

NPDES PERMIT NO. NM0027987

FACT SHEET

FOR THE DRAFT NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
PERMIT TO DISCHARGE TO WATERS OF THE UNITED STATES

APPLICANT

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ISSUING OFFICE

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DATE PREPARED

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PERMIT ACTION

Renewal of a permit previously issued on September 24, 2010, with an effective date of November 1, 2010, and an expiration date of October 31, 2015.

RECEIVING WATER – BASIN

Rio Grande River – Middle Rio Grande Basin (Segment 20.6.4.106)

DOCUMENT ABBREVIATIONS

In the document that follows, various abbreviations are used. They are as follows:

4Q3	Lowest four-day average flow rate expected to occur once every three-years
BAT	Best available technology economically achievable
BCT	Best conventional pollutant control technology
BPT	Best practicable control technology currently available
BMP	Best management plan
BOD	Biochemical oxygen demand (five-day unless noted otherwise)
BPJ	Best professional judgment
CBOD	Carbonaceous biochemical oxygen demand (five-day unless noted otherwise)
CD	Critical dilution
CFR	Code of Federal Regulations
cfs	Cubic feet per second
COD	Chemical oxygen demand
COE	United States Corp of Engineers
CWA	Clean Water Act
DMR	Discharge monitoring report
DO	Dissolved oxygen
ELG	Effluent limitation guidelines
EPA	United States Environmental Protection Agency
ESA	Endangered Species Act
FWS	United States Fish and Wildlife Service
mg/l	Milligrams per liter
ug/l	Micrograms per liter
lbs	Pounds
MG	Million gallons
MGD	Million gallons per day
NMAC	New Mexico Administrative Code
NMED	New Mexico Environment Department
NMIP	New Mexico NPDES Permit Implementation Procedures
NMWQS	New Mexico State Standards for Interstate and Intrastate Surface Waters
NPDES	National Pollutant Discharge Elimination System
ML	Minimum quantification level
O&G	Oil and grease
POTW	Publically owned treatment works
RP	Reasonable potential
SS	Settleable solids
SIC	Standard industrial classification
s.u.	Standard units (for parameter pH)
SWQB	Surface Water Quality Bureau
TDS	Total dissolved solids
TMDL	Total maximum daily load
TRC	Total residual chlorine
TSS	Total suspended solids
UAA	Use attainability analysis
USGS	United States Geological Service
WLA	Waste Load allocation
WET	Whole effluent toxicity
WQCC	New Mexico Water Quality Control Commission
WQMP	Water Quality Management Plan
WWTP	Wastewater treatment plant

I. CHANGES FROM THE PREVIOUS PERMIT

Changes from the permit previously issued on September 24, 2010, with an effective date of November 1, 2010, and an expiration date of October 31, 2015, are as follow:

- Removal percentage for BOD₅ and TSS has been established.
- Mass loading for BOD₅ and TSS have been increased.
- WWTP #6 has been added with newly-established limits.
- Limits for total arsenic and ammonia (as N) have been removed.
- WET testing has been changed from chronic to acute with a different species.
- Monitoring frequency and sample type have been changed to reflect the IP and compliance history
- Limits for TP, TDS and O&G have been established with compliance schedule.
- Monitoring of hexachlorobenzene has been established.

II. APPLICANT LOCATION and ACTIVITY

As described in the application, the facility (Outfall: Latitude 35° 15' 23" North and Longitude 106° 35' 32" West) is located at 100 Industrial Park Loop, Rio Rancho, Sandoval County, New Mexico. The facility is located on State land; the discharge from Outfall 001 enters the Rio Grande from the west to New Mexico surface waters. The Pueblo of Sandia controls the water rights of the east half of the Rio Grande, with the west half Rio Grande controlled by New Mexico.

Under the SIC code 4952, the applicant operates City of Rio Rancho WWTP #2, which has a total design flow of 8.2 MGD along with Rio Rancho WWTP #3 providing sanitary services for approximately 91,956-population in total. Discharges via Outfall 001 to the Rio Grande River consists of effluents from the WWTP #2 (5.5 MGD), WWTP #1 (up to 1.5 MGD) and WWTP #6 (1.2 MGD). Previously the permittee was authorized to discharge effluent from WWTPs #2 and #1, which is discharged seasonally. WWTP #6 added into the permit draft is currently discharged to an infiltration gallery under a ground water permit. The treatment systems includes UV disinfection units. WWTP #6 effluent is directly discharged to Outfall 001; this effluent is possibly diverted to the UV channel from WWTP #2 for re-disinfection (see attached block flow diagram). Sample point for WWTP #2 is located at the UV channel. Part of the total effluent is reused for irrigation at a golf course and Vista Verde Memorial. Sewage sludge is processed and disposed at Rio Rancho Landfill. A map of the facility is attached.

III. EFFLUENT CHARACTERISTICS

Data submitted in Form 2A for WWTP #2 is as follows:

Parameter	Max	Avg
	(mg/l unless noted)	
pH, minimum, standard units (su)	6.87	NA
pH, maximum, standard units (su)	8.12	NA
Flow (MGD)	5.2	3.83
Temperature (C), winter	17.5	17.5
Temperature (C), summer	26.9	26.1
Biochemical Oxygen Demand, 5-day (BOD ₅)	7.0	4.4
E. coli (cfu/100 ml)	N/A	N/A

Total Suspended Solids (TSS)	15	7.8
Ammonia (as N)	0.7	0.5
TRC	N/A	N/A
DO	6.1	6.0
Total Kjeldahl Nitrogen (TKN)	2.8	2.1
Nitrate + Nitrite Nitrogen	16	11.7
Oil & Grease	19	17
Phosphorus (Total)	3.74	3.38
TDS	894.3	736.3
Arsenic, ug/L	8.4	7.6

Since the previous permit effective date, there have been exceedances according to the DMRs as follows:

Date	Parameters	30-day average, mg/L	7-day average, mg/L	Daily maximum, mg/L
3/31/12	Ammonia, total	4.07		8.7
2/28/13	Ammonia, total			4.8
10/31/13	Ammonia, total			7.71
9/30/11	E. coli			210
11/30/11	E. coli			125
2/29/12	E. coli			120
6/30/12	E. coli			3500
7/31/12	E. coli			240
12/31/12	E. coli			152
4/30/12	TSS			46
11/30/14	TSS			61

IV. REGULATORY AUTHORITY/PERMIT ACTION

In November 1972, Congress passed the Federal Water Pollution Control Act establishing the NPDES permit program to control water pollution. These amendments established technology-based or end-of-pipe control mechanisms and an interim goal to achieve “water quality which provides for the protection and propagation of fish, shellfish, and wildlife and provides for recreation in and on the water”; more commonly known as the “swimmable, fishable” goal. Further amendments in 1977 of the CWA gave EPA the authority to implement pollution control programs such as setting wastewater standards for industry and established the basic structure for regulating pollutants discharges into the waters of the United States. In addition, it made it unlawful for any person to discharge any pollutant from a point source into navigable waters, unless a permit was obtained under its provisions. Regulations governing the EPA administered the NPDES permit program are generally found at 40 CFR §122 (program requirements & permit conditions), §124 (procedures for decision making), §125 (technology-based standards) and §136 (analytical procedures). Other parts of 40 CFR provide guidance for specific activities and may be used in this document as required.

The application was dated March 5, 2015. It is proposed that the permit be reissued for a 5-year term following regulations promulgated at 40 CFR §122.46(a).

V. DRAFT PERMIT RATIONALE AND PROPOSED PERMIT CONDITIONS

A. OVERVIEW of TECHNOLOGY-BASED VERSUS WATER QUALITY STANDARDS-BASED EFFLUENT LIMITATIONS AND CONDITIONS

Regulations contained in 40 CFR §122.44 NPDES permit limits are developed that meet the more stringent of either technology-based effluent limitation guidelines, numerical and/or narrative water quality standard-based effluent limits, or the previous permit.

Technology-based effluent limitations are established in the proposed draft permit for TSS and BOD, and percent removal for each. Water quality-based effluent limitations are established in the proposed draft permit for *E. coli* bacteria, pH, TRC, O&G and TDS.

B. TECHNOLOGY-BASED EFFLUENT LIMITATIONS/CONDITIONS

1. General Comments

Regulations promulgated at 40 CFR §122.44 (a) require technology-based effluent limitations to be placed in NPDES permits based on ELGs where applicable, on BPJ in the absence of guidelines, or on a combination of the two. In the absence of promulgated guidelines for the discharge, permit conditions may be established using BPJ procedures. EPA establishes limitations based on the following technology-based controls: BPT, BCT, and BAT. These levels of treatment are:

BPT - The first level of technology-based standards generally based on the average of the best existing performance facilities within an industrial category or subcategory.

BCT - Technology-based standard for the discharge from existing industrial point sources of conventional pollutants, including BOD, TSS, *E. coli* bacteria, pH, and O&G.

BAT - The most appropriate means available on a national basis for controlling the direct discharge of toxic and non-conventional pollutants to navigable waters. BAT effluent limits represent the best existing performance of treatment technologies that are economically achievable within an industrial point source category or subcategory.

2. Effluent Limitation Guidelines

The facility is a POTW/POTW-like that has technology-based ELG's established at 40 CFR Part 133, Secondary Treatment Regulation. Pollutants with ELG's established in this Chapter are BOD, TSS and pH. BOD limits of 30 mg/l for the 30-day average and 45 mg/l for the 7-day average and 85% percent (minimum) removal are found at 40 CFR §133.102(a). TSS limits; also 30 mg/l for the 30-day average and 45 mg/l for the 7-day average, average and 85% percent (minimum) removal are found at 40 CFR §133.102(b). However, existing limits for BOD and TSS are more stringent and retained in the permit draft. ELG's for pH are between 6-9 s.u. and are found at 40 CFR §133.102(c). The draft permit establishes new limits for percent removal for both BOD and TSS. Since these are technology-based there is no compliance schedule provided to meet these limits. Compliance is required on the permit effective date.

Regulations at 40 CFR §122.45(f)(1) require all pollutants limited in permits to have limits expressed in terms of mass such as pounds per day. When determining mass limits for POTWs or similar, the plant's

design flow is used to establish the mass load. Mass limits are determined by the following mathematical relationship:

$$\text{Loading in lbs/day} = \text{pollutant concentration in mg/l} * 8.345 \text{ (lbs)(l)/(mg)(MG)} * \text{design flow in MGD}$$

$$30\text{-day average BOD loading} = 10 \text{ mg/l} * 8.345 \text{ (lbs)(l)/(mg)(MG)} * 8.2 \text{ MGD} = 684 \text{ lbs/day}$$

$$7\text{-day average BOD loading} = 15 \text{ mg/l} * 8.345 \text{ (lbs)(l)/(mg)(MG)} * 8.2 \text{ MGD} = 1,026 \text{ lbs/day}$$

$$30\text{-day average TSS loading} = 15 \text{ mg/l} * 8.345 \text{ (lbs)(l)/(mg)(MG)} * 8.2 \text{ MGD} = 1,026 \text{ lbs/day}$$

$$7\text{-day average TSS loading} = 23 \text{ mg/l} * 8.345 \text{ (lbs)(l)/(mg)(MG)} * 8.2 \text{ MGD} = 1,573 \text{ lbs/day}$$

A summary of the technology-based limits for the facility is:

Effluent Characteristic Outfall 001 & 601	Discharge Limitation			
	lbs/day, unless noted		mg/l, unless noted	
Parameter	30-day Avg	7-day Max	30-day Avg	7-day Max
BOD	2052	3079	10	15
BOD, % removal ¹	≥ 85	---	---	---
TSS	2052	3079	15	23
TSS, % removal ¹	≥ 85	---	---	---
pH	N/A	N/A	6.0 to 9.0 s.u.	

¹ % removal is calculated using the following equation: [(average monthly influent concentration – average monthly effluent concentration) ÷ average monthly influent concentration] * 100.

EPA previously established an internal outfall (Outfall 101) at the point of discharge from WWTP #1 to WWTP #2. Internal outfall (Outfall 601) for WWTP #6 is established in this permit draft with the same BOD/TSS requirements as for Outfall 001 because WWTP #6 effluent is directly and normally discharged to Outfall 001 and criterion for DO is 6 mg/L mentioned below. BOD data in Form 2A for WWTP #6 indicates 1 mg/L and up to 0 mg/L for TSS consistently, which is much below the newly established limits. These internal outfalls are established to ensure dilution will not be used as a substitute for treatment pursuant to 40 CFR §122.45(f)(1)(iii). Concentrations will be monitored at each individual plant consistent with the pervious permit; whereas, mass loadings are monitored at Outfall 001.

Technology-based effluent limitations on BOD₅ and TSS for Internal Outfalls 101 are in accordance with "secondary treatment requirements" established at 40 CFR 133.102(a) and 40 CFR 133.102(b). The limitations included in the proposed permit are proposed at the same level as the previous permit and are as follows:

Effluent Characteristic Outfall 101	Discharge Limitation, mg/l (unless noted)	
	30-Day Avg.	7-Day Avg.
Flow	Measure MGD	Measure MGD
BOD ₅	30	45
TSS	30	45
BOD ₅ /TSS, % removal	≥ 85	

3. Pretreatment Regulation

The facility has one non-categorical significant industrial users (SIUs), Insight Lighting, which is subject to the local limits. The permittee is required to develop/revise and implement a full pretreatment program pursuant to 40 CFR 403.8.

C. WATER QUALITY BASED LIMITATIONS

1. General Comments

Water quality based requirements are necessary where effluent limits more stringent than technology-based limits are necessary to maintain or achieve federal or state water quality limits. Under Section 301(b)(1)(C) of the CWA, discharges are subject to effluent limitations based on Federal or State/Tribe WQS. Effluent limitations and/or conditions established in the draft permit are in compliance with applicable State/Tribal WQS and applicable State/Tribe water quality management plans to assure that surface WQS of the receiving waters are protected and maintained or attained.

2. Implementation

The NPDES permits contain technology-based effluent limitations reflecting the best controls available. Where these technology-based permit limits do not protect water quality or the designated uses, additional water quality-based effluent limitations and/or conditions are included in the NPDES permits. State/Tribe narrative and numerical water quality standards are used in conjunction with EPA criterion and other available toxicity information to determine the adequacy of technology-based permit limits and the need for additional water quality-based controls.

3. Sandia Water Quality Standards

The Pueblo of Sandia has been approved to have treatment in the same manner as a state as contained in 40 CFR 131.8. The general and specific stream standards for the Pueblo of Sandia Water Quality Standards (PSWQS) are provided in "Pueblo of Sandia Water Quality Standards", revised January 31, 2008, approved and adopted by Tribal Council Resolution 2009-118 on November 13, 2009, and approved by EPA March 9, 2010. This latest WQS was used in the previous permitting renewal. The designated uses of the Rio Grande, according to PSWQS, Section V.A.1, are warmwater and coolwater aquatic/fishery, primary contact ceremonial, primary and secondary contact recreational, agricultural and industrial water supply, domestic water supply and wildlife habitat.

4. State Water Quality Standards

The general and specific stream standards are provided in NMWQS (20.6.4 NMAC approved on June 5, 2013). The receiving water is Rio Grande River (segment 20.6.4.106 NMAC of the Rio Grande River Basin). The stream designated uses are irrigation, marginal warmwater aquatic life, livestock watering, wildlife habitat and primary contact; and public water supply.

5. Permit Action - Water Quality-Based Limits

Regulations promulgated at 40 CFR §122.44(d) require limits in addition to, or more stringent than effluent limitation guidelines (technology based). Concentration limits are monitored at Outfalls 001 & 601; whereas, mass limits are monitored at Outfall 001. State or Tribal WQS that are more stringent than effluent limitation guidelines and the most stringent limitations are chosen as follows:

a. pH

State Water Designated Use(s)	State WQS	Tribe Water Designated Use(s)	Pueblo of Sandia (PS) WQS	Limitation Established
Warmwater aquatic life and primary contact	6.6 – 9.0 [20.6.4.900.D and H(5)]	Coolwater Aquatic Life/Fishery	6.6 – 9.0 [Section IV.A]	6.6 – 9.0

b. Bacteria

State Water Designated Use(s)	State WQS	Tribe Water Designated Use(s)	Pueblo of Sandia WQS	Limitation Established
Primary contact	126 cfu/100 ml monthly; 410 cfu/100 ml daily maximum, [20.6.4.900.D]	Primary Contact Ceremonial Use	47 cfu/100 ml monthly; 88 cfu/100 ml daily maximum, [Section IV.D]	47 cfu/100 ml monthly; 88 cfu/100 ml daily maximum

c. Toxics

The CWA in Section 301 (b) requires that effluent limitations for point sources include any limitations necessary to meet water quality standards. Federal regulations found at 40 CFR §122.44 (d) state that if a discharge poses the reasonable potential to cause an in-stream excursion above a water quality criterion, the permit must contain an effluent limit for that pollutant.

All applicable facilities are required to fill out appropriate sections of the Form 2A and 2S, to apply for an NPDES permit or reissuance of an NPDES permit. The new form is applicable not only to POTWs, but also to facilities that are similar to POTWs, but which do not meet the regulatory definition of “publicly owned treatment works” (like private domestics, or similar facilities on Federal property). The forms were designed and promulgated to “make it easier for permit applicants to provide the necessary information with their applications and minimize the need for additional follow-up requests from permitting authorities,” per the summary statement in the preamble to the Rule. These forms became effective December 1, 1999, after publication of the final rule on August 4, 1999, Volume 64, Number 149, pages 42433 through 42527 of the FRL.

NMED provides 4Q3 (236 cfs) and the harmonic mean flow (613 cfs) at gage 08329918, Rio Grande at Alameda Bridge about 1.3 miles upstream from Bernalillo WWTP during April 2004 to April 2014. There are 3 immediate facilities downstream from this gage: Bernalillo WWTP, NM0023485 (0.8 MGD, 1.24 cfs); Rio Rancho WWTP #3, NM0029602 (no discharge since 2003); and Rio Rancho WWTP #2, NM0027987 (5.5 MGD, 8.5 cfs). The calculated 4Q3, immediate upstream from Rio Rancho WWTP#2, is approximately 237.24 cfs (236 + 1.24 + 0). Submitted data in Part D of Form 2A are scanned against the MQL and Tribe/State WQS (for those with no established MQL). Pollutants with levels above the MQL and Tribal/State WQS are analyzed for RP. In additional, pollutants with available ambient data are analyzed as well. For RP calculation purpose, ML/MDL values are used for those results reported with less than the ML/MDL levels. Criteria for Domestic Water Supply is not applicable, attached Appendix A shows RPs exist for benzidine and hexachlorobenzene even ambient concentrations for these pollutants are zero (0). The RP is determined using the same method as for Arsenic described below; RP exists when the instream concentration is equal to the applicable criteria or greater. The instream concentrations are calculated as follows:

Pollutants	Effluent Conc., Ce (ug/L)	Ambient Conc., Ca (ug/L)	Instream Conc., Cd (ug/L)	Applicable criterion (human health), ug/L
Benzidine	0.5	0	0.021	0.002
Hexachlorobenzene	0.5	0	0.021	0.0029

The reported detection limit is used in the calculation because the MQLs (50 ug/L and 5 ug/L) for these pollutants are not protective to the WQS. In a letter dated July 28, 2015, the permittee requested these above pollutant to be removed from the RP analysis because “they were not detected using the most sensitive analytical method currently available.” The permittee provided information as follows:

Pollutants	Tested Method, EPA Method 625	EPA Approved Method with Lowest MDL	Provided Lab Can Run the Test Method Currently
Benzidine	0.5 ug/L	0.08 ug/L (EPA Method 605)	No
Hexachlorobenzene	0.5 ug/L	0.05 ug/L (EPA Method 612)	Yes

The reported effluent concentration, 0.5 ug/L, for these pollutants is the second to the lowest MDL among the EPA approved methods. The permittee has contacted many labs in regarding to EPA Method 605 for benzidine analysis, but so far no lab has not been able to perform the analysis. Because the permittee has not demonstrated compliance with the sufficient sensitive test requirement per 40 CFR 122.21(e)(3) for hexachlorobenzene analysis, which can be currently performed by a lab, EPA proposes monitoring for hexachlorobenzene at once/quarter in this permit draft. During the public comment period, the permittee may submit the analysis result using EPA Method 612; EPA may reconsider this monitoring requirement upon the result(s). Pollutants applicable to the Tribe and State WQS that are not listed in Part D of Form 2A will be tested during the permit term pursuant to 40 CFR 122.21(j)(4)(iv).

Arsenic is re-evaluated for RP due to significant change in 4Q3 and the harmonic mean flow, 66.7 cfs and 179 cfs, respectively, were used previously. To determine if a pollutant has a reasonable potential to exceed a water quality criterion the following calculation is performed with a steady-state mass balance model in the NMIP:

$$\text{Instream concentration} = ((FQa \times Ca) + (Qe \times Ce \times 2.13)) \div (FQa + Qe) = \text{ug/L}$$

Where:

Ce is the geometric mean effluent concentration, 2.9 ug/l (dissolved)

Ca is the ambient concentration upstream of discharger, 2.1 ug/l (dissolved), data collected from April to Oct. 2014 at above Hwy 550 Bridge - 32RGrand508.0 and below Angostura Diversion Works - 30RGrand517.3.

Qe is the effluent flow rate, 12.71 cfs (8.2 MGD)

Qa is the 4Q3 flow rate, 237.24 cfs (chronic) and 613 cfs (human health)

F is the fraction of stream allowed for mixing, 1.0.

The criterion for arsenic is as below pursuant PSWQS Appendix B:

Arsenic	Fish Consumption (dissolved)	Acute (dissolved)	Chronic (dissolved)
Criterion, ug/L	3.6, more stringent than NMWQS	340, same as NMWQS	150, same as NMWQS
Effluent, ug/L (geo. mean)	2.9	2.9	2.9
Calculated Instream Concentration, ug/L	2.18 using Qa = 613 cfs	N/A because criterion must be met at end of pipe. RP level = effluent x 2.13	2.3 using Qa = 237.24 cfs

RP does not exist for any criterion because the calculated instream concentration is less than its respective criterion for fish consumption and chronic conditions, and the RP level is less than the acute criterion. Established limits for arsenic previously are removed in this permit draft. This limit removal does not violate the Antibracksliding because the current data of 4Q3 and harmonic mean flow were not available previously pursuant to 40 CFR 122.44(l)(2)(i). Arsenic level will be instead reported at once/quarter in the permit term; the reported data will be evaluated again in the next renewal cycle.

d. TRC

The facility uses UV to disinfect the effluent. However, TRC of 11 µg/l (for wildlife habitat; 20.6.4.900.G NMAC and for Coolwater Aquatic Life/Fishery) is established in the draft permit in case chlorine based-product is used in the treatment process.

e. DO

For Coolwater Aquatic Life/Fishery, criterion for DO is 6.0 mg/L or more pursuant to PSWQS, Section IV.A. EPA uses LA-QUAL version 9.30 to model DO along this receiving stream; some of the factors used are 4Q3, effluent DO and BOD₅ (10 mg/l for monthly average, 15 mg/l for 7-day maxima). The modeled output shows DO stays above 6 mg/L along this 11.6 mile long stream (see attached graph; other detail information is available upon request). No additional requirement is needed in term of the DO criterion. DO is continued to be monitored for TMDL purpose mentioned below.

f. Salinity/Mineral Quality (Total Dissolved Solids, Chlorides, and Sulfates)

There are criteria for TDS (500 mg/L and no more than 1/3 increase of the background concentration, which are more stringent than the NMWQS), chlorides and sulfates applicable to the designated uses pursuant to PSWQS Section III.K and 20.6.4.106.B(2) NMAC. TDS is evaluated with the same method as for arsenic above using the same 4Q3. Ambient data (Ca) for TDS, measured at the same locations as for arsenic, was 208.95 mg/L on geometric mean during a period of March to Oct. 2014. Effluent data (Ce) for TDS at Plant #2, most representative, was detected at 789.8 mg/L on geometric mean from Dec. 2012 to Sept. 2014. Instream concentration for TDS was calculated at 283.7 mg/L, which exceeds the allowable increase limit [$208.95 \times (1 + \frac{1}{3}) = 278.6$ mg/L]. Therefore, RP exist; the 30-day and daily maximum TDS limits are calculated as follows:

$$30\text{-day Average Limit} = Cs[(FQa + Qe) \div Qe] - Ca(FQa \div Qe) = 1581 \text{ mg/L}$$

$$\text{Daily max. Limit} = 30\text{-day average limit} \times 1.5 = 2372 \text{ mg/L}$$

Where:

Cs is the applicable water quality criterion, $208.95 \times (1 + \frac{1}{3}) = 278.6$ mg/L

Ca is the ambient concentration upstream of discharger, 208.95 mg/L

Qe is the effluent flow rate, 12.71 cfs (8.2 MGD)

Qa is the 4Q3 flow rate, 237.24 cfs (153.35 MGD)

F is the fraction of stream allowed for mixing, 1.0

EPA establishes these limits along with the mass limitation for TDS in the draft permit with a compliance schedule. Mass limits are calculated in the same method as for BOD/TSS. During the permit

term, the permittee must submit 3 analysis for chlorides and sulfates; the results can be attached to the application for the next renewal cycle. EPA will evaluate them against the criteria.

g. Oil & Grease, Ammonia and Total Phosphorus

Data showing in Form 2A indicates level of O&G is 17 mg/L on average. The O&G criterion for the tribe water designated uses is 10 mg/L (average) and 15 mg/L (maximum) in according to Section III.B PSWSQ. EPA establishes these limits along with the mass limitation for O&G in the draft permit with a compliance schedule. Mass limits are calculated in the same method as for BOD/TSS.

Ammonia is re-evaluated with the same method as for arsenic above using the same 4Q3. Ambient data for temperature and pH, measured at the same locations as for arsenic, were 17.4 °C on average and 8.46 s.u. at 95th percentile during a period of March to Oct. 2014. Ambient data for ammonia were detected at 0.1 mg/L or below at immediate location (32RGrand499.2) above the WWTP #2 from March to Oct. 2014. The criterion for total ammonia is as below pursuant PSWQS Appendix A, Tables 1 and 3:

Ammonia, total	Acute	Chronic
Criterion, mg/L	2.14 using pH = 8.5, fish present. Same criterion as NMWQS	0.928 using pH = 8.5; 17°C, fish present. Between 0.99 and 0.87 for NMWQS.
Effluent, mg/L (geo. mean)	0.33	0.33
Calculated Instream Concentration, mg/L	N/A because criterion must be met at end of pipe. RP level = effluent x 2.13	0.13

RP does not exist for acute or chronic criterion because the calculated instream concentration is less than chronic conditions, and the RP level is less than the acute criterion. Established limits for ammonia previously are removed in this permit draft. This limit removal does not violate the Antibacksliding because the current data of 4Q3 is not available previously pursuant to 40 CFR 122.44(l)(2)(i). Ammonia level will be instead reported at once/quarter in the permit term; the reported data will be evaluated again in the next renewal cycle.

Phosphorus, total (TP) is evaluated with the same method as for arsenic above using the same 4Q3. Ambient data for TP was detected at 0.079 mg/L (geometric mean) at immediate location (32RGrand508.0) above the Hwy 550 Bridge from March to Oct. 2014. The instream criterion for TP is 0.100 mg/L pursuant PSWQS Section III.E. There is no numerical criterion for TP in the NMWQS.

TP	
Criterion, mg/L	0.1
Effluent, mg/L (geo. mean)	3.36
Calculated Instream Concentration, mg/L	0.438

RP exist for TP because the calculated instream concentration is greater than the criterion. The 30-day and daily maximum limits are calculated in the same manner as for TDS. Mass limits are calculated in the same method as for BOD/TSS. The limits are established according to PSWQS.

30-day Average Limit = $Cs[(FQa + Qe) \div Qe] - Ca(FQa \div Qe) = 0.49 \text{ mg/L}$

Daily max. Limit = $30\text{-day average limit} \times 1.5 = 0.74 \text{ mg/L}$

D. MONITORING FREQUENCY FOR LIMITED PARAMETERS

Regulations require permits to establish monitoring requirements to yield data representative of the monitored activity, 40 CFR §122.48(b), and to assure compliance with permit limitations, 40 CFR §122.44(i)(1). Sample frequency is based on Table 9 (page 34 of the NMIP) for design flow between 5 and 10 MGD and based on compliance history.

Parameter	Frequency	Sample Type
Flow	Daily	Totalized
pH	Daily	Instantaneous Grab
BOD ₅ /TSS	5/week	12-hr Composite
% Removal	1/week	Calculation
TRC	Daily*	Instantaneous Grab
E. coli Bacteria	Daily (increased due to several exceedances)	Grab
DO	5/week	Instantaneous Grab
Ammonia, total (as N)	1/quarter	12-hr Composite
PCB	Once	12-hr Composite
Arsenic, total	1/quarter	Grab
O&G	5/week	12-hr Composite
TDS	5/week	12-hr Composite
TP	5/week	12-hr Composite
Hexachlorobenzene	1/quarter	Grab
Adjusted gross alpha	1/quarter	Grab

* TRC shall be measured during periods when chlorine is used as either backup bacteria control or when disinfection of plant treatment equipment is required.

E. WHOLE EFFLUENT TOXICITY

Procedures for implementing WET terms and conditions in NPDES permits are contained in the NMIP. Table 11 (page 42) of the NMIP outlines the type of WET testing for different types of discharges. The receiving water (Rio Grande River), a perennial stream has a 4Q3 of 237.24 cfs. With the facility design flow rate of 8.2 MGD (12.71 cfs) and mixing fraction of 100%, a CD is calculated about 5%. Because the critical dilution is below 10%, an acute-to-chronic ratio of 10:1 is used to allow acute WET testing (instead of chronic one) using *Daphnia pulex* and *Pimephales promelas*. Submitted WET data show no RPs exist for both vertebrate and invertebrate species at the CD (see attached Reasonable Potential Analyzer). EPA removes the established limit in the previous permit; this limit removal does not violate the Antidegradation because the current data of 4Q3 is not available previously pursuant to 40 CFR 122.44(l)(2)(i).

The proposed permit requires five (5) dilutions (same as previously) in addition to the control (0% effluent) to be used in the toxicity tests based on a 0.75 dilution series. These additional effluent concentrations must be 21%, 28%, 38%, 50% and 67%. The low-flow effluent concentration (critical low-flow dilution) is defined as 50% effluent. The permittee shall limit and monitor discharge(s) as specified below:

Effluent Characteristic	Discharge Limitations		Monitoring Requirements	
	30-day Avg Min.	48-hr Min.	Frequency ²	Type
WET Testing (48-hr Static Renewal) ¹	Report	Report	Once/Quarter	24-hr Composite
<i>Daphnia pulex</i>	Report	Report	Once/Quarter	24-hr Composite
<i>Pimephales promelas</i>	Report	Report	Once/Quarter	24-hr Composite

¹ Monitoring and reporting requirements begin on the effective date of this permit. See Part II of the permit, Whole Effluent Toxicity Testing Requirements for additional WET monitoring and reporting conditions.

² This permit does not establish requirements to automatically increase the WET testing frequency after a test failure, or to begin a toxicity reduction evaluation (TRE) in the event of multiple failures. However, upon failure of any WET test, the

permittee must report the results to EPA and NMED, Surface Water Quality Bureau, in writing, within 5 business days of notification of the test failure. EPA and NMED will review the test results and determine the appropriate action necessary, if any.

VI. TMDL REQUIREMENTS

The receiving water segment 20.6.4.106 NMAC Rio Grande (non-pueblo Alameda Bridge to HWY 550 Bridge) has been listed in 303(d) List. The receiving water is impaired for wildlife habitat, livestock watering, primary contact and marginal warmwater aquatic life. Causes are PCB in water column and fish tissue, adjusted gross alpha, E. coli, ambient bioassays-acute and DO. Latest TMDL for E. coli was issued in 2010, which the limits was established based on this TMDL. EPA retains this limit requirement for E. coli in this permit draft. TMDLs for other causes are scheduled for 2016 approximately. Adjusted gross alpha is monitored once/quarter. PCB and DO monitoring are retained as before. Effluent PCB level was detected at 0.000404 ppb, which is below the Tribe and State WQS; the monitoring is continued in this permit draft due to additional WWTP #6 to the facility. The permit has a standard reopener clause that would allow the permit to be changed if at a later date additional requirements on new or revised TMDLs are completed.

VII. ANTIDegradation

The NMAC, Section 20.6.4.8 “Antidegradation Policy and Implementation Plan” sets forth the requirements to protect designated uses through implementation of the State water quality standards. The limitations and monitoring requirements set forth in the proposed permit are developed from the State water quality standards and are protective of those designated uses. Furthermore, the policy sets forth the intent to protect the existing quality of those waters, whose quality exceeds their designated use. The permit requirements and the limits are protective of the assimilative capacity of the receiving water, which is protective of the designated uses of that water, NMAC Section 20.6.4.8.A.2.

NMED has reviewed the increase in discharge flow and determined the applicable concentration limits established previously to remain unchanged to comply with the Antidegradation Policy.

VIII. ENDANGERED SPECIES CONSIDERATIONS

According to the list updated on May 8, 2015 for Sandoval County, NM obtained from <http://ecos.fws.gov>, there are endangered (E)/threatened (T) species that were listed in the previous permit: Mexican spotted owl, Southwestern willow flycatcher and Rio Grande Silvery Minnow. These species were determined with “no effect”. Since then, there have been 3 additional threatened/endangered species: Jemez Mountains salamander (E), Yellow-billed Cuckoo (T) and New Mexico meadow jumping mouse (E).

There has been no recovery plan for all these additional species, except the jumping mouse. According to the Recovery Outline for the mouse in June 2014, the species is endangered because of habitat loss; the main sources of the loss include grazing eliminating herbaceous vegetation, lack of water, severe wildland fire, souring flooding, highway reconstruction, unregulated recreation, loss of beaver ponds and mowing of riparian vegetation. According to the Federal Register on 11/20/2013 (78 FR 69569 69591), habitat characteristics for the salamander include moderate to high tree canopy cover with high relative humidity, elevations from 6,988 to 11,254 ft, ground surface in forest areas with large fallen trees and underground habitat in forest or meadow areas containing interstitial spaces. Major factors affecting the species are (a) wildland fire, (b) disease (fungus, infection) or predation (by snake, bear,

owl), (c) inadequacy of existing regulations and (d) others including chemical use for weed control and climate change per the Federal Register on 09/10/2013 (78 FR 55599 55627). Because of these facts, EPA believes the salamander's habitats unlikely exist in flow path of the discharge. According to the Federal Register on 8/15/2014 (79 FR 48547 48652) the primary constituent elements specific to the western yellow-billed cuckoo are: riparian woodlands with mixed willow-cottonwood vegetation, mesquite-thorn-forest vegetation, presence of a prey base consisting of large insect fauna, and river systems that are dynamic and provide hydrologic processes that encourage sediment movement and deposits that allow seedling germination and promote plant growth, maintenance, health, and vigor. Major factors affecting the cuckoo are (a) manmade features that alter watercourse hydrology, livestock overgrazing and encroachment from agriculture, climate change, (b) disease (West Nile virus) or predation (by hawk), (c) inadequacy of existing regulations and (d) others including pesticide chemical per the Federal Register on 10/03/2014 (79 FR 59991 60038).

In accordance with requirements under section 7(a)(2) of the Endangered Species Act, EPA has reviewed this permit for its effect on listed threatened and endangered species and designated critical habitat. After review, EPA has no information determining that the reissuance of this permit will have "effect" on the listed threatened and endangered species nor will adversely modify designated critical habitat. EPA makes this determination based on the following:

1. EPA has received no additional information since the previous permit issuance which would lead to revision of its determinations.
2. The draft permit is consistent with the Tribe/States WQS and does not increase pollutant loadings.
3. There is currently no information determining that the reissuance of this permit will have "effect" on the additional listed threatened and endangered species.
4. The previous permit initiated Formal Consultation with the FWS for the discharge from the facility. EPA provided a Biological Evaluation (BE) to FWS March 27, 2001. The FWS responded to EPA's BE, August 20, 2001, Consultation # 2-22-01-I-592, concurring with EPA's "no effect" determination for the Southwestern flycatcher and its "may affect, but not likely to adversely affect" the Rio Grande silvery minnow.

IX. HISTORICAL and ARCHEOLOGICAL PRESERVATION CONSIDERATIONS

The reissuance of the permit should have no impact on historical and/or archeological sites since no construction activities are planned in the reissuance.

X. PERMIT REOPENER

The permit may be reopened and modified during the life of the permit if NMWQS are promulgated or revised. In addition, if the State develops a TMDL, this permit may be reopened to establish effluent limitations for the parameter(s) to be consistent with that TMDL. Modification of the permit is subject to the provisions of 40 CFR §124.5.

XI. VARIANCE REQUESTS

None

XII. CERTIFICATION

The permit is in the process of certification by the State Agency following regulations promulgated at 40 CFR 124.53. A draft permit and draft public notice will be sent to the District Engineer of COE, to the Regional Director of FWS and to the National Marine Fisheries Service prior to the publication of that notice.

XIII. FINAL DETERMINATION

The public notice describes the procedures for the formulation of final determinations.

XIV. ADMINISTRATIVE RECORD

The following information was used to develop the proposed permit:

A. APPLICATION(S)

EPA Application Form 2A dated April 29, 2015 and Form 2S dated May 15, 2015.

B. 40 CFR CITATIONS

Sections 122, 124, 125, 133, 136

C. STATE OF NEW MEXICO REFERENCES

New Mexico State Standards for Interstate and Intrastate Surface Water, 20.6.4 NMAC June 5, 2013

Total Maximum Daily Load (TMDL) Report for the Middle Rio Grande Watershed, approved by EPA, June 30, 2010.

State of New Mexico 303(d) List for Assessed Stream and River Reaches, 2014-2016

D. MISCELLANEOUS

“Pueblo of Sandia Water Quality Standards”, revised January 31, 2008, adopted by Tribal Council Resolution 2009-118 on November 13, 2009, and approved by EPA March 9, 2010.

NMED email dated 5/4/15, 5/7/2015, 5/27/15.

Permittee's emails dated 5/15/15, 6/2/15, 8/5/15; letter dated July 28, 2015.

Recovery Outline: New Mexico Meadow Jumping Mouse (*Zapus hudsonius luteus*), June 2014.