

# **NPDES PERMIT NO. NM0024988**

## **FACT SHEET**

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

### APPLICANT

City of Santa Rosa  
244 S 4<sup>th</sup> Street  
Santa Rosa, NM 88435

### ISSUING OFFICE

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Region 6  
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### DATE PREPARED

May 17, 2011

### PERMIT ACTION

Proposed reissuance of the current permit issued December 14, 2006 with an effective date of February 1, 2007, and an expiration date of January 31, 2011.

### RECEIVING WATER – BASIN

El Rito Creek in Segment No. 20.6.4.212 - 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 limitation 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                            |
| ML    | Minimum quantification level   |
| O&G   | Oil and grease   |
| PCB   | Polychlorinated Biphenyl   |
| POTW  | Publically owned treatment works   |
| RP    | Reasonable potential   |
| SIC   | Standard industrial classification   |
| s.u.  | Standard units (for parameter pH)  |
| SHPO  | State Historic Preservation Officer (SHPO)                                 |
| SWQB  | Surface Water Quality Bureau   |
| TDS   | Total dissolved solids   |
| THPO  | Tribal Historic Preservation Officer (THPO)                                |
| 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 mean either the State of New Mexico and/or any Tribe.

## I. CHANGES FROM THE PREVIOUS PERMIT

Changes from the permit previously issued December 14, 2006, with an effective date of February 1, 2007, and an expiration date of January 31, 2011:

- A. FCB limits have been eliminated.
- B. Increase monitoring frequency for pH
- C. Increase monitoring frequency for *E. coli*
- D. Reduce monitoring frequency for TRC
- E. Increase monitoring frequency for *Ceriodaphnia dubia*.
- F. Percent (minimum) removal have been added for BOD and TSS

## II. APPLICATION LOCATION and ACTIVITY

### LOCATION

The facility is located south of the City of Santa Rosa, on the south side of El Rito Creek, approximately 500 feet above the confluence with the Pecos River. The effluent from the treatment plant is discharged into El Rito Creek in Segment No. NMAC 20.6.4.212; thence to the Pecos River of the Pecos River Basin. The single outfall of the facility is located on El Rito Creek at:

Latitude 34° 54' 19" North, Longitude 104° 41' 00" West

### ACTIVITY

Raw sewage enters the treatment plant through a 9" Parshall flume. This flows through an automatic bar screen with a manual bar screen back up before flowing to the main lift station. A basket skimmer is located before the lift station to catch additional solids before the water is sent through the pumps of the lift station. Debris is removed from the bar screen and placed in a barrel to dry prior to being transported to the landfill for final disposal. Influent enters the lift station and is sent up-gradient to an east aeration lagoon. The water from the east aeration lagoon is sent to the northern un-aerated polishing pond. From polishing, the water flows through a serpentine chlorine contact chamber. Chlorine gas is added at the head of the chamber. At the end of the chlorine contact chamber, effluent volume is measured by a 6" Parshall flume and Drexelbrook totalizer meter. Sulfur dioxide is added for dechlorination immediately below the flume. The treated effluent flows through an enclosed pipe approximately 500 feet to the discharge point at El Rito Creek. The WWTP serves 2,744 people according to the 2000 census.

The chlorine gas disinfection wastewater treatment facility will be upgraded to an ultraviolet (UV) disinfection facility in October 2011. The facility will include a new biological treatment process as well as modifications/improvements to the existing infrastructure. The existing Corona "main" lift station (a dry well/wet well design) will be replaced with a submersible Flygt-type lift station. The new process train is composed of an aeration basin and a secondary clarifier. Phase I design and construction will include two process trains, with each process train

having the capacity to treat 0.33 MGD, therefore, Phase I design flow is 0.67 MGD. A summary of improvements is identified below:

- The existing bar screen will be replaced.
- A new aerated grit basin will be added downstream of the bar screen to remove grit before it enters the treatment process.
- The Influent Lift Station will have minor modifications to the wet well and cleaning.
- A flow meter will be added downstream of the lift pump station.
- New splitter boxes, aerated grit chamber, sludge drying beds, concrete basins, new aerobic digesters, blower and pump building and secondary clarifiers will be installed.
- After the new biological treatment process trains are online, the East Aeration Lagoon will be cleaned and removed or abandoned.
- A backup generator will be replaced.

The requirements of this permit will be triggered in two phases:

Phase I: during the period beginning the effective date of the permit and lasting until the UV system has replaced chlorine as the bacteria control treatment;

Phase II: during the period beginning when the UV system is used for bacteria control, and lasting through the expiration date of this permit.

### III. EFFLUENT CHARACTERISTICS

A quantitative description of the discharge(s) described in the EPA Permit Application Form 2A received August 24, 2010, are presented below:

#### POLLUTANT TABLE – 1

| Parameter  | Max                 | Avg    |
|--|---------------------|--------|
|  | (mg/L unless noted) |        |
| Flow, million gallons/day (MGD)                      | 1.17                | 0.67   |
| pH, minimum, standard units (su)                     | 6.8                 | N/A    |
| pH, maximum, standard units (su)                     | 7.1                 | N/A    |
| Biochemical Oxygen Demand, 5-day (BOD <sub>5</sub> ) | 37                  | 26     |
| E. coli (# bacteria /100 mL)                         | 35000 *             | 1413 * |
| Total Suspended Solids (TSS) (mg/L)                  | 92.70               | 56.5   |
| Temperature (Winter) (F)                             | 46                  | 40     |
| Temperature (Summer) (F)                             | 76                  | 48     |

\*From June 2004 to December 2010.

A summary of the last 24-months of available pollutant data: October 31, 2008 through September 30, 2010, taken from DMRs shows exceedances of permit limits for TRC, BOD<sub>5</sub>, pH, TSS, and *E. coli*. See Pollutant Table 2.

POLLUTANT TABLE - 2

| Date       | BOD <sub>5</sub> |                  |                 | pH    |      | TSS              |                  |                 | E. coli          |               |
|------------|------------------|------------------|-----------------|-------|------|------------------|------------------|-----------------|------------------|---------------|
|            | 30<br>DAY<br>AVG | 30<br>DAY<br>AVG | 7<br>DAY<br>AVG | Min.  | Max  | 30<br>DAY<br>AVG | 30<br>DAY<br>AVG | 7<br>DAY<br>AVG | 30<br>DAY<br>AVG | Daily<br>Max  |
|            | lbs/day          | mg/L             | mg/L            | s.u.  | s.u. | lbs/day          | mg/L             | mg/L            | cfu/100<br>mL    | cfu/100<br>mL |
| Limit      | 87.6             | 30               | 45              | 6.6   | 8.8  | 87.6             | 30               | 45              | 126              | 410           |
| 10/31/08   | 191 *            | 79 *             | 234 *           | 6.5 * | 6.8  | 74               | 31 *             | 40              | 457 *            | 8000 *        |
| 11/30/08   | 56               | 24               | 27              | 6.9   | 7    | 100 *            | 42 *             | 49 *            | 9                | 23            |
| 12/31/08   | 61               | 24               | 27              | 6.7   | 7    | 94 *             | 39 *             | 49 *            | 9                | 13            |
| 1/31/09    | 70               | 31               | 44              | 6.8   | 7    | 81               | 36 *             | 40              | 52               | 1600 *        |
| 2/28/2009  | 63               | 27               | 36              | 6.6   | 7.2  | 106 *            | 46 *             | 57 *            | 15               | 23            |
| 3/31/2009  | 104 *            | 43 *             | 49 *            | 6.9   | 7.1  | 113 *            | 47 *             | 50 *            | 9                | 23            |
| 4/30/2009  | 103 *            | 40 *             | 47 *            | 7     | 7.1  | 103 *            | 40 *             | 59 *            | 20               | 23            |
| 5/31/2009  | 66               | 31               | 36              | 6.8   | 7.1  | 99 *             | 45 *             | 51 *            | 5                | 23            |
| 6/30/2009  | 54               | 20               | 23              | 7     | 7.2  | 62               | 23               | 29              | 3                | 4             |
| 7/31/2009  | 61               | 19               | 27              | 7.1   | 7.2  | 86               | 26               | 38              | 6                | 11            |
| 8/31/2009  | 66               | 21               | 24              | 7     | 7.1  | 86               | 27               | 32              | 5                | 7             |
| 9/30/2009  | 75               | 30               | 33              | 7     | 7.1  | 104 *            | 40 *             | 48 *            | 2                | 2             |
| 10/31/2009 | 59               | 24               | 28              | 6.4 * | 6.9  | 84               | 34 *             | 49 *            | 138 *            | 1600 *        |
| 11/30/2009 | 31               | 14               | 19              | 6.5 * | 6.8  | 67               | 30               | 43 *            | 13               | 23            |
| 12/31/2009 | 84               | 36 *             | 40              | 6.8   | 6.9  | 104 *            | 45 *             | 51 *            | 62               | 130           |
| 1/31/2010  | 75               | 34 *             | 38              | 6.8   | 6.9  | 112 *            | 51 *             | 57 *            | 53               | 80            |
| 2/28/2010  | 65               | 27               | 33              | 6.6   | 7    | 145 *            | 60 *             | 73 *            | 23               | 23            |
| 3/31/2010  | 76               | 32               | 39              | 6.8   | 7    | 161 *            | 68 *             | 100 *           | 37               | 170           |
| 4/30/2010  | 85               | 35               | 44              | 6.8   | 7.1  | 140 *            | 57 *             | 85 *            | 9                | 30            |
| 5/31/2010  | 59               | 24               | 29              | 6.9   | 7    | 72               | 29               | 34              | 18               | 130           |
| 6/30/2010  | 67               | 23               | 25              | 6.9   | 7.2  | 149 *            | 50 *             | 60 *            | 11               | 30            |
| 7/31/2010  | 50               | 16               | 23              | 7     | 7.1  | 120 *            | 37 *             | 54 *            | 4                | 13            |
| 8/31/2010  | 65               | 22               | 26              | 6.9   | 7.2  | 90               | 32 *             | 47 *            | 5                | 23            |
| 9/30/2010  | 78               | 27               | 35              | 6.8   | 7.2  | 196 *            | 70 *             | 191 *           | 8                | 23            |

\*-denotes exceedance of permit limit

ND- No discharge

#### IV. REGULATORY AUTHORITY/PERMIT ACTION

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

conditions), §124 (procedures for decision making), §125 (technology-based standards) and § 136 (analytical procedures). Other parts of 40 CFR provide guidance for specific activities and may be used in this document as required.

The permit application was received on February 7, 2011. 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 December 14, 2006 with an effective date of February 1, 2007, and an expiration date of January 31, 2011.

## V. DRAFT PERMIT RATIONALE AND PROPOSED PERMIT CONDITIONS

### 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 effluent limitation guidelines, numerical and/or narrative water quality standard-based effluent limits, or the previous permit.

Technology-based effluent limitations are established in the proposed draft permit for TSS and BOD<sub>5</sub>. Water quality-based effluent limitations are established in the proposed draft permit for *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 based on ELGs where applicable, on BPJ in the absence of guidelines, or on a combination of the two. In the absence of promulgated guidelines for the discharge, permit conditions may be established using BPJ procedures. EPA establishes limitations based on the following technology-based controls: BPT, BCT, and BAT. These levels of treatment are:

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

BCT – Technology-based standard for the discharge from existing industrial point sources of conventional pollutants including BOD, TSS, fecal coliform, pH, and O&G.

BAT – The most appropriate means available on a national basis for controlling the direct discharge of toxic and non-conventional pollutants to navigable waters. BAT effluent limits represent the best existing performance of treatment technologies that are economically achievable within an industrial point source category or subcategory.

The Santa Rosa facility is a POTW that has 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 percent removal for each. BOD 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 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 BOD<sub>5</sub> = 30 mg/L \* 8.345 lbs/gal \* 0.35 MGD

30-day average BOD<sub>5</sub> = 87.6 lbs/day

7-day average BOD<sub>5</sub> = 45 mg/L \* 8.345 lbs/gal \* 0.35 MGD

7-day average BOD<sub>5</sub> = 131.4 lbs/day

30-day average TSS loading = 30 mg/L \* 8.345 lbs/gal \* 0.35 MGD

30-day average TSS loading = 87.6 lbs/day

7-day average TSS loading = 45 mg/L \* 8.345 lbs/gal \* 0.35 MGD

7-day average TSS loading = 131.4 lbs/day

The proposed permit calculated the mass loading for BOD<sub>5</sub> and TSS based on 0.35 MGD flow to meet antibacksliding provisions of the Clean Water Act, Section 402(o) and 40 CFR 122.44(1)(i)(A). The new design flow of 0.67 will not be used to calculate mass loading for BOD<sub>5</sub> and TSS until antidegradation consultation is completed with NMED.

Technology-Based Effluent Limits - 0.35 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>                      | 87.6                  | 131.4      | 30                  | 45          |
| BOD <sub>5</sub> , % removal, minimum | ≥ 85% (*1)            | ---        | ---                 | ---         |
| TSS                                   | 87.6                  | 131.4      | 30                  | 45          |
| TSS, % removal, minimum               | ≥ 85% (*1)            | ---        | ---                 | ---         |
| pH                                    | N/A                   | N/A        | 6.0 – 9.0 s.u.      |             |

(\* ) As required by the 2003 NMED's conditions certification, the proposed permit will retain the mass loading for BOD<sub>5</sub> and TSS based on 0.35 MGD

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

## C. WATER QUALITY BASED LIMITATIONS

### 1. General Comments

Water quality based requirements are necessary where effluent limits more stringent than technology-based limits are necessary to maintain or achieve federal or state water quality limits. Under Section 301 (b)(1)(C) of the CWA, discharges are subject to effluent limitations based on federal or state WQS. Effluent limitations and/or conditions established in the draft permit are in compliance with the PSWQS, State WQS and applicable State water quality management plans to assure that surface WQS of the receiving waters are protected and maintained, or attained.

### 2. Implementation

The NPDES permits contain 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. Water Quality Standards

The general and specific stream standards are provided in NMWQS (20.6.4 NMAC amended through January 14, 2011). The facility discharges into the El Rito Creek in Segment No. 20.6.4.212; thence to the Pecos River of the Pecos River Basin. The designated uses of El Rito Creek (Seg. No 20.6.4.212) are irrigation, coldwater aquatic life, livestock watering, wildlife habitat and primary contact. The designated uses of Pecos River (Seg No 20.6.4.211) are fish culture, irrigation, marginal warm water aquatic life, livestock watering, wildlife, and secondary contact.

### 4. Permit Action – Water Quality-Based Limits

Regulations promulgated at 40 CFR 122.44(d) require limits in addition to, or more stringent than effluent limitation guidelines (technology based). State WQS that are more stringent than effluent limitation guidelines are as follows:

#### a. pH

To protect “Coldwater” designated use, the State of New Mexico stream segment specific WQS require pH to be between 6.6 and 8.8 s.u. NMWQS (20.6.4.212 NMAC and 20.6.4.900 NMAC).

The water quality-based limits for pH will be used in the permit since they are more stringent than the technology-based limits.

b. Bacteria

The previous permit had limits for fecal coliform bacteria (FCB) and *E. coli*. Since the previous permit issuance, New Mexico has adopted *E. coli* as the State bacteria standard in lieu of FCB. New Mexico stream segment specific WQS require *E. coli* of 126 cfu/100 mL monthly geometric mean and 410 cfu/100 ml daily maximum, end-of-pipe.

The draft permit will maintain the *E. coli* bacteria limits of 126 cfu/100 mL monthly geometric average and 410 cfu/day daily maximum. Only chlorine (or UV) dosing changes are required to adjust from FCB to *E. coli*, therefore no compliance schedule is granted.

Removal of FCB does not constitute antibacksliding found in 40 CFR §122.44(l) since FCB is an indicator parameter used to evaluate impacts on human health recreational body contact. The adoption of *E. coli* as the State's indicator bacteria replaces FCB.

c. 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 to apply for an NPDES permit or reissuance of an NPDES permit. The new form is applicable not only to POTWs, but also to facilities that are similar to POTWs, but which do not meet the regulatory definition of "publicly owned treatment works" (like private domestics, or similar facilities on Federal property). The forms were designed and promulgated to "make it easier for permit applicants to provide the necessary information with their applications and minimize the need for additional follow-up requests from permitting authorities," per the summary statement in the preamble to the Rule. These forms became effective December 1, 1999, after publication of the final rule on August 4, 1999, Volume 64, Number 149, pages 42433 through 42527 of the FRL.

The facility is designated as a minor, and does not need to fill out the expanded pollutant testing section Part D of Form 2A. Derivation of permit limits will be discussed below.

(ii) Critical Conditions

Critical conditions are used to establish certain permit limitations and conditions. The State of New Mexico WQS allow a mixing zone for establishing pollutant limits in discharges. The state

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 City of Santa Rosa WWTP.

For permitting purposes of certain parameters such as WET, the critical dilution of the effluent to the receiving stream is determined. The critical dilution, CD, is calculated as:

$CD = Q_e / (F \cdot Q_a + Q_e)$ , where:

$Q_e$  = facility flow (0.67MGD)

$Q_a$  = critical low flow of the receiving waters (2.78 MGD [= 4.3 cfs] )

$F$  = fraction of stream allowed for mixing (1.0)

$$\begin{aligned} CD &= 0.67 \text{ MGD} / [(1.0)(2.78) + 0.67] \\ &= 0.19 \\ &= 19\% \end{aligned}$$

### (iii) TRC

The facility uses chlorine to control bacteria. The WQS for TRC is 11 µg/l for chronic conditions and 19 µg/l for acute. Since acute conditions do not allow dilution; the limit must be met at end-of-pipe, but chronic standards do allow dilution, the permit shall use the most stringent WQS for the permit limit. Previously, the CD was calculated at 19 %. The in-stream TRC concentration after allowing for dilution is;  $11 \mu\text{g/l} \div 0.19 = 57.9 \mu\text{g/l}$ . Since this value is greater than the 19 µg/l end-of-pipe acute standard, the 19 µg/l is more stringent and will be more protective. The draft permit shall maintain the 19 µg/l limit contained in the present permit.

Information submitted in the application indicates that the facility will replace the chlorine by UV for bacteria control. 19 ug/l shall become the effluent limitation whenever chlorine is used as a bacteria control chemical. The effluent limitation for TRC is the instantaneous maximum and can not be averaged for reporting purposes.

## 5. 303(d) List Impacts

The current 2010-2012 State of New Mexico Integrated Clean Water 303(d)/305(b) Report shows that the Pecos River from Sumner Reservoir to Santa Rosa Reservoir (Assessment Unit NM-2211.A\_00) in Segment 20.6.4.211 NMAC is not supporting marginal warmwater aquatic life use due to sedimentation or siltation. The potential sources for impairment are flow alterations from water diversions and rangeland grazing. A TMDL for the Pecos headwater watershed (from Ft. Sumner Reservoir to Headwaters) was finalized in June 2005. No WLAs were assigned within Assessment Unit NM-2211.A\_00 in Segment 20.6.4.211.

The Pecos River to headwaters (Assessment Unit NM-9000.A\_050) in Segment 20.6.4.212 is fully supporting coldwater aquatic life, irrigation, livestock watering, and wildlife habitat uses. Primary contact uses was not assessed.

No additional limitations are required to address 303(d) concerns and if at a later time the segment is determined to be impaired, and/or a TMDL is done, or a TMDL is completed, the standard reopener clause will allow additional limitations to be placed in the permit.

#### D. MONITORING FREQUENCY FOR LIMITED PARAMETERS

Regulations require permits to establish monitoring requirements to yield data representative of the monitored activity 40 CFR 122.48(b) and to assure compliance with permit limitations 40 CFR 122.44(i)(1).

##### PHASE I (Chlorine is used as a bacteria control chemical)

Technology based pollutants; BOD<sub>5</sub> and TSS, are proposed to be monitored one (1) times a week. Flow shall be sampled continuously (daily) by totalizing meter consistent with the previous permit. Sample type for BOD<sub>5</sub> and TSS is a 6-hr composite sample.

Water quality-based pollutant monitoring frequency for *E. coli* shall be sampled two (2) times per week using grab samples. When TRC is used as a bacteria control chemical for the effluent, monitoring shall be measured and reported two (2) times per week by instantaneous grab (field measurement). The pollutant pH shall be monitored two (2) times per week by instantaneous grab (field measurement) sample. Regulations at 40 CFR Part 136 define instantaneous grab as being analyzed within 15-minutes of collection. All of these monitoring frequencies are consistent with the NMIP except BOD<sub>5</sub>, TSS, and, *E. coli* as several exceedances were observed during last permit period.

##### PHASE II (UV disinfection facility)

Technology based pollutants; BOD<sub>5</sub> and TSS, are proposed to be monitored one (1) time a week. Flow shall be sampled continuously (daily) by totalizing meter consistent with the previous permit. Sample type for BOD<sub>5</sub> and TSS is a 6-hr. composite sample, which is consistent with the NMIP.

Water quality-based pollutant monitoring frequency for *E. coli* shall be sampled two (2) times per week using grab samples. When TRC is used as a bacteria control chemical for the effluent, TRC shall be measured two (2) times per week by instantaneous grab (field measurement). The pollutant pH shall be monitored five (5) times per week by instantaneous grab (field measurement) sample consistent with the NMIP. Regulations at 40 CFR Part 136 define instantaneous grab as being analyzed within 15-minutes of collection.

E. WHOLE EFFLUENT TOXICITY LIMITATION REQUIREMENTS

OUTFALL 001 (FOR PIMEPHALES PROMELAS ONLY)

In Section V.C.4.c.ii above; “Critical Conditions”, it was shown that the critical dilution, CD, for the facility is 19%, because the discharge is to a perennial. Based on the nature of the discharge; POTW, the design flow; more than 0.1 MGD but less than 1.0 MGD, the nature of the receiving water; perennial, and the critical dilution; 19%, the NMIP directs the WET test to be a 7 day chronic test using *Pimephales promelas* at a once year frequency consistent with the NMIP. Based on the WET Recommendation shown in Appendix A, no WET limits will be established in the proposed permit.

The proposed permit requires five (5) dilutions in addition to the control (0% effluent) to be used in the toxicity tests based on a 0.75 dilution series. These additional effluent concentrations shall be, 8% 11%, 14%, 19%and 25%. The low-flow effluent concentration (critical low-flow dilution) is defined as 19% effluent.

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 El Rito Creek of the treatment system aeration basin. The aeration basin receives process area wastewater, process area stormwater, and treated sanitary wastewater. Discharges shall be limited and monitored by the permittee as specified below:

| EFFLUENT CHARACTERISTIC  | DISCHARGE MONITORING      |                      |
|--|---------------------------|----------------------|
|  | <u>30-DAY AVG MINIMUM</u> | <u>7-DAY MINIMUM</u> |
| Whole Effluent Toxicity Testing<br>(7 Day Static Renewal) <u>1</u> /<br><br><i>Pimephales promelas</i> | REPORT                    | REPORT               |

| EFFLUENT CHARACTERISTIC  | MONITORING REQUIREMENTS |             |
|--|-------------------------|-------------|
|  | <u>FREQUENCY</u>        | <u>TYPE</u> |
| Whole Effluent Toxicity Testing<br>(7 Day Static Renewal) <u>1</u> /<br><br><i>Pimephales promelas</i> |                         |             |

*Pimephales promelas*

1/ year

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.

OUTFALL 001 (FOR CERIODAPHNIA DUBIA ONLY)

In Section V.C.4.c.ii above; “Critical Conditions”, it was shown that the critical dilution, CD, for the facility is 19%, because the discharge is to a perennial. Based on the nature of the discharge; POTW, the design flow; more than 0.1 MGD but less than 1.0 MGD, the nature of the receiving water; perennial, and the critical dilution; 19%, the NMIP directs the WET test to be a 7 day chronic test using *Ceriodaphnia dubia* at a once per 6 months frequency for the life of the permit. Out of four (4) tests performed during the last permit term the effluent exhibited two failures at the sub-lethal endpoint for the test species *Ceriodaphnia dubia*. The facility has demonstrated exceedances of the state WQS. EPA finds that since 50% of WET tests failed at a dilution point below the new critical dilution of 19%, WET limits for toxicity are warranted for this test species. Based on the WET Recommendation shown in Appendix A, WET limits will be established in the proposed permit.

The proposed permit requires five (5) dilutions in addition to the control (0% effluent) to be used in the toxicity tests based on a 0.75 dilution series. These additional effluent concentrations shall be , 8% 11%, 14%, 19% and 25%. The low-flow effluent concentration (critical low-flow dilution) is defined as 19% effluent.

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 El Rito Creek of the treatment system aeration basin. The aeration basin receives process area wastewater, process area stormwater, and treated sanitary wastewater. Discharges shall be limited and monitored by the permittee as specified below:

| <u>EFFLUENT CHARACTERISTIC</u>                                | <u>DISCHARGE LIMITATIONS</u> |                      |
|---|------------------------------|----------------------|
|   | <u>30-DAY AVG MINIMUM</u>    | <u>7-DAY MINIMUM</u> |
| Whole Effluent Toxicity (PCS 22414)<br>(7-Day NOEC) <u>1/</u> | 19%                          | 19%                  |
| <i>Ceriodaphnia dubia</i>                                     | REPORT                       | REPORT               |

| <u>EFFLUENT CHARACTERISTIC</u>                    | <u>MONITORING REQUIREMENTS</u> |             |
|---|--------------------------------|-------------|
|   | <u>FREQUENCY</u>               | <u>TYPE</u> |
| Whole Effluent Toxicity<br>(7-Day NOEC) <u>1/</u> |                                |             |

*Ceriodaphnia dubia*

1/6 months

24-Hr. Composite

FOOTNOTES

- 1/ Monitoring and reporting requirements begin on the effective date of this permit. Compliance with the Whole Effluent Toxicity limitations is required thirty-six months after permit issuance date. See PART II, Whole Effluent Toxicity Testing Requirements for additional WET monitoring and reporting conditions.

## VI. FACILITY OPERATIONAL PRACTICES

## A. 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 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.

## B. 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.

## C. INDUSTRIAL WASTEWATER CONTRIBUTIONS

The treatment plant has no non-categorical Significant Industrial User's (SIU) and no Categorical Industrial User's (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.

## D. OPERATION AND REPORTING

The applicant is required to operate the treatment facility at maximum efficiency at all times; to monitor the facility's discharge on a regular basis; and report the results quarterly. The monitoring results will be available to the public.

## VIII. ANTIDegradation

The State of New Mexico has antidegradation requirements to protect existing uses through implementation of its WQS. 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 proposed permit renewal retains the mass loading for BOD and TSS based on 0.35 MGD flow, as requested by previous NMED's conditions of certification. 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.

## IX. ANTIBACKSLIDING

The proposed permit is consistent with the requirements to meet antibacksliding provisions of the Clean Water Act, Section 402(o) and 40 CFR 122.44(l)(i)(A), which state in part that interim or final effluent limitations must be as stringent as those in the previous permit, unless material and substantial alterations or additions to the permitted facility occurred after permit issuance which justify the application of a less stringent effluent limitation. The proposed permit maintains the mass loading requirements of the 2006 permit for BOD<sub>5</sub> and TSS. The 2006 permit maintained the mass loading for BOD and TSS based on 0.35 MGD flow, as required in NMED's conditions of certification. The previous permit had limits for fecal coliform bacteria (FCB). Since the previous permit issuance, New Mexico has adopted *E. coli* as the State bacteria standard in lieu of FCB. All of the changes represent permit requirements that are consistent with the States WQS and WQMP.

## X. ENDANGERED SPECIES CONSIDERATIONS

Four species in Guadalupe County are listed as Endangered or Threatened, according to the U.S. Fish & Wildlife Service's (USFWS) website, <http://www.fws.gov/southwest/es/EndangeredSpecies/lists/default.cfm>. The only plant species is Pecos sunflower. Two of the species are avian and include the lesser prairie-chicken, and the southwestern willow flycatcher. Additionally, the black footed ferret is listed as endangered. EPA determined the permitting action had no effect on black footed ferret, Pecos sunflower, bald eagle, and southwestern willow flycatcher when EPA reissued the permit in 2001. EPA requested U.S. Fish and Wildlife Service (FWS) to concur on the "no effect" determination for the bald eagle and southwestern willow flycatcher, and FWS concurred in the letter (Cons. # 2-22-01-I-194) dated March 7, 2001. During issuance of the permit in 2006, EPA determined that the reissuance of this permit will have *no effect* on all five federally listed threatened or endangered species, nor alter the habitat of the species. The American bald eagle (*Haliaeetus leucocephalus*) was previously listed in Guadalupe County; however, the USFWS, removed the American bald eagle in the lower 48 states from the Federal List of Endangered and Threatened Wildlife Federal Register, July 9, 2007, (Volume 72, Number 130).

After review, EPA has determined that the reissuance of this permit 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 listed threatened and endangered species nor will adversely modify designated critical habitat. EPA makes this determination based on the following:

1. EPA determined a “No effect” during previous permit, issued on December 14, 2006.
2. Except for the bald eagle which was delisted in 2007 from the US FWS list of threatened and endangered species, no additional changes have been made to the US FWS list of threatened and endangered species and critical habitat designation in the area of the discharge since prior issuance of the permit.
3. EPA has received no additional information since December 14, 2006, previous permit effective date, which would lead to revision of its determinations.
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.

## XI. HISTORICAL and ARCHEOLOGICAL PRESERVATION CONSIDERATIONS

The facility is working with the appropriate SHPO/THPO to determine the Area of Potential Effect (APE), to identify potential historical properties and make the final determination on historical and archeological properties. A permit will not be issued until a mitigation plan is submitted by the facility.

## XII. PERMIT REOPENER

The permit may be reopened and modified during the life of the permit if relevant portions of either States WQS are revised or remanded. In addition, the permit may be reopened and modified during the life of the permit if relevant procedures implementing the States Water Quality Standards are either revised or promulgated. Should either State adopt a new 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 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.

## XIII. VARIANCE REQUESTS

No variance requests have been received.

## XIV. CERTIFICATION

The permit is in the process of certification by the State of New Mexico 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.

## XV. FINAL DETERMINATION

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

## XVI. ADMINISTRATIVE RECORD

The following information was used to develop the proposed permit:

### A. APPLICATION(s)

EPA Application Form 2A received January 29, 2010.

### B. 40 CFR CITATIONS

Citations to 40 CFR as of April 30, 2010.

Sections 122, 124, 125, 133, 136

### C. STATE WATER QUALITY REFERENCES

New Mexico State Standards for Interstate and Intrastate Surface Water, 20.6.4 NMAC, as amended through January 14, 2011.

Procedures for Implementing NPDES Permits in New Mexico, May 2011.

Statewide Water Quality Management Plan, December 17, 2002.

State of New Mexico 303(d) List for Assessed Stream and River Reaches, 2010 -2012.

### D. MISCELLANEOUS REFERNCES

June 14 2005 TMDL for the Pecos Headwater Watershed document