwide effort to control toxic discharges where effluent toxicity is an existing or potential concern is regulated in accordance with the State of Utah Permitting and Enforcement Guidance Document for Whole Effluent Toxicity Control (biomonitoring). 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.

Since the permittee is a major municipal discharger, with a significant pretreatment program the renewal permit will require whole effluent chronic limits with chronic toxicity testing. It is anticipated that the chronic testing will not only indicate chronic toxicity, but also screen for acute toxicity. The permit will contain toxicity reopener language. (Description of monitoring frequency, species being monitored and Numerical Toxicity Limit if necessary)

The permit will contain the standard requirements for additional testing if chronic toxicity is detected and a TRE (Toxicity Reduction Evaluation) as necessary.

**PERMIT DURATION**

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

Drafted by  
Sarah Leavitt, Discharge  
Daniel Griffin, Biosolids  
Jennifer Robinson, Pretreatment  
Lonnie Shull, WET  
Lisa Stevens, Storm Water  
Dave Wham, Wasteload Analysis  
Utah Division of Water Quality, (801) 536-4300

**PUBLIC NOTICE**

Began: MONTH XX, 20XX  
Ended: MONTH XX, 20XX

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

The Public Noticed of the draft permit was published on the Division of Water Quality's Public Notice website.

**ADDENDUM TO FSSOB**

DWQ-2020-012836

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**ATTACHMENT 1**

*Wasteload Analysis*

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**ATTACHMENT 2**

*Reasonable Potential Analysis*

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## **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>4</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.

### **(REASONABLE POTENTIAL LANGUAGE )**

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. A copy of the initial screening is included in the “Effluent Metals and RP Screening Results” table in this attachment. The initial screening check for metals showed that the full model needed to be run on Boron.

The RP model was run on Boron using the most recent data back through 2015. This resulted in 14 data points and that there is a Reasonable Potential for an acute limit for Boron. Reviewing the data showed that there could be at least one outlier in the data. The EPA ProUCL model was used to evaluate the data.

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<sup>4</sup> See Reasonable Potential Analysis Guidance for definitions of terms

**Reasonable Potential Outputs Table**

<b>RP Procedure Output</b>	<b>Outfall Number:</b>
Parameter	Boron
Distribution	Delta-Lognormal
Reporting Limit	(0.0002)
Significant Figures	2
Maximum Reported Effluent Conc.	0.53
Coefficient of Variation (CV)	0.097
Acute Criterion	0.5782
Chronic Criterion	NA
Confidence Interval	95
Projected Maximum Effluent Conc. (MEC)	0.56
RP Multiplier	1.1
RP for Acute?	NO
RP for Chronic?	NO
Outcome	C



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