

FACT SHEET
AND
STATEMENT OF BASIS

RICHMOND CITY
UTAH POLLUTION DISCHARGE ELIMINATION SYSTEM PERMIT NO. UT0020907

FACILITY CONTACT:

Responsible Official: Mike Hall
Mayor, City of Richmond
6 West Main, PO Box 9
Richmond, Utah 84333
Phone: (435) 258-1731

Operator: Scott Ball
6 West Main, PO Box 9
Richmond, Utah 84333
Phone: (435) 994-1572

DESCRIPTION OF FACILITY:

The Richmond City treatment plant (RCTP) has a design capacity of 0.5 MGD. They use an activated sludge process for treatment. Raw wastewater is first treated using a 2 mm screen and compactor followed by grit removal. Following the grit removal system, the process water will enter an aeration basin and then directly into a Membrane Bioreactor (MBR) for microfiltration. The effluent from the MBR will enter an ultra violet disinfection system and then be discharged into an un-named irrigation ditch or to the old lagoon cells and eventually the Cub River.

DESCRIPTION OF DISCHARGE:

Outfall 001 is from the old lagoon cells located at an approximate latitude 41° 55' 25" N and longitude 111° 49' 45" W and has STORET #490372.

A new outfall will be established. This outfall is to an unnamed irrigation ditch to the Cub River. Outfall 002 is located at an approximate latitude 41° 55' 29.463" North and longitude 111° 50' 2.876" West.

RECEIVING WATER CLASSIFICATION:

The Cub River is classified 2B, 3B, and 4. According to Utah Administrative Code (UAC) R317-2-6 the use designations are as follows:

Class 2B Protected for secondary contact recreation such as boating, wading, or similar uses.

- 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 agriculture use including irrigation of crops and stock watering.

SIGNIFICANT PERMIT CHANGES:

During the previous permit cycle, the Richmond City Wastewater treatment plant transitioned from facultative lagoons to Membrane Bio-Reactor facility. As a result of this change, an additional outfall is being added. Additionally, a limit for total phosphorus was added to the permit. This was added because of the finalized TMDL for Cutler Reservoir. The Phosphorous limit for the facility will now be 0.23 Kg per day from April 1-September 30 and 1 mg/L from October 1 – March 31. The facility cannot discharge more than 84 Kg/year of total phosphorous as a sum total of all outfalls. The monthly sum total must be reported on the DMR reports for each month.

The sampling frequency for the facility has been changed to twice monthly based upon the design flow of the facility and the continuous nature of the new discharge.

EFFLUENT LIMITATIONS, SELF-MONITORING AND REPORTING REQUIREMENTS:

Permit effluent limitations are summarized below:

Parameter	Effluent Limitations ^{a/}			
	Maximum Monthly Avg	Maximum Weekly Avg	Daily Minimum	Daily Maximum
Effluent Flow, MGD	0.5	NA	NA	NA
BOD ₅ , mg/L	25	35	NA	NA
BOD ₅ Min. % Removal	85	NA	NA	NA
TSS, mg/L	25	35	NA	NA
TSS Min. % Removal	85	NA	NA	NA
E-Coli, No./100mL	126	157	NA	NA
TRC, mg/L ^{a/}	NA	NA	NA	0.875
DO, mg/L	NA	NA	5.5	NA
Oil & Grease, mg/L	NA	NA	NA	Visual/10
pH, Standard Units	NA	NA	6.5	9.0
Total Phosphorous, Kg/Year ^{b/ c/}	NA	NA	NA	84
April 1–September 30, Kg/Day ^{c/}	NA	NA	NA	0.23
October 1 – March 31, mg/L	NA	NA	NA	1.0

NA – Not Applicable

- ^{a/} TRC is only required to be sampled from Outfall 001.
- ^{b/} The yearly load cannot exceed the total of the maximum daily load x 365 (0.23 x 365 = 84 Kg).
- ^{c/} Total load as the sum of all outfalls. This total shall be calculated monthly and reported on the Discharge Monitoring report.

Self-Monitoring and Reporting Requirements a/ b/			
Parameter	Frequency	Sample Type	Units
Effluent Total Flow <u>c/ d/</u>	Continuous	Recorder	MGD
BOD ₅ , Influent <u>e/</u> Effluent	2x Monthly	Grab	mg/L
	2x Monthly	Grab	mg/L
TSS, Influent <u>e/</u> Effluent	2x Monthly	Grab	mg/L
	2x Monthly	Grab	mg/L
<i>E. coli</i>	2x Monthly	Grab	No./100mL
TRC <u>f/</u>	Daily	Grab	mg/L
DO	2x Monthly	Grab	mg/L
Oil & Grease <u>g/</u>	2x Monthly	Visual/Grab	mg/L
PH	2x Monthly	Grab	SU
Total Phosphorous	2x Monthly	Grab	mg/L
Total Phosphorous <u>h/</u>	Daily	Calculation	kg/Day

- a/ See Definitions, *Part VI*, for definition of terms.
- b/ If the effluent is used for Type II reuse as defined in R-317-13, then the facility must meet the requirements for Type II reuse as found in R-317-11.5
- c/ 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.
- d/ If the rate of discharge is controlled, the rate and duration of discharge shall be reported.
- e/ In addition to monitoring the final discharge, influent samples shall be taken and analyzed for this constituent at the same frequency as required for this constituent in the discharge.
- f/ TRC is required to be sampled at Outfall 001 when Outfall 001 is discharging.
- g/ A visual monitoring will be conducted monthly for an oil and grease sheen. If a sheen is observed, then a grab sample shall be taken and shall not exceed 10 mg/L.
- h/ Total daily phosphorus load shall be calculated by using the bi-monthly Total Phosphorus concentration and total daily flow of all outfalls.

The sampling frequency for the facility has been changed to twice monthly based upon the design flow of the facility and the continuous nature of the new discharge.

BIOSOLIDS (SEWAGE SLUDGE)

DESCRIPTION OF TREATMENT AND DISPOSAL

The RCWRF is expected to dispose of approximately one hundred and twenty five to one hundred fifty dry metric tons (DMT) of wastewater solids (sewage sludge) per year. The wastewater solids will be stabilized during the MBR process with an average retention time of over 60 days. The wastewater solids from the MBR process will be wasted to the primary cell of the lagoon system where the bio-solids will be naturally attenuated. This method of treatment was approved by the Division of Water Quality in a letter dated June 29, 2011 (Appendix B). Please refer to that letter for further requirements with regards to treatment of biosolids at the Richmond City Wastewater Treatment facility.

PRETREATMENT REQUIREMENTS

RCTP has not been designated for a pretreatment program development because it does not meet conditions which necessitate a full program. The flow through the plant is less than one (1) MGD, and there are no categorical industries discharging to the plant.

Although the permittee does not have a State-approved pretreatment program, any wastewater discharges to the sanitary sewer by industrial users are subject to Federal, State and local pretreatment regulations. Pursuant to *Section 307 of the Clean Water Act*, the permittee 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*.

An industrial waste survey (IWS) is required of the permittee as stated in Part II of the permit. The IWS is to assess the needs of the permittee regarding pretreatment assistance. The IWS is required to be submitted within sixty (60) days after the issuance of the permit. If an Industrial User begins to discharge or an existing Industrial User changes their discharge the permittee must resubmit an IWS no later than sixty days following the introduction or change as stated in Part II of the permit.

It is recommended that the permittee perform an annual evaluation of the need to revise or develop technically based local limits for pollutants of concern, to implement the general and specific prohibitions *40 CFR, Part 403.5(a)* and *Part 403.5(b)*. This evaluation may indicate that present local limits are sufficiently protective, need to be revised or should be developed. It is required that the permittee submit any local limits that are developed to the Division of Water Quality for review and if needed public notice.

WHOLE EFFLUENT TOXICITY TESTING:

The need for WET testing at the facility was examined and it was determined that no WET testing is needed at this time. As stated above, the facility has no pretreatment program and there are no categorical industries that discharge to the system. Additionally, the facility has historically only intermittently discharged and the facility's discharge only makes up a small portion of the receiving water. If it is determined that WET testing is needed in the future, Section *V.Q* of the permit allows the permit to be reopened.

PUBLIC NOTICE:

This Permit was public noticed in The Herald Journal and on the Utah Division of Water Quality's website from March 14, 2014 through April 14, 2014. During that time comments were received from Richmond City. Most of those comments were in regards to the Cub River TMDL which is the controlling document for the Phosphorus limit at the Richmond City WWTP. Those comments, while valid, were beyond the scope of what was being public noticed with this permit renewal.

In addition to the comments regarding the phosphorus limits at the facility the City also made comments regarding the total residual chlorine limits from Outfall 001. After careful consideration of those comments, the Division of Water Quality agreed that the decay of chlorine that occurs in the unnamed irrigation ditch where Outfall 001 discharges and the final discharge point at the Cub River was not taken into consideration. We modeled this decay rate and a new TRC limit for Outfall 001 was determined to be 0.875 mg/L. As a result of this change in permit limits, the permit is being re-public noticed.

PERMIT DURATION:

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

Drafted by Lonnie Shull
Environmental Scientist
Utah Division of Water Quality
Drafted February 11, 2014
Updated August 12, 2014

DRAFT

Appendix A

Wasteload Analysis

Appendix B
Biosolids Letter June 29, 2011