

# **NPDES PERMIT NO. NM0027375**

## **STATEMENT of BASIS**

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

### **I. APPLICANT**

Rio De Arenas LLC  
100 Simmens Ranch Road  
Silver City, NM 88061

### **II. ISSUING OFFICE**

U.S. Environmental Protection Agency  
Region 6  
1445 Ross Avenue  
Dallas, Texas 75202-2733

### **III. PREPARED BY**

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### **IV. DATE PREPARED**

February 20, 2009

### **V. DOCUMENT ABBREVIATIONS**

In the document that follows, various abbreviations are used. They are as follows: BAT - best available technology economically achievable, BMP – best management plan, BOD<sub>5</sub> – five-day biochemical oxygen demand, BPJ - best professional judgment, CD – critical dilution, CFR – Code of Federal Regulations, cfs – cubic feet per second, CIU - Categorical Industrial User's, COD – chemical oxygen demand, COE – United States Corp of Engineers, CWA – Clean Water Act, DMR – discharge monitoring report, EPA – United States Environmental Protection Agency, ESA - Endangered Species Act, FWS – United States Fish and Wildlife Service, MGD – million gallons per day, NMAC – New Mexico Administrative Code, NMED – New Mexico Environment Department, NMWQS - New Mexico State Standards for Interstate and Intrastate Surface Waters, NPDES – National Pollutant Discharge Elimination System, MQL - minimum

quantification level, O&G – oil and grease, POTW – Publicly Owned Treatment Works, RP – reasonable potential, SIC - standard industrial classification, SIU - Significant Industrial User's, su – standard units, 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, WET - whole effluent toxicity, WQCC – New Mexico Water Quality Control Commission, and WWTP – wastewater treatment plant.

## **VI. PERMIT ACTION**

Proposed reissuance of the current NPDES permit initially issued June 28, 2004, with an effective date of August 1, 2004, and an expiration date of July 31, 2009.

Unless otherwise stated, citations to 40 CFR refer to promulgated regulations listed in Title 40, CFR, revised as of February 13, 2009.

## **VII. CHANGES FROM THE PREVIOUS PERMIT**

Changes from the permit previously issued June 28, 2004, with an effective date of August 1, 2004, and an expiration date of July 31, 2009 are:

- A. The pollutant pH has been made more stringent.
- B. E. coli bacteria limits have been added.
- C. Fecal coliform bacteria limits have been eliminated.
- D. WET monitoring has been added to the permit.

## **VIII. APPLICANT ACTIVITY**

Under the SIC Code(s) 6515, the applicant currently operates a residential mobile home park. The discharger operates a wastewater treatment package plant. The design flow for this facility is 0.04 MGD.

## **IX. DISCHARGE LOCATION**

As described in the application, the plant is located off highway 180 at the Rio De Arenas Mobile Home Park, Arenas Valley, Grant County, New Mexico. The effluent from the treatment plant is discharged into a series of dry arroyos named Whiskey Creek, thence to Rio De Arenas, thence to San Vicente Arroyo, an unclassified ephemeral tributary of the Mimbres River and never reaching the Lower Mimbres River in Segment 20.6.4.803 of the Closed Basin. The point of discharge is more than 30 miles to the Mimbres River. The discharge is located at Latitude 32° 46' 25" North and Longitude 108° 11' 29" West in Grant County, New Mexico.

## **X. RECEIVING STREAM STANDARDS**

The general and specific stream standards are provided in NMWQS (20.6.4 NMAC, amended through August 1, 2007).

The CWA sections 101(a)(2) and 303(c) require water quality standards to provide, wherever attainable, water quality for the protection and propagation of fish, shellfish, wildlife, and recreation in and on the water, functions commonly referred to as “fishable/swimmable” uses. EPA’s current water quality regulation effectively establishes a rebuttable presumption that “fishable/swimmable” uses are attainable and therefore should apply to a water body unless it can be demonstrated that such uses are not attainable. EPA does not expect the State to adopt uses for ephemeral waters that cannot be attained, but in those instances, the State must submit a UAA to support an aquatic life designation that does not meet the CWA §101(a)(2) objective as required by 40 CFR 131.10(j)(1).

The known uses of the Whiskey Creek are not those contained for Segment No.20.6.4.803, but based on the above, are for aquatic life, 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 Whiskey Creek will be evaluated for coldwater aquatic use.

## **XI. EFFLUENT CHARACTERISTICS**

A quantitative description of the discharge(s) described in the EPA Permit Application Form 2E dated January 26, 2009, are presented below:

### POLLUTANT TABLE

<b>Parameter</b>	<b>Avg</b> (mg/l unless noted)
Flow, MGD	0.012
Temperature, winter	10°C
Temperature, summer	10 °C
pH, minimum	7.3 su
BOD <sub>5</sub>	5.2
FCB (bacteria/100 ml)	13.8
TSS	3.25

## **XII. DRAFT PERMIT RATIONALE AND PROPOSED PERMIT CONDITIONS**

The proposed effluent limitations for those pollutants proposed to be limited are based on regulations promulgated at 40 CFR 122.44. The draft permit limits are based on either technology-based effluent limits pursuant to 40 CFR 122.44(a), on BPJ in the absence of guidelines, WQS and/or requirements pursuant to 40 CFR 122.44(d), whichever are more stringent.

### **A. REASON FOR PERMIT ISSUANCE**

It is proposed that the permit be issued for a 5-year term following regulations promulgated at 40 CFR 122.46(a). The proposed permit expiration date will coordinate with the EPA Basin Statewide Management Approach to Permitting in New Mexico, adopted March 2, 2000.

**B. TECHNOLOGY-BASED VERSUS WATER QUALITY STANDARDS-BASED EFFLUENT LIMITATIONS AND CONDITIONS**

Following regulations promulgated at 40 CFR 122.44, the draft permit limits are based on either technology-based effluent limits pursuant to 40 CFR 122.44(a) or on WQS and requirements pursuant to 40 CFR 122.44(d), whichever are more stringent.

Technology-based effluent limitations are established in the proposed permit for TSS and BOD<sub>5</sub>.

Water quality-based effluent limitations are established in the proposed permit for TRC, E. coli bacteria and pH.

**C. TECHNOLOGY-BASED EFFLUENT LIMITATIONS/CONDITIONS**

Secondary treatment, established at 40 CFR\_133.102(a) and 40 CFR\_133.102(b) are 30 mg/l for the 30-day average and 45 mg/l for the 7-day average for BOD<sub>5</sub> and TSS each.

Final Effluent Limits 0.04 MGD design flow

EFFLUENT CHARACTERISTICS	DISCHARGE LIMITATIONS			
	lbs/Day		mg/l (unless noted)	
Parameter	30-Day Avg.	7-Day Avg.	30-Day Avg.	7-Day Avg.
Flow	N/A	N/A	Measure MGD	Measure MGD
BOD <sub>5</sub>	10	15	30	45
TSS	10	15	30	45
pH	N/A	N/A	6.0 – 9.0 standard units	

Loading limits in lbs/day = pollutant concentration in mg/l \* 8.345 lbs/gal \* design flow in MGD

**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). The technology based pollutants BOD<sub>5</sub> and TSS shall be monitored at once per month, the same as the previous permit. Sample type for these pollutants is 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." The specific requirements in the permit apply as a result of the design flow of the facility, the type of waste discharged to the collection system, and the sewage sludge disposal or reuse practice utilized by the treatment works.

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## F. WASTE WATER 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 SIU and/or CIU. EPA has tentatively determined that the permittee will not be required to develop a full pretreatment program. However, general pretreatment provisions have been required.

## H. 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.

## I. WATER QUALITY BASED LIMITATIONS

### 1. General Comments

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. Post Third Round Policy and Strategy

Section 101 of the CWA states that "...it is the national policy that the discharge of toxic pollutants in toxic amounts be prohibited..." To insure that the CWA's prohibitions on toxic discharges are met, EPA has issued a "Policy for the Development of Water Quality-Based Permit Limitations for Toxic Pollutants 49 FR 9016-9019, March 9, 1984." In support of the national policy, Region 6 adopted the "Policy for Post Third Round NPDES Permitting" and the "Post Third Round NPDES Permit Implementation Strategy" on October 1, 1992. The Regional policy and strategy are designed to insure that no source will be allowed to discharge any wastewater which (1) results in instream aquatic toxicity; (2) causes a violation of an applicable narrative or numerical State water quality standard resulting in nonconformance with the provisions of 40 CFR 122.44(d); (3) results in the endangerment of a drinking water supply; or (4) results in aquatic bioaccumulation which threatens human health.

### 3. Implementation

The Region is currently implementing its post third round policy in conformance with the Regional strategy. 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.

#### 4. State Water Quality Numerical Standards

##### a. GENERAL COMMENTS

Stated previously, Whiskey Creek has designated uses of coldwater aquatic life, livestock watering, wildlife habitat and primary contact.

##### b. WATER QUALITY STANDARDS

The NM WQCC adopted WQS for the State of New Mexico. They are available on the NMED's website at <http://www.nmcpr.state.nm.us/nmac/parts/title20/20.006.0004.pdf>. The WQCC established the WQS in accordance with, and under authority of, the NM Water Quality Act [Chapter 74, Article 6, NMSA 1978 Annotated].

##### c. PERMIT ACTION - WATER QUALITY-BASED LIMITS

Regulations promulgated at 40 CFR 122.44(d) require limits in addition to, or more stringent than effluent limitation guidelines (technology based). NM WQS that are applicable for this discharge are based on 20.6.4 NMAC.

##### i. pH

Stream segment specific WQS do not exist for Whiskey Creek, however, for coldwater aquatic uses, a pH of 6.6 to 8.8 exists at 20.6.4.900.H (2) NMAC. These limits are more restrictive than the technology-based limits presented earlier, and they are also more restrictive than the current permit. The draft permit shall establish 6.6 to 8.8 su's for pH.

##### ii. Bacteria

The previous permit had limits for fecal coliform bacteria (FCB). Since the previous permit issuance, E. coli has been adopted as the State bacteria standard in lieu of FCB. The draft permit shall discontinue limits for FCB and will instead propose E. coli bacteria limits. Stream segment specific WQS for E. coli bacteria do not exist for Whiskey Creek, but E. coli bacteria limits are established in 20.6.4.900.D NMAC for primary contact of 126 cfu/100 ml monthly geometric mean and 410 cfu/100 ml daily maximum. Eliminating FCB from this draft permit does not constitute antibacksliding. Since there is no required construction to add bacteria control technology, no compliance schedule will be granted in the draft permit for the change from FCB to E. coli limits.

##### iii. Toxics

The CWA in Section 301 (b) requires that effluent limitations for point sources include any limitations necessary to meet water quality standards. Federal regulations found at 40 CFR 122.44 (d) state that if a discharge poses the reasonable potential to cause an in-stream excursion above a water quality 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, but also to facilities that are similar to POTWs, but which do not meet the regulatory definition of “publicly owned treatment works” (like private domestics, or similar facilities on Federal property). The forms were designed and promulgated to “make it easier for permit applicants to provide the necessary information with their applications and minimize the need for additional follow-up requests from permitting authorities,” per the summary statement in the preamble to the Rule. These forms became effective December 1, 1999, after publication of the final rule on August 4, 1999, Volume 64, Number 149, pages 42433 through 42527 of the FRL.

The facility is classified as a “minor” discharger with a design flow in less than 1.0 MGD, and does not need to complete Part D, “Expanded Effluent Testing Data” of form 2A. There are no toxics to evaluate impacts on the discharge.

The facility uses chlorine for bacteria control and the previous permit limited TRC to 11 ug/l. This limit shall continue in the draft permit.

#### 5. 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). The monitoring frequencies for E. coli, TRC, pH, and flow are consistent with the previous permit. Flow shall be sampled five times per week by instantaneous measurement. TRC shall be monitored daily by instantaneous grab which is defined in 40 CFR Part 136 as being analyzed within 15-minutes of collection. Monitoring frequency for E. coli shall be proposed at the same frequency as FCB, once per month by grab sample.

#### 6. Whole Effluent Toxicity Limitations

##### 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.)

In a letter from Marcy Leavitt, NMED, to Claudia Hosch, EPA, December 16, 2005, NMED provided Narrative Toxics Implementation Guidance – Whole Effluent Toxicity, (NTIG-WET), an update to the 1995 Implementation Guidance. The previous permit had no biomonitoring requirements. In recognition of the nature of the receiving water, distance to the nearest perennial waterbody and the fact that the discharge would only reach the Mimbres River during

direct response to precipitation runoff, the draft permit proposes a one-time, 48-hour acute test using *Daphnia pulex* and *Pimephales promelas*.

The permittee shall conduct separate whole effluent toxicity tests in accordance with the following table:

<u>EFFLUENT CHARACTERISTIC</u>	<u>DISCHARGE</u> <u>30-DAY AVG MINIMUM</u>	<u>MONITORING</u> <u>48-Hr. MINIMUM</u>
Whole Effluent Toxicity Testing (48 Hr. Static Renewal) (*1)		
Daphnia pulex	REPORT	REPORT
Pimephales promelas	REPORT	REPORT

<u>EFFLUENT CHARACTERISTIC</u>	<u>MONITORING</u> <u>FREQUENCY</u>	<u>REQUIREMENTS</u> <u>TYPE</u>
Whole Effluent Toxicity Testing (48 Hr. Static Renewal) (*1)		
Daphnia pulex	Once/Permit Term	24 Hr. Composite
Pimephales promelas	Once/Permit Term	24-Hr. Composite

**FOOTNOTES**

(\*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.

**XIII. 303(d) LIST**

Whiskey Creek, Rio de Arenas and San Vicente Arroyo have not been identified as impaired on the “State of New Mexico Part 303(d) List for Assessed Stream and River Reaches, 2006-2008.” No additional permit limitations need to be placed in the permit on this basis but the standard reopener language in the permit allows additional permit conditions if a future TMDL is done.

**XIV. 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.

**XV. 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 BOD<sub>5</sub> and TSS. The pollutant pH has been made more stringent and this action is not subject to antibacksliding provisions. E. coli bacteria have replaced fecal coliform, and while fecal coliform bacteria limits have been eliminated, this does not constitute antibacksliding since it is an indicator parameter of bacteria, and has been replaced by E. coli in the WQS. Lastly, the operator has a one time biomonitoring test to assess for potential pollutant synergistic effects. All of 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 FWS, Southwest Region 2 website, <http://www.fws.gov/southwest/es/EndangeredSpecies/lists/>, thirteen species in Grant County are listed as endangered (E) or threatened (T). Seven of the species are fishes and include the Gila topminnow (*Poeciliopsis occidentalis*) (E), beautiful shiner (*Cyprinella Formosa*) (T), Chihuahua chub (*Gila nigrescens*) (T), Gila trout (*Oncorhynchus gilae*) (T), loach minnow (*Tiaroga cobitis*) (T), and the spikedace (*Meda fulgida*) (T). The gray wolf (*Canis lupus*) (E) and the black-footed ferret (*Mustela nigripes*) (E) are mammals while the Chiricahua leopard frog (*Rana chiricahuensis*) (T) is an amphibian. Three of the species are avian and include the Mexican spotted owl (T) (*Strix occidentalis lucida*), Northern aplomado falcon (E) and Southwestern willow flycatcher (E) (*Empidonax traillii extimus*). The American bald eagle (*Haliaeetus leucocephalus*) was previously listed in Grant County, however, in the Federal Register, July 9, 2007, (Volume 72, Number 130), the FWS removed the American bald eagle in the lower 48 States of the United States from the Federal List of Endangered and Threatened Wildlife.

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

1. Permit limitations have only been made more restrictive from the previously issued permit, June 28, 2004.
2. No changes have been made to the US Fish and Wildlife list of threatened and endangered species and critical habitat designation in the area of the discharge since prior issuance of the permit.
3. EPA concluded “no effect” during the previous issuance of the permit on June 28, 2004, and has received no additional information since then which would lead to revision of that “no effect” determination.

4. EPA determines that Items 1, 2, and 3 result in no change to the environmental baseline established by the previous permit, therefore, EPA concludes that reissuance of this permit will have “no effect” on listed species and designated critical habitat.

## **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 NM WQS for Interstate and Intrastate Streams are revised or remanded by the WQCC. In addition, the permit may be reopened and modified during the life of the permit if relevant procedures implementing the WQS are either revised or promulgated by the NMED. Should the State adopt a WQS, 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 WQS and/or WQMP, 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 COE; FWS 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 Form 1 and Form 2E received January 22, 2009.

### **B. 40 CFR CITATIONS**

Sections 122, 124, 125, 133, 136

### C. STATE OF NEW MEXICO REFERENCES

New Mexico State Standards for Interstate and Intrastate Surface Water, 20.6.4 NMAC, as amended through August 1, 2007.

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

State of New Mexico 303(d) List for Assessed Stream and River Reaches, 2006 - 2008.

Draft State of New Mexico 303(d) List for Assessed Stream and River Reaches, 2008 - 2010.

### D. MISCELLANEOUS REFERENCES

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

Compliance Evaluation Inspection, Aztec Water Treatment Plant, NPDES #NM0027375, February 19, 2007, by Richard Powell, SWQB, NMED.