

# **NPDES PERMIT NO. NM0022250**

## **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**

December 1, 2018

### **PERMIT ACTION**

Renewal of a permit previously issued on September 24, 2010, with an effective date of October 1, 2012, and an expiration date of September 30, 2017.

The draft permit was first-proposed on February 24, 2018. After reviewing the submitted conditions/comments, EPA determined it was appropriate to withdraw the original draft permit and propose a new draft permit. Comments submitted on the original proposal are considered moot due to the revision and re-proposal. EPA will consider and respond only to comments submitted during the comment period and Clean Water Act §401 Certification process for the revised draft permit.

### **RECEIVING WATER – BASIN**

Rio Grande River – Middle Rio Grande Basin (Segment 20.6.4.105)

**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
PI	Pueblo of Isleta
POTW	Publicly 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 October 1, 2012, and an expiration date of September 30, 2017, are as follow:

- Removal percentage for CBOD<sub>5</sub> has been established.
- Monitoring for TDS, chlorides, sulfates and mercury have been established.
- Previous limits for total inorganic nitrogen, total ammonia (as N) have been removed.
- Monitoring for arsenic has been removed.
- Monitoring for nutrients have been established.
- A mercury pollutant reduction study has been added.

## II. APPLICANT LOCATION and ACTIVITY

As described in the application, the facility (Outfall 001: Latitude 35° 01' 04" North and Longitude 106° 40' 13" West) is located at 4201 2<sup>nd</sup> Street SW, Bernalillo County, New Mexico.

Under the SIC code 4952, the applicant (municipality) operates ABCWUA Southside WWTP, which has a total design flow of 76 MGD serving a population of 658,238 approximately. The plant performs as high as secondary level of treatment; effluent is ultraviolet-disinfected before discharging (via Outfall 001) to the Rio Grande River. Part of the effluent is reused for irrigation under a ground water discharge permit. Sewage sludge is processed on site and surface-disposed at Albuquerque Soils Amendment Facility. A map of the facility is attached.

## III. EFFLUENT CHARACTERISTICS

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

Parameter	Max (mg/l unless noted)	Avg. (mg/l unless noted)
pH, minimum, standard units (su)	6.6	NA
pH, maximum, standard units (su)	7.3	NA
Flow (MGD)	55.9	50.18
Temperature (C), winter	21.7	19.1
Temperature (C), summer	30.1	28.5
Carbonaceous Biochemical Oxygen Demand, 5-day (CBOD <sub>5</sub> )	6.8	< 2.9
E. coli (cfu/100 ml)	2419	< 14.8
Total Suspended Solids (TSS)	15	7.2
Ammonia (as N)	1.7	0.2
TRC	0	0
DO	7.1	5.8
Total Kjeldahl Nitrogen (TKN)	9.1	< 2.2
Nitrate + Nitrite Nitrogen	8.4	5.2
Oil & Grease	57	< 5
Phosphorus (Total)	5.8	2.6
TDS	860	547

DMRs data, from March 1, 2014 to March 1, 2017, shows numerical limit violations as follow:

Parameters	Date	Exceedance (30-day average value, mg/L)	Exceedance (Daily max. value, mg/L)	Exceedance (pH, loading)
pH, s.u.	1/31/15			6.5

Parameters	Date	Exceedance (30-day average value, mg/L)	Exceedance (Daily max. value, mg/L)	Exceedance (pH, loading)
pH, s.u.	5/31/15			6.5
Ammonia-Nitrogen, total (as N)	10/31/15		2.2	986 lbs./day (daily max.)
Ammonia-Nitrogen, total (as N)	2/29/16		1.7	
E. coli	7/31/14, 8/31/14, 11/30/14, 7/31/15, 9/30/16, 12/31/16		Several exceedances for daily max. value	
Mercury, total	8/31/15	0.009	0.033	0.014 lb/day (7day-aveg.)
Mercury, total	3/31/16		0.02	

Submitted information shows the cumulative collection system sewer overflows (SSOs) have been reduced from 102 to 34 over a period from July 2012 (beginning ABCWUA fiscal year 12) to June 2017 (ending of FY 17). There were a total of 220 SSOs in the collection system from October 1, 2012 to December 31, 2016. 216 out of 220 events were responded to, captured and treated and did not make it to the receiving water. The remaining four SSOs were related to infrastructure failures and three of them were contained within an existing storm water basin and concrete lined channel owned and operated by the City of Albuquerque or the Albuquerque Metropolitan Arroyo Flood Control Authority (AMAFCA), respectively. The last SSO occurred when a forcemain failed and a small amount of effluent entered into the receiving water, a portion of which was captured and removed for treatment.

The SWRP experienced a total of 25 overflows on the plant site between October 1, 2012 and December 31, 2016. For 22 of 25 SSOs, they were contained and treated entirely onsite. For the three remaining that left the SWRP, two of them were minor amounts due to lightning and power failures at the plant. The most significant occurred on February 27, 2015; a total of about 6 million gallons of primary treated effluent was discharged into the riverside drain, which eventually reached to the Rio Grande due to lack of maintenance on electrical switches and other critical equipment for the electrical back-up system. In response to the February 27<sup>th</sup> event, the Water Authority plugged all existing storm drain outfalls and spent more than \$2.1 million to conduct an electrical systems audit and make all the necessary repairs to the electrical system in addition to purchasing backup generators to prevent this type of failure from occurring in the future.

**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 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 February 21, 2017. 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 percent removal for each. Water quality-based effluent limitations are established in the revised draft permit for CBOD<sub>5</sub>, DO, *E. coli* bacteria, pH, TRC, and mercury.

### **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 limits established at 40 CFR Part 133.102, Secondary Treatment Regulation. Pollutants with limits established in this Chapter are CBOD<sub>5</sub>, TSS and pH. CBOD<sub>5</sub> limits of 25 mg/l for the 30-day average and 40 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). The previous permit established CBOD<sub>5</sub> limits based on water quality concerns

(including DO impairment below) and were not technology-based; existing limits for CBOD<sub>5</sub> (15 mg/l 30-day average and 22.5 mg/l 7-day average) are more stringent than the technology standard and are retained in the permit draft in compliance with the Antidegradation per 40 CFR 122.44(l). The limit for pH is 6-9 s.u. and based on 40 CFR §133.102(c). Retaining limitation of percent removal for TSS, EPA establishes new limitation for 85 percent removal of CBOD<sub>5</sub> (minimum) pursuant to 40 CFR §133.102(a)(4) in this draft permit. Since it is technology-based limitation there is no compliance schedule provided to meet these limits. Compliance is required on the permit effective date. Loading limit for CBOD<sub>5</sub> is retained from the previous permit due to DO impairment described in the TMDL requirements below.

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:

$$\text{Loading in lbs/day} = \text{pollutant concentration in mg/l} * 8.34 \text{ (lbs)(l)/(mg)(MG)} * \text{design flow in MGD}$$

$$30\text{-day average TSS loading} = 30 \text{ mg/l} * 8.34 \text{ (lbs)(l)/(mg)(MG)} * 76 \text{ MGD} = 19015 \text{ lbs/day}$$

$$7\text{-day average TSS loading} = 45 \text{ mg/l} * 8.34 \text{ (lbs)(l)/(mg)(MG)} * 76 \text{ MGD} = 28522 \text{ lbs/day}$$

A summary of the technology-based (water quality-based for CBOD<sub>5</sub> concentration/loading) limits for the facility is:

Parameter	30-day Avg (lbs./day, unless noted)	7-day Max. (lbs./day, unless noted)	30-day Avg. (mg/L, unless noted)	7-day Max. (mg/L, unless noted)
CBOD <sub>5</sub> *	9508	Report	15	22.5
CBOD <sub>5</sub> , % removal <sup>1</sup>	≥ 85	---	---	---
TSS	19015	28522	30	45
TSS, % removal <sup>1</sup>	≥ 85	---	---	---
pH	N/A	N/A	6.0 to 9.0 s.u.	6.0 to 9.0 s.u.

\*Limits are retained from previous permit to comply with NMWQS.

$$^1 \text{ Percent removal} = \frac{\text{average monthly influent concentration } (\frac{\text{mg}}{\text{L}}) - \text{average monthly effluent concentration } (\frac{\text{mg}}{\text{L}})}{\text{average monthly influent concentration } (\frac{\text{mg}}{\text{L}})} * 100$$

### 3. Pretreatment Regulation

The facility has 19 non-categorical significant industrial users (SIUs) and 37 categorical industrial users (CIUs) attached to the Fact Sheet. The permittee is required to develop/revise and implement a full pretreatment program pursuant to 40 CFR 403.8.

### 4. Capacity, Management, Operation and Maintenance (CMOM)

The permittee must continue to implement and update (if necessary) the CMOM plan required previously.

## 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 Tribe/State WQS. Effluent limitations and/or conditions established in the draft permit are in compliance with applicable State/Tribal WQS and applicable Tribe/State 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.

The ABCWUA discharge point into the Rio Grande is in State waters approximately five-miles upstream of the boundary with the Pueblo of Isleta (PI). In addition to the NMWQS, the permit limits developed for the POTW must be protective of the Pueblo WQS.

## 3. Pueblo of Isleta Water Quality Standards (PIWQS)

The Pueblo of Isleta 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 are provided in Surface Water Quality Standards (PIWQS) amended March 18, 2002, Tribal Resolution 02-064, approved by EPA on July 22, 2005. This latest WQS was used in the previous permitting renewal. The designated uses of the Rio Grande, according to PIWQS, Section V.A, are warmwater fishery use, primary contact ceremonial use, primary contact recreational use, agricultural water supply use, industrial water supply use and wildlife usage. The Pueblo of Isleta is currently in the process of reviewing the currently approved PIWQS. Any revisions that are adopted by the Pueblo and approved by EPA prior to expiration and reissuance of the new permit could result in requests for modification of the permit prior to the expiration date.

PIWQS Section I.H states: “Criteria specific to a designated use shall be protected at all times and at all flow rates.” In the last two permits cycles (2005 and 2012), zero (0) was used as critical flow rate<sup>1</sup>. The lowest flow rate was 53 cfs (rounded to nearest number) during September 1997 to September 2017 and occurred in September 2013 at gage USGS–08330000. According to the Pueblo of Islets, the use of 53 cfs as the low flow for assessment of discharge effects in this permit term, as opposed to zero (0) cfs, is not unreasonable for protection of applicable PIWQS<sup>2</sup>. For applicable human-health criteria, the harmonic mean flow (same as for NMWQS) is used for RP analysis.

## 4. State Water Quality Standards

The general and specific stream standards are provided in NMWQS (20.6.4 NMAC EPA-approved on August 11, 2017). The receiving water is Rio Grande River (segment 20.6.4.105 NMAC of the Rio

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<sup>1</sup> Zero (0) flow was stated in the fact sheet (Section V.C.5 on page 11 of 24) for 2012 permit; but 52.9 MGD (4Q3) was shown in RP analysis for PIWQS by mistake because the 4Q3 was not applicable to the PIWQS.

<sup>2</sup> PI agreed with EPA on 53 cfs as a low flow per email dated January 10, 2018. PI letter dated October 23, 2018 states the use of 53 cfs “does not appear to be unreasonable”

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). Tribe or State 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 Isleta WQS	Limitation Established (same previously)
Primary contact and marginal warmwater aquatic life	6.6 – 9.0 [20.6.4.900.D and H(6)]	Primary contact recreational use	6.6 – 9.0 [Section IV.E]	6.6 – 9.0

Requested by the permittee, EPA allows pH to be measured continuously in according with 40 CFR 401.17. EPA may adjust the requirements per 40 CFR 401.17.b or switch back to “instantaneous grab” sampling for pH if the permittee does not comply with the requirements for the continuous measurement.

b. Bacteria

State Water Designated Use(s)	State WQS	Tribe Water Designated Use(s)	Pueblo of Isleta WQS	Limitation Established (same previously)
Primary contact	126 cfu (mpn)/100 ml monthly; 410 cfu (mpn)/100 ml daily maximum, [20.6.4.900.D]	Primary contact recreational use	47 cfu/100 ml monthly; 88 cfu/100 ml daily maximum, [Section IV.E]	47 cfu/100 ml monthly; 88 cfu/100 ml daily maximum. Either mpn or cfu can be used.

Bacteria limits for the permit are based on protection of the more restrictive Pueblo of Isleta WQS.

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 data for the 4Q3 (143 cfs, applicable to NMWQS only) and harmonic mean flow (529 cfs, applicable Tribe and State WQS) at gage USGS-08330000 Rio Grande at Albuquerque, NM from 2006 to 2016 using DFlow program (Basins). Ambient data used in the first draft permit were invalid because they were obtained at the outfall approximately. Ambient data (geometric mean values) must be obtained upstream; the nearer the outfall, the more representative the data. NMED has a monitoring station at Rio Bravo Bridge located upstream and nearest to the outfall; no other ambient data located closer to the outfall were available. Available ambient data at this bridge (from March to October 2014) are used for this revised draft permit. Submitted data (average values) in Part D of Form 2A are scanned against the MQL and Tribe/State WQS. Pollutants with levels above the MQL or Tribal/State WQS (and those with no established MQL) are analyzed for RP. For RP calculation purpose, ML/MDL values are used for results reported with less than the ML/MDL levels. Two separate RP analyses are performed in according to the PIWQS and NMWQS. The RP method is described in the NMIP. Several parameters applicable to the PIWQS Appendix I were not included in the Part D of the submitted Form 2A. They are specified in Part I.F of the permit to be tested for the next permit renewal<sup>3</sup>.

During the application review, additional data were submitted to demonstrate Sufficient Sensitive Method (SSM) requirement for those pollutants that were not initially met. Summary of the initial tests and retests are as follow:

Pollutants	Tested Result, ug/L	Applicable NMWQS, ug/L	Approved Method with SSM Complied MDL, ug/L	Retested Result, ug/L
benzidine	<0.5 (EPA 625)	0.002	0.08 (EPA Method 605)	<0.02 (EPA 625)
benzo(a)anthracene	<0.5 (EPA 625)	0.18	0.023 (EPA Method 610)	<0.01 (EPA 625)
Benzo(a)pyrene	<0.5 (EPA 625)	0.18	0.023 (EPA Method 610)	<0.01 (EPA 625)
3,4-benzofluoranthene	<0.5 (EPA 625)	0.18	0.023 (EPA Method 610)	<0.01 (EPA 625)
benzo(k)fluoranthene	<0.5 (EPA 625)	0.18	0.023 (EPA Method 610)	<0.01 (EPA 625)
Chrysene	<0.5 (EPA 625)	0.18	0.023 (EPA Method 610)	<0.01 (EPA 625)
Dibenzo(a,h)anthracene	<0.5 (EPA 625)	0.18	0.03 (EPA Method 610)	<0.01 (EPA 625)
Hexachlorobenzene	<0.5 (EPA 625)	0.0029	0.05 (EPA Method 612)	<0.002 (EPA 625)
Indeno(1,2,3-cd)pyrene	<0.5 (EPA 625)	0.18	0.043 (EPA Method 610)	<0.01 (EPA 625)
heptachlor	<0.01 (EPA 608)	0.00079	0.0015 (EPA Method 508)	<0.00232 (EPA 608)

All the retested results, except for benzidine and heptachlor, have met the applicable NMWQS. The permittee could not find a laboratory performing the analysis for benzidine using EPA Method 605. EPA accepts a retest using EPA Method 625 at this time because the retest result was less than the MDL of EPA Method 605 in term of the SSM requirement. For heptachlor, the permittee could only find a lab in the region that could run EPA Method 508 with a practical quantitative level (PQL) of 0.0375 ug/L. Thus, EPA accepts that Method 608 with a PQL less than 0.0375 ug/L (see the retest result) can be substituted in lieu of the Method 508 for heptachlor at this time. EPA has determined the permittee has demonstrated compliance with the SSM requirement per 40 CFR 122.21(e)(3) for benzidine and heptachlor; no further requirement is necessary for these pollutants.

DMRs (from 3/2014 to 2/2017) for total arsenic (average value of 2.6 ug/L) were scanned against the PIWQS and NMWQS. Harmonic mean flow is used for the human health criteria. 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. The RP is determined in term of PIWQS as follows:

<sup>3</sup> Test frequency of Part D in Form 2A is retained from the previous permit.

Instream concentration =  $((FQa \times Ca) + (Qe \times Ce \times 2.13)) \div (FQa + Qe)$   
 ug/L or mg/L (unit for concentrations must be consistent)

Where:

Ce is the average effluent concentration, ug/L or mg/L

Ca is the geometric mean ambient concentration upstream of discharger, ug/L or mg/L

Qe is the effluent flow rate, 117.8 cfs (76 MGD)

Qa is 53 cfs (PIWQS)

F is the fraction of stream allowed for mixing, 1.0

Arsenic	Ca, ug/L	Ce (dissolved), ug/L	Calculated instream concentration, ug/L	Criterion, ug/L	RP excursion	Limitation?
NMWQS, Aquatic life HH-OO	3*	0.79	2.76	9	No (shown in attached Appendix A)	No
PIWQS; Section III, Appendix II, HH-OO	3*	0.79	2.09	4.2	No, instream conc. < criterion	No

\*Five (5) data points during March to October 2014

Previous established monitoring for arsenic is removed in this permit draft. This removal does not violate the Antibracksliding regulations because the current data of effluent concentration, low flow and harmonic mean flow were not available previously pursuant to 40 CFR 122.44(1)(2)(i).

Mercury is re-evaluated for RP (same approach as for arsenic) due to the current available data:

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

Where:

Ce is the average effluent concentration, 0.003 ug/L (averaged from 221 data points)

Ca is the geometric mean ambient concentration upstream of discharger, 0 ug/L

Qe is the effluent flow rate, 117.8 cfs (76 MGD)

Qa is 143 cfs (NMWQS); 53 cfs (PIWQS)

F is the fraction of stream allowed for mixing, 1.0

Mercury	Ca, ug/L	Ce (total), ug/L	Calculated instream concentration, ug/L	Criterion, ug/L	RP excursion	Limitation?
Wildlife Habitat (total), NMWQS; 20.6.4.900.J	0*	0.003	0.0029	0.77	No (shown in attached Appendix A)	No
Wildlife Usage (total); PIWQS Section IV.I	0*	0.003	0.0044	0.0011 (1.1 ng/L)	Yes, instream conc. > criterion	Yes

\*No ambient data was quantitatively available; no information indicates the value was greater than zero.

Due to RP excursion in term of PIWQS, the 30-day and daily maximum mercury limits would normally be required pursuant to 40 CFR §122.44(d) as follows:

30-day Average Limit =  $Cs[(FQa + Qe) \div Qe] - Ca(FQa \div Qe) = 0.0016 \text{ ug/L}$

Daily max. Limit = 30-day average limit x 1.5 = 0.0024 ug/L

Where:

- Cs is the applicable water quality criterion, 0.0011 ug/L
- Ca is the ambient concentration upstream of discharger, 0 ug/L
- Qe is the effluent flow rate, 117.8 cfs
- Qa is 53 cfs
- F is the fraction of stream allowed for mixing, 1.0

The calculated limits for mercury are more stringent than the previous ones: 0.008 ug/L 30-day average and 0.012 ug/L daily maximum. EPA proposed these more stringent limits in the first draft permit on February 24, 2018; However, Pueblo of Isleta will not oppose EPA withdrawing the new stringent limits and retaining the previous limits<sup>4</sup>. In supporting continuation of the mercury limits from the previous permit, Pueblo of Isleta requests the permittee to investigate:

- Determining sources of mercury: collecting ambient data quarterly at Rio Bravo Bridge and right above the Pueblo of Isleta northern boundary; collecting influent data quarterly; identifying industrial, commercial sources conveyed to the WWTP.
- Evaluating if fish tissue (twice per permit term), from above the Pueblo of Isleta northern boundary, have methylmercury. Guidance on fish tissue studies can be found at: <https://www.epa.gov/sites/production/files/2015-06/documents/volume1.pdf>.  
<https://www.env.nm.gov/swqb/advisories/>  
<http://www.wildlife.state.nm.us/fishing/fishing-regulations/catch-and-release-or-eat/>  
<https://nmtrackingtest.health.state.nm.us/environment/FishConsumption.html>
- Establishing and implementing a plan to reduce mercury levels in the plant influent and effluent. The plan must be developed in coordination with Pueblo of Isleta, NMED and approved by EPA before implemented.

EPA grants the Pueblo of Isleta request and retains the previous mercury limits<sup>5</sup>; see Part I.G of the draft permit for details on the pollutant reduction study and fish tissue study. Information collected during the study will be used in future permitting actions and could be used by the Pueblo of Isleta in future updates to the Pueblo's Water Quality Standards. Note that the Pueblo of Isleta's water quality standards may be revised during the term of this permit, altering the targets for the mercury reduction study and implementation plans.

d. TRC

The facility uses UV to disinfect the effluent. However, TRC limit of 11 µg/l (for wildlife habitat; 20.6.4.900.G NMAC and warmwater fishery use; PIWQS Section IV.C) is established in the draft permit **in case** chlorine based-product is used to disinfect the effluent discharging to the receiving stream with daily monitoring frequency. If all the chlorinated effluent is reused (not discharged to the receiving water), the chlorine monitoring is not required. When UV is used to disinfect the effluent, the monitoring frequency would be once per week due to sodium hypochlorite is used to chlorinate the plant reclaimed water, which then can be reused as cooling water, process clean-up water, and pump seal water. The reused water is then routed to the plant headworks for treatment.

e. DO

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<sup>4</sup> According to the PI letter dated October 23, 2018.

<sup>5</sup> ABCWUA agrees in a letter dated November 13, 2018 regarding to data collection and source reduction for mercury.

For marginal warmwater aquatic life (20.6.4.900.H(6) NMAC) and warmwater fishery use, criterion for DO is 5 mg/L or more. EPA retains the existing limit for DO (minimum 5 mg/L on 30-day average) due to the water DO impairment discussed under TMDL Requirements. Being factor to influence the DO level, previous limits for CBOD are also retained as well.

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

EPA evaluates the RP for TDS, chlorides and sulfates using the same approach for mercury above:

Pollutants	PIWQS; Section III.K	NMWQS; 20.6.4.105, mg/L	Effluent Concentration, mg/L	Ambient Conc., mg/L	1/3 increase of ambient conc., mg/L	Calculated Instream Conc., mg/L	RP Excursion
TDS	no more than 1/3 increase of the background concentration;	1,500	547 (averaged from 39 data points)	227 (8 samples)	303	874	Yes (in term of PIWQS)
Chlorides	no more than 1/3 increase of the background concentration;	250	107 (averaged from 1278 data points)	6.3 (8 samples)	8.4	159	Yes (in term of PIWQS)
Sulfates	no more than 1/3 increase of the background concentration;	500	113 (averaged from 1278 data points)	50 (8 samples)	67	181	Yes (in term of PIWQS)

Due to RP excursion, the 30-day and daily maximum limits for TDS, chlorides and sulfates are supposedly required pursuant to 40 CFR §122.44(d) as follows:

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

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

Where:

- Cs is the applicable PIWQS, mg/L
- Ca is the ambient concentration upstream of discharger, mg/L
- Qe is the effluent flow rate, 117.8 cfs
- Qa is 53 cfs
- F is the fraction of stream allowed for mixing, 1.0

Parameter	PIWQS; Section III.K	1/3 increase of ambient conc., mg/L (Cs)	Ambient Conc., mg/L (Ca)	30-day Average Limit, mg/L	Daily max. Limit, mg/L	Submitted data, mg/L (daily max. conc.)
TDS	no more than 1/3 increase of the background concentration;	303	227	337	506	860
Chlorides	no more than 1/3 increase of the background concentration;	8.4	6.3	9.3	14	173
Sulfates	no more than 1/3 increase of the background concentration;	67	50	75	112	190

In consultation with Pueblo of Isleta (stated in PI letter dated October 23, 2018) and NMED, EPA allows ABCWUA to collect more ambient data in this permit term instead of establishing the new above

limits for TDS, chlorides, sulfates and other parameters specified in the permit Part I.F. Effluent monitoring for these parameters will be monthly. The permittee must also take samples at the Rio Bravo Bridge and above the Pueblo of Isleta northern boundary<sup>6</sup> monthly during the permit term. EPA will use these collected data along with NMED data (if available then) to make decisions in the next permit renewal, taking into account any updates to the Pueblo of Isleta’s WQS.

g. Total Inorganic Nitrogen (TIN)

TIN is re-evaluated with the same method as for mercury above, RP is determined with no excursion for TIN because the calculated instream concentration is less than the criterion (shown in table below). Previously established limits for TIN are removed in this permit draft. This limit removal does not violate the Antibacksliding because the current data of low flow was not available previously pursuant to 40 CFR 122.44(l)(2)(i). TIN in the effluent will be instead reported at once/quarter in the permit term; the reporting data will be evaluated again in the next renewal cycle.

TIN	Ca, ug/L	Ce, ug/L	Calculated instream concentration, ug/L	Criterion, ug/L	RP excursion	Limitation?
NMWQS				NA		NA
Primary contact ceremonial use; PIWQS Section IV.D	110 (8 data points)	5,400	7,962	10,000	No, instream conc. < criterion	No

h. Total Ammonia (as N)

NMWQS allow WET testing to demonstrate compliance with ammonia toxicity. Total ammonia (as N) is re-evaluated against the PIWQS with the same method as for mercury above using the low flow of 53 cfs. Ambient data for temperature and pH, measured at the same location, were 25.5°C on average and 7.2 s.u. at 95<sup>th</sup> percentile during a period of March to Oct. 2014. Ambient data for the ammonia is considered zero because no quantitative data is available. The criteria for total ammonia are as below pursuant PIWQS Appendix IIIA&C:

Ammonia, total	Acute	Chronic
Criterion, mg/L	29.5 (warmwater) using pH = 7.2, fish present.	2.65 (average of 2.74 & 2.57) using pH = 7.2; 25.5°C, fish present.
Effluent, mg/L	0.21	0.21
Calculated Instream Concentration, mg/L	N/A because criterion must be met at end of pipe. RP level = effluent x 2.13 = 0.45	0.3
RP excursion	No	No

RP does not exist for either acute or chronic criterion because the calculated instream concentrations are less than the chronic and acute criteria. Established limits for the ammonia previously (1.0 mg/L 30-day average and 1.5 mg/L daily max.) are removed in this permit draft. This limit removal does not violate the Antibacksliding because the current data of low flow was not available previously pursuant to 40 CFR 122.44(l)(2)(i). The 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.

i. Nutrients (total nitrogen and total phosphorus)

<sup>6</sup> Consistent with the NMED monitoring stations.

EPA has started to monitor nutrients (total nitrogen and total phosphorus) discharged from major POTWs and others. Data would be used to determine applicable limits to protect local and downstream water quality. The proposed monitoring frequency for the nutrients is once/quarter.

**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 > 10 MGD.

Parameter	Frequency	Sample Type
Flow	Daily	Totalized
pH	Daily	Continuous (allowed for this permit)
CBOD <sub>5</sub> /TSS	Daily	24-hr Composite
% Removal	Monthly	Calculation
TRC	Applicable daily or 1/week*	Instantaneous Grab
E. coli Bacteria	Daily	Grab
DO	Daily	Instantaneous Grab
TDS	Monthly	24-hr Composite
Chlorides	Monthly	24-hr Composite
Sulfates	Monthly	24-hr Composite
Mercury	Once/week	Grab (allowed due to high potential for atmospheric contamination)
TIN	Once/quarter	24-hr Composite
Total ammonia (as N)	Once/quarter	24-hr Composite

\* Daily when chlorine is used as either backup bacteria control or when disinfection of plant treatment equipment is required. Otherwise, once per week 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 CD is calculated and established based on the more stringent between the 4Q3 and critical flow of 53 cfs (PIWQS) as follows:

	PIWQS	NMWQS, 4Q3	Established CD	Previously Established CD
Critical flow	53 cfs	143 cfs		
Effluent flow	117.8 cfs (76 MGD)	117.8 cfs (76 MGD)		
Calculated CD with mixing factor 1	69%	45%	69%	61%

Submitted WET data show no RPs exist for both vertebrate and invertebrate species at the established CD (see attached Reasonable Potential Analyzer). In this permit draft, EPA proposes WET monitoring using the same species, Ceriodaphnia dubia (Cd) and Pimephales promelas (Pp).

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 29%, 39%, 52%, 69% and 92%. The low-flow effluent concentration (critical low-flow dilution) is defined as 69% effluent. The permittee shall limit and monitor discharge(s) as specified below:

Effluent Characteristic	Discharge Limitations	Monitoring Frequency	Monitoring Type
WET Testing (7-day Static Renewal) <sup>1</sup>	VALUE		
Ceriodaphnia dubia	Report	1/3 months <sup>2</sup>	24-hr Composite
Pimephales promelas	Report	1/3 months <sup>2</sup>	24-hr Composite

<sup>1</sup> 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.

<sup>2</sup> Once/3 months shall be for the first year after the permit effective date; if all the test pass, frequencies would be once/6 months for Cd and once/year for Pp for the remaining term. If any WET test fails, frequency returns to once/3 months for the remaining term. If eligible for frequency reduction after the first year, the permittee must request EPA before proceeding.

## VI. TMDL REQUIREMENTS

The receiving water segment 20.6.4.105 NMAC Rio Grande (Isleta Pueblo boundary to Tijeras Arroyo) has been listed in 303(d) List. The receiving water is not supporting the uses of marginal warmwater aquatic life and primary contact. Causes are PCB in fish tissue, DO and E. coli. Latest TMDL for E. coli was issued in 2010. The E. coli loading limit in the previous permit was established based on this TMDL. EPA retains this same limit requirement for E. coli in this permit draft. TMDLs for other causes were scheduled for 2016, but are not issued yet. Monitoring/limit for PCB and DO are retained for future TMDLs development. Effluent PCB level was detected at 0.0000603 ppm, which is below the applicable Tribe and State WQS; during the 5<sup>th</sup> year of the permit term, if there will be no change in the treatment process (e.g., change in chemicals used) from the previous term the permittee may certify that in lieu of monitoring PCB. 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.

## VIII. ENDANGERED SPECIES CONSIDERATIONS

According to the list updated on March 2, 2017 for Bernalillo 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 2 addition threatened/endangered species: Yellow-billed Cuckoo (T) and New Mexico meadow jumping mouse (E).

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. There has been no recovery plan for the cuckoo. Per 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 an “effect” beyond the environmental baseline 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 July 30, 2012. The FWS responded to EPA’s BE, July 31, 2012, Consultation #02ENNM00-2012-I-0092, concurring with EPA’s “may affect, but is not likely to adversely affect” Rio Grande silvery minnow and its critical habitat, or flycatcher because the effects are discountable and insignificant. The current “no effect” determination is based on this environmental baseline.

## **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 and 2S dated February 21, 2017. Additional data submitted via email on June 1<sup>st</sup>, August 22 and September 19, 2017.

#### **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; WQCC effective March 2, 2017; EPA approved on August 11, 2017.

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, 2016-2018.

#### **D. MISCELLANEOUS**

“Pueblo of Isleta Water Quality Standards”, Amended March 18, 2002, Tribal Resolution 02-064, and approved by EPA July 22, 2005.

NMIP

NMED email dated 3/2/17, 3/9/17, 4/7/17, 4/17/17, 5/2/17, 9/13/17.

Pueblo of Isleta email dated 9/28/17, PI letter dated 10/23/18

Permittee’s emails dated 2/22/17, 6/1-2/17, 8/22-24/17, 9/19/17; letter dated 11/13/18

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