MONTANA DEPARTMENT OF ENVIRONMENTAL QUALITY

Water Quality Division
Water Protection Bureau
P.O. Box 200901, Helena, MT 59620-0901

Fact Sheet
Montana Pollutant Discharge Elimination System (MPDES)

Permittee:	City of Whitefish
Permit No.:	MT0030414
Receiving Water:	1907-built reservoir on an unnamed tributary to Whitefish Lake
Facility Name:	Whitefish Water Treatment Plant (WTP)
Facility Location:	Section 19, Township 31 North, Range 21 West, Flathead County
Facility Address:	350 Reservoir Road Whitefish, MT 59937
Facility Type:	Publicly-Owned Treatment Works, Minor
Facility Contact:	Neil DeZort, Utility Operation Supervisor P.O. Box 158 Whitefish, MT 59937-0158
Number of Outfalls:	1 (for fee determination only)
Outfall – Type:	001 – Filter Backwash

Summary of changes from the 2014 permit proposed in this Fact Sheet:

- Total residual chlorine limits are adjusted to the water quality standard
- The requirement to monitor dissolved aluminum in the receiving water is removed

I. Permit Status

The current MPDES permit (2014 permit) for the Whitefish Water Treatment Plant (facility) became effective on February 1, 2014 and expires on January 31, 2019. The Montana Department of Environmental Quality (DEQ) received a permit renewal application on August 2, 2018. DEQ sent a notice of deficiency to the City of Whitefish on August 23, 2018. The City responded on September 11, 2018, and DEQ determined the application was complete on September 25, 2018. As required by the Administrative Rules of Montana, the 2014 permit remains in effect until DEQ issues a renewed permit.

II. Facility Information

A. Facility Description

The Whitefish Water Treatment Plant is a publicly-owned treatment works that falls under the Standard Industrial Classification Code 4941 for a water supply system. The facility was built in its current configuration in 1999. The facility did not have a permitted discharge prior to 1999. The production of potable water utilizes raw water screening, primary coagulation after polymer addition, contact adsorption clarification (CAC), filtration, chlorination, and sulfur dioxide dichlorination. The facility uses source water from either the Haskill Creek Reservoir or from Whitefish Lake. The facility is designed to produce six million gallons per day (mgd) of treated potable water at full capacity.

The permit application did not include an updated flow diagram or water balance. The following description of the treatment and discharge process is taken from the statement of basis for the 2014 permit and is assumed representative of current operations.

During operation CAC filters are backwashed. The backwash water is treated and discharged to the 1907-built municipal reservoir. The backwash water treatment system consists of a 9-foot by 20-foot by 100-foot concrete settling basin that receives the filter backwash. Settling time is typically 48 hours. Aluminum sulfate is added to the backwash during the summer when discharge frequency is increased; the settling time during the summer is reduced to 24 hours. Discharge rates are obtained by using a staff gauge to determine the volumetric difference measurements of the basin averaged over the discharge duration.

Batch discharges from the facility occur 140 to 150 days per year, 9 to 16 discharges per monthly monitoring period, with an average discharge flow rate of 0.03 mgd.

The facility's current system summary, based on the 2014 permit statement of basis, is presented in Table 1.

Table 1: Current System Summary	
Facility Description: Publicly-owned water treatment works	
SIC Code(s): 4941	
Construction Date: 1999	
Location of Outfall: Outfall 001 located at 48º 26' 10" North Latitude and -114º 19' 48" West Longitude	
Type of Discharge (Continuous or Intermittent): Intermittent	
Discharge Method: Batch	
Discharges per year: 140 -150	Duration of Each Discharge: ~ 4 hours
Average Flow per Discharge (mgd): 0.03	Facility Design Flow Rate (mgd): 0.075
Facility Annual Average Daily Flow Rate (mgd): 0.012	Facility Maximum Daily Flow Rate (mgd): 0.055
Flow Monitoring Equipment: Volumetric measurements based on staff gauge readings	
Flow Monitoring Location: Settling basin	
Effluent Monitoring Location: End of effluent pipe at discharge point	
Level of Treatment: Primary (settling)	
Disinfection Method: Chlorination followed by sulfur dioxide dechlorination	
Discharge Structure: Effluent pipe discharging into 1907-built municipal reservoir	

B. Effluent Characteristics

Table 2 below summarizes the monthly self-monitoring effluent data that was reported by the permittee from February 1, 2014, through August 31, 2018. These effluent characteristics are used to assess the need for changes to the current permit requirements.

C. Compliance History

During the 2014 permit term, DEQ performed one compliance evaluation inspection on January 11, 2018. DEQ issued a violation letter to the City for failure to maintain proper records and failure to submit annual reports. The City corrected the violations and returned to compliance.

During the 2014 permit term, the City received two violation letters, dated January16, 2015, and March 20, 2015, for failing to submit discharge monitoring report (DMR) forms. The forms were submitted, and the City returned to compliance.

Table 2: Effluent Characteristics – Outfall 001

Parameter	Sampling Location	Units	Current Permit Limit	Maximum Monthly Average	Maximum Daily	Number of Samples [1]	Source of Data
Aluminum, Dissolved	Effluent	mg/L	0.750[2]	0.05	0.05	48	(3)
		lbs/day	0.4[4]	0.01	0.01	48	(3)
Chlorine, Total Residual	Effluent	mg/L	0.010/0.014[5]	NA	<0.005	55	(3)
Duration of Discharge	Effluent	days	None	21	NA	55	(3)
Flow Rate, Daily Maximum	Effluent	mgd	None	0.27	0.5	55	(3)
pH	Effluent	s.u.	6.0-9.0	NA	6.8 / 8.3[6]	55	(3)
Turbidity	Upstream	NTU	None	1.0	5.2	53	(3)
	Effluent	NTU	None	0.9	1.00	55	(3)
	Net Change[7]	NTU	≤ 0[8]	--	≤ 0	55	(3)

Footnotes:
Period of Record: February 2014 through August 2018.
NA = Not Applicable.
(1) Corresponds to daily maximum sampling.
(2) Maximum Daily Limit.
(3) Self-reported Discharge Monitoring Reports.
(4) Average Monthly Limit.
(5) Average Monthly Limit/Maximum Daily Limit; values reported equal to or less than DEQ's Required Reporting Value (RRV) of 0.1 mg/L were considered to be in compliance with this limit.
(6) Minimum Daily Value/Maximum Daily Value.
(7) Net Change, as measured in NTUs, is equal to the effluent turbidity minus the upstream turbidity.
(8) Any discharge sample resul of less than 1 NTU was considered to be in compliance with the limit.

III. Technology-Based Effluent Limits

A. Scope and Authority

The Clean Water Act (CWA) and the federal regulations require that permits, including those issued by state programs, contain technology-based effluent limits (TBELs) that implement the technology-based treatment requirements specified in the CWA. These technology-based requirements may be national technology standards for existing sources or new sources established by the United States Environmental Protection Agency (EPA) or, in some cases, standards established by the permit writer on a case-by-case basis.

B. Applicable Technology Standards

EPA has not promulgated effluent guidelines for filter backwash facilities. Where EPA has not established effluent guidelines that are applicable to a particular class or category of industrial discharger or to a specific discharge, the permit writer establishes applicable technology-based treatment requirements on a case-by-case basis using best professional judgment (BPJ). The applicable BPJ TBELs for this permittee were established in the original 1999 permit and carried forward in the 2014, as follows.

pH – The TBEL for pH (within the range of 6.0-9.0 standard units) will continue in this renewed permit.

No additional TBELs for any other parameters are required since the water quality-based effluent limits developed in this fact sheet are more stringent than any TBELs developed using BPJ.

IV. Water Quality-Based Effluent Limits

A. Scope and Authority

Permits are required to include water quality-based effluent limits (WQBELs) when technology-based effluent limits are not adequate to protect state water quality standards. No wastes may be discharged, and no activities conducted such that the wastes or activities, either alone or in combination with other wastes or activities, will violate, or can reasonably be expected to violate, any of the standards. The Montana water quality standards define the water use classifications for all state waters and the numeric and narrative standards that protect those designated uses.

B. Receiving Water

The source water for the facility is either the Haskell Creek Reservoir or Whitefish Lake. Typical operations use only the Haskill Creek Reservoir as the primary raw water source. Under periods of excess demand or when the primary source has low water availability, the facility uses Whitefish Lake as an additional source of raw water. The facility discharges into the 1907-built municipal water reservoir located in the drainage below the facility (see Appendix 1). This reservoir flows into Whitefish Lake via an unnamed tributary.

The unnamed tributary of Whitefish Lake flows for approximately 300 feet after leaving the 1907-built reservoir before it becomes subsurface. The unnamed tributary then daylights again after about 100 feet, flows for about 0.75 miles through the Whitefish Spruce Swamp, and eventually discharges into Monks Bay of Whitefish Lake (Carver Engineering, 1998). According to the permittee, the 1907-built reservoir appears to be recharged by ground water. The stream above the 1907-built reservoir may be dry for periods of time and may flow in response to runoff and precipitation events and/or the wasting of raw water from the Haskill Creek Reservoir (Carver Engineering, 1998).

The 1907-built municipal reservoir, the unnamed tributary, and Whitefish Lake are located within the Flathead watershed. Whitefish Lake is identified as United States Geological Survey (USGS) Hydrological Unit Code (HUC) 17010210 and as Montana stream segment MT76P004_010. The 1907-built municipal reservoir and the unnamed tributary to Whitefish Lake are not listed in the 2016 CWA 303(d) List. However, Whitefish Lake is listed in the 2016 CWA 303(d) List. A total maximum daily load (TMDL) for this water body is required but has not been completed. The probable causes of impairment are identified as mercury and polychlorinated biphenyls (PCBs). The beneficial use impacted is identified as aquatic life. The probable source(s) for mercury and PCBs are unknown. Mercury and PCBs are not expected to be present in the discharge from the facility and are not parameters of concern.

C. Applicable Water Quality Standards

Whitefish Lake and its tributaries are classified as A-1. A-1 waters are to be maintained suitable for drinking, culinary, and food processing purposes after conventional treatment for removal of naturally present impurities. Water quality must be maintained suitable for bathing, swimming, and recreation; growth and propagation of salmonid fishes and associated aquatic life, waterfowl, and furbearers; and agricultural and industrial water supply. Discharges to surface waters classified as A-1 are subject to the specific water quality standards of ARM 17.30.622, numeric standards in Circular DEQ-7, and the general provisions of ARM 17.30.635 through 637. In addition to these standards, dischargers are also subject to the mixing zone rules and Montana's no degradation policy.

D. Mixing Zone

Previous permits for this facility granted the permittee a source specific mixing zone within the 1907-built municipal reservoir at five percent of the lake surface area, as specified in the mixing zone rules. The mixing zone area is defined as a semicircle extending 23 feet in radius from the point of discharge (see Appendix 1).

The permittee has requested a mixing zone in this permit renewal. The previously granted source specific mixing zone for the facility will continue under the issuance of this permit renewal. This mixing zone is for chronic parameters only; a mixing zone in a lake for any acute parameters is not authorized.

E. Reasonable Potential Analysis and Design Conditions

The Montana water quality standards state that no wastes may be discharged, and no activities conducted such that the wastes or activities, either alone or in combination with other wastes or activities, will violate, or can reasonably be expected to violate, any of the standards. DEQ performs a reasonable potential analysis (RPA) in order to determine whether a discharge, either alone or in combination with other sources of pollutants to a water body, may lead to an excursion above an applicable water quality standard.

DEQ uses a simple, steady-state model based on the mass-balance equation in the RPA and in the development of WQBELs. The mass-balance equation is used to determine the concentration of a pollutant of concern after accounting for other sources of pollution in the receiving water and for any dilution provided by a mixing zone. The mass-balance equation used is as follows:

$$A_r c = Q_s C_s + Q_d C_d \quad (\textit{Equation 1})$$

Where:

Q_s	=	receiving water flow rate above point of discharge (mgd)
C_s	=	upstream receiving water pollutant concentration (mg/L)
Q_d	=	effluent flow rate (facility design flow rate; mgd)
C_d	=	effluent pollutant concentration (mg/L)
Q_r	=	receiving water flow rate after discharge ($Q_r = Q_s + Q_d$; mgd)

C_r = receiving water pollutant concentration (after available dilution; mg/L)

Equation 1 may be expressed in terms of the dilution ratio at the edge of the approved mixing zone. The dilution ratio is the volume of receiving water at the edge of the mixing zone to the volume of effluent at the edge of the mixing zone. Equation 1 is re-arranged to solve for the receiving water concentration of a pollutant of concern as follows:

$$C_r = (C_d + C_sD) / (1 + D) \text{ (}\textit{Equation 2}\text{)}$$

Where:

C_r = receiving water pollutant concentration (after available dilution; mg/L)
C_d = effluent pollutant concentration (mg/L)
C_s = upstream receiving water pollutant concentration (mg/L)
D = dilution ratio (Q_s / Q_d; dimensionless)

The values used to establish the maximum allowable changes in surface water quality are based on the design conditions specified in the water quality standards specific to the use classification; these are referred to as critical conditions. The critical conditions that determine the values for the variables used in Equations 1 and 2 are further discussed below. These critical conditions are incorporated into the mixing zone regulations and nondegradation regulations by reference.

1. Critical Stream Flow (Q_s)

Critical stream flow is based on the provisions of the water quality standards, which require that discharge permits must not cause the receiving water concentrations to exceed applicable standards. When there is insufficient data to establish critical stream flow DEQ must establish an acceptable stream flow. The critical stream flow for a discharge to a lake is zero unless a dilution ratio has been specified in the mixing zone analysis.

For this facility, the Q_s value is equal to zero for acute parameters. For chronic parameters, the value for Q_s is based on the physical characteristics of the previously granted source specific mixing zone of five percent of the lake area. DEQ assumes that the average depth of the mixing zone is equal to the average depth of the 1907-built reservoir. The value for Q_s is equal to the surface area of the semicircle shaped mixing zone (831 ft^2) multiplied by the average depth of the mixing zone (6 feet) multiplied by a conversion factor that converts cubic feet into gallons (7.48 gallons per cubic foot). DEQ also assumes a constant volume over time in days in the mixing zone. Using these values and assumptions, the value determined for Q_s with respect to the chronic dilution ratio is 0.037 mgd.

2. Critical Background Receiving Water Pollutant Concentration (C_s)

The critical pollutant concentration is the 75th percentile concentration in the receiving water during the critical stream flow. A minimum of 10 samples must be collected over a range of hydrological conditions within the previous 3-5 years. If there are less than 10 data points available, then C_s is undetermined and additional monitoring is required. The RPA and the determination of WQBELs may then be based on meeting the applicable water quality standard

end-of-pipe (no receiving water dilution). Where dechlorination is used, as is the case at this facility, DEQ requires dischargers to achieve the water quality standards at the point of discharge. A discharge is considered in compliance with the TRC standards as long as analytical results are less than the 0.1 mg/L RRV.

The critical background concentrations and water quality standards for the parameters of concern are reported in Table 3.

Table 3: Critical Background Receiving Water Pollutant Concentrations – Outfall 001

Parameter	Units	75th Percentile of Ambient Concentration	Acute Aquatic Life Standard(1)	Chronic Aquatic Life Standard(1)
Chlorine, Total Residual	mg/L	--	0.019	0.011
Aluminum, Dissolved	mg/L	0.009	0.750	0.087

(1) As listed in Circular DEQ-7 (2012d).

3. Critical Effluent Flow (Q_d)

Effluent flow is a measure of the average daily flow expected to occur over the next 5-year permit cycle or the effective life of the regulated facility or activity. The critical flow is based on the maximum 30-day (monthly) average over the previous permit cycle for existing facilities. For this facility, Q_d value is 0.27 mgd, as reported by the permittee on DMRs. This value is also used in determining a dilution ratio (Q_s / Q_d) for the facility.

4. Critical Effluent Pollutant Concentrations (C_d)

The critical effluent concentration is based on the 95th percentile of the expected effluent concentration observed or predicted in the discharge. Due to the low frequency (percentage) of samples and the non-normal distribution of most effluents, DEQ follows the estimation procedures described in EPA's *Technical Support Document for Water Quality Based Toxic Control* (EPA, 1991) to estimate the 95th percentile of the daily values. The values for C_d are summarized in Table 4.

Table 4: Critical Effluent Pollutant Concentrations – Outfall 001

Parameter	Units	Instantaneous Daily Maximum	Number of Samples (n)	Coefficient of Variation (CV)	Multiplying Factor 95% Confidence Level	Critical Effluent Concentration (C_d)
Chlorine, Total Residual	mg/L	0.01	55	0	1	0.01
Aluminum, Dissolved	mg/L	0.05	48	0	1	0.05

5. Reasonable Potential Analysis

DEQ determines the receiving water pollutant concentration (C_r) using Equation 2:

$$C_r = (C_d + C_s D) / (1 + D) \quad (\textit{Equation 2})$$

The following values were used in the RPA:

C_s	=	the background receiving water pollutant concentration for each parameter
Q_s	=	zero for acute parameters; 0.037 mgd for chronic parameters
C_d	=	the critical effluent pollutant concentration from Table 4 for each parameter
Q_d	=	0.27 mgd
D	=	dilution ratio based on the applicable Q_s and Q_d values for each parameter

The dilution ratio (D_a) for acute parameters is zero since DEQ does not allow for an acute mixing zone for discharges into a lake. For chronic parameters, the dilution ratio (D_c) is equal to 0.14.

Where the projected receiving water pollutant concentration (C_r) equals or exceeds any applicable water quality standard (S) for a parameter of concern, there is a finding of reasonable potential and a WQBEL must be calculated for that parameter. The RPA is repeated for each applicable parameter. A summary of the RPA for the discharge from the facility is presented below in Table 5.

Table 5: Reasonable Potential Analysis Summary – Outfall 001

Parameter	RPA Determination (Yes/No/Undetermined)	Rationale and/or Comments
Dissolved Aluminum, Acute	No	No background data for C_s; $D_a = 0$
Dissolved Aluminum, Chronic	No	No background data for C_s; $D_c = 1.76$
TRC, Acute	Yes	$C_r \geq S$; $D_a = 0$
TRC, Chronic	Yes	$C_r \geq S$; $D_c = 1.76$

Even though the Facility does not exhibit RP for dissolved aluminum using the mass balance equation, DEQ finds the use of aluminum sulfate in the treatment process, its potential overuse absent an effluent limitation and the potential for spills or spikes in its concentration, leads to RP for dissolved aluminum and WQBELs are necessary.

F. Proposed WQBELs

Pollutants typically present at potable water treatment plants that may cause or contribute to a violation of water quality standards include: conventional pollutants such as TSS and pH; non-conventional pollutants such as turbidity; and toxic pollutants such as total residual chlorine and dissolved aluminum**.**

1. Conventional Pollutants

Total Suspended Solids (TSS) – There is to be no increase above naturally occurring suspended sediment in class A-1 waters. The permit limit on turbidity discussed below in Section IV.G.2. is sufficient to assure the suspended solids do not exceed background concentrations; a WQBEL for TSS is not required.

pH – This permit renewal continues the BPJ-based TBEL for pH that was granted in the previous issuances of this permit. The TBEL discussed in Section III above is sufficient to protect the quality of the receiving water; a WQBEL for pH is not required.

2. Non-Conventional Pollutants

Turbidity – There is to be no increase above naturally occurring turbidity in class A-1 waters. The net turbidity change calculated by subtracting the upstream turbidity, from the effluent turbidity, as measured in nephelometric turbidity units (NTU), must be less than or equal to zero in order to comply with the terms of the permit; i.e. the effluent turbidity must be less than or equal to the upstream turbidity.

When reporting turbidity values in the 0 to 1.0 NTU range, Method 2130 B (40 CF part 136 Table 1B), requires that the instrument is sensitive enough to detect a turbidity difference of 0.02 NTU or less and that the reporting of turbidity readings must be to the nearest 0.05 NTU. For the purposes of determining the net turbidity change, if the upstream turbidity reading is less than 1 NTU then a corresponding effluent sample less than 1 NTU is considered to be in compliance with the limit.

3. Toxic Pollutants

Total Residual Chlorine (TRC) –The permit limits for TRC in the 2014 permit were developed based on EPA TSD methods (EPA, 1991) and accounted for effluent variability. Compliance with the effluent limits is determined by daily monitoring for TRC. Samples below the RRV of 0.1 mg/L are considered in compliance with the limits. All samples reported on facility DMRs were below the RRV for the 2014 permit term, thus there is no variability in the reported TRC concentrations (CV = 0). Where effluent variability is zero and monitoring is required daily, the acute and chronic water quality standards may safely be applied directly as effluent limitations. In this permit renewal, WQBELs for TRC are adjusted to the water quality standards; 0.011 mg/L monthly average and 0.019 mg/L daily maximum.

TRC analyses must use an approved method pursuant to 40 CFR Part 136.

Dissolved Aluminum – The 2014 permit limit for dissolved aluminum is 0.750 mg/L as a daily maximum. There is not a monthly average permit limit for dissolved aluminum. This limit is continued in this renewal based on DEQ's determination that the use of aluminum sulfate in the treatment process results in RP for this parameter. The facility easily complies with this permit limit and maintaining it prevents any potential increase in aluminum loading in the receiving water. Instream monitoring for dissolved aluminum is discontinued.

H. Nondegradation

The facility was constructed after April 29, 1993 and is subject to the Montana nondegradation policy. Sources from which discharges to state waters have commenced or increased on or after April 29, 1993, provided the discharge is in compliance with the conditions of, and does not exceed the limits established under or determined from, a permit or approval issued by DEQ prior to April 29, 1993, are not considered new or increased sources. The facility did not exceed

any effluent limits during the term of the current permit. Therefore, for the purposes of this permit renewal, the facility is not a new or increased source.

The dissolved aluminum nondegradation load allocation for the facility was calculated as part of the original permitting action in 1999. This load was based on the facility design flow of 0.070 mgd and the proposed numeric effluent limit for dissolved aluminum of 0.750 mg/L. The nondegradation load allocation and the monthly average load discharged from the facility are presented below in Table 6. The data from DMRs indicates that the facility did not exceed the nondegradation load value during the POR. The nondegradation load limit for dissolved aluminum of 0.4 lbs/day, based on the monthly averages for both effluent flow rate and dissolved aluminum concentration, will continue in this permit renewal.

Table 6: Nondegradation Load and Actual Loads for the Whitefish Water Treatment Plant

Nondegradation Allocated Load Limits			**Average Annual Instantaneous Maximum Load**				
Parameter	Units	Annual Average Load	2014	2015	2016	2017	2018
Dissolved Aluminum	lbs/day	0.4	0.008	0.007	0.004	0.006	0.007

V. Effluent Limits

A. Final Effluent Limits

Beginning on the effective date of the permit and lasting through the term of the permit, the quality of the effluent discharged by the facility at Outfall 001 must, as a minimum, meet the limits set forth below in Table 7.

Table 7: Final Effluent Limits – Outfall 001

Parameter Name	**Units**	**Maximum Daily Limit(1)(2)**	**Average Monthly Limit(1)**
Aluminum, Dissolved	mg/L	0.750	NA
	lbs/day	NA	0.4(3)(4)
Chlorine, Total Residual	mg/L	0.019(5)	0.011(5)
Turbidity, Net Change	NTU	$\leq$ 0(6)	NA
pH	s.u.	Within the Range of 6.0 - 9.0	NA

Footnotes:
NA = Not Applicable
(1) See definitions in Part V of the permit.
(2) Report the highest measured daily value for the reporting period on the DMR forms.
(3) Value reported on DMR form is calculated based on the monthly average values for flow and concentration.
(4) Report the average of the individual daily loads for the reporting period on the DMR forms.
(5) Values reported that are equal to or less than DEQ's RRV of 0.1 mg/L are considered to be in compliance with this limit.
(6) As measured by the effluent turbidity (NTU) minus the corresponding upstream turbidity (NTU). When reporting turbidity readings less than 1 NTU for upstream and effluent samples, report in increments of 0.05 NTU. For the purposes of net turbidity change, when upstream turbidity readings are less than 1 NTU, effluent sample results less than 1 NTU are considered to be in compliance with the limit.

VI. Monitoring and Reporting Requirements

A. Background Monitoring and Reporting Requirements

The permittee is required to monitor upstream turbidity as summarized in Table 8.

Table 8: Background Monitoring and Reporting Requirements

Parameter	Monitoring Location	Units	Sample Type[1][2]	Minimum Sampling Frequency	Reporting Requirements[1][3]	Reporting Frequency	RRV[4]
Turbidity	Upstream of Discharge	NTU	Grab	1/Day	Daily Maximum and Monthly Average	Monthly	1

Footnotes:
(1) See definitions in Part V of the permit.
(2) Grab sample will represent concentration for a 24-hour period.
(3) Daily Maximum: report the highest measured daily value for the reporting period on DMR forms.
(4) When listed, the RRV is the detection level that must be achieved in reporting effluent monitoring or compliance data to DEQ. The RRV is DEQ's best determination of a level of analysis that is achievable by the majority of the commercial, university, or governmental laboratories using EPA approved methods or methods approved by DEQ. PQL (Practical Quantification Limits) are not acceptable substitutions for RRV.

B. Effluent Monitoring and Reporting Requirements

Self-monitoring and reporting of the effluent quality is required. The samples collected and analyzed must be representative of the volume and the nature of the effluent discharged from the facility. The monitored parameters, their respective monitoring locations, and the reporting requirements are presented below in Table 9.

Table 9: Effluent Monitoring and Reporting Requirements – Outfall 001

Parameter	Monitoring Location	Units	Sample Type[1][2]	Minimum Sampling Frequency	Reporting Requirements[1][3]	Reporting Frequency	RRV[4]
Effluent Flow Rate	Settling Basin Discharge	mgd	Calculated[5]	1/Day	Daily Maximum and Monthly Average	Monthly	-
Duration of Discharge	Effluent	days	Reported	NA	Number of Days the Discharge Occurs	Monthly	-
Aluminum, Dissolved	Effluent	mg/L	Grab	1/Month	Daily Maximum and Monthly Average	Monthly	0.03[6]
		lbs/day	Calculated[7]	1/Month	Monthly Average	Monthly	-
Chlorine, Total Residual	Effluent	mg/L	Grab	1/Day	Daily Maximum and Monthly Average	Monthly	0.1
Turbidity	Effluent	NTU	Grab	1/Day	Daily Maximum and Monthly Average	Monthly	1
pH	Effluent	s.u.	Instantaneous	1/Day	Daily Minimum and Daily Maximum	Monthly	-

Footnotes:
NA = Not Applicable
(1) See definitions in Part V of the permit.
(2) Grab sample will represent concentration for a 24-hour period.

Table 9: Effluent Monitoring and Reporting Requirements – Outfall 001

(3) Daily Maximum: report the highest measured daily value for the reporting period on the DMR forms.
(4) When listed, the RRV is the detection level that must be achieved in reporting effluent monitoring or compliance data to DEQ. The RRV is DEQ's best determination of a level of analysis that is achievable by the majority of the commercial, university, or governmental laboratories using EPA approved methods or methods approved by DEQ. PQL (Practical Quantification Limits) are not acceptable substitutions for RRV.
(5) Measured using staff gauge to determine volumetric differences and averaged over the duration of discharge.
(6) DEQ is specifying a RRV of 0.03 mg/L for this parameter based on Footnote 19 in DEQ-7.
(7) Report the average of the individual daily loads for the reporting period on the DMR forms.

VII. Nonsignificance Determination

The discharge from the facility does not constitute a new or increased source of pollutants.

VIII. Special Conditions

Not applicable.

IX. Compliance Schedule

Not applicable.

X. References

33 U.S.C. § 1251 *et seq*. – *Federal Water Pollution Control Act (Clean Water Act)*. 1948. Major Amendments in 1961, 1966, 1970, 1972, 1977, and 1987.

33 U.S.C. § 1311, Clean Water Act § 303(d) – *Montana List of Waterbodies in Need of Total Maximum Daily Load Development*. 2012.

40 CFR § 122 – *EPA Administered Permit Programs: The National Pollutant Discharge Elimination System*. 2012.

40 CFR § 133 – *Secondary Treatment Regulation*. 2012.

40 CFR § 136 – *Guidelines Establishing Test Procedures for the Analysis of Pollutants*. 2012.

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XI. Appendices

Appendix 1 – Flow Diagram for the City of Whitefish Water Treatment Plant