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RYAN FLYNN
Cabinet Secretary

BUTCH TONGATE
Deputy Secretary

Certified Mail - Return Receipt Requested

May 14, 2015

The Honorable Constance Cordell-Wehrheim, Mayor
Village of Reserve
P.O. Box 587
Reserve, New Mexico 87830

Re: **Minor Municipal; SIC 4952; NPDES Compliance Evaluation; Village of Reserve Waste Water Treatment Plant; NM0024163; April 28, 2015**

Dear Mayor Cordell-Wehrheim:

Enclosed please find a copy of the report and check list for the referenced inspection that the New Mexico Environment Department (NMED) Surface Water Quality Bureau (SWQB) conducted at your facility on behalf of the U.S. Environmental Protection Agency (USEPA). This inspection report will be sent to the USEPA in Dallas for their review. These inspections are used by USEPA to determine compliance with the National Pollutant Discharge Elimination System (NPDES) permitting program in accordance with requirements of the federal Clean Water Act.

Problems noted during this inspection are discussed in the further explanations section of the inspection report. You are encouraged to review the inspection report, required to correct any problems noted during the inspection, and modify your operational and/or administrative procedures, as appropriate. If you have comments on or concerns with the basis for the findings in the NMED inspection report, please contact us (see the address below) in writing within 30 days from the date of this letter. Further, you are encouraged to notify in writing both the USEPA and NMED regarding modifications and compliance schedules at the addresses below:

Racquel Douglas
US Environmental Protection Agency, Region VI
Enforcement Branch (6EN-WM)
1445 Ross Avenue
Dallas, Texas 75202-2733

Bruce Yurdin
New Mexico Environment Department
Surface Water Quality Bureau
Point Source Regulation Section
P.O. Box 5469
Santa Fe, New Mexico 87502

If you have any questions about this inspection report, please contact Shelly Lemon at (505) 827-2819 or at shelly.lemon@state.nm.us.

Village of Reserve
May 14, 2015
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Sincerely,

/s/ Bruce Yurdin

Bruce J. Yurdin
Program Manager
Point Source Regulation Section
Surface Water Quality Bureau

cc: Rashida Bowlin, USEPA (6EN-AS) by e-mail
Carol Peters-Wagnon, USEPA (6EN-WM) by e-mail
Raquel Douglas, USEPA (6EN-WM) by e-mail
Gladys Gooden-Jackson, USEPA (6EN) by e-mail
Tung Nguyen, USEPA (6WQ-PP) by email
Mike Kesler, NMED District III by e-mail

SECTION A - PERMIT VERIFICATION

PERMIT SATISFACTORILY ADDRESSES OBSERVATIONS DETAILS: S M U NA (FURTHER EXPLANATION ATTACHED NO)

- 1. CORRECT NAME AND MAILING ADDRESS OF PERMITTEE Y N NA
- 2. NOTIFICATION GIVEN TO EPA/STATE OF NEW DIFFERENT OR INCREASED DISCHARGES Y N NA
- 3. NUMBER AND LOCATION OF DISCHARGE POINTS AS DESCRIBED IN PERMIT Y N NA
- 4. ALL DISCHARGES ARE PERMITTED Y N NA

SECTION B - RECORDKEEPING AND REPORTING EVALUATION

RECORDS AND REPORTS MAINTAINED AS REQUIRED BY PERMIT. DETAILS: S M U NA (FURTHER EXPLANATION ATTACHED YES)
Old DMR form provided by EPA – need to update form to adequately report new permit requirements.

- 1. ANALYTICAL RESULTS CONSISTENT WITH DATA REPORTED ON DMRs. Y N NA
- 2. SAMPLING AND ANALYSES DATA ADEQUATE AND INCLUDE: S M U NA
 - a) DATES, TIME(S) AND LOCATION(S) OF SAMPLING Y N NA
 - b) NAME OF INDIVIDUAL PERFORMING SAMPLING Y N NA
 - c) ANALYTICAL METHODS AND TECHNIQUES. Y N NA
 - d) RESULTS OF ANALYSES AND CALIBRATIONS. Y N NA
 - e) DATES AND TIMES OF ANALYSES. Y N NA
 - f) NAME OF PERSON(S) PERFORMING ANALYSES. Y N NA
- 3. LABORATORY EQUIPMENT CALIBRATION AND MAINTENANCE RECORDS ADEQUATE. S M U NA
- 4. PLANT RECORDS INCLUDE SCHEDULES, DATES OF EQUIPMENT MAINTENANCE AND REPAIR. S M U NA
- 5. EFFLUENT LOADINGS CALCULATED USING DAILY EFFLUENT FLOW AND DAILY ANALYTICAL DATA. Y N NA

SECTION C - OPERATIONS AND MAINTENANCE

TREATMENT FACILITY PROPERLY OPERATED AND MAINTAINED. DETAILS: S M U NA (FURTHER EXPLANATION ATTACHED YES)

- 1. TREATMENT UNITS PROPERLY OPERATED. S M U NA
- 2. TREATMENT UNITS PROPERLY MAINTAINED. **One secondary clarifier still needs repair** S M U NA
- 3. STANDBY POWER OR OTHER EQUIVALENT PROVIDED. S M U NA
- 4. ADEQUATE ALARM SYSTEM FOR POWER OR EQUIPMENT FAILURES AVAILABLE. S M U NA
- 5. ALL NEEDED TREATMENT UNITS IN SERVICE. **One secondary clarifier still needs repair** S M U NA
- 6. ADEQUATE NUMBER OF QUALIFIED OPERATORS PROVIDED. S M U NA
- 7. SPARE PARTS AND SUPPLIES INVENTORY MAINTAINED. S M U NA
- 8. OPERATION AND MAINTENANCE MANUAL AVAILABLE. Y N NA
 STANDARD OPERATING PROCEDURES AND SCHEDULES ESTABLISHED. Y N NA
 PROCEDURES FOR EMERGENCY TREATMENT CONTROL ESTABLISHED. Y N NA

SECTION C - OPERATIONS AND MAINTENANCE (CONT'D)

9. HAVE BYPASSES/OVERFLOWS OCCURRED AT THE PLANT OR IN THE COLLECTION SYSTEM IN THE LAST YEAR? Y N NA
 IF SO, HAS THE REGULATORY AGENCY BEEN NOTIFIED? Y N NA
 HAS CORRECTIVE ACTION BEEN TAKEN TO PREVENT ADDITIONAL BYPASSES/OVERFLOWS? Y N NA
10. HAVE ANY HYDRAULIC OVERLOADS OCCURRED AT THE TREATMENT PLANT? Y N NA
 IF SO, DID PERMIT VIOLATIONS OCCUR AS A RESULT? Y N NA

SECTION D - SELF-MONITORING

PERMITTEE SELF-MONITORING MEETS PERMIT REQUIREMENTS. S M U NA (FURTHER EXPLANATION ATTACHED NO)
 DETAILS: **pH meter was not working at time of inspection. New meter was on order. pH sampled at once per month frequency. See Further Explanations Section (Laboratory) of report for more detail.**

1. SAMPLES TAKEN AT SITE(S) SPECIFIED IN PERMIT. Y N NA
2. LOCATIONS ADEQUATE FOR REPRESENTATIVE SAMPLES. Y N NA
3. FLOW PROPORTIONED SAMPLES OBTAINED WHEN REQUIRED BY PERMIT. Y N NA
4. SAMPLING AND ANALYSES COMPLETED ON PARAMETERS SPECIFIED IN PERMIT. **BOD and TSS % removal** Y N NA
5. SAMPLING AND ANALYSES PERFORMED AT FREQUENCY SPECIFIED IN PERMIT. **pH and E. coli** Y N NA
6. SAMPLE COLLECTION PROCEDURES ADEQUATE Y N NA
- a) SAMPLES REFRIGERATED DURING COMPOSITING. Y N NA
- b) PROPER PRESERVATION TECHNIQUES USED. Y N NA
- c) CONTAINERS AND SAMPLE HOLDING TIMES CONFORM TO 40 CFR 136.3. Y N NA
7. IF MONITORING AND ANALYSES ARE PERFORMED MORE OFTEN THAN REQUIRED BY PERMIT, ARE THE RESULTS REPORTED IN PERMITTEE'S SELF-MONITORING REPORT? Y N NA

SECTION E - FLOW MEASUREMENT

PERMITTEE FLOW MEASUREMENT MEETS PERMIT REQUIREMENTS. S M U NA (FURTHER EXPLANATION ATTACHED YES)
 DETAILS:

1. PRIMARY FLOW MEASUREMENT DEVICE PROPERLY INSTALLED AND MAINTAINED. Y N NA
 TYPE OF DEVICE: **V-Notch Weir with Electromagnetic Flow Meter**
2. FLOW MEASURED AT EACH OUTFALL AS REQUIRED. Y N NA
3. SECONDARY INSTRUMENTS (TOTALIZERS, RECORDERS, ETC.) PROPERLY OPERATED AND MAINTAINED. Y N NA
4. CALIBRATION FREQUENCY ADEQUATE. (DATE OF LAST CALIBRATION Unknown) Y N NA
 RECORDS MAINTAINED OF CALIBRATION PROCEDURES. Y N NA
 CALIBRATION CHECKS DONE TO ASSURE CONTINUED COMPLIANCE. Y N NA
5. FLOW ENTERING DEVICE WELL DISTRIBUTED ACROSS THE CHANNEL AND FREE OF TURBULENCE. Y N NA
6. HEAD MEASURED AT PROPER LOCATION. Y N NA
7. FLOW MEASUREMENT EQUIPMENT ADEQUATE TO HANDLE EXPECTED RANGE OF FLOW RATES. Y N NA

SECTION F - LABORATORY

PERMITTEE LABORATORY PROCEDURES MEET PERMIT REQUIREMENTS. S M U NA (FURTHER EXPLANATION ATTACHED YES)
 DETAILS: **pH meter was not functional on the day of the inspection. A new meter was on order but there was no back-up for permit requirements.**

1. EPA APPROVED ANALYTICAL PROCEDURES USED (40 CFR 136.3 FOR LIQUIDS, 503.8(b) FOR SLUDGES) Y N NA

Compliance Evaluation Inspection
Village of Reserve Wastewater Treatment Plant
NPDES Permit No. NM0024163
April 28, 2015

Introduction:

On April 28, 2015, Shelly Lemon of the New Mexico Environment Department (NMED), Surface Water Quality Bureau (SWQB) conducted a Compliance Evaluation Inspection at the Village of Reserve Wastewater Treatment Plant in Catron County, New Mexico. The WWTP has a design flow capacity of 0.075 million gallons per day (MGD) and is classified as a minor municipal discharger under the federal Clean Water Act, Section 402, of the National Pollutant Discharge Elimination System (NPDES) permit program. It is assigned NPDES permit number NM0024163 which regulates discharge from outfall 001 to an unnamed tributary of the San Francisco River in Water Quality Segment 20.6.4.601 of the New Mexico Administrative Code (NMAC). This segment includes the designated uses of irrigation, marginal warmwater and marginal coldwater aquatic life, livestock watering, wildlife habitat and primary contact.

The NMED performs a certain number of inspections for the U.S. Environmental Protection Agency (USEPA), Region VI, under the NPDES permit program, in accordance with the federal Clean Water Act. USEPA uses these inspections to determine compliance with the NPDES permit program. This inspection report is based on information provided by the permittee's representatives, observations made by NMED staff, and records and reports kept by the permittee and/or NMED.

Upon arrival at the facility, the inspector made introductions, stated the purpose of the inspection and presented her credentials to Mr. Bret Sellars, Wastewater Treatment Plant Supervisor for the Village, and Mr. Furlon Richey, Operator. The inspector, Mr. Sellars, and Mr. Richey toured the facility. At the end of the tour, the inspector conducted an exit interview on site with Mr. Sellars and Mr. Richey to discuss preliminary findings of the inspection.

Treatment Scheme and Solids Management:

The Village of Reserve's wastewater treatment plant (WWTP) was originally constructed in the 1970's. The current anoxic basin, two cell aeration basin and secondary clarifiers were constructed in 2003. The Village has a population of approximately 400 residents. In addition, the Village has adopted a grease trap ordinance for local restaurants.

The WWTP's collection system has 2 lift stations. A 140-gallon diesel generator at the plant can be used for backup power. The headworks of the plant consist of a manually cleaned bar screen and 3" Parshall flume for measuring influent flow. The lift station at the headworks has an alarm (light) for power outages. After the headworks, a pump lifts wastewater to an anoxic tank. Flow can then be diverted to one of two aeration basins consisting of two concrete tanks with diffused aeration from one of three blowers on-site. One of the two aeration basins is used as an additional anoxic basin. After the aeration basin, wastewater flows by gravity to a splitter box where it can be directed to one of two secondary clarifiers. Return activated sludge (RAS) can be sent back to the aeration basin and flow from the secondary clarifiers can be recycled back to the anoxic basin. Wastewater leaves the clarifier by flowing over weirs into an inner trough leading to a wet well where chlorine gas is injected. One hundred fifty (150) pound gas chlorine cylinders and automatic switchover unit is stored in a chlorine room at the plant office. After the wet well, wastewater enters a dual chamber serpentine chlorine contact chamber. Each chlorine contact chamber has a sodium sulfite tablet de-chlorination unit.

After the de-chlorination unit, effluent enters an open basin and channel before flow measurement. The staff gauge, ultrasonic level sensor, and weir are located after this open channel. The v-notch weir has been modified with the addition of second bolted V-notch plate. A sensor instantaneously measures the head (height) of the flow and displays the volume in gallons. Influent and effluent readings are also recorded on a circular pen chart in the WWTP office.

Waste activated sludge (WAS) from the secondary clarifier is dewatered in four sludge sand filter drying beds in a low area of the facility. Under drains collect water from the drying beds. Filtrate is pumped back to the headworks to be retreated. Dry sludge is moved from the beds to the plant's concrete dry sludge storage pad. Once the sludge is adequately dried and tested, it is given away for land application uses, mostly for pasture.

Outfall 001 is located outside the plant fence in a low area (wetland). Effluent from the outfall enters an unnamed tributary, then a pipe that passes under an irrigation ditch and then the San Francisco River.

FURTHER EXPLANATIONS

Note: The sections are arranged according to the format of the enclosed EPA Inspection Checklist (Form 3560-3), rather than being ranked in order of importance.

Section B – Recordkeeping and Reporting – Overall Rating of “Marginal”

Permit Requirements for Recordkeeping and Reporting:

Part I.A.1 (Limitations and Monitoring Requirements) requires:

During the period beginning the effective date of the permit and lasting through the expiration date of the permit (unless otherwise noted), the permittee is authorized to discharge treated domestic wastewater from Outfall 001. Such discharges shall be limited and monitored by the permittee and reported as specified below [changes from previous permit highlighted in red]:

EFFLUENT CHARACTERISTICS	DISCHARGE LIMITATIONS		MONITORING REQUIREMENTS	
	MINIMUM	MAXIMUM	MEASUREMENT FREQUENCY	SAMPLE TYPE
POLLUTANT				
pH	6.6 s.u.	9.0 s.u.	1/Month	Grab

EFFLUENT CHARACTERISTICS	DISCHARGE LIMITATIONS					MONITORING REQUIREMENTS	
	lbs/day, unless noted		mg/l, unless noted (*1)			MEASUREMENT FREQUENCY	SAMPLE TYPE
POLLUTANT	30-DAY AVG	7-DAY AVG	30-DAY AVG	7-DAY AVG	DAILY MAX		
Flow	Report MGD	Report MGD	***	***	***	Daily	Continuous
BOD	18.8	28.2	30	45	N/A	1/Month	Grab
BOD % removal, minimum	≥85 (*2)	***	***	***	***	1/Month	Calculation (*2)
TSS	18.8	28.2	30	45	N/A	1/Month	Grab
TSS % removal, minimum	≥85 (*2)	***	***	***	***	1/Month	Calculation (*2)
E. coli bacteria (*3)	N/A	N/A	206 cfu/100 ml	N/A	940 cfu/100 ml	1/Month	Grab
TRC	N/A	N/A	N/A	N/A	11 ug/l (*4)	1/Month	Grab (*5)

EFFLUENT CHARACTERISTICS	DISCHARGE MONITORING		MONITORING REQUIREMENTS	
WHOLE EFFLUENT TOXICITY TESTING 7-DAY CHRONIC NOEC FRESHWATER (*6)	30-DAY AVG	7-DAY MINIMUM	MEASUREMENT FREQUENCY (*7)	SAMPLE TYPE
Ceriodaphnia dubia	Report	Report	Once/5 year	Grab
Pimephales promelas	Report	Report	Once/5 year	Grab

Footnotes:

- See Appendix A of Part II of the permit for minimum quantification limits.
- Percent removal is calculated using the following equation:

$$[\text{average monthly influent concentration (mg/l)} - \text{average monthly effluent concentration (mg/l)}] \div [\text{average monthly influent concentration (mg/l)}] \times 100.$$
- Colony forming units (cfu) per 100 ml
- The effluent limitation for TRC is the instantaneous maximum and cannot be averaged for reporting purposes.
- Regulations at 40 CFR Part 136 define "grab" as instantaneous grab, analyzed within 15 minutes of collection.
- Monitoring and reporting requirements begin on the effective date of this permit. See Part II of the permit for WET testing requirements for additional WET monitoring and reporting conditions.
- The tests shall take place between November 1 and April 30. 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.

Part III.F.22 of the permit defines:

7-DAY AVERAGE or WEEKLY AVERAGE, other than for fecal coliform bacteria, is the arithmetic mean of the daily values for all effluent samples collected during a calendar week, calculated as the sum of all daily discharges measured during a calendar week divided by the number of daily discharges measured during that week.

30-DAY AVERAGE or MONTHLY AVERAGE, other than for fecal coliform bacteria, is the arithmetic mean of the daily values for all effluent samples collected during a calendar month, calculated as the sum of all daily discharges measured during a calendar month divided by the number of daily discharges measured during that month.

The NPDES Reporting Requirements Handbook for EPA Region 6 states:

How do I calculate and report 7-day averages?

For the purpose of calculating and reporting 7-day averages, you should follow the process below:

- a) Define your week (SUN-SAT, MON-SUN, etc.).*
- b) Calculate the averages of all sample data obtained for each week.*
- c) The highest calculated weekly average will be reported on the DMR for the month in which (1) the week ends or (2) the week begins, or (3) the month which contains the greatest number of days. It is the choice of the facility. However, the choice should be consistent month to month, year to year.*

Part I.C (Monitoring and Reporting Requirements) of the permit states:

Monitoring results must be reported to EPA on either the electronic or paper Discharge Monitoring Report (DMR) approved formats... Until you are approved for Net DMR, you must report on the Discharge Monitoring Report (DMR) Form EPA. No. 3320-1 in accordance with the "General Instructions" provided on the form... Reports shall be submitted quarterly.

Part III.C.3 (Retention of Records) necessitates:

The permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least 3 years from the date of the sample, measurement, report, or application. This period may be extended by request of the Director at any time.

Part III.D.9 (Other Information) of the permit states:

Where the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Director, it shall promptly submit such facts or information.

Findings for Recordkeeping and Reporting:

- The DMR Form 3320-1 provided by EPA Region 6 to the permittee and new WWTP supervisor is the form for the old permit (effective February 1, 2008 through January 31, 2013). The renewed permit (effective September 1, 2013) has several substantial changes to Part I.A – Limitations and Monitoring Requirements. They include:
 - pH measurement frequency changing from “once/quarter” (old permit) to “1/month” (new permit)
 - E. coli measurement frequency changing from “once/quarter” (old permit) to “1/month” (new permit)
 - E. coli discharge limitations changing from 126 cfu/100mL and 410 cfu/100mL (old permit) to 206 cfu/100mL and 940 cfu/100mL (new permit)
 - Adding BOD and TSS % removal limitations and reporting requirements to the new permit
 - Changing Whole Effluent Toxicity (WET) Testing from an Acute Test (48-hr) to a Chronic Test (7-day)

What is confusing to the inspector is that the correct DMR Form, which included all of the required pollutants and associated monitoring and reporting frequencies, was used starting on the effective date of the new permit (September 2013). The correct form was used the first year of the permit term (9/2013 through 9/2014); however the old forms were also concurrently submitted for each reporting period. If the permittee does not have an electronic version of the correct DMR Form 3320-1 then the permittee should contact EPA Region 6 to obtain the correct form in order to adequately and properly report their monitoring requirements. Furthermore, if the permittee has submitted incorrect information or excluded information in a DMR report, the permittee is required to submit the corrected data or information as soon as it becomes aware.

- The inspector reviewed one month of bench sheets (February 2015). Several reported values were inconsistent with the actual or calculated results (see highlighted values Appendix A). In addition, Total Residual Chlorine is being reported in the wrong unit – TRC should be reported in micrograms per liter (µg/L) per the requirements of the permit, but the instrument used measures TRC in milligrams per liter (mg/L). This value must be converted to µg/L on the DMR Form.
- It was noted during the records review that some flow reporting was suspect (see Appendix A). On multiple occasions the 30-day average flow was greater than the 7-day average flow, which seems questionable. Also, three months (May 2013, June 2013, and June 2014) it appears that a “0” is missing from the reported values. Some of the noted flow reporting deficiencies should be remedied using an electronic spreadsheet to record and calculate the values. The inspector would remind the permittee to double check data entry as part of their QA/QC program and to ensure the appropriate and correct values are being recorded and reported.
- It was discussed with the permittee’s representatives at the time of the inspection that the monitoring frequency for WET testing is once per permit term, or once in 5 years. The inspector would like to remind the permittee that the test is required to take place between November 1 and April 30. Since the permit is already in its second year and approaching its third year, the inspector recommended planning for a WET test this fall/winter. WET testing requirements changed to Chronic (7-day) testing in the “new” permit.
- The permittee asked in a follow-up call about the retention of records. Permit conditions and regulations are provided above for reference. In short, facility records should be retained onsite with easy access for federal or state inspectors for at least 3 years and, for compliance with 40 CFR Part 503 (Standards for the Use or Disposal of Sewage Sludge), sludge records should be retained onsite for a minimum of 5 years.
- Monitoring results can be submitted electronically as an alternative to the paper-based DMR submission process. NetDMR is a web-based application that allows National Pollutant Discharge Elimination System (NPDES) Permittee Users to enter and electronically submit Discharge Monitoring Report (DMR) data through the Central Data Exchange (CDX) to the Integrated Compliance Information System (ICIS). The EPA is encouraging permittees to transition from submitting DMRs as paper copies to the NetDMR system. If interested, information on NetDMR and training can be found at: <http://epa.gov/netdmr/about/training.html> and https://netdmr.epa.gov/netdmr/public/getting_started.htm.

Section C - Operations and Maintenance – Overall Rating of “Marginal”

Permit Requirements for Operations and Maintenance:

Part III.B.3 (Standard Conditions, Proper Operation and Maintenance) of the permit states:

- The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by permittee as efficiently as possible and in a manner which will minimize upsets and discharges of excessive pollutants and will achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar systems which are installed by a permittee only when the operation is necessary to achieve compliance with the conditions of this permit.*
- The permittee shall provide an adequate operating staff which is duly qualified to carry out operation, maintenance and testing functions required to insure compliance with the conditions of this permit.*

Findings for Operations and Maintenance:

- One of the secondary clarifiers was not operational on the day of the inspection. **This is a repeat finding from 2012.** The plant design flow is 0.075 MGD and the average discharge is around 0.020 MGD. With this

low influent flow the facility has been able to function with one clarifier inoperable but has no backup if this unit malfunctions also. Mr. Sellars stated that he and Mr. Richey were planning on replacing the broken equipment the following week, so the clarifier should be online soon.

- According to Operator Certification Regulations (20.7.4.13 NMAC) the systems used at the Village of Reserve WWTP are required to have a Level III wastewater operator. It should be noted that the Village recently hired Mr. Sellars, who holds a Level IV Certification, as the Wastewater Treatment Plant Supervisor. Mr. Richey, who holds a Level II Certification, assists Mr. Sellars with daily operations.
- Operation and maintenance manuals, standard operating procedures, and emergency treatment procedures were not available during the inspection. Mr. Sellars recently had been hired by the Village. On the day of the inspection, Mr. Sellars had been there for 1 week and stated that he intends to establish appropriate procedures and schedules as he becomes familiar with and evaluates the needs of the plant.

Section E – Flow Measurement: “Unsatisfactory”

Permit Requirements for Flow Measurement:

Part III.C.5 (Monitoring Procedures) of the permit stipulates:

- b. The permittee shall calibrate and perform maintenance procedures on all monitoring and analytical instruments at intervals frequent enough to insure accuracy of measurements and shall maintain appropriate records of such activities.*

Part III.C.6 (Flow Measurements) of the permit states:

Appropriate flow measurement devices and methods consistent with accepted scientific practices shall be selected and used to ensure the accuracy and reliability of measurements of the volume of monitored discharges. The devices shall be installed, calibrated, and maintained to insure that the accuracy of the measurements is consistent with the accepted capability of that type of device. Devices selected shall be capable of measuring flows with a maximum deviation of less than 10% from true discharge rates throughout the range of expected discharge volumes.

Findings for Flow Measurement:

- To measure discharge at the facility a v-notch weir is used with an ultrasonic level sensor flow meter. There were no functional secondary flow instruments nor any readily available flow measurement calibration records or other measurements to verify accuracy and reliability of flow measurements. Flow measurement accuracy is important because this information is used to calculate mass loading calculations. Simple checks, like using the *Bucket Flow Method*, could be used at intervals frequent enough to insure accuracy of the flow meter. In addition, there is a Parshall flume in the canal where the treated effluent is discharged. The flume (if properly installed and calibrated) could also be used to periodically check the validity and accuracy of the ultrasonic flow meter. USEPA’s NPDES Inspection Manual, Chapter 6 states, “The facility must ensure that their flow measurement systems are calibrated by a qualified source at least once a year [emphasis added] to ensure their accuracy.”

Section F – Laboratory – Overall Rating of “Marginal”

Permit Requirements for Laboratory:

Part III.C.5 (Standard Conditions, Monitoring Procedures) of the permit requires:

- a. 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.*
- b. The permittee shall calibrate and perform maintenance procedures on all monitoring and analytical instruments at intervals frequent enough to insure accuracy of measurements and shall maintain appropriate records of such activities.*

Part III.B.3 (Standard Conditions, Proper Operation and Maintenance) of the permit states:

- a. *The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) ... Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar systems which are installed by a permittee only when the operation is necessary to achieve compliance with the conditions of this permit.*

Section C of 20.7.4.13 NMAC (Utility Operator Certification – Public Wastewater Facilities) states:

In order to perform wastewater analysis for regulatory compliance at public wastewater facilities after January 1, 2011, the indicated level of certification shall be required:

Level of Certification Needed	Type of Methodology Performed
WWLT1	Analyses involving colorimetry and commercially prepared reagents, including but not limited to Dissolved Oxygen (DO) and pH by probe, and commercially available test kits.
WWLT2	WWLT1 plus analyses involving other specific ion electrodes, titration, gravimetry, microbiology, media and standards preparation, including but not limited to Biochemical Oxygen Demand (BOD), fecal coliform, E.coli, residuals (Total Suspended Solids (TSS), Total Volatile Solids (TVS), Volatile Suspended Solids (VSS), etc.), Total Residual Chlorine (TRC) by titration, and Dissolved Oxygen by the Winkler method.
WWLT3	WWLT1 and WWLT2 plus analyses involving digestion, distillation, spectrophotometry, chromatography, reagents and standards preparation, live organisms, including but not limited to nitrogen (Nitrate (NO ₃), Ammonium (NH ₄), Total Kjeldahl Nitrogen (TKN)), trace metals, anions, and whole effluent toxicity.
SWW, SWWA, WW1, WW2, WW3, WW4, WWLT1, WWLT2 or WWLT3	TRC by the N-diethyl-p-phenylene-diamine (DPD) method, pH, Temperature and DO by probe.

Findings for Laboratory:

- According to the permittee’s representative, currently only pH and TRC are analyzed onsite. The previous Wastewater Treatment Plant supervisor had also analyzed BOD, TSS, and E. coli onsite; however the Village recently hired a new WWTP supervisor (Mr. Bret Sellars). At the time of the inspection, Mr. Sellars had been on the job for 1 week and had stated that he was looking into the possibility of using a commercial lab for all compliance monitoring except pH and TRC. In a follow-up phone conversation with Mr. Sellars, he stated that he had recommended to Village officials that a commercial lab be used for wastewater analyses arguing that financially it was a better decision than buying new equipment and supplies to maintain a functioning laboratory. Starting in July 2015, the Village will be using Hall Environmental in Albuquerque, NM to analyze their wastewater samples.
- The pH probe is being calibrated before each measurement as recommended by Standard Methods; however, EPA-approved methods also require that the electrode be calibrated with buffers that bracket the expected pH value. For example, if the expected pH of the sample is 6.5 SU the calibration should be conducted with the 7.0 and 4.0 buffers. Calibrations are being done with the 4.0 and 10.0 buffers and checked with the 7.0 buffer. While technically 4.0 and 10.0 bracket the expected pH, pH is measured on a logarithmic scale thus it is advised that the 7.0 buffer always be used with calibrations to reduce the calibration range and assure a successful calibration and more accurate readings. If the expected pH is 7.0 SU then the lab technician can perform a 3-point calibration. To ensure the initial calibration standard (pH 7) has not changed, the instrument should be checked with the initial standard. The check should result in a pH reading that is within the manufacturer’s specifications. If not, the instrument should be recalibrated.

- At the time of the inspection, the pH meter was out of service. A new instrument was on order, but there was no back-up meter. It is recommended that the facility have the necessary equipment and supplies onsite to ensure the proper operation, maintenance, and monitoring of plant processes to achieve compliance with the permit in the event that something breaks and becomes inoperable.
- If the Village decides to maintain a functioning laboratory onsite in the future, the State regulations for Utility Operator Certification to perform wastewater analysis are included above.

Section H – Sludge Disposal – Overall Rating “Unsatisfactory”

Permit requirements for Sludge Disposal:

The permit requires in Part IV (Minor – Sewage Sludge Requirements):

ELEMENT 1 - LAND APPLICATION

SECTION I: Page 2 - Requirements Applying to All Sewage Sludge Land Application

SECTION II: Page 6 - Requirements Specific to Bulk Sewage Sludge for Application to the Land Meeting Class A or B Pathogen Reduction and the Cumulative Loading Rates in Table 2, or Class B Pathogen Reduction and the Pollutant Concentrations in Table 3

SECTION III: Page 9 - Requirements Specific to Bulk Sewage Sludge Meeting Pollutant Concentrations in Table 3 and Class A Pathogen Reduction Requirements

SECTION IV: Page 10 - Requirements Specific to Sludge Sold or Given Away in a Bag or Other Container for Application to the Land that does not meet the Pollutant Concentrations in Table 3

Federal regulation 40 CFR 503.9(y) states,

Store or storage of sewage sludge [onsite or offsite] is the placement of sewage sludge on land on which the sewage sludge remains for two years or less. This does not include the placement of sewage sludge on land for treatment.

Findings for Sludge Disposal:

- According to the permittee’s representatives, sludge is given away for land application mostly for pasture. The sludge pile onsite has been there for a while. Federal regulations for the use or disposal of sewage sludge establish an allowable maximum storage time of 2 years. This does not include placing sludge on land for treatment purposes, but is purely for storage prior to disposal. If the permittee cannot dispose of its sludge within established timeframes and using approved practices, then it should have clearly documented plans for alternative methods of disposal, such as disposal in a Municipal Solid Waste Land Fill (MSWLF) that accepts special waste like sewage sludge.

APPENDIX A: DMR CHECK

EFFLUENT DISCHARGE (FLOW):

npdes_id	Parameter	Day	Day of Week	initial reading	final reading	Daily Discharge (gpd)	Daily Discharge (MGD)	Daily Lab Record Sheet (MGD)	Actual 7-DA AVG	Daily Lab Record Sheet 7-DA AVG
WEEK 1										
NM0024163	effluent	2/1/2015	Sunday	7533260	7564940	31680	0.03168	0.03167	-	-
NM0024163	effluent	2/2/2015	Monday	7564940	7589540	24600	0.0246	0.0246	-	-
NM0024163	effluent	2/3/2015	Tuesday	7589540	7622080	32540	0.03254	0.03254	-	-
NM0024163	effluent	2/4/2015	Wednesday	7622808	-	26551	0.026551	missing	-	-
NM0024163	effluent	2/5/2015	Thursday	-	7675910	26551	0.026551	missing	-	-
NM0024163	effluent	2/6/2015	Friday	7675910	7708060	32150	0.03215	0.03215	-	-
NM0024163	effluent	2/7/2015	Saturday	7708060	7742940	34880	0.03488	0.03488	0.02985	0.03117
WEEK 2										
NM0024163	effluent	2/8/2015	Sunday	7742940	7768110	25170	0.02517	0.02517	-	-
NM0024163	effluent	2/9/2015	Monday	7768110	7797660	29550	0.02955	0.02955	-	-
NM0024163	effluent	2/10/2015	Tuesday	7797660	7829330	31670	0.03167	0.03167	-	-
NM0024163	effluent	2/11/2015	Wednesday	7829330	7863510	34180	0.03418	0.03418	-	-
NM0024163	effluent	2/12/2015	Thursday	7863510	7905890	42380	0.04238	0.04238	-	-
NM0024163	effluent	2/13/2015	Friday	7905890	7937440	31550	0.03155	0.03155	-	-
NM0024163	effluent	2/14/2015	Saturday	7937440	-	30885	0.030885	missing	0.03220	0.03242
WEEK 3										
NM0024163	effluent	2/15/2015	Sunday	-	7999210	30885	0.030885	missing	-	-
NM0024163	effluent	2/16/2015	Monday	7999210	8034500	35290	0.03529	0.03529	-	-
NM0024163	effluent	2/17/2015	Tuesday	8034500	8074080	39580	0.03958	0.03958	-	-
NM0024163	effluent	2/18/2015	Wednesday	8074080	8101890	27810	0.02781	0.02781	-	-
NM0024163	effluent	2/19/2015	Thursday	8101890	8133510	31620	0.03162	0.03162	-	-
NM0024163	effluent	2/20/2015	Friday	8133510	8163880	30370	0.03037	0.03037	-	-
NM0024163	effluent	2/21/2015	Saturday	8163880	8192520	28640	0.02864	0.02864	0.03203	0.03222
WEEK 4										
NM0024163	effluent	2/22/2015	Sunday	8192520	8221160	28640	0.02864	0.02864	-	-
NM0024163	effluent	2/23/2015	Monday	8221160	8252610	31450	0.03145	0.03145	-	-
NM0024163	effluent	2/24/2015	Tuesday	8252610	8284330	31720	0.03172	0.03172	-	-
NM0024163	effluent	2/25/2015	Wednesday	8284330	8315780	31450	0.03145	0.03145	-	-
NM0024163	effluent	2/26/2015	Thursday	8315780	8344040	28260	0.02826	0.02826	sampling day	
NM0024163	effluent	2/27/2015	Friday	8344040	8369760	25720	0.02572	0.02572	-	-
NM0024163	effluent	2/28/2015	Saturday	8369760	8394470	24710	0.02471	0.02471	0.02885	0.02885

DMR CHECK - FEBRUARY 2015:

FLOW	Actual Daily Discharge	Daily Lab Record	REPORTED VALUE
30DA AVG	0.03073	0.03107	0.029526
7DA AVG	0.03220	0.03242	0.025429

BOD & TRC	npdes_id	Parameter	Day	ACTUAL CONC.	REPORTED CONC.	Discharge (MGD)	Conversion Factor	LOAD (lbs/day)	REPORTED LOAD
	NM0024163	BOD, 5-day	2/26/2015	1.44	1.44 mg/L	0.02826	8.34	0.34	0.36
	NM0024163	TRC	2/27/2015	0.01 mg/L	0.01 ug/L	-	-	-	-

pH & E. coli	npdes_id	Parameter	Day	ACTUAL VALUE	REPORTED VALUE
	NM0024163	pH*	2/25/2015	6.9 SU	6.9 (MAX)
	NM0024163	pH*	3/20/2015	6.8 SU	6.8 (MIN)
	NM0024163	E. coli*	2/26/2015	2.66	2.94 (30DAV)
	NM0024163	E. coli*	3/4/2015	2.94	2.66 (MAX)

What should have been reported each month				
MONTH	MINIMUM	MAXIMUM	30DAVGEO	DAILY MX
Feb-15	6.9	6.9	-	-
Mar-15	6.8	6.8	-	-
Feb-15	-	-	2.66	2.66
Mar-15	-	-	2.94	2.94

E. coli Lab Worksheet

NM0024163	E. coli*	2/26/2015	2.66	cfu/100mL
NM0024163	E. coli*	3/4/2015	2.94	cfu/100mL
		30DAVGEO	2.80	cfu/100mL
		DAILY MAX	2.94	cfu/100mL

*pH and E. coli data were reported quarterly (1/1/2015 thru 3/31/2015) but current permit has monthly reporting requirements.
 January data were unavailable because of the previous operator passed away and the lab records could not be found.

REPORTED FLOW DATA:

npdes_id	parameter_desc (daily)	Reporting Period	30DA AVG	7DA AVG	Effective	Expires
NM0024163	Flow, in conduit or thru treatment plant	1/31/2012	0.020519	0.033168	2/1/2008	1/31/2013
NM0024163	Flow, in conduit or thru treatment plant	2/29/2012	0.022215	0.023074	2/1/2008	1/31/2013
NM0024163	Flow, in conduit or thru treatment plant	3/31/2012	0.021176	0.019194	2/1/2008	1/31/2013
NM0024163	Flow, in conduit or thru treatment plant	4/30/2012	0.019501	0.019762	2/1/2008	1/31/2013
NM0024163	Flow, in conduit or thru treatment plant	5/31/2012	0.020247	0.01971	2/1/2008	1/31/2013
NM0024163	Flow, in conduit or thru treatment plant	6/30/2012	0.021124	0.020055	2/1/2008	1/31/2013
NM0024163	Flow, in conduit or thru treatment plant	7/31/2012	0.022751	0.023317	2/1/2008	1/31/2013
NM0024163	Flow, in conduit or thru treatment plant	8/31/2012	0.024456	0.022324	2/1/2008	1/31/2013
NM0024163	Flow, in conduit or thru treatment plant	9/30/2012	0.024906	0.02774	2/1/2008	1/31/2013
NM0024163	Flow, in conduit or thru treatment plant	10/31/2012	0.02594	0.029994	2/1/2008	1/31/2013
NM0024163	Flow, in conduit or thru treatment plant	11/30/2012	0.02359	0.023062	2/1/2008	1/31/2013
NM0024163	Flow, in conduit or thru treatment plant	12/31/2012	0.024267	0.023588	2/1/2008	1/31/2013
NM0024163	Flow, in conduit or thru treatment plant	1/31/2013	0.026021	0.023697	2/1/2008	1/31/2013
NM0024163	Flow, in conduit or thru treatment plant	2/28/2013	0.022122	0.020497	2/1/2008	1/31/2013
NM0024163	Flow, in conduit or thru treatment plant	3/31/2013	0.02147	0.022011	2/1/2008	1/31/2013
NM0024163	Flow, in conduit or thru treatment plant	4/30/2013	0.024723	0.029377	2/1/2008	1/31/2013
NM0024163	Flow, in conduit or thru treatment plant	5/31/2013	0.022092	0.19978	2/1/2008	1/31/2013
NM0024163	Flow, in conduit or thru treatment plant	6/30/2013	0.022423	0.23822	2/1/2008	1/31/2013
NM0024163	Flow, in conduit or thru treatment plant	7/31/2013	0.024692	0.023082	2/1/2008	1/31/2013
NM0024163	Flow, in conduit or thru treatment plant	8/31/2013	0.02844	0.026338	2/1/2008	1/31/2013
NM0024163	Flow, in conduit or thru treatment plant	9/30/2013	0.03293	0.032621	9/1/2013	8/31/2018
NM0024163	Flow, in conduit or thru treatment plant	10/31/2013	0.028053	0.028984	9/1/2013	8/31/2018
NM0024163	Flow, in conduit or thru treatment plant	11/30/2013	0.027263	0.025475	9/1/2013	8/31/2018
NM0024163	Flow, in conduit or thru treatment plant	12/31/2013	0.025455	0.024152	9/1/2013	8/31/2018
NM0024163	Flow, in conduit or thru treatment plant	1/31/2014	0.025761	0.024031	9/1/2013	8/31/2018
NM0024163	Flow, in conduit or thru treatment plant	2/28/2014	0.021968	0.026941	9/1/2013	8/31/2018
NM0024163	Flow, in conduit or thru treatment plant	3/31/2014	0.028678	0.037047	9/1/2013	8/31/2018
NM0024163	Flow, in conduit or thru treatment plant	4/30/2014	0.029014	0.028985	9/1/2013	8/31/2018
NM0024163	Flow, in conduit or thru treatment plant	5/31/2014	0.024584	0.024927	9/1/2013	8/31/2018
NM0024163	Flow, in conduit or thru treatment plant	6/30/2014	0.24537	0.23587	9/1/2013	8/31/2018
NM0024163	Flow, in conduit or thru treatment plant	7/31/2014	0.029023	0.035307	9/1/2013	8/31/2018
NM0024163	Flow, in conduit or thru treatment plant	8/31/2014	0.032007	0.032705	9/1/2013	8/31/2018
NM0024163	Flow, in conduit or thru treatment plant	9/30/2014	0.031677	0.052238	9/1/2013	8/31/2018
NM0024163	Flow, in conduit or thru treatment plant	10/31/2014	0.030587	0.026875	9/1/2013	8/31/2018
NM0024163	Flow, in conduit or thru treatment plant	11/30/2014	0.027821	0.02508	9/1/2013	8/31/2018
NM0024163	Flow, in conduit or thru treatment plant	12/31/2014	0.031707	0.030197	9/1/2013	8/31/2018

** YELLOW cells indicate the 30-day average flow was reported as higher than the 7-day average flow.

** BLUE cells indicate a typo. The design flow of the plant is 0.075 MGD. BLUE values should have a "0" after the decimal point.

NMED/SWQB
Official Photograph Log
Photo #1

Photographer: Shelly Lemon	Date: 04-28-2015	Time: 14:45 hours
City/County: Reserve/Catron County		
Location: Village of Reserve WWTP		
Subject: Broken Clarifier		

