NPDES PERMIT NO. NM0026395
FACT SHEET

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

APPLICANT

City of Carlsbad
Wastewater Treatment Plant
45 Tell Tale Lane
Carlsbad, NM 88220

ISSUING OFFICE

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DATE PREPARED

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PERMIT ACTION

Renewal of a permit previously issued on August 28, 2019, with an effective date of October 1, 2019, and an expiration date of September 30, 2024.

RECEIVING WATER – BASIN

Pecos River – Pecos River 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
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
ELG	Effluent limitations guidelines
EPA	United States Environmental Protection Agency
ESA	Endangered Species Act
FCB	Fecal coliform bacteria
F&WS	United States Fish and Wildlife Service
mg/L	Milligrams per liter
µg/L	Micrograms per liter
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
PCB	Polychlorinated Biphenyl
PFAS	Per and Polyfluoroalkyl Substances
POTW	Public owned treatment works
RP	Reasonable potential
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	Wasteload allocation
WET	Whole effluent toxicity
WQCC	New Mexico Water Quality Control Commission
WQMP	Water Quality Management Plan
WWTP	Wastewater treatment plant

In this document, references to State WQS and/or rules shall collectively mean the State of New Mexico WQS.

I. CHANGES FROM THE PREVIOUS PERMIT

Changes from the permit issued on August 28, 2019, with an effective date of October 1, 2019, an expiration date of September 30, 2024, and currently administratively continued under 5 U.S.C. 558(c) are:

- Per- and Polyfluoroalkyl Substances, Adjusted Gross Alpha, Gross Alpha, Uranium, Total Nitrogen, Total Phosphorous, 4,4'-DDT and derivatives, and PCBs monitoring requirements were added.
- Effluent limitations were established for Cyanide (Total).
- Effluent WET limitations were established for *Ceriodaphnia dubia.*

II. APPLICATION LOCATION and ACTIVITY

As described in the application, the plant site is located at 45 Blackfoot Road, Eddy County, New Mexico. Under the Standard Industrial Classification Code 4952, the facility is a POTW with a design flow of 5 MGD serving a population of 32,328. The effluent from the treatment plant is discharged to Pecos River in segment 20.6.4.202 NMAC of the Pecos River Basin. The outfall is located at Latitude 32° 24' 28.12" North and Longitude 104° 10' 43.33" West.

The WWTP is composed of head-work, automatic bar screen, fine screen, aerated grit chamber, two primary clarifiers, aerobic digesters, reuse water storage tank, waste gas burners, aeration basins, two secondary clarifiers, storm retention ponds, bacteria control, and discharge. There are approximately twenty-one lift stations within the entire collection system. All raw sewage from the city is lifted by the primary lift station located on the west side of the Pecos River to the WWTP located on the east side of the Pecos River. The primary lift station is at the City's former WWTP, it has two lift pumps and automatic back-up power, an alarm and callout system.

The flow travels from the headwork to a splitter box, then to either of two primary clarifiers which are run in parallel. Gritt and screening are hauled to the landfill. The flow is divided between the two primary clarifiers, then recombines and is treated in four aeration basins. The basins have both anoxic and aeration zones for nitrogen removal. From the aeration basin, the wastewater flows into two second clarifiers. After solids are dropped out in the two secondary clarifiers effluent flows through a dual bank UV system for final disinfection. Some flow is stored for reuse on the city golf course and other facilities. The effluent flow is measured using an 18-inch Parshall flume with a secondary Drexelbrook flow totalizing meter. The final effluent is discharged to the Pecos River through an effluent pipeline above the river.

Sludge from two primary clarifiers is sent to the primary sludge digesters. The Return Activated Sludge (RAS) from the secondary clarifiers is pumped to the head of the activated sludge basins. The facility has solid bottom sludge drying beds with drains for decanting liquid. The decant water from the sludge beds is pumped back to the head of the WWTP, along with the decant water from the fan press. The sludge on the solid beds is mixed and turned to enhance drying using a front-end loader. It is then stockpiled and composted to meet Class A pathogen reduction requirements. The composted sludge is used on City properties and given away to the public.

III. RECEIVING STREAM STANDARDS

The general and specific stream standards are provided in "New Mexico State Standards for Interstate and Intrastate Surface Waters," (20.6.4 NMAC, effective September 24, 2022). The facility discharges to Pecos River in segment 20.6.4.202 NMAC of the Pecos River Basin. This segment has the designated uses of industrial water supply, irrigation, livestock watering, wildlife habitat, warm-water aquatic life, and primary contact.

IV. EFFLUENT CHARACTERISTICS

A quantitative description of the discharge(s) described in the EPA Permit Application Form 2A and addendum received on June 27, 2024, July 08, 2024, August 14, 2024, August 29, 2024 and August 30, 2024 are presented in Tables 1 and 2.

TABLE 1:

Parameter	**Maximum**	**Average**
Flow, million gallons/day (MGD)	3.69	2.4
Temperature, winter	15.9 °C	13.81 °C
Temperature, summer	23.7 °C	22.8 °C
pH, minimum, standard units (s.u.)	6.92	---
pH, maximum, standard units (s.u.)	7.51	---
Biochemical Oxygen Demand, 5-day (BOD_5)	39.3 mg/L	6.055 mg/L
Fecal Coliform	11 cfu/100 ml	1.06 cfu/100 ml
Total Suspended Solids	18.53 mg/L	3.58mg/L
Ammonia	0.5 mg/L	0.226 mg/L
Dissolved Oxygen	8.93 mg/L	8.6 mg/L
Total Kjeldahl Nitrogen	1.4 mg/l	0.79 mg/L
Nitrate plus Nitrite Nitrogen	7.5 mg/L	6.27 mg/L
Phosphorus	9.7 mg/L	3.37 mg/L
Total Dissolved Solids	18.53 mg/L	3.58 mg/L

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 was 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 here.

TABLE 2:

Parameter	**Maximum**	**Average**
Antimony	0.0013 mg/L	0.00077 mg/L
Arsenic	0.00059 mg/L	0.0002 mg/L
Barium. dissolved	0.063 mg/L	0.0543 mg/L
Boron, dissolved	0.35 mg/L	0.34 mg/L
Copper	0.0012 mg/L	0.0006 mg/L

Total phenolic compounds	3.5 mg/L	2.2 mg/L
Cyanide	0.013 mg/L	0.0043 mg/L
Zinc	0.54 mg/L	0.197 mg/L
Manganese, dissolved	0.0053 mg/L	0.0046 mg/L
Methyl Mercury	0.05 ng/L	0.035 ng/L
Mercury	1.3 ng/L	1.249 ng/L
Aluminum, Total	0.034 mg/L	0.028 mg/L
Uranium, dissolved	0.00093 mg/L	0.000889 mg/L
Nickel, Total	0.0012 mg/L	0.0012 mg/L
Radium 226/228	0.931 pCi/L	0.592 pCi/L
Benzoic Acid	14 ug/L	9.899 ug/L

A summary of the last 36 months of available pollutant data from January 2021 through January 2024, taken from DMRs indicates the facility experienced exceedances of permit limit (shown in parenthesis) for TSS (1), BOD_5 (1), and E. coli (1).

V. 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 existing NPDES permit initially issued on August 28, 2019, with an effective date of October 1, 2019, and an expiration date of September 30, 2024, is administratively continued under 5 U.S.C. 558(c) until this permit is reissued.

VI. 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 require that NPDES permit limits are developed that meet the more stringent of either technology-based ELGs, 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_5, and percent removal for both. Water quality-based effluent limitations are established in the proposed draft permit for BOD_5, E. coli bacteria, TRC, and pH.

B. TECHNOLOGY-BASED EFFLUENT LIMITATIONS/CONDITIONS

Regulations promulgated at 40 CFR §122.44 a) require technology-based effluent limitations to be placed in NPDES permits. The facility is a POTW. POTWs have technology based ELGs established at 40 CFR §133, Secondary Treatment Regulation. Pollutants with ELGs established in this Chapter are BOD_5, TSS and pH. BOD_5 limits of 30 mg/L for the 30-day average, 45 mg/L for the 7-day average, and 85% percent (minimum) removal are found at 40 CFR §133.102 (a). TSS limits of 30 mg/L for the 30-day average, 45 mg/L for the 7-day average, and 85% percent (minimum) removal are found at 40 CFR §133.102(b). ELGs for pH are between 6-9 standard units (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 POTWs or WWTPs, the plant's design flow is used to establish the mass load. Mass limits in Table 3 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 * 5.0 MGD
30-day average TSS loading = 1252 lbs

7-day average TSS loading = 45 mg/L * 8.345 lbs/gal * 5.0 MGD
7-day average TSS loading = 1878 lbs

30-day average BOD_5 loading = 30 mg/L * 8.345 lbs/gal * 5.0 MGD
30-day average BOD_5 loading = 1252 lbs

7-day average BOD_5 loading = 45 mg/L * 8.345 lbs/gal * 5.0 MGD
7-day average BOD_5 loading = 1878 lbs

Technology-Based Effluent Limits – 5.0 MGD design flow.

TABLE 3:

EFFLUENT CHARACTERISTICS	**30-Day Avg.**	**7-Day Avg.**	**30-Day Avg.**	**7-Day Avg.**
Flow	N/A	N/A	Measure MGD	Measure MGD
BOD_5	1252 lbs/day [*3]	1878 lbs/day [*3]	30 mg/L [*3]	45 mg/L [*3]
BOD_5, % removal, minimum [*1]	≥ 85%	---	---	---
TSS	1252 lbs/day	1878 lbs/day	30 mg/L	45 mg/L
TSS, % removal, minimum [*1]	≥ 85%	---	---	---
pH	N/A	N/A	6.0 – 9.0 standard units [*2]	

Footnotes:

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

[*2] The pH based on stream segment specific WQS are more stringent than pH technology-based limits. See section C.3.i below.
[*3] The BOD_5 based on stream segment specific WQS are more stringent than BOD_5 technology-based limits. See section C.3.vi below.

The facility will be required to maintain a log and kept at the facility showing the influent of BOD_5 and TSS on a once per week frequency to be used to determine the removal percentage. This data is not required to be submitted but must be made available to EPA or its agents upon request.

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, state or tribal WQS. Effluent limitations and/or conditions established in the draft permit are in compliance with State water quality standards and the applicable water quality management plan.

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 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. Permit Actions

The general and specific stream standards are provided in NMWQS (20.6.4 NMAC, approved by EPA on September 24, 2022). The facility discharges to the Pecos River in segment number 20.6.4.202 NMAC, which has designated uses industrial water supply, irrigation, livestock watering, wildlife habitat, warm-water aquatic life, and primary contact. Regulations promulgated at [40 CFR §122.44(d)] require limits in addition to, or more stringent than effluent limitation guidelines (technology based). The State WQS that are more stringent than effluent limitation guidelines are as follows:

i. pH

The State of New Mexico WQS criteria applicable to the warm-water aquatic life designated use require pH to be between 6.6 and 9.0 standard units. These limits are more restrictive than the technology-based limits presented earlier. The pH limits of 6.6 to 9.0 standard units in the previous permit will be continued in the draft permit.

ii. Bacteria

The E. coli bacteria limits applicable to 20.6.4.202 NMAC receiving water are 126 cfu/100 ml monthly geometric mean and 410 cfu/100 ml single maximum. The E. coli bacteria limits of 126 cfu/100 ml monthly geometric mean and 410 cfu/100 ml single maximum in the previous permit will be continued in the draft permit.

iii. Total Residual Chlorine (TRC)

The facility uses UV disinfection, so chlorine is not normally added to the effluent. However, chlorine may be used for maintenance or other purposes in the future. These usages may cause chlorine to be in the facility discharge. If chlorine may be used, there, however, will be a permit requirement that will limit its discharge during those times. The implementation to protect NMWQS from chlorine toxicity is to limit chlorine as “no measurable amount”. Specifically, after de-chlorination and prior to final disposal, the effluent shall contain “NO MEASUREABLE” total residual chlorine at any time. “NO MEASUREABLE” will be defined as no detectable concentration of TRC as determined the minimum quantification level of TRC becomes less than 11 ug/L. The previous permit TRC limit of 11 µg/L when chlorine is used will be continued in the draft permit. The effluent limitation for TRC is the instantaneous maximum and cannot be averaged for reporting purposes.

iv. Total Phosphorus and Total Nitrogen

The facility is designated as a major POTW with a design flow rate of 5.0 MGD. To protect and maintain existing and downstream water quality and to prevent further degradation of water quality in the Pecos River, EPA proposes Total Nitrogen (TN), Total Phosphorous (TP) to be monitored once per month in the draft permit.

v. Adjusted Gross Alpha Value

The Pecos River in water quality standards segment 20.6.4.202 NMAC has the following designated uses: industrial water supply, irrigation, livestock watering, wildlife habitat, warm-water aquatic life, and primary contact. To protect livestock watering designated use, the New Mexico water quality criterion for "adjusted gross alpha" is 15 pCi/L (see 20.6.4.900.J). The EPA proposed that "adjusted gross alpha" to be monitored once every 6 months by grab sampling to determine if effluent limits will be required in future permits.

The "adjusted gross value" is determined by the following mathematical relationship:

[Adjusted Gross Alpha] (pCi/L) = [Gross Alpha] (pCi/L) – {[Uranium] ug/L) * 0.67}

A conversion factor of 0.67 (pCi/L)/(µg/L) is used to convert uranium concentrations (in µg/L) to uranium activity (in pCi/L) prior to subtraction.

To determine the adjusted gross alpha value which will be used to evaluate directly against the water quality criterion, EPA proposes natural uranium and gross alpha to be monitored once every 6 months.

vi. PCBs and 4,4'-DDT and derivatives

Pecos River (Six Mile Dam Lake to Lower Tansil Lake) is listed on the "2024-2026 State of New Mexico Integrated Clean Water Act Section 303(d) / 305(b) Report." Pecos River waterbody is impaired for PCBs-Fish Consumption Advisory 2010 and DDT-Fish Consumption Advisory 2020. There is no TMDL in place. The EPA proposes PCBs and 4,4'-DDT and derivatives to be monitored once per month in the draft permit. The monitored data will be used for the future development of TMDLs. Once the TMDL(s) is developed and approved, this permit will 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.

vii. Dissolved Oxygen (DO)

The State of New Mexico WQS criterion applicable to the warmwater aquatic life designated use is at least 5 mg/L for dissolved oxygen. As a part of the permitting process, EPA used the LA-QUAL water quality model, which is a steady-state one-dimensional model which assumes complete mixing within each modeled element, to develop permit parameters for the protection of the State of New Mexico surface water WQS for DO (i.e., 5 mg/L). Primarily based on the

City of Carlsbad Treatment Plant's design flow of 5 MGD (0.263 m^3/s), the receiving water critical flow of 0.764 MGD (0.04 m^3/s), and various BOD_5 factors including BOD_5 Secondary Treatment Standards were considered and simulated to achieve the receiving waterbody DO criterion. A complete characterization of Pecos River (i.e., water quality and hydrodynamic data) was not available. Assumptions were made when there was no data. The following is a summary of model inputs.

- The City of Carlsbad Treatment Plant's design flow of 5 MGD (0.263 m^3/s). The discharge location provided in the permit application is located at Latitude 32° 24' 28.12" North (32.4078), and Longitude -104° 10' 43.3" West (-104.1787). Other effluent parameters provided in the permittee's NPDES application which were applied in the model include Fecal Coliform (Avg: 1.06 MPN/100ml), summer temperature (Avg: 22.8 ^oC), Nitrate/nitrite (Avg: 6.27 mg/L), Ammonia (Avg: 0.226 mg/L) and effluent DO (Avg: 8.6 mg/L).

- NMED provided the following information. The critical low flow of Pecos River receiving stream is approximately 0.764 MGD (0.04 m^3/s). Other parameters applied in the model include Salinity (Avg: 1.87 ppt) Nitrate plus Nitrite Nitrogen (Avg: 0.5 mg/L), temperature (Avg: 17.86 ^oC), and DO (Avg: 8.9 mg/L).

- The EPA used the State of New Mexico's OpenEnviroMap to estimate the average elevation of the study area. The average elevation is approximately 991.82 meters (3253 feet). The average width and depth of Pecos River at critical conditions were assumed approximately 20 (66 feet) meters and 1 meter (3 feet), respectively, and the studied segment length is approximately 23.3 kilometers (14.5 miles).

The model results show an excursion of the receiving stream DO standard of 5 mg/L when the TBEL BOD_5 limits of 30 mg/L for monthly average and 45 mg/L for 7-day maxima were applied (see graph with 30/45 mg/L BOD_5 in Appendix 1; other detail information is available upon request). Various BOD_5 factors were considered and simulated to achieve the DO criterion; EPA believes the optimal levels of BOD_5 for protection of the DO WQS are 7 mg/L/17 mg/L (see attached graph with 7mg/L/17 mg/L BOD_5 in Appendix 2.

The model results are based on the assumptions and default values as explained and presented above. Should these conditions change, the model should be updated to provide a more accurate assessment of the water quality within the receiving water body.

viii. Toxics

The Clean Water Act 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, to apply for an NPDES permit or reissuance of an NPDES permit. The new form is applicable not only to

Publicly Owned Treatment Works (POTWs), but also to facilities that are like 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 City of Carlsbad WWTP is classified as a "major" discharger with a design flow more than 1.0 MGD, and is required to complete Part D, "Expanded Effluent Testing Data" of form 2A. The EPA conducted a screening analysis using submitted data in the Section IV "Effluent Characteristics" to determine if RP to cause or contribute to the State WQS exceedances exists. If RP exist, appropriate permit limits needed to be protective of such designated uses will be established as required by 40 CFR 122.44(d)(1)(iii). The EPA conducted a RP screening analysis based on the NMIP as of March 15, 2012. The result of the preliminary RP analysis (see Appendix 1) indicates that Cyanide (Total) has RP to violate New Mexico WQS consistent with the receiving waterbody's designated uses. The EPA proposes a monthly average limit of 5.2 ug/L and a daily maximum limit of 5.99 ug/L for Cyanide, Total in the draft permit. The facility shall have a 3-year compliance schedule to achieve final limitations for these pollutants. The draft permit will require compliance schedule reports.

ix. Per- and Polyfluoroalkyl Substances (PFAS)

The EPA currently has no data indicating that PFAS is present in the City of Carlsbad WWTP discharge. There are no industrial users of the system expected to contribute PFAS into the collection system. The standard reopener language in the permit allows additional permit conditions if warranted by future changes in the listing of receiving waterbody segment (i.e., PFAS) and/or new TMDLs. As explained at https://www.epa.gov/pfas, PFAS are a group of synthetic chemicals that have been in use since the 1940s. PFAS are found in a wide array of consumer and industrial products. PFAS manufacturing and processing facilities, facilities using PFAS in production of other products, airports, and military installations can be contributors of PFAS releases into the air, soil, and water. Due to their widespread use and persistence in the environment, most people in the United States have been exposed to PFAS. Exposure to some PFAS above certain levels may increase risk of adverse health effects (EPA's Per- and Polyfluoroalkyl Substances (PFAS) Action Plan, EPA 823R18004, February 2019). The EPA is collecting information to evaluate the potential impacts that discharges of PFAS from wastewater treatment plants may have on downstream drinking water, recreational and aquatic life uses. Although the New Mexico Water Quality Standards do not include numeric criteria for PFAS, the 2022 New Mexico Water Quality Standards narrative criterion supply guidance including: 20.6.4.7(E)(2) NMAC states: "**Emerging contaminants"** refer to water contaminants that may cause significant ecological or human health effects at low concentrations. Emerging contaminants are generally chemical compounds recognized as having deleterious effects at environmental concentrations whose negative impacts have not been fully quantified and may not have regulatory numeric criteria.

20.6.4.7(T)(2) NMAC states: **"Toxic pollutant"** means those pollutants, or combination of pollutants, including disease-causing agents, that after discharge and upon exposure, ingestion, inhalation or assimilation into any organism, either directly from the environment or indirectly by ingestion through food chains, will cause death, shortened life spans, disease, adverse behavioral changes, reproductive or physiological impairment or physical deformations in such organisms or their offspring.

Since PFAS chemicals are persistent in the environment and may lead to adverse human health and environmental effects, the draft permit requires that the facilities conduct influent, effluent, and sludge sampling for PFAS according to the frequency outlined in the permit. The purpose of this monitoring and reporting requirement is to better understand potential discharges of PFAS from this facility and to inform future permitting decisions, including the potential development of water quality-based effluent limits on a facility-specific basis. EPA is authorized to require this monitoring and reporting by CWA § 308(a), which states:

"SEC. 308. (a) Whenever required to carry out the objective of this Act, including but not limited to (1) developing or assisting in the development of any effluent limitation, or other limitation, prohibition, or effluent standard, pretreatment standard, or standard of performance under this Act; (2) determining whether any person is in violation of any such effluent limitation, or other limitation, prohibition or effluent standard, pretreatment standard, or standard of performance; (3) any requirement established under this section; or (4) carrying out sections 305, 311, 402, 404 (relating to State permit programs), 405, and 504 of this Act—

(A) the Administrator shall require the owner or operator of any point source to (i) establish and maintain such records, (ii) make such reports, (iii) install, use, and maintain such monitoring equipment or methods (including where appropriate, biological monitoring methods), (iv) sample such effluents (in accordance with such methods, at such locations, at such intervals, and in such manner as the Administrator shall prescribe), and (v) provide such other information as he may reasonably require;".

The EPA notes that there is currently not an analytical method approved in 40 CFR Part 136 for PFAS. As stated in 40 CFR §122.44(i)(1)(iv)(B), in the case of pollutants or pollutant parameters for which there are no approved methods under 40 CFR Part 136 or methods are not otherwise required under 40 CFR chapter I, subchapter N or O, monitoring shall be conducted according to a test procedure specified in the permit for such pollutants or pollutant parameters. Therefore, the draft permit specifies that until there is an analytical method approved in 40 CFR Part 136 for PFAS, monitoring shall be conducted using Method 1633. The Adsorbable Organic Fluorine CWA wastewater method 1621 can be used in conjunction with Method 1633, if appropriate.

EPA has included PFAS monitoring in the draft permit using analytical Method 1633 (see https://www.epa.gov/cwa-methods/cwa-analytical-methods-and-polyfluorinated-alkyl-substances-pfas for more information). Table 6 lists Region 6 recommended PFAS monitoring frequencies for different facility type.

Table 6: Region 6 Recommended Monitoring Frequencies

Minor (< 0.1 MGD)	Once/Term
Minor (0.1 < 1.0 MGD) [2,3]	3/Term
Major (if NOT in an applicable category) [2]	Once/6 Months
Major (if IS in an applicable category) [2]	Quarterly
Major (with required pretreatment OR discharge is > 5 MGD)	Quarterly

Footnotes:

1 These recommended frequencies are only for facilities where an applicable ELG for PFAS does not apply. These frequencies may be altered if an industry category is known or suspected to discharge PFAS or based on the permit writer's BPJ.

2 More information on PFAS is available at https://www.epa.gov/pfas.

3 PFAS samples must be collected and analyzed in three separate calendar years

4. Whole Effluent Toxicity (WET)

a. General Comments

The State has established narrative criteria, which in part state that:

"...surface waters of the state shall be free of toxic pollutants from other than natural causes in amounts, concentrations or combinations that affect the propagation of fish or that are toxic to humans, livestock or other animals, fish or other aquatic organisms, wildlife using aquatic environments for habitation or aquatic organisms for food, or that will or can reasonably be expected to bioaccumulate in tissues of fish, shellfish and other aquatic organisms to levels that will impair the health of aquatic organisms or wildlife or result in unacceptable tastes, odors or health risks to human consumers of aquatic organisms...." (NM WQS Section 20.6.4.13.F.)

The NMED used USGS Hydrologic Toolbox and data obtained from USGS Gauge 08405200 (PECOS RIVER BELOW DARK CANYON AT CARLSBAD, NM) to derive receiving stream low flow (4Q3), which were provided to EPA. The EPA used the provided low flow (4Q3) of 0.76388 MGD (1.1816 cfs) to calculate receiving stream critical dilution using the following mathematical equation:

$$CD = Q_e / [Q_e + Q_a]$$

Where:

CD -- Critical dilution

Q_a -- Critical low flow (0.76388 MGD)

Q_e -- Facility's design flow (5 MGD)

$$CD = 5 / [5 + 0.76388]$$
$$= 0.867 \text{ or } 86.7\%$$

The EPA used procedures in the NMIP for implementing WET terms and conditions in NPDES permits. Table 11 (page 42) of the NMIP outlines the type of WET testing for different types of discharges. The previous permit required the facility to conduct chronic 7-day biomonitoring testings using *Ceriodaphnia dubia* and *Pimephales promelas*. The EPA conducted an analysis of the facility past WET data to determine if any reasonable potential to cause toxicity to exist. The results show a reasonable potential to cause toxicity exists at *Ceriodaphnia dubia* sublethal (see Appendix 4). The EPA proposes a WET limit for *Ceriodaphnia dubia* in the draft permit. Due to current classification of receiving stream (perennial), effluent dominated receiving stream (4Q3 = 0.76388 MGD and CD = 87 %), aquatic life protection and existing reasonable potential, the previous permit requirements of conducting the 7-day chronic tests for *Ceriodaphnia dubia* and *Pimephales promelas* at a once per quarter will be continued in the draft permit, with a limit imposing to *Ceriodaphnia dubia*. The critical condition is 87 %. The proposed permit requires five (5) dilutions in addition to the control (0% effluent) to be used in the toxicity tests based on a 1 dilution series. These additional effluent concentrations shall be 28%, 37%, 49%, 65%, and 87%. The permittee shall conduct separate whole effluent toxicity tests in accordance with Table 4.

Table 4

WHOLE EFFLUENT TOXICITY (7-day Static renewal) *1/	**VALUE**	**MEASUREMENT FREQUENCY**	**DMR Reporting Frequency**	**SAMPLE TYPE**
Pimephales promelas	Report	Once/Quarter	NA	24-Hr Composite
Ceriodaphnia dubia	87	Once/Quarter	Monthly	24-Hr Composite

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

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 with design flows between 1 MGD and 5 MGD. Sample frequency and type for limited parameters are shown in Table 6.

Table 6: Monitoring Frequency for Limited Parameters

Parameter	**Frequency**	**Sample Type**
Flow	Continuous	Totalized Meter
pH	Daily	Grab
BOD_5, TSS	Once/Week	6-Hr Composite
% Removal	Once/Week	Calculation
TRC (if necessary)	Daily	Grab
E. coli Bacteria	1/Week	Grab
Total Nitrogen, Total Phosphorous	1/Month	6-hour Composite
Uranium, Gross Alpha	1/6 Months	Grab
Cyanide, Total	3/Week	Grab

Adjusted Gross Alpha,	1/6 Months	Calculation
PFAS Analytes	1/6 Months	Grab

E. SEWAGE SLUDGE PRACTICES

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". EPA may later issue a sludge-only permit. Until such future issuance of a sludge-only permit, sludge management and disposal at the facility will be subject to Part 503 sewage sludge requirements. Part 503 regulations are self-implementing, which means that facilities must comply with them whether a sludge-only permit has been issued. Part IV of the draft permit contains sewage sludge permit requirements.

F. 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.

G. INDUSTRIAL WASTEWATER CONTRIBUTIONS

The treatment plant has no non-categorical Significant Industrial User (SIU) and no Categorical Industrial User (CIU). The EPA has tentatively determined that the permittee will not be required to develop a full pretreatment program. However, general pretreatment provisions have been required. 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 Section 307(b) of the CWA and 40 CFR Part 403.

H. OPERATION AND REPORTING

The applicant is required to always operate the treatment facility at maximum efficiency; to monitor the facility's discharge on a regular basis; and to report 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. As required by 40 CFR §127.16, all Discharge Monitoring Reports (DMRs) shall be electronically reported. The monitoring results will be available to the public.

XII. 303(d) LIST/TMDL REQUIREMENTS

Pecos River (Six Mile Dam Lake to Lower Tansil Lake) is listed on the "2024-2026 State of New Mexico Integrated Clean Water Act Section 303(d) / 305(b) Report." Pecos River waterbody is impaired for PCBS-Fish Consumption Advisory 2010 and DDT-Fish Consumption Advisory 2020 There is no TMDL in place. Once the TMDL(s) is developed and approved, 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.

The standard reopener language in the permit allows additional permit conditions if warranted by new or revised TMDLs.

XIII. 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 waters, which is protective of the designated uses of that water, NMAC Section 20.6.4.8.A.2.

XIV. ANTIBACKSLIDING

The proposed permit is consistent with the requirements to meet anti-backsliding 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. Besides maintaining the effluent limitation requirements of the previous permit for BOD_5, TSS, pH and E. coli, the proposed permit includes the effluent limitation for Cyanide, Total. All the changes represent permit requirements that are consistent with the WQS and with WQMP.

XV. ENDANGERED SPECIES CONSIDERATIONS

According to the most recent county listing available at US Fish and Wildlife Service (USFWS), Southwest Region 2 website, http://www.fws.gov/southwest/es/EndangeredSpecies/lists/, thirteen species in Eddy County are listed as endangered (E), or threatened (T). They are Pecos gambusia (E) (*Gambusia nobilis*), Pecos bluntnose shiner (T) (*Notropis simus pecosensis*), Mexican spotted owl (T) (*Strix occidentalis lucida*), Yellow-billed Cuckoo (T) (*Coccyzus americanus*), Piping Plover (T) (*Charadrius melodus*), Southwestern willow flycatcher (E) (*Empidonax traillii extimus*), Lee pincushion cactus (T) (*Coryphantha sneedii var. leei*), Sneed pincushion cactus (E) (*Coryphantha sneedii var. sneedii*), Kuenzler's hedgehog cactus (T) (*Echinocereus fendleri var. kuenzleri*), and Gypsum wild-buckwheat (T) (*Eriogonum gypsophilum*), Wright's marsh thistle (T) (*Cirsium wrightii*) (T), Dunes sagebrush lizard (E) (*Sceloporus arenicolus*) and Texas Hornshell (E) (*Popenaias popeii*). In the previous permit issued August 28, 2019, EPA made a "no effect" determination for federally listed species mentioned above except for Wright's marsh thistle (T) (*Cirsium wrightii*) (T), and Dunes sagebrush lizard (E) (*Sceloporus arenicolus*). Also, there are no critical habitats downstream of the facility for any of the species.

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 the listed threatened and endangered species nor will adversely modify designated critical habitat. The 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. The EPA, on February 14, 2023, submitted a Biological Evaluation (BE) and requested informal consultation with the FWS for the U.S. Environmental Protection Agency's approval of the New Mexico's Standards for Interstate and Intrastate Surface Waters, Title 20, Chapter 6, Part 4, as approved under the Clean Water Act (CWA) and the effects of chloride, iron, and ammonia on a number of the federally listed endangered species including Wright's marsh thistle and Texas Hornshell. The FWS responded to EPA's BE, May 23, 2024, Consultation # 2022-0035392, concurring with EPA its proposed action "may affect, but not likely to adversely affect" on a number of the federally listed endangered species including Wright's marsh thistle and Texas Hornshell,
4. The dunes sagebrush lizard is a habitat specialist, relying on the narrowly distributed shinnery oak sand dunes and supportive matrix of shinnery oak flats. The dunes sagebrush lizard is a small, light brown spiny lizard (Degenhardt et al. 1996; Hibbitts and Hibbitts 2015). Females average 53.8 mm (2.12 in) in snout-to-vent length while males average 54.5 mm (2.15 in; Degenhardt et al. 1996). Dunes sagebrush lizards have a short lifespan of two to four years (Snell et al. 1997; Fitzgerald and Painter 2009). Lizards are active from April through October, with mating occurring from May to early July (Fitzgerald and Painter 2009; Hibbitts and Hibbitts 2015). The primary factors affecting the current and future conditions of the dunes sagebrush lizard are habitat loss and fragmentation. The source of these stressors is primarily related to oil and gas extraction, associated infrastructure development, and frac sand mining (with frac sand used during hydraulic fracturing of oil and gas wells), which modify and degrade shinnery oak duneland and the surrounding shinnery oak supportive habitat to an extent that it is no longer suitable for dunes sagebrush lizard use. Additional sources of stressors include wind and solar development, transmission lines and other linear infrastructure, shinnery oak treatments, honey mesquite encroachment, grazing, and off-highway vehicle (OHV) use. The EPA determines that this permitting action will have no effect on the species. The permit does not authorize activities that may cause destruction or modification the dunes sagebrush lizard habitat, and issuance of the permit will have no effect on this species.

The 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.

XVI. 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.

XVII. PERMIT REOPENER

The permit may be reopened and modified during the life of the permit if relevant portions of New Mexico's Water Quality Standards for Interstate and Intrastate Streams are revised or remanded by the New Mexico Water Quality Control Commission. In addition, the permit may be reopened and modified during the life of the permit if relevant procedures implementing the Water Quality Standards are either revised or promulgated by the New Mexico Environment Department. Should the State adopt a water quality standard, and/or develop or amend a TMDL, this permit may be reopened to establish effluent limitations for the parameter(s) to be consistent with that approved State standard and/or water quality management plan, in accordance with [40 CFR §122.44(d)]. Modification of the permit is subject to the provisions of [40 CFR §124.5].

XVIII. VARIANCE REQUESTS

No variance requests have been received.

XIX. 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, Corps of Engineers, to the Regional Director of the U.S. Fish and Wildlife Service and to the National Marine Fisheries Service prior to the publication of that notice.

XX. FINAL DETERMINATION

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

XXI. ADMINISTRATIVE RECORD

The following information was used to develop the proposed permit:

A. APPLICATION(s)

EPA Application Forms 2A/2S and addendum were received on June 27, 2024, July 08, 2024, August 14, 2024, August 29, 2024, and August 30, 2024.

B. 40 CFR CITATIONS

Sections 122, 124, 125, 127, 131, 133, 136

C. STATE OF NEW MEXICO REFERENCES

New Mexico State Standards for Interstate and Intrastate Surface Water, 20.6.4 NMAC, effective September 24, 2022.

Region 6 Implementation Guidance for State of New Mexico Standards for Interstate and Intrastate Stream, May 1995.

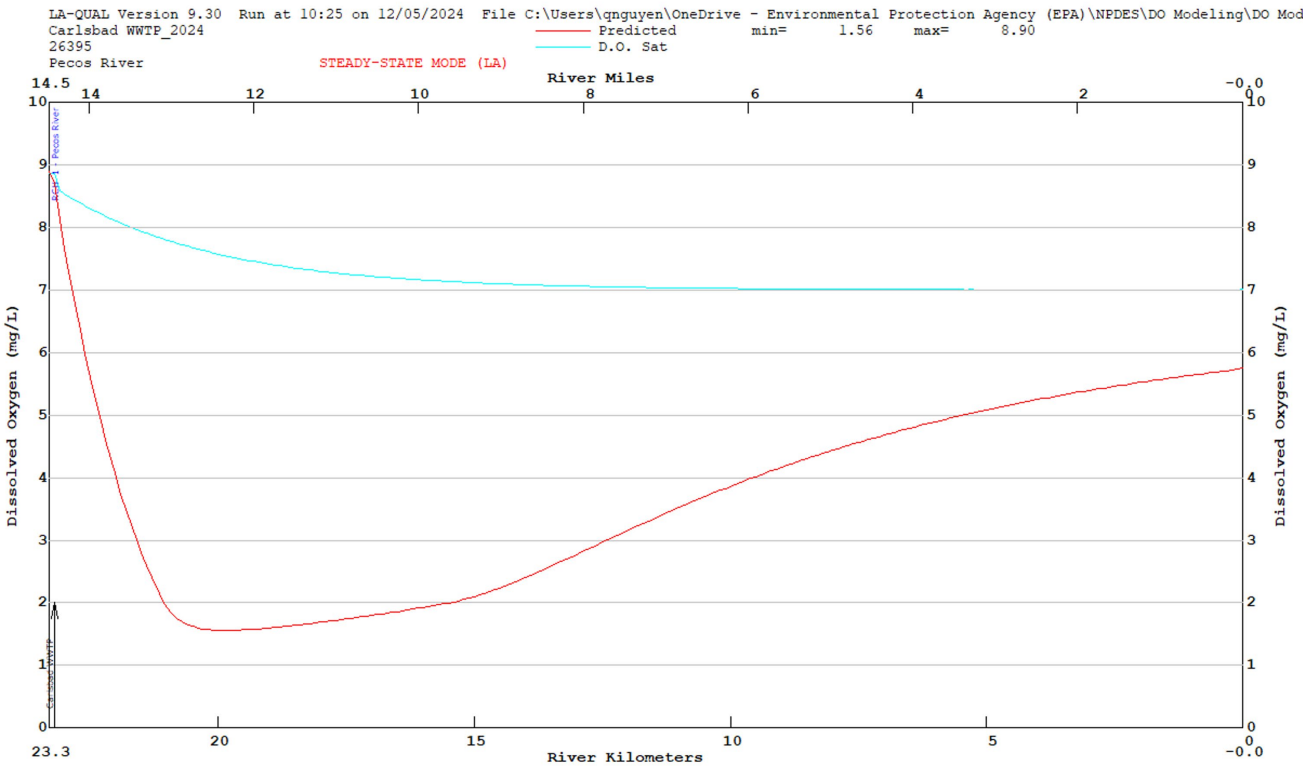
Statewide Water Quality Management Plan, December 17, 2002.

State of New Mexico 303(d) / §305(b) List for Assessed Stream and River Reaches, 2024-2026.

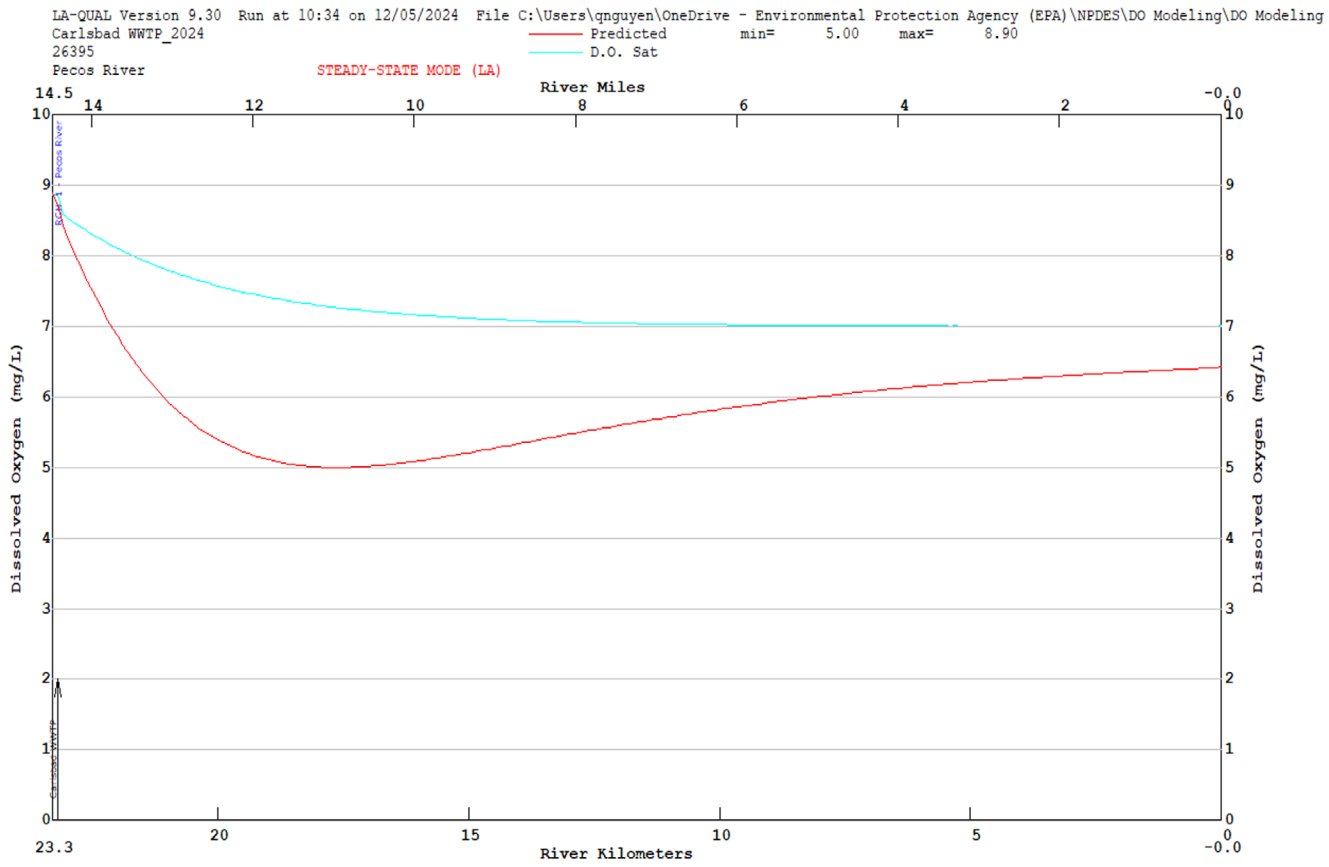
D. MISCELLANEOUS REFERENCES

EPA Region 6 "Policy for Post Third Round NPDES Permitting" and "Post Third Round NPDES Permit Implementation Strategy," October 1, 1992.

Appendix 1


LA-QUAL Version 9.30 Run at 10:25 on 12/05/2024 File C:\Users\qnguyen\OneDrive - Environmental Protection Agency (EPA)\NPDES\DO Modeling\DO Mod
Carlsbad WWTP_2024
26395
Pecos River
STEADY-STATE MODE (LA)
Predicted min= 1.56 max= 8.90
D.O. Sat
River Miles
14.5
14
12
10
8
6
4
2
-0.0
Dissolved Oxygen (mg/L)
Reach 1 - Pecos River
Carlsbad WWTP
23.3
20
15
10
5
0
-0.0
River Kilometers

Appendix 2


LA-QUAL Version 9.30 Run at 10:34 on 12/05/2024 File C:\Users\qnguyen\OneDrive - Environmental Protection Agency (EPA)\NPDES\DO Modeling\DO Modeling
Carlsbad WWTP_2024
26395
Pecos River
STEADY-STATE MODE (LA)
Predicted min= 5.00 max= 8.90
D.O. Sat
River Miles
14.5
14
12
10
8
6
4
2
-0.0
Dissolved Oxygen (mg/L)
Dissolved Oxygen (mg/L)
23.3
20
15
10
5
0
-0.0
River Kilometers

Appendix 3

	CALCULATIONS OF NEW MEXICO WATER QUALITY-BASED EFFLUENT LIMITATIONS			
NMAC 20.6.4.	**NMWQS as of 2023 (EPA Approved January 19, 2023)**			
Calculations Specifications:	Excel	**Revised (in red text) as of February 2023**		
Prepared By:	Quang Nguyen	2-Dec-24	11:33 AM	
STEP 1:	REFERENCE IMPLEMENTATION PROCEDURES	**APPENDIX**	**1**	
	INPUT FACILITY AND RECEIVING STREAM DATA	**of FACT SHEET**		
	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 Carlsbad	
NPDES Permit No.			NM0026395	
Outfall No.(s)			1	
Plant Effluent Flow (MGD)			5	For industrial and federal facility, use the highest monthly average flow
Plant Effluent Flow (cfs)			7.75	for the past 24 months. For POTWs, use the design flow.
RECEIVING STREAM			DATA INPUT	
Receiving Stream Name			Pecos River	
Basin Name			Pecos River Basin	
Waterbody Segment Code No.			20.6.4.202	
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)			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.			SJR	
Receiving Stream TSS (mg/l)			8.2	For intermittent stream, enter effluent TSS
Receiving Stream Hardness (mg/l as CaCOs)	RANGE: 0 - 400		1200	For intermittent stream, enter effluent Hardness (If no data, 20 mg/l is used)
Receiving Stream Critical Low Flow (4Q3) (cfs)			1.1816	Enter "0" for intermittent stream and lake.
Receiving Stream Harmonic Mean Flow (cfs)			4.0092	Enter harmonic mean or modified harmonic mean flow data or 0.001 if no data is available
Avg. Receiving Water Temperature (C)			19.65	
pH (Avg), Receiving Stream			8.09	
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			1.1816	

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	0.59	480000	-0.73	103313.512	0.541368454	0.31940739	480000	-0.73	103313.512	0.541368454	0.3194074
Chromium III		3360000	-0.93	474779.9766	0.204365417	0	2170000	-0.27	1229504.135	0.090236958	0
Copper	1.2	1040000	-0.74	219185.1306	0.357485268	0.42898232	2850000	-0.9	428955.6503	0.221364492	0.2656374
Lead		2800000	-0.8	520124.0666	0.189932898	#VALUE!	2040000	-0.53	668819.3442	0.154218208	#VALUE!
Nickel	1.2	490000	-0.57	147680.1702	0.452288658	0.54274639	2210000	-0.76	446574.3203	0.214504382	0.2574053
Silver		2390000	-1.03	273633.7316	0.308280735	0	2390000	-1.03	273633.7316	0.308280735	0
Zinc	54	1250000	-0.7	286576.3298	0.298514065	16.1197595	3340000	-0.68	798643.6578	0.132470018	7.1533809

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)	102812.2951	If Stream pH < 6.5, enter 750 in cell O114
	Chronic	e(1.3695[ln(hardness)]+0.9161)	41190.3888	If Stream pH < 6.5, enter 87 in cell P114
Cadmium (D)	Acute	e(0.8968[ln(hardness)]-3.5699)*CF1	13.65590462	CF1 = 1.136672 - 0.041838*ln(hardness)
	Chronic	e(0.7647[ln(hardness)]-4.2180)*CF2	2.682945264	CF2 = 1.101672 - 0.041838*ln(hardness)

										Dissolved						
										WQC (ug/l)						
Chromium III (D)			Acute			0.316 e(0.819[ln(hardness)]+3.7256)				4360.577855						
			Chronic			0.860 e(0.819[ln(hardness)]+0.6848)				567.2215901						
Copper (D)			Acute			0.960 e(0.9422[ln(hardness)]-1.700)				139.6931736						
			Chronic			0.960 e(0.8545[ln(hardness)]-1.702)				74.86216792						
Lead (D)			Acute			e(1.273[ln(hardness)]-1.46)*CF3				828.1420043		CF3 = 1.46203 - 0.145712*ln(hardness)				
			Chronic			e(1.273[ln(hardness)]-4.705)*CF4				32.27150499		CF4 = 1.46203 - 0.145712*ln(hardness)				
Manganese (D)			Acute			e(0.3331[ln(hardness)]+6.4676)				6831.534473						
			Chronic			e(0.3331[ln(hardness)]+5.8743)				3774.429763						
Nickel (D)			Acute			0.998 e(0.846[ln(hardness)]+2.255)				3832.233228						
			Chronic			0.997 e(0.846[ln(hardness)]+0.0584)				425.6427988						
Silver (D)			Acute			0.85 e(1.72[ln(hardness)]-6.59)				230.9989645						
Zinc (D)			Acute			0.978 e(0.9094[ln(hardness)]+0.9095)				1532.982197						
			Chronic			0.986 e(0.90947[ln(hardness)]+0.6235)				1161.669247						
						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	190	34	72.42	87.9751668	87.9751668	112.507909	1E+100	1E+100	1E+100	102812.2951	41190.389	1E+100	N/A
Aluminum, dissolved		7429-90-5		0	0	0	0	0	0	1E+100	5000	1E+100	1E+100	1E+100	1E+100	N/A
Barium, dissolved		7440-39-3	100	25	63	134.19	119.744783	119.744783	96.962591	2000	1E+100	1E+100	1E+100	1E+100	1E+100	N/A
Boron, dissolved		7440-42-8	100	169	350	745.5	669.232321	669.232321	548.94719	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	3.63	0.93	1.9809	2.19906657	2.19906657	2.54314673	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)				0.584	0.931	1.98303	1.79794627	1.79794627	1.50604253	5	1E+100	30	1E+100	1E+100	1E+100	N/A
Strontium (pCi/l)					0	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	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
Ammonia as N, total (mg/l)				0.1	0.5	1.065	0.93733598	0.93733598	0.73599139	1E+100	1E+100	1E+100	1.47	1.47	1E+100	N/A
Nitrate as N (mg/l)				0	0	0	0	0	0	10	1E+100	1E+100	1E+100	1E+100	1E+100	N/A
Nitrite + Nitrate (mg/l)				0.494	7.5	15.975	13.9269515	13.9269515	10.6968837	1E+100	1E+100	132	1E+100	1E+100	1E+100	N/A
METALS AND CYANIDE																
Antimony, dissolved (P)		7440-36-0	60	0	1.3	2.769	2.40267701	2.40267701	1.82493282	6	1E+100	1E+100	1E+100	1E+100	640	N/A
Arsenic, dissolved (P)		7440-38-2	0.5	0	0.59	1.2567	1.09044572	1.09044572	0.82823874	10	100	200	340	150	9	N/A
Beryllium, dissolved		7440-41-7	0.5	0	0	0	0	0	0	4	1E+100	1E+100	1E+100	1E+100	1E+100	N/A
Cadmium, dissolved		7440-43-9	1	0	0	#REF!	#REF!	#REF!	#REF!	5	10	50	13.65590462	2.6829453	1E+100	N/A
Chromium (III), dissolved		16065-83-1	10		0	0	0	0	0	1E+100	1E+100	1E+100	4360.577855	567.22159	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	0	0.428982321	0.913732345	0.79285074	0.79285074	0.60220301	1300	200	500	139.6931736	74.862168	1E+100	N/A
Lead, dissolved		7439-92-1	0.5	0	0	0	0	0	0	15	5000	100	828.1420043	32.271505	1E+100	N/A
Manganese, dissolved		7439-96-5		5.6	5.3	11.289	10.5363776	10.5363776	9.34938346	1E+100	1E+100	1E+100	6831.534473	3774.4298	1E+100	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	
Mercury, dissolved	7439-97-6	0.005		0	0	0	0	0	1E+100	1E+100	1E+100	1.4	0.77	1E+100	N/A
Mercury, total	7439-97-6	0.005	0	0.0013	0.002769	0.00240268	0.00240268	0.00182493	2	1E+100	0.77	1E+100	1E+100	1E+100	N/A
Molybdenum, dissolved	7439-98-7		0	0	0	0	0	0	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	0	0	0	0	700	1E+100	1E+100	3832.233228	425.6428	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	0	0	0	0	1E+100	1E+100	1E+100	230.9989645	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	0	16.11975952	34.33508779	29.7927505	29.7927505	22.6288294	10500	2000	25000	1532.982197	1161.6692	26000	N/A
Cyanide, total recoverable	57-12-5	10	0	13	27.69	24.0267701	24.0267701	18.2493282	200	1E+100	5.2	22	5.2	140	N/A
Dioxin	1746-01-6	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	400	N/A
Acrylonitrile	107-13-0	20			0	0	0	0	0.65	1E+100	1E+100	1E+100	1E+100	70	N/A
Benzene	71-43-2	10			0	0	0	0	5	1E+100	1E+100	1E+100	1E+100	160	N/A
Bromoform	75-25-2	10			0	0	0	0	44	1E+100	1E+100	1E+100	1E+100	1200	N/A
Carbon Tetrachloride	56-23-5	2			0	0	0	0	5	1E+100	1E+100	1E+100	1E+100	50	N/A
Chlorobenzene	108-90-7	10			0	0	0	0	100	1E+100	1E+100	1E+100	1E+100	800	N/A
Clorodibromomethane	124-48-1	10			0	0	0	0	4.2	1E+100	1E+100	1E+100	1E+100	210	N/A
Chloroform	67-66-3	50	0	0	0	0	0	0	57	1E+100	1E+100	1E+100	1E+100	2000	N/A
Dichlorobromomethane	75-27-4	10			0	0	0	0	5.6	1E+100	1E+100	1E+100	1E+100	270	N/A
1,2-Dichloroethane	107-06-2	10			0	0	0	0	5	1E+100	1E+100	1E+100	1E+100	6500	N/A
1,1-Dichloroethylene	75-35-4	10			0	0	0	0	7	1E+100	1E+100	1E+100	1E+100	20000	N/A
1,2-Dichloropropane	78-87-5	10			0	0	0	0	5	1E+100	1E+100	1E+100	1E+100	310	N/A
1,3-Dichloropropylene	542-75-6	10			0	0	0	0	3.5	1E+100	1E+100	1E+100	1E+100	120	N/A
Ethylbenzene	100-41-4	10			0	0	0	0	700	1E+100	1E+100	1E+100	1E+100	130	N/A
Methyl Bromide	74-83-9	50			0	0	0	0	49	1E+100	1E+100	1E+100	1E+100	10000	N/A
Methylene Chloride	75-09-2	20			0	0	0	0	5	1E+100	1E+100	1E+100	1E+100	10000	N/A
1,2,4,5-Tetrachlorobenzene	95-94-3				0	0	0	0	1E+100	1E+100	1E+100	1E+100	1E+100	0.03	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	30	N/A
Tetrachloroethylene	127-18-4	10			0	0	0	0	5	1E+100	1E+100	1E+100	1E+100	290	N/A
Tolune	108-88-3	10			0	0	0	0	1000	1E+100	1E+100	1E+100	1E+100	520	N/A
1,2-trans-Dichloroethylene	156-60-5	10			0	0	0	0	100	1E+100	1E+100	1E+100	1E+100	4000	N/A
1,1,1-Trichloroethane	71-55-6				0	0	0	0	200	1E+100	1E+100	1E+100	1E+100	200000	N/A
1,1,2-Trichloroethane	79-00-5	10			0	0	0	0	5	1E+100	1E+100	1E+100	1E+100	89	N/A
Trichloroethylene	79-01-6	10			0	0	0	0	5	1E+100	1E+100	1E+100	1E+100	70	N/A
Vinyl Chloride	75-01-4	10			0	0	0	0	2	1E+100	1E+100	1E+100	1E+100	16	N/A
ACID COMPOUNDS															
2-Chlorophenol	95-57-8	10			0	0	0	0	175	1E+100	1E+100	1E+100	1E+100	800	N/A
2,4-Dichlorophenol	120-83-2	10			0	0	0	0	105	1E+100	1E+100	1E+100	1E+100	60	N/A
2,4-Dimethylphenol	105-67-9	10			0	0	0	0	700	1E+100	1E+100	1E+100	1E+100	3000	N/A
3-Methyl-4-chlorophenol	59-50-7				0	0	0	0	1E+100	1E+100	1E+100	1E+100	1E+100	2000	N/A
2-Methyl-4,6-dinitrophenol	534-52-1	50			0	0	0	0	14	1E+100	1E+100	1E+100	1E+100	30	N/A

				Instream Waste Concentration										
		Ambient	Effluent	Acute	Domestic	Chronic	Human	Domestic	Irrigation	Livestock&	Acute	Chronic	Human	Need
POLLUTANTS			Conc	Conc.	Aquatic	Supply	Aquatic	Health	Criteria	Criteria	Wildlife	Aquatic	Aquatic	Health	TMDL
	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	Criteria	Criteria	Criteria	Criteria	
											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	300	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	0	10500	1E+100	1E+100	1E+100	1E+100	860000	N/A
2,4,5-Trichlorophenol	95-95-4				0	0	0	0	1E+100	1E+100	1E+100	1E+100	1E+100	600	N/A
2,4,6-Trichlorophenol	88-06-2	10			0	0	0	0	32	1E+100	1E+100	1E+100	1E+100	28	N/A
2-(2,4,5Trichlorophenoxy)propionic acid (Silvex)					0	0	0	0	1E+100	1E+100	1E+100	1E+100	1E+100	400	N/A
BASE/NEUTRAL															
Acenaphthene	83-32-9	10			0	0	0	0	2100	1E+100	1E+100	1E+100	1E+100	90	N/A
Anthracene	120-12-7	10			0	0	0	0	10500	1E+100	1E+100	1E+100	1E+100	400	N/A
Benzidine	92-87-5	50			0	0	0	0	0.0015	1E+100	1E+100	1E+100	1E+100	0.11	N/A
Benzo(a)anthracene	56-55-3	5			0	0	0	0	0.048	1E+100	1E+100	1E+100	1E+100	0.013	N/A
Benzo(a)pyrene	50-32-8	5			0	0	0	0	0.2	1E+100	1E+100	1E+100	1E+100	0.0013	N/A
3,4-Benzofluoranthene	205-99-2	10			0	0	0	0	0.048	1E+100	1E+100	1E+100	1E+100	0.0013	N/A
Benzo(k)fluoranthene	207-08-9	5			0	0	0	0	0.048	1E+100	1E+100	1E+100	1E+100	0.13	N/A
Bis(2-chloroethyl)Ether	111-44-4	10			0	0	0	0	0.3	1E+100	1E+100	1E+100	1E+100	22	N/A
Bis(2-chloro-1-methylethyl) ether	108-60-1	10			0	0	0	0	1400	1E+100	1E+100	1E+100	1E+100	4000	N/A
Bis(2-ethylhexyl)Phthalate	117-81-7	10	0	0	0	0	0	0	6	1E+100	1E+100	1E+100	1E+100	3.7	N/A
Bis(chloromethyl) ether	542-88-1				0	0	0	0	1E+100	1E+100	1E+100	1E+100	1E+100	0.17	N/A
Butyl Benzyl Phthalate	85-68-7	10			0	0	0	0	7000	1E+100	1E+100	1E+100	1E+100	1	N/A
2-Chloronapthalene	91-58-7	10			0	0	0	0	2800	1E+100	1E+100	1E+100	1E+100	1000	N/A
Chrysene	218-01-9	5			0	0	0	0	0.048	1E+100	1E+100	1E+100	1E+100	1.3	N/A
2,4-Dichlorophenoxyacetic acid	94-75-7				0	0	0	0	1E+100	1E+100	1E+100	1E+100	1E+100	12000	N/A
Dibenzo(a,h)anthracene	53-70-3	5			0	0	0	0	0.048	1E+100	1E+100	1E+100	1E+100	0.0013	N/A
1,2-Dichlorobenzene	95-50-1	10			0	0	0	0	600	1E+100	1E+100	1E+100	1E+100	3000	N/A
1,3-Dichlorobenzene	541-73-1	10			0	0	0	0	469	1E+100	1E+100	1E+100	1E+100	10	N/A
1,4-Dichlorobenzene	106-46-7	10		0	0	0	0	0	75	1E+100	1E+100	1E+100	1E+100	900	N/A
3,3'-Dichlorobenzidine	91-94-1	5			0	0	0	0	0.78	1E+100	1E+100	1E+100	1E+100	1.5	N/A
Diethyl Phthalate	84-66-2	10			0	0	0	0	28000	1E+100	1E+100	1E+100	1E+100	600	N/A
Dimethyl Phthalate	131-11-3	10			0	0	0	0	350000	1E+100	1E+100	1E+100	1E+100	2000	N/A
Di-n-Butyl Phthalate	84-74-2	10			0	0	0	0	3500	1E+100	1E+100	1E+100	1E+100	30	N/A
2,4-Dinitrotoluene	121-14-2	10			0	0	0	0	1.1	1E+100	1E+100	1E+100	1E+100	17	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	20	N/A
Fluorene	86-73-7	10			0	0	0	0	1400	1E+100	1E+100	1E+100	1E+100	70	N/A
Hexachlorobenzene	118-74-1	5			0	0	0	0	1	1E+100	1E+100	1E+100	1E+100	0.00079	N/A
Hexachlorobutadiene	87-68-3	10			0	0	0	0	4.5	1E+100	1E+100	1E+100	1E+100	0.1	N/A
Hexachlorocyclohexane (HCH)-T	608-73-1				0	0	0	0	1E+100	1E+100	1E+100	1E+100	1E+100	0.1	N/A
Hexachlorocyclopentadiene	77-47-4	10			0	0	0	0	50	1E+100	1E+100	1E+100	1E+100	4	N/A
Hexachloroethane	67-72-1	20			0	0	0	0	25	1E+100	1E+100	1E+100	1E+100	1	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	0.013	N/A
Isophorone	78-59-1	10			0	0	0	0	368	1E+100	1E+100	1E+100	1E+100	18000	N/A
Nitrobenzene	98-95-3	10			0	0	0	0	18	1E+100	1E+100	1E+100	1E+100	600	N/A
Nitrosamines	Various				0	0	0	0	1E+100	1E+100	1E+100	1E+100	1E+100	12.4	N/A
Nitrosodibutylamine	924-16-3				0	0	0	0	1E+100	1E+100	1E+100	1E+100	1E+100	2.2	N/A
Nitrosodiethylamine	55-18-5				0	0	0	0	1E+100	1E+100	1E+100	1E+100	1E+100	12.4	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
N-Nitrosopyrrolidine	930-55-2				0	0	0	0	1E+100	1E+100	1E+100	1E+100	1E+100	340	N/A
Nonylphenol	84852-15-3				0	0	0	0	1E+100	1E+100	1E+100	28	6.6	1E+100	N/A
Pentachlorobenzene	608-93-5				0	0	0	0	1E+100	1E+100	1E+100	1E+100	1E+100	0.1	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	0.76	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	0.0000077	N/A
Alpha-BHC	319-84-6	0.05				0	0	0	0	0.056	1E+100	1E+100	1E+100	1E+100	0.0039	N/A
Beta-BHC	319-85-7	0.05				0	0	0	0	0.091	1E+100	1E+100	1E+100	1E+100	0.14	N/A
gamma-BHC (Lindane)	58-89-9	0.05				0	0	0	0	0.2	1E+100	1E+100	0.95	1E+100	4.4	N/A
Chlordane	57-74-9	0.2				0	0	0	0	2	1E+100	1E+100	2.4	0.0043	0.0032	N/A
Dichlorodiphenyldichloroethane (DDD)						0	0	0	0	1E+100	1E+100	1E+100	1E+100	1E+100	0.0012	N/A
Dichlorodiphenyldichloroethylene (DDE)						0	0	0	0	1E+100	1E+100	1E+100	1E+100	1E+100	0.00018	N/A
Dichlorodiphenyltrichloroethane (DDT)						0	0	0	0	1E+100	1E+100	1E+100	1E+100	1E+100	0.0003	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	1E+100	N/A
Dieldrin	60-57-1	0.02				0	0	0	0	0.022	1E+100	1E+100	0.24	0.056	0.000012	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	30	N/A
Beta-Endosulfan	33213-65-9	0.02				0	0	0	0	62	1E+100	1E+100	0.22	0.056	40	N/A
Endosulfan sulfate	1031-7-8	0.1				0	0	0	0	62	1E+100	1E+100	1E+100	1E+100	40	N/A
Endrin	72-20-8	0.02				0	0	0	0	2	1E+100	1E+100	0.086	0.036	0.03	N/A
Endrin Aldehyde	7421-93-4	0.1				0	0	0	0	10.5	1E+100	1E+100	1E+100	1E+100	1	N/A
Heptachlor	76-44-8	0.01				0	0	0	0	0.4	1E+100	1E+100	0.52	0.0038	0.000059	N/A
Heptachlor Epoixde	1024-57-3	0.01				0	0	0	0	0.2	1E+100	1E+100	0.52	0.0038	0.00032	N/A
PCBs	336-36-3	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	0	0	3	1E+100	1E+100	0.73	0.0002	0.0071	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
Aluminum, dissolved	7429-90-5		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
Ammonia as N, total (mg/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
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	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!
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	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
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, Dissolved	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	5.99281548	22	5.99281548	N/A	5.992815484	5.2	5.992815484	5.2	0.24990041	0.21684
DIOXIN														0
2,3,7,8-TCDD	1746-01-6	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
					Livestock	Acute	Chronic	Human	Daily	Monthly	Daily Max	Mon. Avg	Daily	Monthly
POLLUTANTS	CAS No.	STORET	Domestic	Irrigation	or Wildlife	Aquatic	Aquatic	Health	Max Conc	Avg Conc	Total	Total	Max Load	Avg Load
			Limits	Limits	Limits	Limits	Limits	Limits	ug/l	ug/l	ug/l	ug/l	lb/day	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	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1,2,4,5-Tetrachlorobenzene	95-94-3		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
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
3-Methyl-4-chlorophenol	59-50-7		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-Methyl-4,6-dinitrophenol	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
2,4,5-Trichlorophenol	95-95-4		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
2-(2,4,5Trichlorophenoxy)propionic acid (Silvex)			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	N/A	N/A	N/A	N/A	N/A	N/A	N/A
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-chloro-1-methylethyl) 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
Bis(chloromethyl) ether	542-88-1		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
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
2,4-Dichlorophenoxyacetic acid	94-75-7		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
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
Hexachlorocyclohexane (HCH)-T	608-73-1		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
Nitrosamines	Various		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Nitrosodibutylamine	924-16-3		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Nitrosodiethylamine	55-18-5		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
N-Nitrosopyrrolidine	930-55-2		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
Pentachlorobenzene	608-93-5		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
Dichlorodiphenyldichloroethane (DDD)			N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dichlorodiphenyldichloroethylene (DDE)			N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dichlorodiphenyltrichloroethane (DDT)			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	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Heptachlor Epoixde	1024-57-3	39420	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
PCBs	336-36-3	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 4

Facility Name	City of Carlsbad WWTP							
NPDES Permit Number	NM0026395					Outfall Number	001	
Proposed Critical Dilution*	43							
			*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
3/31/21	57	57	1.75	1.75	43	18	2.33	5.56
6/30/21	57	57	1.75	1.75	57	57	1.75	1.75
9/30/21	57	57	1.75	1.75	57	57	1.75	1.75
12/31/21	57		1.75		57	57	1.75	1.75
3/31/22	57	57	1.75	1.75	57	57	1.75	1.75
6/30/22	57	57	1.75	1.75	57	57	1.75	1.75
9/30/22	57	57	1.75	1.75	57	57	1.75	1.75
12/31/22	57	57	1.75	1.75	57	57	1.75	1.75
3/31/23	57	57	1.75	1.75	57	57	1.75	1.75
6/30/23	57	57	1.75	1.75	57	57	1.75	1.75
9/30/23	57	57	1.75	1.75	57	57	1.75	1.75
12/31/23	57	57	1.75	1.75	57	57	1.75	1.75
	57	57	1.75	1.75	43	18	2.33	5.56
Count			12	11			12	12
Mean			1.754	1.754			1.802	2.071
Std. Dev.			0.000	0.000			0.165	1.097
CV			0.0	0			0.1	0.5
RPMF			#N/A	#N/A			1.1	1.5
		2.326	Reasonable Potential Acceptance Criteria					
Vertebrate Lethal		#N/A	#N/A					
			No Reasonable Potential exists. Permit requires WET monitorin					
Vertebrate Sublethal		#N/A	#N/A					
			No Reasonable Potential exists. Permit requires WET monitorin					
Invertebrate Lethal		1.100	No Reasonable Potential exists. Permit requires WET monitoring, but no W					
Invertebrate Sublethal		3.583333333	Reasonable Potential exists, Permit requires WET monitoring and WET lim					