
NPDES PERMIT NO. NM0027375
FACT SHEET

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

APPLICANT

Rio de Arenas Mobile Home Manor Waste Water Treatment Plant
Highway 180 East & Rio de Arenas Rd
Silver City, NM 88061

ISSUING OFFICE

U.S. Environmental Protection Agency
Region 6
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DATE PREPARED

October 1, 2014

PERMIT ACTION

This is a renewal of a NPDES permit with an effective date of October 1, 2009, and an expiration
date of September 30 2014.

RECEIVING WATER – BASIN

Mimbres River

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NPDES PERMIT NO. NM0027375

APPENDIX SHEET

Appendix 1.....	Rio de Arenas Steady-State Mode
Appendix 2.....	Rio de Arenas DO Modeling Output
Appendix 3.....	Consultation Tracking Number: 02ENNM00-2015-SLI-0034
Appendix 4.....	WET Reasonable Potential Analyzer
Appendix A of Part II.....	Minimum Quantification Level's



DOCUMENT ABBREVIATIONS

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

4Q3	lowest four-day average flow rate expected once every three years
BOD5	five-day biochemical oxygen demand
BPJ	best professional judgment
CD	critical dilution
CFR	Code of Federal Regulations
cfs	cubic feet per second
cfu	colony forming units
CFR	Code of Federal Regulations
CIU	categorical industrial user
CWA	Clean Water Act
DMR	discharge monitoring report
ELG	effluent limitation guidelines
EPA	United States Environmental Protection Agency
ESA	Endangered Species Act
FWS	United States Fish and Wildlife Service
lbs	pounds
ug/L	micrograms per liter (one part per billion)
mg/L	milligrams per liter (one part per million)
MGD	million gallons per day
MQL	minimum quantification level
N	nitrogen
NAICS	North American Industry Classification System
NMAC	New Mexico Administrative Code
NMED	New Mexico Environment Department
NMIP	New Mexico NPDES permit implementation procedures
NPDES	national pollutant discharge elimination system
O&G	oil and grease
POTW	publically owned treatment works
SBR	sequencing batch reactor
SIC	standard industrial classification
SIU	significant industrial user
s.u.	standard units (for parameter pH)
SWQB	Surface Water Quality Bureau
TN	total nitrogen
TP	total phosphorus
TRC	total residual chlorine
TSS	total suspended solids
WET	whole effluent toxicity
WLA	Waste Load Allocations
WQMP	water quality management plan
WQS	water quality standards
WWTP	wastewater treatment plant

A. CHANGES FROM THE PREVIOUS PERMIT

Changes from the permit with expiration date of September 30, 2014, are:

1. The flow monitoring frequency changed from instantaneous to daily.
2. The pH monitoring frequency has changed from one (1) time per month with grab sampling to five (5) per week with instantaneous grab (field measurement).
3. The E. coli limits have changed from 410 cfu to 235 cfu OR mpn single sample maximum to protect instream designated use.
4. The percent removal for BOD5 and TSS have been added to the proposed permit in accordance with the Secondary Treatment requirements at 40 CFR 133.102.
5. TRC has changed from one (1) day per week to five (5) times per week.
6. Bacteria reporting units MUST be reported either as cfu/100 mL or as mpn.

B. APPLICANT LOCATION and ACTIVITY

The facility is located at Highway 180 East & Rio de Arenas Rd, Silver City, Grant County, New Mexico 88061

Under the NAICS code 531190 and SIC code 6515, the applicant operates a sewage treatment plant or facility. The facility has a design flow capacity of 0.04 MGD serving a residential population of 250.

The Rio de Arenas Mobile Home Manor WWTP is an activated sludge package plant system with chlorine disinfection. Influent enters the plant via gravity flow into a beehive shaped brick structure, flows through a downward sloped concrete structure with a bar screen, then into an aerated equalization tank to accommodate fluctuating flows. From the equalization tank, wastewater enters an aeration basin, then clarifier basins for settling. A sludge digester unit located between the aeration basin and the equalization tank receives waste activated sludge (WAS) from the clarifiers. Return activated sludge (RAS) flows back from the clarifiers to the equalization basin where it mixes with influent before going to the aeration basin. After the clarifiers, flow enters an open basin or trough, then a chlorine contact chamber with serpentine baffle design. Calcium hypochlorite tablets are manually placed into the open trough below the clarifiers' effluent weir. An outlet pipe at the bottom of the chlorine contact chamber allows effluent to exit the package plant. Effluent is then piped to Outfall 001. Before reaching the outfall, the effluent flow is metered and then flows into a sodium sulfite de-chlorination tablet unit. Effluent is discharged into a short (approximately 60 foot long) unnamed tributary then to Mimbres River and Rio de Arenas. Mimbres River is shown on topographic maps to join Rio de Arenas above the WWTP outfall. Biosolids are removed from the plant by a septic tank cleaning service (Humphrey's Enterprises Inc., Silver City, New Mexico).

The facility discharge is to a series of dry arroyos named Mimbres River, thence to Rio De Arenas thence to San Vicente Arroyo, an unclassified ephemeral water in the Southwestern River Basin. The discharge is located at Latitude 32° 46' 25" N and Longitude 108° 11' 29" W, in Grant County, New Mexico.

C. EFFLUENT CHARACTERISTICS

A quantitative description of the discharge(s) described in the EPA Permit Application Form 2A in section A.12. Effluent Testing Information received October 24, 2014, is presented in Table 1 below:

Table 1

Parameter	Max	Avg	Number of Samples
Flow, MGD	0.013855	0.007521	300
Temperature, winter	23.5 C	23.5 C	26
Temperature, summer	16.7 C	16.7 C	26
pH, minimum, s.u.	7.5	6.6	12
pH, maximum, s.u.	7.5	8.8	12
BOD (mg/L)	45	8.29	12
E.Coli	410	43.12	12
TSS (mg/L)	45	11.38	12

Table 2

Date	DMR Effluent Data												
	BOD ₅			pH			TSS			E. Coli Bacteria			
	30 Day Avg lbs/ day	7 Day Avg mg/L	lbs/ day	Min s.u.	Max s.u.	30 Day Avg mg/L	7 Day Avg lbs/day	mg/L	TRC Max	30 Day Avg cfu/ 100 mL	TRC Max	30 Day Avg cfu/ 100 mL	Daily Max cfu/ 100 mL
Limit	10	30	15	6.6	8.8	30	15	45	0.011	126	0.011	126	410
8/2013	*NR	4.3	*NR	7.7	7.7	2.7	*NR	2.7	1.0 *2	65.8	1.0 *2	65.8	65.8
9/2013	*NR	14.3	*NR	7.6	7.6	4.3	*NR	4.3	1.0 *2	85.0	1.0 *2	85.0	85.0
10/2013	*NR	17.2	*NR	7.5	7.5	13.6	*NR	13.6	1.0 *2	109.0	1.0 *2	109.0	109.0
11/2013	*NR	5.6	*NR	7.5	7.5	9.3	*NR	9.3	1.0 *2	55.0	1.0 *2	55.0	55.0
12/2013	*NR	3.0	*NR	7.3	7.3	5.3	*NR	5.3	1.0 *2	11.0	1.0 *2	11.0	11.0
1/2014	1.06	21.0	1.06	7.4	7.4	10.0	*NR	10.0	1.0 *2	109.0	1.0 *2	109.0	109.0
2/2014	0.66	12.5	0.66	704.0	7.4	4.2	0.22	4.2	1.0 *2	91.0	1.0 *2	91.0	91.0
3/2014	0.45	9.1	0.45	7.4	7.4	3.2	0.18	3.2	1.0 *2	64.7	1.0 *2	64.7	64.7
4/2014	*NR	*NR	*NR	*NR	*NR	*NR	*NR	*NR	*NR	*NR	*NR	*NR	*NR
5/2014	*NR	*NR	*NR	*NR	*NR	*NR	*NR	*NR	*NR	*NR	*NR	*NR	*NR
6/2014	*NR	*NR	*NR	*NR	*NR	*NR	*NR	*NR	*NR	*NR	*NR	*NR	*NR

*NR Not Reported

*1 non-detect

*2 Violation of effluent limitation.

D. REGULATORY AUTHORITY/PERMIT ACTION

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

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 expired September 30 2014. EPA received the NPDES application on May 31, 2013. The existing permit is administratively continued until this permit is issued.

E. DRAFT PERMIT RATIONALE AND PROPOSED PERMIT CONDITIONS

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

As required by 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 BOD5. Water quality-based effluent limitations are established in the proposed draft permit for *E. coli* bacteria, pH and TRC.

2. TECHNOLOGY-BASED EFFLUENT LIMITATIONS/CONDITIONS

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

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

BCT - Technology-based standard for the discharge from existing industrial point sources of conventional pollutants including BOD5, TSS, *E. coli* bacteria, pH, and O&G.

BAT - The most appropriate means available on a national basis for controlling the direct discharge of toxic and non-conventional pollutants to navigable waters. BAT effluent limits represent the best

existing performance of treatment technologies that are economically achievable within an industrial point source category or subcategory.

The facility is a publicly owned treatment plant (POTW)-like facility 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 BOD, TSS and pH. BOD limits of 30 mg/l for the 30-day average and 45 mg/l for the 7-day average and 85% percent (minimum) removal are found at 40 CFR §133.102(a). TSS limits; also 30 mg/l for the 30-day average and 45 mg/l for the 7-day average, average and 85% percent (minimum) removal are found at 40 CFR §133.102(b). ELG's for pH are between 6.6-9 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 BOD₅/TSS loading = 30 mg/l * 8.345 lbs/gal * 0.04 MGD

30-day average BOD₅/TSS loading = 10 lbs/day

7-day average BOD₅/TSS loading = 45 mg/l * 8.345 lbs/gal * 0.04 MGD

7-day average BOD₅/TSS loading = 15 lbs/day

A summary of the effluent limits for the facility is:

Table 1

PARAMETER	DISCHARGE LIMITATIONS				MONITORING REQUIREMENTS	
	Mass (lbs/ day, unless noted) 30 Day Avg Report MGD	7 Day Avg Report MGD	Concentration (mg/L, unless noted) 30 Day Avg Daily Max	7 Day Avg	Measurement Frequency	Sample Type
Flow					Daily	Grab (*1)
BOD (influent)			Report	Report	1/month (*5)	Grab (*1)
BOD5 (effluent)	10	15	30	45	1/month (*5)	Grab (*1)
TSS (influent)			Report	Report	1/month (*5)	Grab (*1)
TSS (effluent)	10	15	30	45	1/month (*5)	Grab (*1)
30-day Average Percent Removal (minimum), BOD5	≥85%				1/month (*5)	Calculation (*2)
30-day Average Percent Removal (minimum), TSS	≥85%				1/month (*5)	Calculation (*2)
E. coli Bacteria (*3)			126	235	1/month (*5)	Grab (*1)
TRC				11 ug/l	5/week	Grab (*1)

Footnotes for Factsheet Table 1:

- Monitoring must be conducted according to test procedures approved under 40 CFR Part 136, unless other test procedures have been specified in this permit or approved by the Regional Administrator. Instantaneous grab a field measurement that is the analysis of a sample less than 15 minutes from the time of collection.
- Percent removal is calculated using the following equation: (average monthly influent concentration - average monthly effluent concentration) ÷ average monthly influent concentration
- Bacteria reporting units MUST be either cfu/100mL OR mpn
- The effluent limitation for TRC is the instantaneous maximum and cannot be averaged for reporting purposes. See Part II.A for MQL
- Sample events for any reporting period shall be taken at least fifteen (15) days from the first sample event of the previous reporting period.

Table 2

Effluent Characteristics	Discharge Limitations		Monitoring Requirements	
	Standard Units		Measurement Frequency	Sample Type
Pollutant	Min	Max		
pH	6.6	8.8	5/week	Grab (*1)

Footnotes for Factsheet Table 2:

1. Monitoring must be conducted according to test procedures approved under 40 CFR Part 136, unless other test procedures have been specified in this permit or approved by the Regional Administrator. Instantaneous grab a field measurement that is the analysis of a sample less than 15 minutes from the time of collection.

Table 3

Effluent Characteristic	Discharge Monitoring		Monitoring Requirements	
WET Testing (48-Hour Acute Static Renewal) (*1)	30-Day Avg Min	48-hr Min	Frequency	Type
<u>Daphnia pulex</u>	Report	Report	Once per term (*2)	24-Hr. Composite
<u>Pimephales promelas</u>	Report	Report	Once per term (*2)	24-Hr. Composite

Footnotes for Table 3:

- (*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.
- (*2) Once per permit-term. The test shall take place between November 1 and April 30 during the first year of the permit term. This permit does not establish requirements to automatically increase the WET testing frequency after a test failure, or to begin a toxicity reduction evaluation (TRE) in the event of multiple failures. However, upon failure of any WET test, the permittee must report the results to EPA and NMED, Surface Water Quality Bureau, in writing, within 5 business days of notification of the test failure. EPA and NMED will review the test results and determine the appropriate action necessary, if any.

1. WATER QUALITY BASED LIMITATIONS

a. 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 comply 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.

b. 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.

c. State Water Quality Standards

The general and specific stream standards are provided in 20.6.4.803 NMAC for Outfall 001, amended June 5, 2013. The discharge is to receiving waterbody Mimbres River. The designated uses of the receiving waters are coldwater aquatic life, irrigation, livestock watering, wildlife habitat and primary contact. The determination of coldwater or warmwater aquatic uses is based on the first downstream designation from the stream segment. The Mimbres River is the first designated stream, and it is designated as a coldwater aquatic use and based on this rationale Mimbres River will be evaluated for coldwater aquatic use.

d. Permit Action - Water Quality-Based Limits

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. Regulations promulgated at [40 CFR 122.44(d)] require limits in addition to or more stringent than effluent limitation guidelines (technology based).

In accordance with NMAC 20.6.4.803, the permit must be developed to allow for the maintenance and attainment of acute numerical criteria at the point of discharge to the receiving stream and for the maintenance and attainment of chronic numerical criteria at the edge of the mixing zone.

Results of all dilutions as well as the associated chemical monitoring of pH, temperature, hardness, dissolved oxygen, conductivity, and alkalinity will be documented in a full report, according to the appropriate test method publication. The full reports required by each test section do not need to be submitted unless requested. However, the full report is to be retained following the provisions of [40 CFR Part 122.41 (j) (2)]. The permit requires the submission of the toxicity testing information to be included on the DMR.

1) pH

The draft permit proposes a stream segment specific pH limit, specified in 20.6.4.900.H NMAC, 6.6 to 8.8 s.u.

2) Bacteria

Stream segment specific NMWQS for *E. coli* bacteria are 126 cfu/100 ml monthly geometric mean and 235 cfu/100 ml single sample maximum as found in 20.6.4.803 NMAC. Bacteria reporting units MUST be either cfu/100mL OR mpn.

3) Dissolved Oxygen

An evaluation of the permittee's impact on the receiving water dissolved oxygen was completed as part of the permitting process. A steady state model (LA-QUAL) was used to evaluate the biochemical oxygen demand of the discharge and associated constituents including ammonia. A complete characterization of the receiving water was not available. Certain parameters, including flow, were available and were utilized. However, the receiving water model also used default values to estimate the various unavailable hydrodynamic and water quality parameters. The discharge was modeled using data obtained from the application, permits limits and defaults were used for unavailable discharge characterization data.

The evaluation demonstrated that the discharge would not cause an excursion of the in-stream standard of 6 mg/L. The output file is attached as Fact Sheet Appendix 1 and 2.

4) 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 criteria, the permit must contain an effluent limit for that pollutant.

All applicable facilities are required to fill out appropriate sections of the Form 2A and 2S, to apply for an NPDES permit or reissuance of an NPDES permit. The new form is applicable not only to POTWs and to facilities that are similar to POTWs, but those facilities, which do not meet the regulatory definition of POTW (like privately owned sanitary wastewater treatment facility, 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 by EPA NPDES as a minor and does not need to fill out the expanded pollutant testing section Part D of Form 2A. There are no toxics that need to be placed in the draft permit.

ii. TRC

The previous permit established water quality-based effluent limitations for TRC of 11 µg/L. The proposed permit establishes a water quality-based effluent limitation for TRC of 11 ug/L in accordance with the designated use of 20.6.4.803 and 20.6.4.900.J NMAC.

iii. Critical Conditions

Critical dilutions are used to establish certain permit limitations and conditions. The State of New Mexico WQS allows a mixing zone for establishing pollutant limits in discharges. The mixing zones established by the State of New Mexico do not overlap with tribal/pueblo boarders.

Both the NMWQS and NMIP establish a critical low flow designated as 4Q3, as the minimum average four consecutive day flow which occurs with a frequency of once in three years. The SWQB of the NMED provided EPA with the 4Q3 for the Rio de Arenas Mobile Home Manor WWTP at 0.0 cfs.

For permitting purposes of certain parameters such as WET, the critical dilution of the effluent to the receiving stream is determined to be 100%.

C_D Dilution Series (percentage) = 32, 42, 56, 75 and 100

2. 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). Changes to sample frequencies have been made based on the NMIP in order to ensure consistency with similar sized facilities.

In the 2009 permit, the facility was given a monitoring frequency of one (1) time per month for BOD, TSS, and E. coli monitoring. The proposed permit monitoring requirements for BOD and TSS will be continue at one (1) per month. The previous permit had a monitoring frequency of one (1) time per month for pH, which has increased to five (5) times per week grab, in accordance to the NMIP. The 2009 permit had a monitoring frequency of once per week for TRC with grab sampling, which will be changed to 5/week grab sampling, in accordance to the NMIP.

According to the NMIP, based on treatment technology and design flow, the monitoring frequency has changed as listed below. TSS concentration and mass limit averages for 7-day and 30-day are continued from the previous permit to reflect the regulation limit for treatment equivalent to secondary standard (40 CFR 133).

Monitoring must be conducted according to test procedures approved in 40 CFR Part 136, unless other test procedures have been specified in this permit or approved by the Regional Administrator.

3. WHOLE EFFLUENT TOXICITY TESTING (48-HOUR ACUTE NOEC FRESHWATER)

Based on the nature of the discharge; POTW, the design flow; 0.04 MGD, the nature of the receiving water; ephemeral, and the critical dilution; the NMIP directs the WET test to be a 48-hour acute test using Daphnia pulex and Pimephales promelas (fathead minnow) a once per five year frequency.

The proposed permit requires five (5) dilutions in addition to the control (0% effluent) to be used in the toxicity tests based on a 32% 42%, 56%, 75%, and 100% dilution series. 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 from Outfall 001 - the discharge to Mimbres River. Discharges shall be limited and monitored by the permittee as specified below:

The EPA Reasonable Potential Analyzer for outfall 001 (Appendix A) indicates that RP exists for Daphnia pulex and Pimephales promelas, but since RP for an excursion of the narrative criterion to protect the aquatic life against toxicity does not actually exist (toxic events were not demonstrated) WET limits will not be established in the proposed permit for the invertebrate or vertebrate species for outfall 001. 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.

Final Effluent Limits - 0.04 MGD design flow.

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 from Outfall 001 - the discharge to Mimbres River. Discharges are limited and monitored by the permittee as specified below:

Table 4

Effluent Characteristic	Discharge Monitoring	
	30-Day Avg Min	48-Hr Min
WET Testing (48-Hour Acute Static Renewal) (*1)	Report	Report
<u>Daphnia pulex</u>	Report	Report
<u>Pimephales promelas</u>	Report	Report

Table 5

Effluent Characteristic	Monitoring Requirements	
	Frequency	Type
WET Testing (7-Day Static Renewal) (*1)	Once per term (*2)	24-Hr. Composite
<u>Daphnia pulex</u>	Once per term (*2)	24-Hr. Composite
<u>Pimephales promelas</u>	Once per term (*2)	24-Hr. Composite

Footnotes for Table 4 & 5:

(*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.

(*2) Once per permit-term. The test shall take place between November 1 and April 30 during the first year of the permit term. This permit does not establish requirements to automatically increase the WET testing frequency after a test failure, or to begin a toxicity reduction evaluation (TRE) in the event of multiple failures. However, upon failure of any WET test, the permittee must report the results to EPA and NMED, Surface Water Quality Bureau, in writing, within 5 business days of notification of the test failure. EPA and NMED will review the test results and determine the appropriate action necessary, if any.

F. FACILITY OPERATIONAL PRACTICES

1. SEWAGE SLUDGE

The permittee shall use only 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 at a later date 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 or not a sludge-only permit has been issued. Part IV of the draft permit contains sewage sludge permit requirements.

2. 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.

3. INDUSTRIAL WASTEWATER CONTRIBUTIONS

The treatment plant has no non-categorical SIU and no 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 City of Raton Wastewater Treatment/Reclamation Facility that are subject to pretreatment standards under §307(b) of the CWA and 40 CFR Part 403.

4. 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 quarterly. The monitoring results will be available to the public.

G. 303(d) LIST

Section 303(d) of the Federal Clean Water Act requires states to develop a TMDL management plan for water bodies determined to be water quality limited. A TMDL documents the amount of a pollutant a water body can assimilate without violating a state's water quality standards. It also allocates a load capacity to known point sources and nonpoint sources at a given flow. EPA defines TMDLs in 40 CFR Part 130 as the sum of the individual WLAs for point sources and background conditions, and includes a margin of safety.

Rio de Arenas does not discharge into a 303(d) impaired waterbody and does not have a TMDL to comply with. If the receiving waterbody does need to comply with a TMDL, then the permit will be reopened as explained in the permit reopener clause.

H. ANTIDegradation

The State of New Mexico has antidegradation requirements to protect existing uses through implementation of NMWQS. The limitations and monitoring requirements set forth in the proposed draft

are developed from the appropriate State WQS and are protective of those designated uses. Furthermore, the policy's set forth the intent to protect the existing quality of those waters, whose quality exceeds their designated use. The design flow rate of the facility has not changed. The proposed draft permit does not authorize a new or increased discharge. Therefore, the need for an Antidegradation Tier 2 Review was determined not necessary (was not conducted) by the State of New Mexico Environment Department. The draft permit is consistent with the NM WQMP.

I. 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 BOD5 and mass loading requirements for TSS.

J. ENDANGERED SPECIES CONSIDERATIONS

According to FWS Consultation Tracking Number 02ENNM00-2014-SLI-0034 on October 10, 2014 for Project Number NM0027375 Rio de Arenas, LLC WWTP (Factsheet Appendix 3), seven species in Grant County are listed as endangered: Southwestern willow flycatcher (Empidonax traillii extimus), Gila chub (Gila intermedia), Gila topminnow (Poeciliopsis occidentalis), Loach minnow (Tiaroga cobitis), Spikedace (Meda fulgida), Grey wolf (Canis lupus), and the Mexican Long-Nosed bat (Leptonycteris nivalis). The Chiricahua leopard frog (Lithobates chiricahuensis), Mexican spotted owl (Strix occidentalis lucida), yellow-billed cuckoo (Coccyzus americanus), Beautiful shiner (Cyprinella formosa), Chihuahua chub (Gila nigrescens), Gila trout (Oncorhynchus gilae), Narrow-headed garter snake (Thamnophis megalops), and the Northern Mexican garter snake (Thamnophis eques megalops) are the eight (8) species listed as threatened. The Northern aplomado falcon (Falco femoralis septentrionalis) is listed as an experimental population and is treated as a threatened species. The Sprague's Pipit (Anthus spragueii) and the Roundtail chub (Gila robusta) are candidate species.

Critical habitat within Grant County was listed for Chiricahua leopard frog (Lithobates chiricahuensis), Mexican spotted owl (Strix occidentalis lucida), Southwestern willow flycatcher (Empidonax traillii extimus), Beautiful shiner (Cyprinella formosa), Gila chub (Gila intermedia), Spikedace (Meda fulgida), and the Loach minnow (Tiaroga cobitis). Based on identification of the FWS Critical Habitat Mapper (<http://ecos.fws.gov/crithab/flex/crithabMapper.jsp>?) there is no critical habitat identified in the area of the discharge or downstream.

When EPA reissued the permit for the Rio de Arenas, LLC in 2009, EPA conducted an affect analyses and determined that the action had no affect on the Grey wolf (Canis lupus), Gila trout (Oncorhynchus gilae), Gila topminnow (Poeciliopsis occidentalis), Chihuahua chub (Gila nigrescens), Beautiful shiner (Cyprinella formosa), Mexican spotted owl (Strix occidentalis lucida), Southwestern willow flycatcher (Empidonax traillii extimus), northern aplomado falcon (Falco femoralis septentrionalis), and the Chiricahua leopard frog (Lithobates chiricahuensis).

Effects of the Action – Loach minnow (Tiaroga cobitis)

The Loach minnow (Tiaroga cobitis) is endemic to New Mexico in the Gila River, San Francisco River, Tularosa River, and the Dry Blue Creek, but its distribution is fragmented. When the loach minnow reaches sexual maturity, approximately at age one, it spawns in late winter to early spring and from late

March into early June. Adhesive eggs are deposited on the underside of flattened rocks where the upstream portion of the rock is embedded in the substrate. Recurrent flooding and a natural hydrograph are very important in maintaining the habitat of loach minnow and in helping the species maintain a competitive edge over invading nonnative aquatic species.

The facility discharge is remaining constant and would continue to provide habitat to loach minnow (*Tiaroga cobitis*). Based on the site characteristics of the facility and the needs of the loach minnow, EPA Region 6 does not anticipate any habitat alteration resulting from the reissuance of this permit and finds that the discharge of treated effluent at the proposed limits and current design flow of 0.04 MGD will have "no affect" for the northern loach minnow (*Tiaroga cobitis*).

Effects of the Action – Spikedace (*Meda Fulgida*)

Spikedace (*Meda Fulgida*) aquatic habitat includes permanent, flowing, unpolluted water of low gradient streams having pool, riffle, run, and backwater areas. The substrate can vary between sand, gravel, and cobble with low to moderate amounts of fine sediment. Adults favor slow to swift velocities (0-100 cm/sec) in shallow water (3-38 cm) with shear zones where rapid flow borders slower flow, areas of sheet flow at the upper ends of mid-channel sand/gravel bars, and eddies at downstream riffle edges. Spawning occurs over shallow (less than 15 cm deep), sand-gravel-bottomed riffles where water flow is moderate. Stability of the substrate is likely important during times of egg deposition and hatching. Larvae occur in areas of slow to moderate flow (0-30 cm/sec) in shallow water (3-30 cm) with abundant instream cover. Immature and mature diet consists of invertivore (both aquatic and terrestrial) and piscivore (fry stage) and require abundant aquatic insects.

The facility discharge is remaining constant and would continue to provide habitat to spikedace (*Meda Fulgida*). Based on the site characteristics of the facility and the needs of the spikedace, EPA Region 6 does not anticipate any habitat alteration resulting from the reissuance of this permit and finds that the discharge of treated effluent at the proposed limits and current design flow of 0.04 MGD will have "no affect" for the spikedace (*Meda Fulgida*).

Effects of the Action – yellow-billed cuckoo (*Coccyzus americanus*)

The yellow-billed cuckoo (*Coccyzus americanus*) nests almost exclusively in low to moderate elevation riparian woodlands that cover 50 acres or more within arid to semiarid landscapes and within the low- to moderate-elevation the upper and middle Rio Grande and the Colorado River Basin. Their nests are an open cup nest with a loose saucer-shaped stick construction. The breeding season and varies, and is dependent on the availability of its preferred food, cicadas, katydids, and caterpillars.

Yellow-billed cuckoos regularly nest twice during a single breeding season (double brood) and, during years of exceptionally abundant food, have successfully raised three broods in a season. Yellow-billed cuckoos were historically common in riparian areas along the Rio Grande, as well as uncommon to common locally along portions of the Gila, San Francisco, and San Juan Rivers.

The facility discharge is remaining constant and would continue to provide habitat for the yellow-billed cuckoo (*Coccyzus americanus*) prey. Based on the site characteristics of the facility and the needs of the yellow-billed cuckoo, EPA Region 6 does not anticipate any habitat alteration resulting from the reissuance of this permit and finds that the discharge of treated effluent at the proposed limits and current design flow of 0.04 MGD will have "no affect" for the yellow-billed cuckoo (*Coccyzus americanus*).

Effects of the Action – Gila chub (*Gila intermedia*)

Gila chub (*Gila intermedia*) habitat requires perennial pools with reduced levels of sediments, spawning appropriate temperatures (17 to 24 °C), with submerged aquatic vegetation (ex. submerged large tree root wads), and a food base consisting of invertebrates (e.g. aquatic and terrestrial insects) and aquatic plants.

Adults appear to be principally carnivorous, feeding on large and small terrestrial and aquatic insects and sometimes, other small fishes. Spawning probably occurs over beds of submerged aquatic vegetation or root wads.

Based on our current knowledge of the life history, biology, and ecology of the species and the requirements of the habitat to sustain the essential life history functions of the species, EPA Region 6 does not anticipate any habitat alteration resulting from the reissuance of this permit and finds that the discharge of treated effluent at the proposed limits and current design flow of 0.04 MGD will have “no affect” for the Gila chub (*Gila intermedia*).

Effects of the Action – Mexican long-nosed bat (*Leptonycteris nivalis*)

Mexican long-nosed bat (*Leptonycteris nivalis*) depend on caves for roosting and on the flowers of agaves and cacti for food. These bats are adapted for life in arid country, and are found mainly in desert scrub habitat in the U.S. The bats emerge at night to feed on nectar and pollen, especially of the flowers of particular agaves (century plants) and large cacti. These bats also eat fruit, particularly soft and juicy kind. The reported presence in New Mexico is based solely on two specimens collected in 1963 and 1967 in Hidalgo County. The only roosting site in the United States, currently known to be in use, is a cave in Big Bend National Park, Texas. The two most important aspects of the bats’ habitat involve roosting sites and food sources. A limited number of caves and mines provide a proper roosting environment. While there are no precisely documented cases of roosts being made unusable, such sites are becoming increasingly subject to human destruction and disturbance.

The existing facility does not propose facility enlargement during this permit term, and EPA Region 6 does not anticipate any habitat alteration resulting from the reissuance of this permit and finds that the discharge of treated effluent at the proposed limits and current design flow of 0.04 MGD will have “no affect” for the Mexican long-nosed bat (*Leptonycteris nivalis*).

Effects of the Action – narrow-headed gartersnake (*Thamnophis megalops*)

The narrow-headed gartersnake (*Thamnophis megalops*), distributed across New Mexico, is widely considered to be one of the most aquatic of the gartersnakes. This species is strongly associated with clear, rocky streams, using predominantly pool and riffle habitat that includes cobbles and boulders. The species have been observed using lake shoreline habitat in New Mexico. Bank line vegetation is an important component to suitable habitat for this species. Common plant species associations include Arizona alder (*Alnus oblongifolia*), velvet ash, willows (*Salix* ssp), canyon grape, blackberry, Arizona sycamore, Arizona black walnut, Fremont cottonwood, Gambel oak, ponderosa pine. Species use shrub-sapling-sized plants for thermo-regulating at the waters’ edge as well as islands within the stream channel that are created by sedge tussocks. The species evolved in the absence of such habitat, and impoundments are generally managed as sport fisheries and often maintain populations of harmful nonnative species that are incompatible with narrow-headed gartersnakes. Many areas where the species may occur likely rely on emigration of individuals from occupied habitat into those areas to maintain the species, provided there are no potential barriers to movement, such as extensive stretches of dewatered habitat, or high densities of harmful nonnative species. As of 2011, the only remaining narrow-headed gartersnake populations in New Mexico where the species could reliably be found were located at: Whitewater Creek, Tularosa River, Diamond Creek, Middle Fork Gila River, and Saliz Creek.

Based on the site characteristics of the facility, the current known location of existing populations, and the needs of the narrow-headed gartersnake (Thamnophis megalops), EPA Region 6 does not anticipate any habitat alteration resulting from the reissuance of this permit and finds that the discharge of treated effluent at the proposed limits and current design flow of 0.04 MGD will have “no affect” for the narrow-headed gartersnake (Thamnophis megalops).

Effects of the Action – northern Mexican gartersnake (Thamnophis eques megalops)

The northern Mexican gartersnake (Thamnophis eques megalops) is considered a riparian obligate and occurs chiefly source-area wetlands, large river riparian woodlands, streamside gallery forests. The diet includes fishes, amphibians, earthworms, leeches, and various other small animals.

The facility discharge is remaining constant and would continue to provide habitat to northern Mexican gartersnake (Thamnophis eques megalops). Based on the 2009 permit baseline, any changes to the listing status made by FWS, the site characteristics of the facility, and the needs of the northern Mexican gartersnake, EPA Region 6 does not anticipate any habitat alteration resulting from the reissuance of this permit and finds that the discharge of treated effluent at the proposed limits and current design flow of 0.04 MGD will have “no affect” for the northern Mexican gartersnake (Thamnophis eques megalops).

As the 2009 NPDES Permit listed species were evaluated in 2009 and that the nature of the authorized discharge has not been changed since, and the past listing status of ‘no effect’ will remain the current determination. Therefore, based on information available, EPA has determined that the issuance of this permit will have *no affect* on these federally listed threatened or endangered species *nor will it destroy or adversely modify* designated critical habitat.

Table 6

Threatened and Endangered Species Determination	
Species	Determination
Chiricahua leopard frog (<u>Lithobates chiricahuensis</u>)	No Affect
northern aplomado falcon (<u>Falco femoralis septentrionalis</u>)	No Affect
Southwestern willow flycatcher (<u>Empidonax traillii extimus</u>)	No Affect
Mexican spotted owl (<u>Strix occidentalis lucida</u>)	No Affect
Beautiful shiner (<u>Cyprinella formosa</u>)	No Affect
Chihuahua chub (<u>Gila nigrescens</u>)	No Affect
Gila topminnow (<u>Poeciliopsis occidentalis</u>)	No Affect
Gila trout (<u>Oncorhynchus gilae</u>)	No Affect
Grey wolf (<u>Canis lupus</u>)	No Affect
Loach minnow (<u>Tiaroga cobitis</u>)	No Affect
Spikedace (<u>Meda Fulgida</u>)	No Affect
yellow-billed cuckoo (<u>Coccyzus americanus</u>)	No Affect
Gila chub (<u>Gila intermedia</u>)	No Affect
Mexican Long-Nosed bat (<u>Leptonycteris nivalis</u>)	No Affect
Narrow-headed garter snake (<u>Thamnophis megalops</u>)	No Affect
northern Mexican gartersnake (<u>Thamnophis eques megalops</u>)	No Affect
Spikedace (<u>Meda Fulgida</u>) Critical Habitat	No Affect
Loach minnow (<u>Tiaroga cobitis</u>) Critical Habitat	No Affect
Gila chub (<u>Gila intermedia</u>) Critical Habitat	No Affect

Beautiful shiner (<i>Cyprinella formosa</i>) Critical Habitat	No Affect
Southwestern willow flycatcher (<i>Empidonax traillii extimus</i>) Critical Habitat	No Affect
Mexican spotted owl (<i>Strix occidentalis lucida</i>) Critical Habitat	No Affect
Chiricahua leopard frog (<i>Lithobates chiricahuensis</i>) Critical Habitat	No Affect

K. HISTORICAL and ARCHEOLOGICAL PRESERVATION CONSIDERATIONS

The reissuance of the permit should not have an impact on historical and/or archeological sites since no construction activities are planned in the reissuance.

L. PERMIT REOPENER

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

M. VARIANCE REQUESTS

No variance requests have been received.

N. 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.

O. FINAL DETERMINATION

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

P. ADMINISTRATIVE RECORD

The following information was used to develop the proposed permit:

1. APPLICATION(s)

EPA Application Form 2A and 2S received October 24, 2014.

2. 40 CFR CITATIONS

Citations to 40 CFR are as of August 14, 2014
 Sections 122, 124, 125, 130, 133, 136, 261, 403

3. STATE OF NEW MEXICO REFERENCES

2012-2014 State of New Mexico Clean Water Act 303(d)/305(6) Integrated Report – Appendix A – List of Assessed Surface Waters USEPA – Approved May 8, 2012.

2012-2014 State of New Mexico Clean Water Act §303(d)/305(b) Integrated List.

Procedures for Implementing National Pollutant Discharge Elimination System Permits in New Mexico, NMIP. March 15, 2012.

Statewide Water Quality Management Plan, June 5, 2013.

State of New Mexico Standards for Interstate and Intrastate Surface Waters, 20.6.4.98 and 20.6.4.900 NMAC, as amended through June 5, 2013.

4. MISCELLANEOUS

Handbook for Sampling and Sample Preservation of Water & Wastewater. September 1982. EPA Report Number EPA-600/4-82-029.

Part 503 Implementation Guidance – 1995, EPA 833-R-95-001 – Office of Water, October 1995.

POTW Sludge Sampling and Analysis Guidance Document – 1989, EPA 833-B-89-100 – Office of Water, August 1989.

Technical Support Document for Water Quality based Toxics Control (EPA/505/2 90 001), page 47.