NPDES PERMIT NO. NM0022292
FACT SHEET

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

APPLICANT

City of Santa Fe
73 Paseo Real
Santa Fe, NM 87507

ISSUING OFFICE

U.S. Environmental Protection Agency
Region 6
1201 Elm Street
Dallas, Texas 75270

PREPARED BY

Quang Nguyen
Environmental Engineer
NPDES Permits & Technical Branch (6WQ-P)
Water Division
PHONE: 214-665-7238
FAX: 214-665-2191
EMAIL: Nguyen.Quang@epa.gov

DATE PREPARED

March 04, 2021

PERMIT ACTION

Proposed reissuance of the current NPDES permit that was issued on July 1, 2016, with an effective date of September 1, 2016, and an expiration date of August 31, 2021.

RECEIVING WATER – BASIN

Santa Fe River – Rio Grande Basin

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
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
DAF	Dissolved air flotation
DMR	Discharge monitoring report
DO	Dissolved oxygen
ELG	Effluent limitation guidelines
EPA	United States Environmental Protection Agency
ESA	Endangered Species Act
FCB	Fecal coliform bacteria
F&WS	United States Fish and Wildlife Service
ug/l	Micrograms per litter (one part per billion)
mg/l	Milligrams per liter (one part per million)
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
MQL	Minimum quantification level
O&G	Oil and grease
POTW	Publically owned treatment works
RAS	Return activated sludge
RP	Reasonable potential
SIC	Standard industrial classification
s.u.	Standard units (for parameter pH)
SWQB	Surface Water Quality Bureau
TBELs	Technology-based effluent limitations
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
UV	Ultraviolet Light

WET	Whole effluent toxicity
WLA	Waste-load Allocation
WQBELs	Water quality-based effluent limitations
WQCC	New Mexico Water Quality Control Commission
WQMP	Water Quality Management Plan
WWTP	Wastewater treatment plant

As used in this document, references to State water quality standards and/or rules, regulations and/or management plans may mean the State of New Mexico and/or Tribal or both.

I. CHANGES FROM THE PREVIOUS PERMIT

Changes from the permit previously issued on June 8, 2010, are:

- The E. coli mass loading limit has been added;
- WET monitoring frequency has been changed to once/quarter from once/year;
- Copper, Cyanide, Heptachlor limits and compliance schedules have been established; and,
- Benzo(a)pyrene monitoring requirement has been added.

II. APPLICANT LOCATION and ACTIVITY

As described in the application, the facility is located on 73 Paseo Real, Santa Fe, in Santa Fe County, New Mexico, Under the Standard Industrial Classification Code 4952, the facility is a WWTP treating sanitary wastewater. It has a design flow of 13 MGD. The average flow currently is 5.42 MGD. The treatment plant serves a population of approximately 87,200 residents, but during the summer months, the City of Santa Fe becomes a tourist destination and this increases the flow to the treatment plant.

The WWTP is composed of head-works, clarifiers, rapid mix, bio-selectors, dissolved air flotation (sludge thickeners), anaerobic digesters, lime stabilization and storage units, aeration basins, secondary clarification, bacteria control, post aeration and discharge.

The head-works include a bar screen to remove larger debris/trash (i.e., cans, plastic products, paper and rags) entering the plant. These items are fed into the rag press where most of the moisture is removed, and the solids are disposed to the hoppers or dumpster placed under the chutes. The bar screen is followed by a grit trap that supplies enough aeration to remove sand, silts and inorganic wastes while allowing organic material to continue to a wet well for further treatment. The grit is removed by an auger and conveyor belt system and sent to a dumpster for disposal to a land fill. The wastewater continues to the wet well at the start of the primary wastewater treatment.

Primary treatment consists of two 580,600-gallon primary clarifiers. The clarifiers are used as sedimentation tanks which allow the wastewater velocity to be reduced enough so that the heavy organic material settles to the bottom of the clarifier while the lighter material floats to the top and is removed via a skimmer. The solids are scraped from the bottom of the clarifier and pumped to the digester. The rapid mix tank receives flow from the clarifiers and returns from several other process areas and is mixed together before entering the bio-selector for secondary treatment. The rapid mix tank collects flow from the various recycle flows, RAS, DAF flow, mixed liquor line and the primary effluent. The aeration basins use nitrification and then denitrification to remove ammonia and nitrogen. The nitrification process utilizes dissolved oxygen, fed through fine bubble diffusers, to change ammonium to nitrite. Ammonia is stripped off with either increased air or converted to ammonia to nitrites by *Nitrobacter* microorganisms. The nitrite continues through the basin to the anoxic zone and is broken down from nitrite to nitrate by *Nitrosomonas* microorganisms and then to nitrous oxide, carbon dioxide and water.

Secondary treatment continues as the wastewater moves from the clarifiers into one of four bio-selector basins. These basins can be either aerobic, anaerobic, or a combination of each. At present the WWTP uses a low DO system in combination with mixed liquor pumps to recycle mixed liquor back through the system to reduce the nitrates, utilize soluble COD, and inhibit the growth of filamentous bacteria. Mixed liquor from the aeration basins flows into one of six 460,000-gallon secondary clarifiers to allow solids to settle to the bottom of the tank. The clear effluent flows over the weirs and out of the tanks, while the settable solids are pulled from the bottom of the clarifier, via suction pick up tubes. These solids enter two common channels and flow into the wet well then into the DAF. The overflow from the secondary clarifiers enters the influent channel to three disk filters and two sand filters. The UV system disinfects the effluent prior to discharge. Two air blowers continuously aerate the effluent water in the post aeration basin to ensure adequate DO in the effluent. The non-potable water system draws filtered water from the effluent channel to supply water for reused and is also sold at the standpipe to contractors for use in construction, dust control, watering of golf courses and sports playing fields.

Solids are initially treated using DAF to thicken sludge. The DAF operates by pressurizing water in a tank and is introduced via a header along with pumped sludge and a polymer thickening agent. The sludge, pressurized water and polymer enter into the DAF tanks which are at atmosphere pressure. The difference in pressures causes air to come out of solution as fine bubbles which rise to the surface of the DAF tank. The sludge attaches to the fine bubbles and floats to the surface where it is thickened and is further treated either by anaerobic digestion or lime stabilization. The anaerobic digesters are composed of a 462,000-gallon fixed-cover primary digester and a 453,000-gallon floating-cover secondary digester. The digester is heated by two hot water boilers using either natural gas or digester gas. The digester contents are also mixed by the use of digester gas which is compressed and introduced into the mixing guns. Sludge can also be treated with a second method using lime stabilization. Sludge is disposed by the City using subsurface injection at the Paseo Real Sludge Disposal Injection Field adjacent to the WWTP. During the winter months when sludge injection cannot be used, sludge is stored in either sludge tank#1; 660,000 gallons or sludge tank#2; 1,618,000 gallons. The compost facility dewaters the digested sludge from the sludge storage tanks.

Appendix 1 shows an aerial view of the plant and the process flow schematic of the facility.

The discharge from the WWTP is to the Santa Fe River thence to the Rio Grande in Water-body Segment No. 20.6.4.113 of the Rio Grande Basin. The discharge is located at Latitude 35^{o} 37’ 52.41” North, Longitude 106^{o} 05’18.88” West.

III. EFFLUENT CHARACTERISTICS

A quantitative description of the discharge(s) described in the EPA Permit Application Forms 2A received on March 1, 2021, are presented in Tables 1 and 2 below. The facility is required to sample and report all the priority pollutants identified in Part D, Expanded Effluent Testing Data of Form 2A. From that list, the pollutants in Table 2 were either tested above the minimum quantification levels (MQLs) or were tested at levels above EPA MQL and reported as being non-detect. When a pollutant was tested at a detection level that was greater than the EPA MQL, then for screening purposes that pollutant will be assumed to have a concentration at that detection level. For toxics that were tested at the minimum quantification level and reported as less than the MQL, those pollutants are not shown.

POLLUTANT TABLE - 1

Parameter	Max	Avg
	(mg/l unless noted)	
Flow, million gallons/day (MGD)	6.28	5.42
Temperature, winter	24.8 °C	17.4 °C
Temperature, summer	28.2 °C	23.1 °C
pH, minimum, standard units (SU)	6.63 su	N/A
pH, maximum, standard units (SU)	8.34 su	N/A
Carbonaceous Oxygen Demand, 5-day ($CBOD_5$)	76.7	3.82
E. Coli (#bacteria/100 ml)	10,000	56
Total Suspended Solids (TSS)	540	19.1
Ammonia (NH3)	57.7	3.65
Chlorine, Total Residual (TRC)	0	0
Dissolved Oxygen	10.1	7.6
Total Kjeldahl Nitrogen (TKN)	57.4	2.02
Nitrate plus Nitrite Nitrogen	9.66	2.02
Oil and grease	0.19	0.038
Phosphorus	10.1	2.22
Total Dissolved Solids (TDS)	429	363

POLLUTANT TABLE – 2 - Expanded Pollutant list

Parameter	Max	Avg
Hardness ($CaCO_3$)	102 mg/L	102 mg/L
Antimony, total recoverable	0.64 ug/L	0.13 ug/L
Arsenic, total recoverable	2.06 ug/L	0.74 ug/L
Chromium, total recoverable	1.28 ug/L	0.246 ug/L
Copper, total recoverable	39 ug/L	7.58 ug/L
Lead, total recoverable	3.96 ug/L	1.32 ug/L
Mercury, total recoverable	0.0394 ug/L	0.0186 ug/L
Nickel, total recoverable	3.33 ug/L	2.51 ug/L
Silver, total recoverable	0.34 ug/L	0.0402 ug/L
Zinc, total recoverable	118 ug/L	66.5 ug/L
Cyanide, total recoverable	6.57 ug/L	2.26 ug/L
Total Phenolic Compounds	17.4 ug/L	3.91 ug/L
Methyl bromide	0.6 ug/L	0.12 ug/L

Bis (2-ethylhexyl) phthalate	1.48 ug/L	0.544 ug/L
Diethyl phthalate	5.78 ug/L	1.16 ug/L
Aluminum	51.2 ug/L	29.4 ug/L
Boron	264 ug/L	251 ug/L
Molybdenum	3.6 ug/L	2.84 ug/L
Heptachlor	0.00182 ug/L	0.000364 ug/L
Benzo(a)pyrene	10 ug/L	10 ug/L

A summary of the last 36 months of available pollutant data (i.e., December 2017 through December 2020) taken from DMRs indicates the facility experienced a number of exceedances of permit limits (shown in parenthesis) for TSS (10), Suspended Solids removal (5), pH (2), Total Nitrogen (24), Total Phosphorous (10), E. coli (21) and CBOD (7).

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 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.

It is proposed that the permit be reissued for a 5-year term following regulations promulgated at 40 CFR §122.46(a). The previous permit will be expired on August 31, 2021. The application was received on March 01, 2021. The existing permit is administratively continued until this permit is issued.

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. Water quality-based effluent limitations are established in the proposed draft permit for E. coli bacteria, Total Phosphorous, Total Nitrogen, Nitrate-Nitrite, ammonia, DO, pH and TRC.

B. TECHNOLOGY-BASED EFFLUENT LIMITATIONS/CONDITIONS

Regulations promulgated at 40 CFR §122.44 (a) require TBELs 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, fecal coliform, 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.

The facility is a POTW treating sanitary wastewater. POTW's have technology based ELG's established at 40 CFR Part 133, Secondary Treatment Regulation. Pollutants with ELG's established in this Chapter are $CBOD_5$, TSS and pH. $CBOD_5$ 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)(4). TSS limits; also 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(b). ELG's for pH are between 6-9 s.u. and are found at 40 CFR §133.102(c). 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 POTW's, the plant's design flow is used to establish the mass load. Mass limits are determined by the following mathematical relationship:

Loading in lbs/day = pollutant concentration in mg/l * 8.345 lbs/gal * design flow in MGD
30-day average TSS loading = 30 mg/l * 8.345 lbs/gal * 13 MGD
30-day average TSS loading = 3,254 lbs

7-day average TSS loading = 45 mg/l * 8.345 lbs/gal * 13 MGD
7-day average TSS loading = 4,881 lbs

30-day average $CBOD_5$ loading = 25 mg/l * 8.345 lbs/gal * 13 MGD
30-day average $CBOD_5$ loading = 2,712 lbs

7-day average $CBOD_5$ loading = 40 mg/l * 8.345 lbs/gal * 13 MGD
7-day average $CBOD_5$ loading = 4,339 lbs

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

Final Effluent Limits - 13 MGD design flow.

EFFLUENT CHARACTERISTICS	DISCHARGE LIMITATIONS			
	lbs/Day		mg/l (unless noted)	
Parameter	30-Day Avg.	7-Day Avg.	30-Day Avg.	7-Day Avg.
Flow	N/A	N/A	Measure MGD	Measure MGD
$CBOD_5$	3,712(*3)	4,339	25(*3)	40(*3)
CBOD, % removal (*1)	≥ 85	---	---	---
TSS	3,254 (*2)	4,881	30(*2)	45
TSS, % removal (*1)	≥ 85	---	---	---
pH	N/A	N/A	6.0 – 9.0 standard units (*4)	

(*1) % removal is calculated using the following equation: [(average monthly influent concentration – average monthly effluent concentration) ÷ average monthly influent concentration] * 100.
(*2) The draft permit will propose the previous permit TSS mass limit of 2,127 lbs/day and concentration of 30 mg/l TSS at end-of-pipe, which were based on the EPA approved 2000 TMDL, since they are more stringent than the technology-based limits.
(*3) The draft permit will propose the previous permit $CBOD_5$ mass limits of 709 lbs/day at a target end-of-pipe monthly average concentration of 10 mg/L and 7-day average concentration of 15 mg/L, which were based on the EPA approved 2001 TMDL, since they are more stringent than the technology-based limits.
(*4) The draft permit will propose the previous permit pH limits of 6.6 su to 9.0 su, which were based on EPA approved 2001 TMDL, since these limits are more stringent than the technology-based limits.

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 WQS. Effluent limitations and/or conditions established in the draft permit are in compliance with applicable State WQS and applicable 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 TBELs reflecting the best controls available. Where these technology-based permit limits do not protect water quality or the designated uses, additional WQBELs and/or conditions are included in the NPDES permits. State narrative and numerical water quality standards are used in conjunction with EPA criteria and other available toxicity information to determine the adequacy of technology-based permit limits and the need for additional water quality-based controls.

3. State Water Quality Standards

The general and specific stream standards are provided in New Mexico State Standards for Interstate and Intrastate Surface Water (20.6.4 NMAC, effective September 12, 2018). The facility

discharges into the Santa Fe River in segment number 20.6.4.113 of the Rio Grande Basin. The designated uses of the receiving waters are irrigation, livestock watering, wildlife habitat, primary contact and coolwater aquatic life.

The facility discharge point into the Santa Fe River is approximately 15 miles upstream of the Pueblo de Cochiti (Cochiti), which does not have EPA-approved WQS. Effluent limitations and/or conditions established in the draft permit are in compliance with State water quality standards, applicable established and EPA approved TMDLs, and the applicable water quality management plan. These criteria are established to protect the designated uses of New Mexico surface waters and are also expected to be protective of downstream Cochiti surface waters.

4. 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). State WQS that are more stringent than effluent limitation guidelines are as follows:

a. BACTERIA

Primary contact currently is one of the designated uses of the Santa Fe River in segment number 20.6.4.113 of the Rio Grande Basin. The State of New Mexico WQS criteria applicable to the primary contact designated use of the receiving stream are the monthly geometric mean of E. coli bacteria of 126 cfu/100 mL (or MPN/100 ml) and single sample of 410 cfu/100 mL (or MPN/100 mL). The results for E. coli may be reported as either colony forming units (CFU) or the most probable number (MPN) depending on the analytical method used. The E. coli limits (i.e. monthly geometric mean of 126 cfu/100 ml, and a single sample maximum of 410 cfu/100 ml) in the previous permit will be continued in the draft permit.

The 2020-2022 State of New Mexico CWA §303(d) / §305(b) Integrated Report identifies the Segment is impaired due to E.coli. The EPA, also, proposes in the draft permit the E. coli 30-day average mass loading limit of 31 billion (1.0×10^9) cfu/day, which was based on the WLA provided in the EPA approved E. coli TMDL developed for the Santa Fe River (Cienega Creek to the Santa Fe WWTP). The E. coli monitoring frequency requirement in the previous permit be also continued in the draft permit.

b. pH

The previous permit pH limits of 6.6 to 9.0 su were based on the stream segment specific (20.6.4.113 NMAC) WQS and on the EPA approved 2001 TMDL. These limits, which are more stringent than the technology-based limits, will be continued in the draft permit.

c. DISSOLVED OXYGEN

Stream segment specific (20.6.4.113 NMAC) WQS for dissolved oxygen requires 5.0 mg/l. No separate DO model was conducted since a dissolved oxygen TMDL was developed and approved

by EPA for this stream segment (see discussion on TMDL requirements in part 5 below). The previous permit DO-limits consistent with the WLA will be continued in the draft permit.

d. NUTRIENTS

The Santa Fe WWTP discharges treated effluent into the Santa Fe River in Water Quality Segment 20.6.4.113 NMAC (Segment) with designated uses of coolwater aquatic life, irrigation, livestock watering, wildlife habitat, and primary contact. The 2020-2022 State of New Mexico CWA §303(d) / §305(b) Integrated Report identifies the Segment is impaired due to Nutrient/Eutrophication.

According to the approved New Mexico's Antidegradation Policy[1] and Implementation Procedures[2], the Segment is classified as Tier 1 for nutrients (i.e., phosphorus and nitrogen); therefore any increase in pollutant load or other activity that would cause further degradation of water quality is not allowed. Each NPDES permit issued must contain requirements necessary to achieve water quality standards. Consistent with NM's Policy and Procedures, the level of water quality necessary to protect existing uses must be maintained and protected. Furthermore, where a surface water is impaired, there shall be no further degradation or lowering of the water quality with respect to the pollutant causing the impairment (e.g., nutrients).

To protect and maintain existing water quality and to prevent further degradation of water quality in the Santa Fe River in accordance with 40 CFR 131.12, Subsection A of 20.6.4.8 NMAC, and the New Mexico Continuing Planning Process – Antidegradation Policy and Implementation Procedures, the limits of 108 lbs/day and 3.1 mg/l end-of-pipe Total Phosphorous concentration and limits of 265 lbs/day and 6.9 mg/l end-of-pipe of Total Nitrogen concentration from the previous permit will be continued in the draft permit. These limits will ensure that nutrient loading to the river is not increased, and current water quality is not further degraded.

e. TOXICS

i. General Comments

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.

[1] http://www.nmenv.state.nm.us/swqb/Planning/WQMP-CPP/
[2] Appendix A of the Continuing Planning Process – http://www.nmenv.state.nm.us/swqb/Planning/WQMP-CPP/

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.

The facility is designated a major POTW for permitting purposes and must supply the expanded pollutant testing list described in the EPA Application Form 2A. The Santa Fe WWTP is classified as a "major" discharger with a design flow more than 1.0 MGD. They completed Part D, "Expanded Effluent Testing Data" of form 2A and submitted to EPA as a part of their March 1, 2021 application. However, some of the pollutant testing data in the submitted Form 2A were found erroneously reported. The facility submitted the revised data on March 3, 2021 and March 30, 2021. The submitted data which were presented in the "Pollutant Table" of Section III included the effluent pollutants at concentrations above minimum quantification levels (MQL) and effluent pollutants (i.e., Benzo(a)pyrene), which were tested at levels above EPA MQL and reported as being non-detect.

Upstream of the WWTP, the Santa Fe River is generally a dry arroyo with upstream flow during some snowmelt periods in the spring and after some storm events the rest of the year. The 4Q3 for the receiving water is zero (0) cfs. The CD for the facility is 100%; therefore, discharges must meet WQS at end-of-pipe.

ii. Hardness

Based on the pollutant data in Part III of this Fact Sheet, a water quality screen has been conducted to determine if discharged pollutant concentrations demonstrate RP to exceed WQS for the various designated uses. If RP exists, the screen will calculate the appropriate permit limit needed to be protective of such designated uses. The screen is based on the NMIP as of March 15, 2012 (see Appendix 2). RP is determined by comparing a discharged pollutant concentration times an appropriate statistical variability factor (i.e., 2.13), and then comparing the result against the instream criteria. For the analysis, the Santa Fe River geometric mean hardness of 62.8 mg/L (expressed as $CaCO_3$), which was based on the data provided by NMDEQ, was used. The mathematical equation for hardness-based criteria for certain pollutants can be found in Appendix 2. The relationships for copper, zinc and silver are as follows:

Copper – Acute	0.960 e (0.9422[ln (hardness)] – 1.700)	(Eqn. 1)
Copper – Chronic	0.960 e (0.8545[ln (hardness)] – 1.702)	(Eqn. 2)
Zinc – Acute	0.978 e (0.9094[ln (hardness)] +0.9095)	(Eqn. 3)
Zinc – Chronic	0.986 e (0.90947[ln (hardness)] +0.6235)	(Eqn. 4)
Silver – Acute	0.85 e (1.72[ln (hardness)] -6.59)	(Eqn. 5)

Silver – Chronic (Silver has no chronic criteria)

Certain pollutants such as copper, zinc and silver have criteria reported in dissolved form. Appendix 2 shows the conversion from total pollutant concentrations to the dissolved form. Data from the RP analysis are summarized in the below table for three pollutant.

POLLUTANT	Concentration Total (ug/l)	Concentration Dissolved (ug/l)
Copper	39	7.76
Zinc	118	16.96
Silver	0.34	0.11

The result of the RP analysis (see Appendix 2) indicates that Copper, Cyanide, Heptachlor, Heptachlor Epoxide and Benzo(a)pyrene pollutants have RP to violate WQS consistent with the designated uses for the receiving waterbody. The draft permit will propose a daily maximum and monthly average limits of 6.02 ug/L, 5.2 ug/L and 0.0008 ug/L for Copper, Cyanide, and Heptachlor, respectively. The facility shall have a 3-year compliance schedule to achieve final limitations for Copper, Cyanide, and Heptachlor pollutants. The permit will require compliance report schedules.

The preliminary toxic analysis, also, shows RP exists for Benzo(a)pyrene. Because the permittee has not met the sufficient sensitive test requirement per 40 CFR 122.21(e)(3), EPA proposes monitoring for this parameter daily in the draft permit. During the public comment period, the permittee may submit the analysis result using EPA Method 610 for Benzo(a)pyrene. 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).

iii. TRC

The facility uses UV to control bacteria. In the event the facility uses chlorine to control bacteria or disinfect control equipment, the 11 μg/l TRC limit from the previous permit will be continued in the draft permit.

5. TMDL Requirements

NMED developed several TMDLs for the Santa Fe River (in segment number 20.6.4.113 of the Rio Grande Basin) and approved by EPA. They are Total Residual Chlorine/Stream Bottom Deposits TMDL (March 2000), DO/pH TMDL (January 2001) and E. coli bacteria TMDL (May 2017). The Total Residual Chlorine and Stream Bottom Deposits TMDL established TRC limits of 11ug/l, TSS 30-Day average mass limits of 2,127 lbs/day and monthly average concentration of 30 mg/l TSS at end-of-pipe. The draft permit will maintain the 11 ug/l limit for times when the facility uses chlorine to disinfect equipment or in the control of algae at the WWTP. The TSS

limits were in the previous permit and will be continued in the draft permit since they are more restrictive than the technology-based limits described in Part B above.

The DO and pH TMDL established limits for $CBOD_5$, nitrate-nitrite, ammonia, DO and pH. The $CBOD_5$ daily mass limits of 709 lbs/day at a target end-of-pipe concentration of 10 mg/l, nitrate-nitrite daily limits of 212.67 lbs/day at end-of-pipe target concentration of 3 mg/l, ammonia limits of 141.78 lbs/day at end-of-pipe target concentration of 2 mg/L, DO limit of 5.0 mg/l minimum and pH limits of 6.6 su to 9.0 su. (more restrictive than the technology-based limits) were the previous permit and will be continued in the draft permit.

The E. coli bacteria TMDL established a 30-day average mass limit of 3.1×10^{10} cfu/day, which will be proposed in the draft permit.

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 the March 2012, NMIP. Ammonia, E. coli bacteria, $CBOD_5$, TSS, DO, Copper, Cyanide, Heptachlor and nitrate-nitrite have daily monitoring frequency requirement. Total Phosphorous and Total Nitrogen have 3 per month monitoring frequency requirement. The rest of limited parameters have 1/week monitoring frequency requirement. Flow is proposed to be monitored continuously by totalizing meter. E. coli bacteria, Copper, Cyanide and Heptachlor shall use grab samples, and the other parameters (i.e., $CBOD_5$, TSS, Total Phosphorous, Total Nitrogen, ammonia and nitrate-nitrite) shall use 24-hr composite samples. When chlorine is used to disinfect treatment equipment and/or treat filamentous algae, TRC shall be sampled daily using instantaneous grab samples. Using instantaneous grab samples are also applied to pH and DO. Regulations at 40 CFR §136 define instantaneous grab as being analyzed with 15-minutes of collection.

E. WHOLE EFFLUENT TOXICITY LIMITATIONS

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. Analysis of past WET data is shown in Appendix 3. The results of the last five years show no reasonable potential since there was no toxicity exhibited in any of the results. WET monitoring will be required at a quarterly frequency, in accordance to the NMIP, for both species (*Ceriodaphnia dubia* and *Pimephales promelas)* at a CD of 100%.

During the period beginning the effective date of the permit and lasting through the expiration date of the permit, the permittee is authorized to discharge treated sanitary wastewater from Outfall 001 to the Santa Fe River. Discharges shall be limited and monitored by the permittee as specified below:

Whole Effluent Toxicity (7-Day NOEC)*	**VALUE**	**Measurement Frequency**	**Sample Type**
Ceriodaphnia dubia	Report	Once/Quarter	24-hr Composite
Pimephales promelas	Report	Once/Quarter	24-hr Composite

* 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. Grab samples are allowed per method, if needed.

VI. FACILITY OPERATIONAL PRACTICES

A. SEWAGE SLUDGE

The permittee shall use only those sewage sludge disposal or reuse practices that comply with the federal regulations established in 40 CFR Part 503 "Standards for the Use or Disposal of Sewage Sludge". The specific requirements in the permit apply as a result of the design flow of the facility, the type of waste discharged to the collection system, and the sewage sludge disposal or reuse practice utilized by the treatment works. The permittee shall submit an Annual Sludge Status report in accordance with NPDES Permit NM0022292, Parts I and Part IV.

B. WASTEWATER POLLUTION PREVENTION REQUIREMENTS

The permittee shall institute programs directed towards pollution prevention. The permittee will institute programs to improve the operating efficiency and extend the useful life of the treatment system.

C. INDUSTRIAL WASTEWATER CONTRIBUTIONS

The treatment plant has four non-categorical Significant Industrial User's (SIU) and no Categorical Industrial User's (CIU). The facilities, their services and estimated long-term flow contribution to the POTW are as follows:

Discharger	Product	Discharge Volume
Christus St. Vincent's Hospital	Medical care	0.049 MGD
Esoterix Genetics	Medical lab testing	0.027 MGD
Public Service Co. of New Mexico	Remediated ground water	0.000 MGD
New Mexico History Museum	Remediated ground water	0.000041MGD

The facility has an approved pretreatment program in place and will be continued with this draft permit. The facility is required to report to EPA, in terms of character and volume of pollutants any significant indirect dischargers into the POTW subject to pretreatment standards under §307(b) of the CWA and 40 CFR 403.

D. OPERATION AND REPORTING

The applicant is required to operate the treatment facility at maximum efficiency at all times; to monitor the facility's discharge on a regular basis; and report the results monthly. Reporting requirements and the requirement of using EPA-approved test procedures (methods) for the analysis and quantification of pollutants or pollutant parameters are contained in 40 CFR 122.41(l) and 40 CFR 122.21 (e), respectively. All Discharge Monitoring Reports (DMRs) shall be electronically reported to EPA per 40 CFR 127.16. The monitoring results will be available to the public.

VII. 303(d) LIST

The EPA approved 2020-2022 State of New Mexico CWA §303(d) / §305(b) Integrated Report identifies the receiving stream segment no, 20.6.4.113 is impaired for nutrient/eutrophication and E. coli bacteria. Previously in Part V of the Fact Sheet, permit conditions were identified as being based on approved TMDLs to address these pollutants. No additional pollutants are listed for this waterbody. The standard reopener language in the permit allows additional permit conditions if warranted by future changes and/or new TMDLs.

VIII. 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 limitation and monitoring requirements set for the in the proposed permit are developed from the State water quality standards and are protective of the 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 waters, which is protective of the designated uses of that water, NMAC Section 20.6.4.8.A.2.

IX. ANTIBACKSLIDING

The proposed permit is consistent with the requirements to meet antibacksliding provisions of the Clean Water Act, Section 402(o) and 40 CFR §122.44(l)(i)(A), which state in part that interim or final effluent limitations must be as stringent as those in the previous permit, unless material and substantial alterations or additions to the permitted facility occurred after permit issuance which justify the application of a less stringent effluent limitation. The proposed permit

maintains the mass loading requirements of the previous permit for CBOD5, TSS, nitrate-nitrite, ammonia and the concentration limits for DO, pH, and TRC. Addition of E. coli mass loading limit and limits for Copper, Cyanide and Heptachlor were included in the draft permit to protect designated uses and WQS of the receiving stream, respectively. All of the changes represent permit requirements that are consistent with the State WQS and WQMP.

X. ENDANGERED SPECIES CONSIDERATIONS

According to the most recent county listing available at US Fish and Wildlife Service (USFWS), Southwest Region 2 website, http://ecos.fws.gov/tess_public/reports/species-by-current-range-county?fips=35049, four species in Santa Fe County are listed as endangered (E) or threatened (T). They are Southwestern willow flycatcher (*Empidonax traillii extimus*) (E), the Mexican spotted owl (*Strix occidentalis lucida*) (T), New Mexico meadow jumping mouse (*Zapus hudsonius luteus*) (E), and Yellow-billed Cuckoo (*Coccyzus americanus*) (T). All species, except for New Mexico meadow jumping mouse, were listed in the previous permit with determination of "no effect". According to the report, there are no critical habitats for all the species downstream from the discharging facility.

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 determined that the reissuance of this permit will have "*no effect*" on listed threatened and endangered species nor will adversely modify designated critical habitat. EPA makes this determination based on the following:

1) In the previous permit issued July 1, 2016, EPA made a "no effect" determination for federally listed species. EPA has received no additional information since then which would lead to a revision of that "no effect" determination. EPA determines that this reissuance will not change the environmental baseline established by the previous permit, and therefore, EPA concludes that reissuance of this permit will have "no effect" on the listed species and designated critical habitat.

2) No additions have been made to the critical habitat designation in the area of the discharge since prior issuance of the permit.

3) EPA has received no additional information since the previous permit issuance which would lead to revision of its determinations.

4) The draft permit is no less stringent from the previous permit. It is consistent with the States WQS and does not allow facility to increase pollutant loadings.

5) EPA determines that Items 1, thru 4 result in no change to the environmental baseline established by the previous permit, therefore, EPA concludes that reissuance of this permit will have "no effect" on listed species and designated critical habitat.

XI. 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.

XII. PERMIT REOPENER

The permit may be reopened and modified during the life of the permit if State/Tribal Water Quality Standards are promulgated or revised. In addition, if either the State and/or Tribe 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.

XIII. VARIANCE REQUESTS

No variance requests have been received.

XIV. CERTIFICATION

The permit is in the process of certification by the State Agency following regulations promulgating at 40 CFR §124.53. EPA will send a draft permit and a draft public notice to the District Engineer, Corps of Engineers, Regional Director of the U.S. Fish and Wildlife Service, and the National Marine Fisheries Service prior to the publication of that notice.

XV. FINAL DETERMINATION

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

XVI. ADMINISTRATIVE RECORD

The following information was used to develop the proposed permit:

A. APPLICATION(s)

EPA Application Forms 2A and 2S received on March 1, 2021.

B. 40 CFR CITATIONS

Citations to 40 CFR Sections 122, 124, 125, 133, 136

C. MISCELLANEOUS

New Mexico State Standards for Interstate and Intrastate Surface Water, 20.6.4 NMAC, effective September 12, 2018

Procedures for Implementing National Pollutant Discharge Elimination System Permits in New Mexico, March 2012.

State of New Mexico Statewide Water Quality Management Plan and Continuing Planning Process, May 10, 2020.

State of New Mexico 303(d) List for Assessed Stream and River Reaches, 2020-2022.

Total Maximum Daily Load for the Santa Fe River from the Cochiti Pueblo to the Santa Fe Wastewater Treatment Plant for Chlorine and Stream Bottom Deposits, approved by EPA March 20, 2000.

Total Maximum Daily Load for the Santa Fe River for Dissolved Oxygen and pH, approved by EPA January 11, 2001.

Santa Fe River E. coli TMDL, approved by EPA May 3, 2017

APPENDIX 1

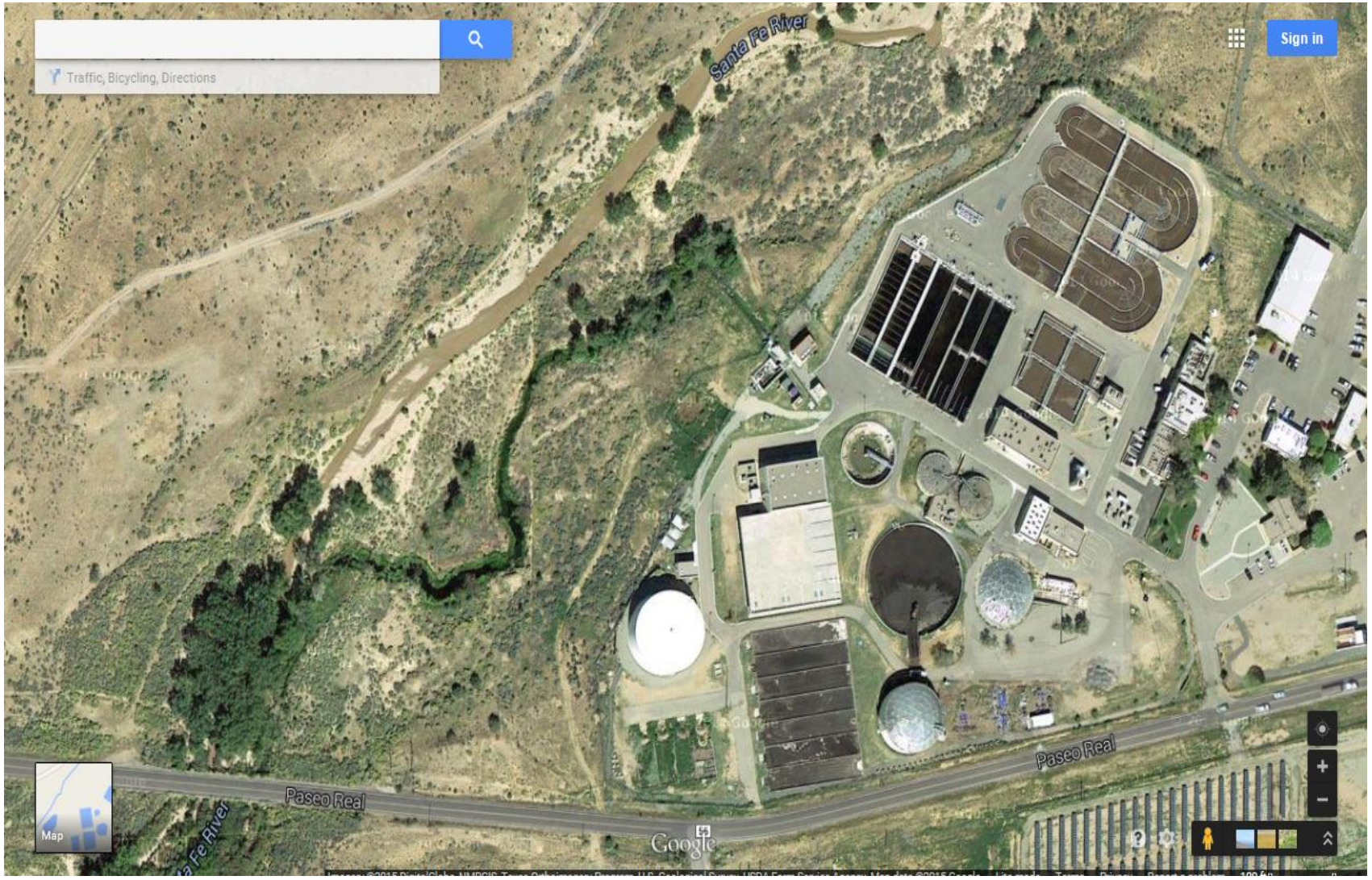

FIGURE 1 – Facility Aerial View

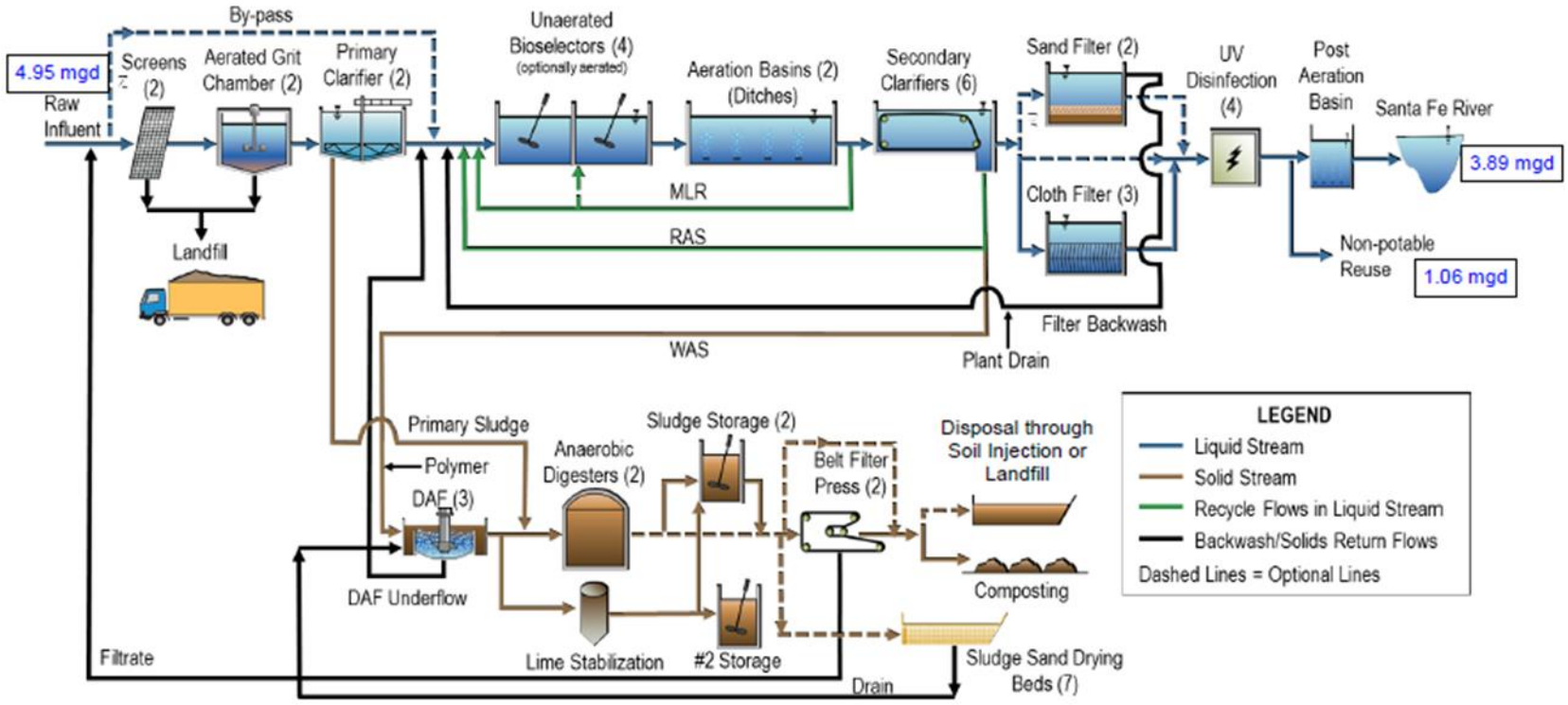

FIGURE 2 – Facility Process Flow Schematic

	CALCULATIONS OF NEW MEXICO WATER QUALITY-BASED EFFLUENT LIMITATIONS		
NMAC 20.6.4.	(EPA approved site-specific criteria for aluminum, cadmium, and zinc on April 30, 2012)		
Calculations Specifications:	Excel **Revised as of July 10, 2012**		
Prepared By:	Quang Nguyen		
	4/16/2021		
STEP 1:	REFERENCE IMPLEMENTATION PROCEDURES	**Appendix 2 of Fact Sheet**	
	INPUT FACILITY AND RECEIVING STREAM DATA		
	LIST SOURCE OF DATA INPUT		
IMPLEMENTATION PROCEDURES			
The State of New Mexico Standards for Interstate and Intrastate Surface Waters are implemented in this spread sheet			
by using procedures established in the current "Procedures for Implementing NPDES Permits in New Mexico"			
FACILTY		DATA INPUT	
Permittee		City of Santa Fe Paseo Real WWTP	
NPDES Permit No.		NM0022292	
Outfall No.(s)		1	
Plant Effluent Flow (MGD)		13	For industrial and federal facility, use the highest monthly average flow
Plant Effluent Flow (cfs)		20.15	for the past 24 months. For POTWs, use the design flow.
RECEIVING STREAM		DATA INPUT	
Receiving Stream Name		Santa Fe River	
Basin Name		Rio Grande	
Waterbody Segment Code No.		20.6.4.113	
Is a publicly owned lake or reservoir (enter "1" if it's a lake, "0" if not)		0	
Are acute aquatic life criteria considered (1= yes, 0= no)	(MUST enter "1" for 2005 Standards)	1	
Are chronic aquatic life criteria considered (1= yes, 0=no)		1	
Are domestic water supply criteria considered (1= yes, 0=no)		0	
Are irrigation water supply criteria considered (1= yes, 0=no)		1	
Livestock watering and wildlife habitat criteria applied to all streams		1	
USGS Flow Station		USGS	
WQ Monitoring Station No.			
Receiving Stream TSS (mg/l)		182.32	For intermittent stream, enter effluent TSS
Receiving Stream Hardness (mg/l as CaCOs)	RANGE: 0 - 400	62.8	For intermittent stream, enter effluent Hardness (If no data, 20 mg/l is used)
Receiving Stream Critical Low Flow (4Q3) (cfs)		0	Enter "0" for intermittent stream and lake.
Receiving Stream Harmonic Mean Flow (cfs)		0	Enter harmonic mean or modified harmonic mean flow data or 0.001 if no data is available
Avg. Receiving Water Temperature (C)		15.16	
pH (Avg), Receiving Stream		8.2	
Fraction of stream allowed for mixing (F)		1	Enter 1, if stream morphology data is not available or for intermittent streams.
Fraction of Critical Low Flow		0	

STEP 2: INPUT AMBIENT AND EFFLUENT DATA

CALCULATE IN-STREAM WASTE CONCENTRATIONS

DATA INPUT

Input pollutant geometric mean concentration as micro-gram per liter (ug/l or ppb)

unless other unit is specified for the parameter.

Effluent value reported as "< detection level" (DL) but the DL is greater than MQL, input "1/2 DL" for calculation.

Effluent value reported as "< detection level" (DL) and the DL is smaller than MQL, no data is inputted.

If a less than MQL vakue is reported, input either the reported value or "0" for calculation.

The following formular is used to calculate the Instream Waste Concentration (Cd)

See the current "Procedures for Implementing NPDES Permits in New Mexico"

Cd = [(F*Qa*Ca) + (Qe*2.13*Ce)] / (F*Qa + Qe)

Where:

Cd = Instream Waste Concentration

F = Fraction of stream allowed for mixing (see "Procedures for Implementing NPDES Permits in New Mexico")

Ce = Reported concentration in effluent

Ca = Ambient stream concentration upstream of discharge

Qe = Plant effluent flow

Qa = Critical low flow of stream at discharge point expressed as the 4Q3 or harmonic mean flow for human health criteria

The following formular convert metals reported in total form to dissolved form if criteria are in dissolved form

See the current "Procedures for Implementing NPDES Permits in New Mexico"

Kp = Kpo * (TSS**a)

Kp = Linear partition coefficient; Kpo and a can be found in table below

C/Ct = 1/ (1 + Kp*TSS* 10^-6)

TSS = Total suspended solids concentration found in receiving stream (or in effluent for intermittent stream)

Total Metal Criteria (Ct) = Cr / (C/Ct)

C/Ct = Fraction of metal dissolved; and Cr = Dissolved criteria value

		Stream Linear Partition Coefficient					Lake Linear Partition Coefficient				
Total Metals	Total Value	Kpo	alpha (a)	Kp	C/Ct	Dissolved Value in Stream	Kpo	alpha (a)	Kp	C/Ct	Dissolved Value in Lake
Arsenic	2.06	480000	-0.73	10735.74505	0.33814159	0.69657167	480000	-0.73	10735.74505	0.33814159	0.6965717
Chromium III	1.28	3360000	-0.93	26531.59548	0.171313826	0.2192817	2170000	-0.27	532150.4939	0.010201825	0.0130583
Copper	39	1040000	-0.74	22080.85818	0.198974008	7.75998631	2850000	-0.9	26308.3723	0.172516636	6.7281488
Lead	3.96	2800000	-0.8	43500.13268	0.111970244	0.44340217	2040000	-0.53	129237.3315	0.040712385	0.161221
Nickel	3.33	490000	-0.57	25206.96289	0.178707582	0.59509625	2210000	-0.76	42282.26039	0.114825041	0.3823674
Silver	0.34	2390000	-1.03	11213.43215	0.328468394	0.11167925	2390000	-1.03	11213.43215	0.328468394	0.1116793
Zinc	118	1250000	-0.7	32683.30708	0.143702513	16.9568965	3340000	-0.68	96912.35218	0.053564561	6.3206182

The following formular is used to calculate hardness dependent criteria

(Please refer to State Water Quality Standards for details)

			Dissolved WQC (ug/l)	
Aluminum (T)	Acute	e(1.3695[ln(hardness)]+1.8308)	1808.889632	If Stream pH < 6.5, enter 750 in cell O113
	Chronic	e(1.3695[ln(hardness)]+0.9161)	724.7077522	If Stream pH < 6.5, enter 87 in cell P113
Cadmium (D)	Acute	e(0.8968[ln(hardness)]-3.5699)*CF1	1.111368496	CF1 = 1.136672 - 0.041838*ln(hardness)
	Chronic	e(0.7647[ln(hardness)]-4.2180)*CF2	0.324198459	CF2 = 1.101672 - 0.041838*ln(hardness)

										Dissolved						
										WQC (ug/l)						
Chromium III (D)			Acute			0.316 e(0.819[ln(hardness)]+3.7256)				389.2454571						
			Chronic			0.860 e(0.819[ln(hardness)]+0.6848)				50.63283685						
Copper (D)			Acute			0.960 e(0.9422[ln(hardness)]-1.700)				8.669782255						
			Chronic			0.960 e(0.8545[ln(hardness)]-1.702)				6.018088089						
Lead (D)			Acute			e(1.273[ln(hardness)]-1.46)*CF3				38.78100757		CF3 = 1.46203 - 0.145712*ln(hardness)				
			Chronic			e(1.273[ln(hardness)]-4.705)*CF4				1.511240189		CF4 = 1.46203 - 0.145712*ln(hardness)				
Manganese (D)			Acute			e(0.3331[ln(hardness)]+6.4676)				2557.074307						
			Chronic			e(0.3331[ln(hardness)]+5.8743)				1412.786162						
Nickel (D)			Acute			0.998 e(0.846[ln(hardness)]+2.255)				315.8918757						
			Chronic			0.997 e(0.846[ln(hardness)]+0.0584)				35.08583484						
Silver (D)			Acute			0.85 e(1.72[ln(hardness)]-6.59)				1.445136523						
Zinc (D)			Acute			0.978 e(0.9094[ln(hardness)]+0.9095)				104.8079403						
			Chronic			0.986 e(0.90947[ln(hardness)]+0.6235)				79.40537144						
						Instream Waste Concentration						Livestock&	Acute	Chronic	Human	Need
POLLUTANTS				Ambient	Effluent	Acute	Domestic	Chronic	Human	Domestic	Irrigation	Wildlife	Aquatic	Aquatic	Health	TMDL
				Conc.	Conc.	Aquatic	Supply	Aquatic	Health	Criteria	Criteria	Criteria	Criteria	Criteria	Criteria	
		CAS No.	MQL	Ca (ug/l)	Ce (ug/l)	2.13*Ce	Cd,dom (ug/l)	Cd (ug/l)	Cd,hh (ug/l)	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	
Radioactivity, Nutrients, and Chlorine																
Aluminum, total		7429-90-5	2.5	2450	51.2	109.056	109.056	109.056	109.056	1E+100	5000	1E+100	1808.889632	724.70775	1E+100	Need TMDL
Barium, dissolved		7440-39-3	100			0	0	0	0	2000	1E+100	1E+100	1E+100	1E+100	1E+100	N/A
Boron, dissolved		7440-42-8	100		264	562.32	562.32	562.32	562.32	1E+100	750	5000	1E+100	1E+100	1E+100	N/A
Cobalt, dissolved		7440-48-4	50			0	0	0	0	1E+100	50	1000	1E+100	1E+100	1E+100	N/A
Uranium, dissolved		7440-61-1	0.1			0	0	0	0	30	1E+100	1E+100	1E+100	1E+100	1E+100	N/A
Vanadium, dissolved		7440-62-2	50			0	0	0	0	1E+100	100	100	1E+100	1E+100	1E+100	N/A
Ra-226 and Ra-228 (pCi/l)						0	0	0	0	5	1E+100	30	1E+100	1E+100	1E+100	N/A
Strontium (pCi/l)						0	0	0	0	8	1E+100	1E+100	1E+100	1E+100	1E+100	N/A
Tritium (pCi/l)						0	0	0	0	20000	1E+100	20000	1E+100	1E+100	1E+100	N/A
Gross Alpha (pCi/l)						0	0	0	0	15	1E+100	15	1E+100	1E+100	1E+100	N/A
Asbestos (fibers/l)						0	0	0	0	7000000	1E+100	1E+100	1E+100	1E+100	1E+100	N/A
Total Residual Chlorine		7782-50-5	33			0	0	0	0	1E+100	1E+100	11	19	11	1E+100	N/A
Nitrate as N (mg/l)						0	0	0	0	10	1E+100	1E+100	1E+100	1E+100	1E+100	N/A
Nitrite + Nitrate (mg/l)					9.66	20.5758	20.5758	20.5758	20.5758	1E+100	1E+100	132	1E+100	1E+100	1E+100	N/A
METALS AND CYANIDE																
Antimony, dissolved (P)		7440-36-0	60		0.64	1.3632	1.3632	1.3632	1.3632	6	1E+100	1E+100	1E+100	1E+100	640	N/A
Arsenic, dissolved (P)		7440-38-2	0.5		0.696571675	1.483697668	1.48369767	1.48369767	1.48369767	10	100	200	340	150	9	N/A
Beryllium, dissolved		7440-41-7	0.5			0	0	0	0	4	1E+100	1E+100	1E+100	1E+100	1E+100	N/A
Cadmium, dissolved		7440-43-9	1		0.112	0.23856	0.23856	0.23856	0.23856	5	10	50	1.111368496	0.3241985	1E+100	N/A
Chromium (III), dissolved		16065-83-1	10	4	1.28	2.7264	2.7264	2.7264	2.7264	1E+100	1E+100	1E+100	389.2454571	50.632837	1E+100	N/A
Chromium (VI), dissolved		18540-29-9	10			0	0	0	0	1E+100	1E+100	1E+100	16	11	1E+100	N/A
Chromium, dissolved		7440-47-3				0	0	0	0	100	100	1000	1E+100	1E+100	1E+100	N/A
Copper, dissolved		7440-50-8	0.5		7.75998631	16.52877084	16.5287708	16.5287708	16.5287708	1300	200	500	8.669782255	6.0180881	1E+100	N/A
Lead, dissolved		7439-92-1	0.5		0.443402166	0.944446614	0.94444661	0.94444661	0.94444661	15	5000	100	38.78100757	1.5112402	1E+100	N/A
Manganese, dissolved		7439-96-5				0	0	0	0	1E+100	1E+100	1E+100	2557.074307	1412.7862	1E+100	N/A

					Instream Waste Concentration										
			Ambient	Effluent	Acute	Domestic	Chronic	Human	Livestock& Domestic	Acute Irrigation	Chronic Wildlife	Human Aquatic	Need Aquatic	Health	TMDL
POLLUTANTS	CAS No.	MQL	Conc Ca (ug/l)	Conc. Ce (ug/l)	Aquatic 2.13*Ce	Supply Cd,dom (ug/l)	Aquatic Cd (ug/l)	Health Cd,hh (ug/l)	Criteria ug/l	Criteria ug/l	Criteria ug/l	Criteria ug/l	Criteria ug/l	Criteria ug/l	
Mercury, dissolved	7439-97-6	0.005		0.0394	0.083922	0.083922	0.083922	0.083922	1E+100	1E+100	1E+100	1.4	0.77	1E+100	N/A
Mercury, total	7439-97-6	0.005		0.0394	0.083922	0.083922	0.083922	0.083922	2	1E+100	0.77	1E+100	1E+100	1E+100	N/A
Molybdenum, dissolved	7439-98-7		2	3.6	7.668	7.668	7.668	7.668	1E+100	1000	1E+100	1E+100	1E+100	1E+100	N/A
Molybdenum, total recoverable	7439-98-7				0	0	0	0	1E+100	1E+100	1E+100	7920	1895	1E+100	N/A
Nickel, dissolved (P)	7440-02-0	0.5		0.595096249	1.26755501	1.26755501	1.26755501	1.26755501	700	1E+100	1E+100	315.8918757	35.085835	4600	N/A
Selenium, dissolved (P)	7782-49-2	5			0	0	0	0	50	130	50	1E+100	1E+100	4200	N/A
Selenium, dis (SO4 >500 mg/l)		5			0	0	0	0	50	250	50	1E+100	1E+100	4200	N/A
Selenium, total recoverable	7782-49-2	5			0	0	0	0	1E+100	1E+100	5	20	5	1E+100	N/A
Silver, dissolved	7440-22-4	0.5		0.111679254	0.237876811	0.23787681	0.23787681	0.23787681	1E+100	1E+100	1E+100	1.445136523	1E+100	1E+100	N/A
Thalllium, dissolved (P)	7440-28-0	0.5			0	0	0	0	2	1E+100	1E+100	1E+100	1E+100	0.47	N/A
Zinc, dissolved	7440-66-6	20		16.95689653	36.11818961	36.1181896	36.1181896	36.1181896	10500	2000	25000	104.8079403	79.405371	26000	N/A
Cyanide, total recoverable	57-12-5	10		6.57	13.9941	13.9941	13.9941	13.9941	200	1E+100	5.2	22	5.2	140	N/A
Dioxin	1764-01-6	0.00001			0	0	0	0	3.00E-05	1E+100	1E+100	1E+100	1E+100	5.1E-08	N/A
VOLATILE COMPOUNDS															
Acrolein	107-02-8	50			0	0	0	0	18	1E+100	1E+100	1E+100	1E+100	9	N/A
Acrylonitrile	107-13-0	20			0	0	0	0	0.65	1E+100	1E+100	1E+100	1E+100	2.5	N/A
Benzene	71-43-2	10			0	0	0	0	5	1E+100	1E+100	1E+100	1E+100	510	N/A
Bromoform	75-25-2	10			0	0	0	0	44	1E+100	1E+100	1E+100	1E+100	1400	N/A
Carbon Tetrachloride	56-23-5	2			0	0	0	0	5	1E+100	1E+100	1E+100	1E+100	16	N/A
Chlorobenzene	108-90-7	10			0	0	0	0	100	1E+100	1E+100	1E+100	1E+100	1600	N/A
Clorodibromomethane	124-48-1	10			0	0	0	0	4.2	1E+100	1E+100	1E+100	1E+100	130	N/A
Chloroform	67-66-3	50			0	0	0	0	57	1E+100	1E+100	1E+100	1E+100	4700	N/A
Dichlorobromomethane	75-27-4	10			0	0	0	0	5.6	1E+100	1E+100	1E+100	1E+100	170	N/A
1,2-Dichloroethane	107-06-2	10			0	0	0	0	5	1E+100	1E+100	1E+100	1E+100	370	N/A
1,1-Dichloroethylene	75-35-4	10			0	0	0	0	7	1E+100	1E+100	1E+100	1E+100	7100	N/A
1,2-Dichloropropane	78-87-5	10			0	0	0	0	5	1E+100	1E+100	1E+100	1E+100	150	N/A
1,3-Dichloropropylene	542-75-6	10			0	0	0	0	3.5	1E+100	1E+100	1E+100	1E+100	210	N/A
Ethylbenzene	100-41-4	10			0	0	0	0	700	1E+100	1E+100	1E+100	1E+100	2100	N/A
Methyl Bromide	74-83-9	50		0.6	1.278	1.278	1.278	1.278	49	1E+100	1E+100	1E+100	1E+100	1500	N/A
Methylene Chloride	75-09-2	20			#VALUE!	#VALUE!	#VALUE!	#VALUE!	5	1E+100	1E+100	1E+100	1E+100	5900	N/A
1,1,2,2-Tetrachloroethane	79-34-5	10			0	0	0	0	1.8	1E+100	1E+100	1E+100	1E+100	40	N/A
Tetrachloroethylene	127-18-4	10			0	0	0	0	5	1E+100	1E+100	1E+100	1E+100	33	N/A
Tolune	108-88-3	10			0	0	0	0	1000	1E+100	1E+100	1E+100	1E+100	15000	N/A
1,2-trans-Dichloroethylene	156-60-5	10			0	0	0	0	100	1E+100	1E+100	1E+100	1E+100	10000	N/A
1,1,1-Trichloroethane	71-55-6				0	0	0	0	200	1E+100	1E+100	1E+100	1E+100	1E+100	N/A
1,1,2-Trichloroethane	79-00-5	10			0	0	0	0	5	1E+100	1E+100	1E+100	1E+100	160	N/A
Trichloroethylene	79-01-6	10			0	0	0	0	5	1E+100	1E+100	1E+100	1E+100	300	N/A
Vinyl Chloride	75-01-4	10			0	0	0	0	2	1E+100	1E+100	1E+100	1E+100	24	N/A
ACID COMPOUNDS															
2-Chlorophenol	95-57-8	10			0	0	0	0	175	1E+100	1E+100	1E+100	1E+100	150	N/A
2,4-Dichlorophenol	120-83-2	10			0	0	0	0	105	1E+100	1E+100	1E+100	1E+100	290	N/A
2,4-Dimethylphenol	105-67-9	10			0	0	0	0	700	1E+100	1E+100	1E+100	1E+100	850	N/A
4,6-Dinitro-o-Cresol	534-52-1	50			0	0	0	0	14	1E+100	1E+100	1E+100	1E+100	280	N/A

				Instream Waste Concentration						Livestock&	Acute	Chronic	Human	Need
		Ambient	Effluent	Acute	Domestic	Chronic	Human	Domestic	Irrigation	Wildlife	Aquatic	Aquatic	Health	TMDL
POLLUTANTS		Conc	Conc.	Aquatic	Supply	Aquatic	Health	Criteria	Criteria	Criteria	Criteria	Criteria	Criteria	
	CAS No. MQL	Ca (ug/l)	Ce (ug/l)	2.13*Ce	Cd,dom (ug/l)	Cd (ug/l)	Cd,hh (ug/l)	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	
2,4-Dinitrophenol	51-28-5 50			0	0	0	0	70	1E+100	1E+100	1E+100	1E+100	5300	N/A
Pentachlorophenol	87-86-5 50			0	0	0	0	1	1E+100	1E+100	19	15	30	N/A
Phenol	108-95-2 10			0	0	0	0	10500	1E+100	1E+100	1E+100	1E+100	860000	N/A
2,4,6-Trichlorophenol	88-06-2 10			0	0	0	0	32	1E+100	1E+100	1E+100	1E+100	24	N/A
BASE/NEUTRAL														
Acenaphthene	83-32-9 10			0	0	0	0	2100	1E+100	1E+100	1E+100	1E+100	990	N/A
Anthracene	120-12-7 10			0	0	0	0	10500	1E+100	1E+100	1E+100	1E+100	40000	N/A
Benzidine	92-87-5 50			0	0	0	0	0.0015	1E+100	1E+100	1E+100	1E+100	0.002	N/A
Benzo(a)anthracene	56-55-3 5			0	0	0	0	0.048	1E+100	1E+100	1E+100	1E+100	0.18	N/A
Benzo(a)pyrene	50-32-8 5		10	21.3	21.3	21.3	21.3	0.2	1E+100	1E+100	1E+100	1E+100	0.18	N/A
3,4-Benzofluoranthene	205-99-2 10			0	0	0	0	0.048	1E+100	1E+100	1E+100	1E+100	0.18	N/A
Benzo(k)fluoranthene	207-08-9 5			0	0	0	0	0.048	1E+100	1E+100	1E+100	1E+100	0.18	N/A
Bis(2-chloroethyl)Ether	111-44-4 10			0	0	0	0	0.3	1E+100	1E+100	1E+100	1E+100	5.3	N/A
Bis(2-chloroisopropyl)Ether	108-60-1 10			0	0	0	0	1400	1E+100	1E+100	1E+100	1E+100	65000	N/A
Bis(2-ethylhexyl)Phthalate	117-81-7 10		1.48	3.1524	3.1524	3.1524	3.1524	6	1E+100	1E+100	1E+100	1E+100	22	N/A
Butyl Benzyl Phthalate	85-68-7 10			0	0	0	0	7000	1E+100	1E+100	1E+100	1E+100	1900	N/A
2-Chloronapthalene	91-58-7 10			0	0	0	0	2800	1E+100	1E+100	1E+100	1E+100	1600	N/A
Chrysene	218-01-9 5			0	0	0	0	0.048	1E+100	1E+100	1E+100	1E+100	0.18	N/A
Dibenzo(a,h)anthracene	53-70-3 5			0	0	0	0	0.048	1E+100	1E+100	1E+100	1E+100	0.18	N/A
1,2-Dichlorobenzene	95-50-1 10			0	0	0	0	600	1E+100	1E+100	1E+100	1E+100	1300	N/A
1,3-Dichlorobenzene	541-73-1 10			0	0	0	0	469	1E+100	1E+100	1E+100	1E+100	960	N/A
1,4-Dichlorobenzene	106-46-7 10			0	0	0	0	75	1E+100	1E+100	1E+100	1E+100	190	N/A
3,3'-Dichlorobenzidine	91-94-1 5			0	0	0	0	0.78	1E+100	1E+100	1E+100	1E+100	0.28	N/A
Diethyl Phthalate	84-66-2 10		5.78	12.3114	12.3114	12.3114	12.3114	28000	1E+100	1E+100	1E+100	1E+100	44000	N/A
Dimethyl Phthalate	131-11-3 10			0	0	0	0	350000	1E+100	1E+100	1E+100	1E+100	1100000	N/A
Di-n-Butyl Phthalate	84-74-2 10			0	0	0	0	3500	1E+100	1E+100	1E+100	1E+100	4500	N/A
2,4-Dinitrotoluene	121-14-2 10			0	0	0	0	1.1	1E+100	1E+100	1E+100	1E+100	34	N/A
1,2-Diphenylhydrazine	122-66-7 20			0	0	0	0	0.44	1E+100	1E+100	1E+100	1E+100	2	N/A
Fluoranthene	206-44-0 10			0	0	0	0	1400	1E+100	1E+100	1E+100	1E+100	140	N/A
Fluorene	86-73-7 10			0	0	0	0	1400	1E+100	1E+100	1E+100	1E+100	5300	N/A
Hexachlorobenzene	118-74-1 5			0	0	0	0	1	1E+100	1E+100	1E+100	1E+100	0.0029	N/A
Hexachlorobutadiene	87-68-3 10			0	0	0	0	4.5	1E+100	1E+100	1E+100	1E+100	180	N/A
Hexachlorocyclopentadiene	77-47-4 10			0	0	0	0	50	1E+100	1E+100	1E+100	1E+100	1100	N/A
Hexachloroethane	67-72-1 20			0	0	0	0	25	1E+100	1E+100	1E+100	1E+100	33	N/A
Indeno(1,2,3-cd)Pyrene	193-39-5 5			0	0	0	0	0.048	1E+100	1E+100	1E+100	1E+100	0.18	N/A
Isophorone	78-59-1 10			0	0	0	0	368	1E+100	1E+100	1E+100	1E+100	9600	N/A
Nitrobenzene	98-95-3 10			0	0	0	0	18	1E+100	1E+100	1E+100	1E+100	690	N/A
n-Nitrosodimethylamine	62-75-9 50			0	0	0	0	0.0069	1E+100	1E+100	1E+100	1E+100	30	N/A
n-Nitrosodi-n-Propylamine	621-64-7 20			0	0	0	0	0.05	1E+100	1E+100	1E+100	1E+100	5.1	N/A
n-Nitrosodiphenylamine	86-30-6 20			0	0	0	0	71	1E+100	1E+100	1E+100	1E+100	60	N/A
Nonylphenol	84852-15-3			0	0	0	0	1E+100	1E+100	1E+100	28	6.6	1E+100	N/A
Pyrene	129-00-0 10			0	0	0	0	1050	1E+100	1E+100	1E+100	1E+100	4000	N/A
1,2,4-Trichlorobenzene	120-82-1 10			0	0	0	0	70	1E+100	1E+100	1E+100	1E+100	70	N/A

						Instream Waste Concentration						Livestock&	Acute	Chronic	Human	Need
				Ambient	Effluent	Acute	Domestic	Chronic	Human	Domestic	Irrigation	Wildlife	Aquatic	Aquatic	Health	TMDL
POLLUTANTS				Conc	Conc.	Aquatic	Supply	Aquatic	Health	Criteria	Criteria	Criteria	Criteria	Criteria	Criteria	
		CAS No.	MQL	Ca (ug/l)	Ce (ug/l)	2.13*Ce	Cd,dom (ug/l)	Cd (ug/l)	Cd,hh (ug/l)	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	
PESTICIDES AND PCBS																
Aldrin		309-00-2	0.01			0	0	0	0	0.021	1E+100	1E+100	3	1E+100	0.0005	N/A
Alpha-BHC		319-84-6	0.05			0	0	0	0	0.056	1E+100	1E+100	1E+100	1E+100	0.049	N/A
Beta-BHC		319-85-7	0.05			0	0	0	0	0.091	1E+100	1E+100	1E+100	1E+100	0.17	N/A
Gamma-BHC		58-89-9	0.05			0	0	0	0	0.2	1E+100	1E+100	0.95	1E+100	1.8	N/A
Chlordane		57-74-9	0.2			0	0	0	0	2	1E+100	1E+100	2.4	0.0043	0.0081	N/A
4,4'-DDT and derivatives		50-29-3	0.02			0	0	0	0	1	1E+100	0.001	1.1	0.001	0.0022	N/A
Dieldrin		60-57-1	0.02			0	0	0	0	0.022	1E+100	1E+100	0.24	0.056	0.00054	N/A
Diazinon		333-41-5				0	0	0	0	1E+100	1E+100	1E+100	0.17	0.17	1E+100	N/A
Alpha-Endosulfan		959-98-8	0.01			0	0	0	0	62	1E+100	1E+100	0.22	0.056	89	N/A
Beta-Endosulfan		33213-65-9	0.02			0	0	0	0	62	1E+100	1E+100	0.22	0.056	89	N/A
Endosulfan sulfate		1031-7-8	0.1			0	0	0	0	62	1E+100	1E+100	1E+100	1E+100	89	N/A
Endrin		72-20-8	0.02			0	0	0	0	2	1E+100	1E+100	0.086	0.036	0.06	N/A
Endrin Aldehyde		7421-93-4	0.1			0	0	0	0	10.5	1E+100	1E+100	1E+100	1E+100	0.3	N/A
Heptachlor		76-44-8	0.01		0.00182	0.0038766	0.0038766	0.0038766	0.0038766	0.4	1E+100	1E+100	0.52	0.0038	0.00079	N/A
Heptachlor Epoxide		1024-57-3	0.01			#VALUE!	#VALUE!	#VALUE!	#VALUE!	0.2	1E+100	1E+100	0.52	0.0038	0.00039	N/A
PCBs		1336-36-3	0.2			0	0	0	0	0.5	1E+100	0.014	2	0.014	0.00064	N/A
Toxaphene		8001-35-2	0.3			0	0	0	0	3	1E+100	1E+100	0.73	0.0002	0.0028	N/A

STEP 3: SCAN POTENTIAL INSTREAM WASTE CONCENTRATIONS AGAINST WATER QUALITY CRITERIA
AND ESTABLISH EFFLUENT LIMITATIONS FOR ALL APPLICABLE PARAMETERS

No limits are established if the receiving stream is not designated for the particular uses.

No limits are established if the potential instream waste concentrations are less than the chronic water quality criteria.

The most applicable stringent criteria are used to establish effluent limitations for a given parameter.

Water quality criteria apply at the end-of-pipe for acute aquatic life criteria and discharges to public lakes.

If background concentration exceeds the water quality criteria, water quality criteria apply. And "Need TMDL" shown to the next column of Avg. Mass

Monthly avg concentration = daily max. / 1.5.

APPLICABLE WATER QUALITY-BASED LIMITS

The following formular is used to calculate the allowable daily maximum effluent cincentration — See the current "Procedures for Implementing NPDES Permits in New Mexico"

Daily Max. Conc. = Cs + (Cs - Ca)(F*Qa/Qe) — Monthly Avg. Conc. = Daily Max. Conc. / 1.5

Where:
Cs = Applicable water quality standard
Ca = Ambient stream concentration
F = Fraction of stream allowed for mixing (1.0 is assigned to domestic water supply and human health uses)
Qe = Plant effluent flow
Qa = Criteria Low flow (4Q3) or Harmonic Mean flow for Human Health Criteria

POLLUTANTS	CAS No.	STORET	Domestic Limits	Irrigation Limits	Livestock or Wildlife Limits	Acute Aquatic Limits	Chronic Aquatic Limits	Human Health Limits	Daily Max Conc ug/l	Monthly Avg Conc ug/l	Daily Max Total ug/l	Mon. Avg Total ug/l	Daily Max Load lb/day	Monthly Avg Load lb/day
Radioactivity, Nutrients, and Chlorine, as Total														
Aluminum, Total	7429-90-5	01105	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Barium, Total	7440-39-3	01007	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Boron, Total	7440-42-8	01022	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Cobalt, Total	7440-48-4	01037	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Uranium, Total	7440-61-1	22706	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Vanadium, Total	7440-62-2	01087	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Ra-226 and Ra-228 (pCi/l)		11503	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Strontium (pCi/l)		13501	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tritium (pCi/l)		04124	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Gross Alpha (pCi/l)		80029	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Asbestos (fibers/l)			N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total Residual Chlorine	7782-50-5	50060	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Nitrate as N (mg/l)		00620	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Nitrite + Nitrate (mg/l)		00630	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
METALS AND CYANIDE, as Total														
Antimony, Total (P)	7440-36-0	01097	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Arsenic, Total (P)	7440-38-2	1002	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Beryllium, Total	7440-41-7	01012	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Cadmium, Total	7440-43-9	01027	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chromium (III), dissolved	16065-83-1	01033	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chromium (VI), dissolved	18540-29-9	01034	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chromium, Total	7440-47-3	01034	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Copper, Total	7440-50-8	01042	N/A	N/A	N/A	8.66978225	6.01808809	N/A	6.018088089	6.018088089	30.24559917	30.245599	3.27922786	3.279227862
Lead, Total	7439-92-1	01051	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Manganese, dissovled	7439-96-5	01056	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Mercury, Total	7439-97-6	71900	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Mercury, Total	7439-97-6	71900	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Molybdenum, dissolved	7439-98-7	1060	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Molybdenum, total recoverable	7439-98-7	01062	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Nickel, Total (P)	7440-02-0	01067	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Selenium, Total (P)	7782-49-2	01147	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Selenium, Total (SO4 >500 mg/l)		01147	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Selenium, Total recoverable	7782-49-2	01147	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Silver, Total	7440-22-4	01077	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Thalllium, Total (P)	7440-28-0	01059	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Zinc, Total	7440-66-6	1092	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Cyanide, total recoverable	57-12-5	00720	N/A	N/A	5.2	N/A	5.2	N/A	5.2	5.2	5.2	5.2	0.563784	0.563784
DIOXIN														0
2,3,7,8-TCDD	1764-01-6	34675	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
VOLATILE COMPOUNDS														
Acrolein	107-02-8	34210	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Acrylonitrile	107-13-0	34215	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Benzene	71-43-2	34030	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Bromoform	75-25-2	32104	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Carbon Tetrachloride	56-23-5	32102	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

POLLUTANTS	CAS No.	STORET		Domestic Limits	Irrigation Limits	Livestock or Wildlife Limits	Acute Aquatic Limits	Chronic Aquatic Limits	Human Health Limits	Daily Max Conc ug/l	Monthly Avg Conc ug/l	Daily Max Total ug/l	Mon. Avg Total ug/l	Daily Max Load lb/day	Monthly Avg Load lb/day
Chlorobenzene	108-90-7	34301		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Clorodibromomethane	124-48-1	32105		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chloroform	67-66-3	32106		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dichlorobromomethane	75-27-4	32101		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1,2-Dichloroethane	107-06-2	34531		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1,1-Dichloroethylene	75-35-4	34501		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1,2-Dichloropropane	78-87-5	34541		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1,3-Dichloropropylene	542-75-6	34561		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Ethylbenzene	100-41-4	34371		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Methyl Bromide	74-83-9	34413		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Methylene Chloride	75-09-2	34423		N/A	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
1,1,2,2-Tetrachloroethane	79-34-5	34516		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tetrachloroethylene	127-18-4	34475		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tolune	108-88-3	34010		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1,2-trans-Dichloroethylene	156-60-5	34546		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1,1,1-Trichloroethane	71-55-6			N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1,1,2-Trichloroethane	79-00-5	34511		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Trichloroethylene	79-01-6	39180		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Vinyl Chloride	75-01-4	39175		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
ACID COMPOUNDS															
2-Chlorophenol	95-57-8	34586		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2,4-Dichlorophenol	120-83-2	34601		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2,4-Dimethylphenol	105-67-9	34606		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4,6-Dinitro-o-Cresol	534-52-1	34657		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2,4-Dinitrophenol	51-28-5	34616		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Pentachlorophenol	87-86-5	39032		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Phenol	108-95-2	34694		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2,4,6-Trichlorophenol	88-06-2	34621		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
BASE/NEUTRAL															
Acenaphthene	83-32-9	34205		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Anthracene	120-12-7	34220		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Benzidine	92-87-5	39120		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Benzo(a)anthracene	56-55-3	34526		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Benzo(a)pyrene	50-32-8	34247		N/A	N/A	N/A	N/A	N/A	0.18	0.18	0.18	0.18	0.18	0.0195156	0.0195156
3,4-Benzofluoranthene	205-99-2	34230		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Benzo(k)fluoranthene	207-08-9	34242		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Bis(2-chloroethyl)Ether	111-44-4	34273		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Bis(2-chloroisopropyl)Ether	108-60-1	34283		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Bis(2-ethylhexyl)Phthalate	117-81-7	39100		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Butyl Benzyl Phthalate	85-68-7	34292		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2-Chloronapthalene	91-58-7	34581		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chrysene	218-01-9	34320		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dibenzo(a,h)anthracene	53-70-3	34556		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1,2-Dichlorobenzene	95-50-1	34536		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

POLLUTANTS	CAS No.	STORET		Domestic Limits	Irrigation Limits	Livestock or Wildlife Limits	Acute Aquatic Limits	Chronic Aquatic Limits	Human Health Limits	Daily Max Conc ug/l	Monthly Avg Conc ug/l	Daily Max Total ug/l	Mon. Avg Total ug/l	Daily Max Load lb/day	Daily Avg Load lb/day
1,3-Dichlorobenzene	541-73-1	34566		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1,4-Dichlorobenzene	106-46-7	34571		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3,3'-Dichlorobenzidine	91-94-1	34631		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Diethyl Phthalate	84-66-2	34336		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dimethyl Phthalate	131-11-3	34341		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Di-n-Butyl Phthalate	84-74-2	39110		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2,4-Dinitrotoluene	121-14-2	34611		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1,2-Diphenylhydrazine	122-66-7	34346		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Fluoranthene	206-44-0	34376		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Fluorene	86-73-7	34381		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Hexachlorobenzene	118-74-1	39700		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Hexachlorobutadiene	87-68-3	34391		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Hexachlorocyclopentadiene	77-47-4	34386		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Hexachloroethane	67-72-1	34396		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Indeno(1,2,3-cd)Pyrene	193-39-5	34403		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Isophorone	78-59-1	34408		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Nitrobenzene	98-95-3	34447		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
n-Nitrosodimethylamine	62-75-9	34438		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
n-Nitrosodi-n-Propylamine	621-64-7	34428		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
n-Nitrosodiphenylamine	86-30-6	34433		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Nonylphenol	84852-15-3			N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Pyrene	129-00-0	34469		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1,2,4-Trichlorobenzene	120-82-1	34551		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
PESTICIDES AND PCBS															
Aldrin	309-00-2	39330		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Alpha-BHC	319-84-6	39337		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Beta-BHC	319-85-7	39338		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Gamma-BHC	58-89-9	39340		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chlordane	57-74-9	39350		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4,4'-DDT and derivatives	50-29-3	39300		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dieldrin	60-57-1	39380		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Diazinon	333-41-5	39570		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Alpha-Endosulfan	959-98-8	34361		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Beta-Endosulfan	33213-65-9	34356		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Endosulfan sulfate	1031-7-8	34351		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Endrin	72-20-8	39390		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Endrin Aldehyde	7421-93-4	34366		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Heptachlor	76-44-8	39410		N/A	N/A	N/A	N/A	0.0038	0.00079	0.00079	0.00079	0.00079	0.00079	8.5652E-05	8.56518E-05
Heptachlor Epoxide	1024-57-3	39420		N/A	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!	#VALUE!
PCBs	1336-36-3	39516		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Toxaphene	8001-35-2	39400		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

APPENDIX 3

Facility Name	City of Santa Fe							
NPDES Permit Number	NM0022292					Outfall Number	001	
Proposed Critical Dilution*	100							
	*Critical Dilution in draft permit, do not use % sign.							
	Enter data in yellow shaded cells only. Fifty percent should be entered as 50, not 50%.							
Test Data								
		VERTEBRATE				INVERTEBRATE		
Date (mm/yyyy)	Lethal NOEC	Sublethal NOEC	Lethal TU	Sublethal TU	Lethal NOEC	Sublethal NOEC	Lethal TU	Sublethal TU
Feb-17					100	100	1.00	1.00
Aug-17	100	100	1.00	1.00	100	100	1.00	1.00
Feb-18					100	100	1.00	1.00
Aug-18	100	100	1.00	1.00	100	100	1.00	1.00
Feb-19					100	100	1.00	1.00
Aug-19	100	100	1.00	1.00	100	100	1.00	1.00
Feb-20					100	100	1.00	1.00
Aug-20	100	100	1.00	1.00	100	100	1.00	1.00
	100	100	1.00	1.00	100	100	1.00	1.00
Count			72	72			8	76
Mean			1.000	1.000			1.000	1.000
Std. Dev.			0.000	0.000			0.000	0.000
CV			0.0	0			0.6	0
RPMF			#N/A	#N/A			1.9	#N/A
		1	Reasonable Potential Acceptance Criteria					
Vertebrate Lethal								
			No Reasonable Potential exists. Permit requires WET monitoring, but no WET limit.					
Vertebrate Sublethal								
			No Reasonable Potential exists. Permit requires WET monitoring, but no WET limit.					
Invertebrate Lethal		1.900	Reasonable Potential exists, Permit requires WET monitoring and WET limit.					
Invertebrate Sublethal								
			No Reasonable Potential exists. Permit requires WET monitoring, but no WET limit.					

EPA concludes that this effluent does not cause or contribute to an exceedance of the State water quality standards. Therefore WET limits will not be established in the proposed permit.