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ENVIRONMENT DEPARTMENT



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Certified Mail - Return Receipt Requested

18 June 2012

Mr. John Eckley
Operations Superintendent
For Water and Wastewater
City of Bloomfield
P.O. Box 1838
Bloomfield, NM 87413

Re: **Major Municipal; SIC 4952; NPDES Compliance Evaluation Inspection; Bloomfield
Wastewater Treatment Plant; NM0020770; May 23, 2012**

Dear Mr. Eckley:

Enclosed, please find a copy of the report 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 to modify your operational and/or administrative procedures, as appropriate.

I wish to thank you for the cooperation of the City of Bloomfield representatives including Mr. Jeff Loch and yourself during this inspection.

If you have any questions about this inspection report, please contact me at (505) 827-0212.

Sincerely,

/s/ Barbara Cooney

Barbara Cooney
Surface Water Quality Bureau

cc: Marcia Gail Adams, USEPA (6EN-AS) by e-mail
Samuel Tates, USEPA (6EN-AS) by e-mail
Carol Peters-Wagnon, USEPA (6EN-WM) by e-mail
Diana McDonald, USEPA (6EN-WM) by e-mail
Larry Giglio, USEPA (6WQ-PP) by e-mail
Hannah Branning, USEPA (6EN-WC) by e-mail
NMED District II Manager 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 No __)

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.

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.

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:

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. Y N NA

5. SAMPLING AND ANALYSES PERFORMED AT FREQUENCY SPECIFIED IN PERMIT. 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

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 11/11/2011) Y N NA
 RECORDS MAINTAINED OF CALIBRATION PROCEDURES. Y N NA
 CALIBRATION CHECKS DONE TO ASSURE CONTINUED COMPLIANCE Although the calibration was checked by an outside company Nov. 2011 when checked by the Inspector with the assistance of the facility operators the difference was 27% between Staff Gauge and Backup Ultrasonic meter. 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:

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

SECTION F - LABORATORY (CONT'D)

2. IF ALTERNATIVE ANALYTICAL PROCEDURES ARE USED, PROPER APPROVAL HAS BEEN OBTAINED
TSS - method using the Shake and pour method not pipette method as found in SM 18th Edition 2540 D (See Further Explanations) Y N NA

3. SATISFACTORY CALIBRATION AND MAINTENANCE OF INSTRUMENTS AND EQUIPMENT. S M U NA

4. QUALITY CONTROL PROCEDURES ADEQUATE. S M U NA

5. DUPLICATE SAMPLES ARE ANALYZED. 10 % OF THE TIME. Y N NA

6. SPIKED SAMPLES ARE ANALYZED. 10 % OF THE TIME. Spike samples analyzed as part of the DMR QA study. Y N NA

7. COMMERCIAL LABORATORY USED. Y N NA

LAB NAME Huther & Associates
LAB ADDRESS Denton, TX
PARAMETERS PERFORMED Whole Effluent Toxicity Test

SECTION G - EFFLUENT/RECEIVING WATERS OBSERVATIONS. S M U NA (FURTHER EXPLANATION ATTACHED YES).

| OUTFALL NO. | OIL SHEEN | GREASE | TURBIDITY | VISIBLE FOAM | FLOAT SOL. | COLOR | OTHER |
|-------------|-----------|--------|-----------|--------------|------------|----------------|-------|
| | None | Slight | Slight | None | Yes | Greenish Brown | None |
| | | | | | | | |
| | | | | | | | |

RECEIVING WATER OBSERVATIONS
See Attached Further Explanations.

SECTION H - SLUDGE DISPOSAL

SLUDGE DISPOSAL MEETS PERMIT REQUIREMENTS. DETAILS: S M U NA (FURTHER EXPLANATION ATTACHED YES).

1. SLUDGE MANAGEMENT ADEQUATE TO MAINTAIN EFFLUENT QUALITY. Not enough capacity in drying beds to handle solids produced S M U NA

2. SLUDGE RECORDS MAINTAINED AS REQUIRED BY 40 CFR 503. S M U NA

3. FOR LAND APPLIED SLUDGE, TYPE OF LAND APPLIED TO: _____ (e.g., FOREST, AGRICULTURAL, PUBLIC CONTACT SITE)

SECTION I - SAMPLING INSPECTION PROCEDURES (FURTHER EXPLANATION ATTACHED NO).

1. SAMPLES OBTAINED THIS INSPECTION. Y N NA

2. TYPE OF SAMPLE OBTAINED
GRAB _____ COMPOSITE SAMPLE _____ METHOD _____ FREQUENCY _____

3. SAMPLES PRESERVED. Y N NA

4. FLOW PROPORTIONED SAMPLES OBTAINED. Y N NA

5. SAMPLE OBTAINED FROM FACILITY'S SAMPLING DEVICE. Y N NA

6. SAMPLE REPRESENTATIVE OF VOLUME AND MATURE OF DISCHARGE. Y N NA

7. SAMPLE SPLIT WITH PERMITTEE. Y N NA

8. CHAIN-OF-CUSTODY PROCEDURES EMPLOYED. Y N NA

9. SAMPLES COLLECTED IN ACCORDANCE WITH PERMIT. Y N NA

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Introduction

A Compliance Evaluation Inspection (CEI) was conducted at the City of Bloomfield Wastewater Treatment Plant (WWTP) by Ms. Barbara Cooney of the New Mexico Environment Department (NMED), Surface Water Quality Bureau (SWQB) on 23 May 2012. The inspection was conducted by NMED for the U. S. Environmental Protection Agency (USEPA), Region 6, under the National Pollutant Discharge Elimination System (NPDES) permit program, in accordance with the Federal Clean Water Act. These inspections are conducted under agreement with USEPA and are used by the USEPA to determine compliance with the NPDES permit program.

This facility is a major municipal waste water treatment plant (WWTP) under the Federal Clean Water Act (CWA), section 402 National National Pollutant Discharge Elimination system (NPDES) permit program and is assigned NPDES permit number NM0020770. The Standard Industrial Classification Code (SIC) is 4952. The facility discharges into the San Juan River in water quality segment 20.6.4.408 of the San Juan Basin (*State of New Mexico Standards for Interstate and Intrastate Surface Waters*). The designated uses for the segment are municipal and industrial water supply, irrigation, livestock watering, wildlife habitat, secondary contact, marginal coldwater aquatic life and warmwater aquatic life.

INSPECTION DETAILS

The inspector arrived at the Bloomfield WWTP at 9:25 a.m. Mr. Jeff Lock, Plant Operator and Laboratory Analyst and Ms. Becky Bowden, Drinking Water Plant Operator accompanied the inspector through the plant during the inspection. Mr. John Eckley, Operations Superintendent was also contacted. The Inspector made introductions, showed her credentials and explained the purpose of her visit. The Operators accompanied Ms. Cooney as she toured the WWTP and the laboratory. Ms. Cooney was provided at her request all records of plant and laboratory activity for the month of March 2012 for a records review. An exit interview was held with Mr. John Eckley and Mr. Loch following the inspection. The Inspector left the WWTP at 5:15 p.m.

TREATMENT SCHEME

The Bloomfield WWTP is designed to treat 0.9 MGD. The collection system is estimated to be 148 miles long and services a population of approximately 7800 people. The head works of the WWTP were upgraded in 2005. Influent flow is measured with Parshall flume with a staff gauge and an ultrasonic flow meter that totalizes the flow. The head works has split channels, one is to a manual bar screen, the other to the mechanical grit and solids removal system including a screw pump. The channels converge at an aerated grit chamber. The manual bar screen channel is a back up and was not being used at the time of the inspection. From the aerated grit chamber three sump pumps lift the influent water to the aeration basins. The sump pumps are run on rotation. One pump is rested at a time.

The two aeration basins are run in parallel. The square basins are above ground because of the high water table. Aeration is accomplished with surface aerators that sit approximately four feet deep in the basins. They create a great deal of turbulence at the surface of the basins. Due to the surface location of the aerators and the square shape of the basins, aeration is not efficient and evenly distributed throughout the basins. It is likely that solids build up and become septic in the

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bottom corners of the basins. The basins color was a light brown, indicating older microbes and solids that are less efficient at aerobic treatment. From the aeration basins, decant is sent to the two secondary round clarifiers (run in parallel), then to the square serpentine chlorine contact chamber. Dechlorination follows that process and the effluent flows through a Parshall flume with a fixed staff gauge, and an ultrasonic flow meter reads the discharge volume. This is the sampling location for the NPDES permit. The flow then goes to the San Juan River through an enclosed pipe that is approximately 1/8 mile in length.

Sludge

According to the operator, solids are wasted from the secondary clarifiers to an open air chamber identified as the aerobic digester / solids thickener. The aerobic digester was not being aerated at the time of the inspection. The contents of the chamber were visibly anaerobic with a light brown - grey color. A fair amount of bubbling was occurring and the sulfurs odor being emitted by the contents of the basin was noticeable from well outside the treatment plant boundaries. Decant from the digester / solids thickener is sent back to the head works where it mixes with the raw influent. From the digester / solids thickener, solids are sent to the belt press, then hauled to the sludge drying beds. Final disposal of solids is to a surface disposal site at the Bondad landfill in Colorado. The sludge drying beds have under drains that direct liquids back to the head of the plant.

Grit removed from the head works is collected in a wheel barrow or hopper and after passing the paint filter test disposed of in the landfill.

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 A – Permit Verification – Overall Rating of “Satisfactory”

Section B – Record Keeping and Reporting – Overall Rating of “Satisfactory”

Section C - Operation and Maintenance – Overall Rating of “Unsatisfactory”

Permit Requirements For Operation and Maintenance

The permit requires in Part III.3. PROPER OPERATIONS AND MAINTENANCE:

a. The permittee shall properly and maintain all facilities and systems of treatment and control (and 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 operations 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.

Findings For Operation and Maintenance:

Numerous operational and facility design problems were observed during this inspection. It is advisable that the operators consider contracting with an outside technical assistance consultants to advise them on operational/maintenance and unit modifications to improve the quality of the functioning of the WWTP.

1. Head works berm - During a previous inspection, it was noted that there is no containment at the head works where the grit chamber screw pump dumps waste into a wheel barrow or hopper. The need for containment is twofold: 1. Prevention of the raw sewage and solids from spreading on the bare ground and potentially contaminating ground water by seeping in. Ground water is hydrologically connected with the San Juan River in this location; 2. To prevent raw sewage from running off into surface water. Since the time of the last inspection, operators have put mounds of earth around the grit removal area. This is successful at preventing normal weather surface run off. However the solids and raw sewage are still able to seep into the ground. Staining was visible on the ground in this area, indicating that liquids have indeed been allowed to pool and soak into the ground. The berms and platform where influent grit is handled should be made of impermeable material such as concrete.

2. Aeration Basins - The parallel aeration basins have surface aerators that mix approximately the top six feet of the chambers. The paddles cause a great deal of turbulence and frequent splash over. Regardless of the highly turbulent surface these aerators create, the lower 2/3 of each basin does not receive adequate and reliable aeration and mixing, causing anoxic and potentially even septic conditions. The color of the basins was an unhealthy milk brown - indicating old solids and less than optimal aerobic treatment.

3. Aerobic digester / sludge thickener - This basin was septic. There was no indication of any aerobic activity in the basin. The odor from the basin was indicative of a septic condition and was evident more than several hundred yards outside the boundary of the WWTP property. The Clean Water Act does not regulate odors. However odors can be an indicator of how well a treatment plant is or is not operating. The rate of solids removal should be increased.

4. Secondary Clarifiers - The sludge blanket was 4 feet deep and throughout the rest of the column solids were thinly dispersed. - Solids in the column indicate too many solids in basin and old solids - rising flock - pin flock also indicate old solids. The rate of solids wasting should be increased.

The weirs have been replaced on the secondary clarifiers and this is helpful at reducing floating solids from being sent to the chlorine contact chamber. However, floating solids are still getting through.

5. Concrete cracks - This WWTP was built in 1978. New head works were built and put on line approximately 5 years ago. Throughout the WWTP there are indications of failing concrete, including cracks throughout all the treatment units including the secondary clarifiers. Inside the

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basins the concrete is pitted and crumbling from the many years of exposure to the caustic wastewater. Metal parts and water works are showing signs of rusting throughout.

6. Aging treatment units and obsolete treatment units - The motors for the aeration basin paddle aerators are heavily worn, rusting and leaking oil.

7. Sludge dump truck cleaning on bare ground - Outside the building where the solids belt press is located, pools of water and sludge were observed. According to operators, the dump truck used to haul the sludge from the belt press to the sludge drying beds was recently washed there. All efforts must be made to contain and prevent liquid waste and sludge from coming into contact with the bare ground. Cleaning of the dump truck should be in a contained area such as the cement lined sludge drying beds. Due to the close proximity to the San Juan River and to the high ground water table, a hydrological link exists between the two. This area could also wash off to the river during a rain storm.

8. Effluent color was slightly turbid greenish brown - The effluent color was indicative of ineffective treatment throughout the WWTP. The color of the effluent was similar to what is commonly found in trickling filter processes. Activated sludge sewage treatment should be able to produce a much more clear effluent than was observed at this facility. According to plant representatives, the collection system was undergoing line cleaning and resulting in heavier than normal loads of grease and solids being sent to the WWTP, and partially responsible for the effluent quality.

9. Chlorine Contact Chamber - The serpentine chlorine contact chambers were very turbid. Floating solids were observed in the chamber. Operators have installed a surface baffle to catch floating solids before they reach the effluent discharge point. However because floating solids are visible throughout the water column, the surface baffles are only partially effective at removing all of it. Operator indicated that at one time they installed additional screens at the end of the chlorine contact chambers to catch the solids but the screens became clogged to quickly for the operator to keep up with cleaning it, and the screens were removed. This is a repeat finding.

10. Grease in collection system -There were noticeable amounts of grease in the treatment units. The city is encouraged to pursue enforcement of the existing grease ordinances especially for restaurants and other commercial establishments that could be adding grease to the system.

11. Collection System Influent and Infiltration (I&I) - According to Mr. Eckley, the collection system may have in some locations with combined storm water and wastewater streams. This is a fairly rare design condition in New Mexico. It is advisable for the City of Bloomfield to survey the collection system to identify these locations and make the necessary adjustments to optimize the treatment for the wastewater. If combined sewers are found. It is necessary for the Permittee to submit an amended permit application to the EPA to include this information.

Section D – Self Monitoring – Overall Rating of “Satisfactory”

Section E – Flow Measurements – Overall Rating of “Unsatisfactory”

Permit Requirements For Flow Measurement

The permit requires in Part III. 6. FLOW MEASUREMENTS

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

Effluent flow measurements are not accurate to within a 10% margin of error as required by the permit. The margin of error is 27%.

During the inspection Operator Jeff Loch was located at the effluent flow channel and read the staff gauge at the Parshall flume. At the same time the inspector was in the control office reading the ultrasonic digital read out of the effluent flow volume. Also in the control room at the time was John Eckley. The two were communicating via cell phone to insure the readings were taken at the same moment. The results were:

Staff gauge reading: 4 3/4 inches = .3037MGD

Digital readout: 5.69 inches = .410 MGD

Difference in MGD = 0.106 MGD

% Difference = 27%

A label on the digital readout unit stated that the flow meter was calibrated 11/11/2011. Once a year calibrations are normally acceptable. However because of the wide variation of readings from the staff gauge and the ultrasonic meter, it is advisable that the unit be recalibrated and adjusted to be within acceptable limits as soon as possible.

Section F - Laboratory - Overall Rating of "Satisfactory"

Permit Requirements For Laboratory

The permit requires in Part III 5. MONITORING PROCEDURES

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.

Findings for Laboratory

The samples analyzed for BOD are conducted with the Standard Methods 20th Edition 5210B, because of the use of the commercially prepared GGA. The method referenced on the bench

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sheets are from Standard Methods 18th Edition. The bench sheets should be corrected to reflect the correct method being used.

The Total Suspended Solids (TSS) Analysis are being done in a manner that does not strictly follow the method referenced on the bench sheets - Standard Methods 18th Edition 2540 D, i.e. the use of the "Shake and Pour" procedure from a graduated cylinder verses mix and pipette process to transfer the sample to the filter. Other analytical laboratories who are also using this modified procedure have received approval from the EPA administration. It is advisable for this facility to also request approval from EPA for the use of the modified method.

The Total Residual Chlorine (TRC) Units are not being recorded correctly. The permit requirement is for a daily max of 19 µg/L (see table in the section below). This is equivalent to 0.019 mg/L. The November 2011 DMRs were reported with TRC value of 0.12. This value is most likely a value of mg/L not µg/L. The value of 0.12 mg/L would be equivalent to 120 µg/L.

The value of 1.000 mg/L = 1000 µg/L.

Section G - Effluent and Receiving Water - Overall Rating "Unsatisfactory"

Permit Requirements For Effluent and Receiving Water

The permit requires in Part I. Section A. Limitations and Monitoring Requirements:

2. FLOATING SOLIDS, VISIBLE FOAM AND/OR OILS

a. There shall be no discharge of floating solids or visible foam in other than trace amounts.

The permit requires in Part I. Section A. Limitations and Monitoring Requirements:

| Effluent Characteristics | Lbs/day, unless noted | | | | Mg/L, unless noted | | | Monitoring Requirements | |
|-------------------------------------|-----------------------|-----------------------------|------------|--|--------------------|----------------|----------------|-------------------------|-------------------|
| | 30 Day Avg | Daily Max | 7Day Avg | | 30 Day Avg | Daily Max | 7 Day Avg | Measuring Frequency | Sample Type |
| pH | | | | | | Minimum 6.6 su | Maximum 9.0 su | 5/Week | Grab |
| Flow | | Report MGD | Report MGD | | Report MGD | NA | NA | Continuous | Totalizing Meter |
| BOD 5-day | 225 | NA | 338 | | 30 | NA | 45 | Two/Week | 24 Hour Composite |
| TSS | 225 | NA | 338 | | 30 | NA | 45 | | 24 Hour Composite |
| E. coli Bacteria | NA | 4.30 x 10 ⁹ (*3) | NA | | 126 cfu | 126 cfu | NA | Five/Week | Grab |
| Total Residual Chlorine | NA | NA | NA | | NA | 19 µg/l | NA | Daily | Grab |
| Total Dissolved Solids Net Increase | 22264 | NA | NA | | 400 | NA | NA | 1/Quarter | 3 Hour Composite |

*3 Conversion factor to determine loading limit is 3.79 x 10⁷ x Flow in MGD x cfu/100 ml in effluent.

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Findings For Effluent and Receiving Water

The effluent from the WWTP was slightly turbid green-brown at the time of the inspection. There were small amounts of floating solids noted in the chlorine contact chamber and in the effluent at the Parshall Flume.

DMR records show that the following Exceedences have occurred since June 2010 (see table below).

| Date | Parameter | Effluent Exceedence |
|----------------|--|------------------------|
| March 2012 | E. coli Daily Max 126 cfu / 100 ml | 133 cfu/ 100 ml |
| February | E.coli Daily Max Loading 4300 cfu | 4465 cfu |
| February 2012 | E.coli Daily Max 126 cfu/ 100 ml | 195.7 cfu/ 100 ml |
| January 2012 | E.coli Daily Max Loading 4300 cfu | 6458 cfu |
| January 2012 | E.coli Daily Max 126 cfu/ 100 ml | 316.7 cfu/ 100 ml |
| December 2011 | E.coli Daily Max Loading 4300 cfu | 5621cfu |
| December 2011 | E.coli Daily Max 126 cfu/ 100 ml | 231.5 cfu/ 100 ml |
| November 2011 | E.coli Daily Max Loading 4300 cfu | 9133 cfu |
| November 2011 | E.coli Daily Max 126 cfu/ 100 ml | 358 cfu/ 100 ml |
| November 2011 | E. coli 30 Day Avg 126 cfu/ 100 ml | 133.3 cfu/ 100 ml |
| October 2011 | E.coli Daily Max Loading 4300 cfu | 5597 cfu |
| October 2011 | E.coli Daily Max 126 cfu/ 100 ml | 206.3 cfu/ 100 ml |
| September 2011 | Total Residual Chlorine Max 0.019 mg/L | Incorrect value on DMR |
| April 2011 | E.coli Daily Max Loading 4300 cfu | 6619 cfu |
| April 2011 | E.coli Daily Max 126 cfu/ 100 ml | 233 cfu/ 100 ml |
| February 2011 | E.coli Daily Max 126 cfu/ 100 ml | 127.8 cfu/ 100 ml |
| December 2010 | E.coli Daily Max Loading 4300 cfu | 4468 cfu |
| December 2010 | E. coli Daily Max 126 cfu / 100 ml | 180.5 cfu/100 ml. |
| June 2010 | BOD 7 Day Avg Loading 338 lbs/day | 398.5 lbs/day |
| June 2010 | BOD 30 Day Avg 30 mg/L | 30.8 mg/L |
| June 2010 | BOD 7 Day Avg 45 mg/L | 66.8 mg/L |

As part of the San Juan Water Quality Survey conducted by the NMED SWQB Monitoring and Assessment Section (MAS), samples were taken of the effluent and analyzed. The sample results include:

| Station No. | Facility | Sample Date | Total Dis-solved Solids (mg/L) | Total Sus-pended Solids (mg/L) | E. coli (cfu /100 ml) | Total Residual Chlorine (mg/L) | Ammonia (mg/L) | pH | Nitrate + Nitrite (mg/L) | Total Kjeldahl Nitrogen (mg/L) | Total Phos-phorus (mg/L) |
|-------------|------------------|-------------|--------------------------------|--------------------------------|-----------------------|--------------------------------|----------------|------|--------------------------|--------------------------------|--------------------------|
| 8 | Bloom-field WWTP | 17/Mar/2010 | | | 235.9 | | 14.2 | 7.51 | 4.5 | 17 | 0.935 |
| | | 13/Apr/2010 | 526 | | 4.1 | | 2.52 | 6.95 | 9.3 | 4.8 | 0.291 |
| | | 11/May/2010 | | 7 | 8.4 | | 0.804 | 7.05 | 9.4 | 2.7 | 0.325 |
| | | 15/Jun/2010 | | | 2 | | 2.36 | 7.64 | 10 | 5.1 | 1.44 |
| | | 20/Jul/2010 | 526 | | 180.6 | | < 0.1 | 7.15 | 12 | 1.7 | 0.72 |
| | | 17/Aug/2010 | | | 3.1 | | 2 | 7.14 | 5.8 | 3.6 | 0.653 |
| | | 13/Oct/2010 | 482 | | 435.2 | 0.05 | 1.26 | 7.16 | 9 | 2.9 | 0.637 |
| | | 1/Nov/2010 | | | 20.6 | | 12.5 | 7.46 | 0.5 | 15 | 0.709 |

Note: the samples highlighted indicate exceedences of NPDES permit Daily Max effluent limits.

Section H - Sludge Disposal - Overall Rating of "Satisfactory"

NMED/SWQB
Official Photograph Log
Photo # 1

Photographer: B. Cooney

Date: 23 May 2012

Time: 10:27 a.m. est.

City/County: Bloomfield / San Juan

State: New Mexico

Location: Bloomfield WWTP:

Subject: Head works - The earthen berm is permeable and raw sewage is still allowed to make contact with bare ground - potentially contaminating groundwater. The reason for berms and containment is to prevent the raw sewage from coming into direct contact with the bare ground. A hydrologic link between ground water and the San Juan River exists in this location.



NMED/SWQB
Official Photograph Log
Photo # 2

Photographer: B. Cooney

Date: 23 May 2012

Time: 10:17 a.m. est

City/County: Bloomfield / San Juan

State: New Mexico

Location: Bloomfield WWTP

Subject: Head works,- including mechanical and manual bar screens. Grit removal and primary aeration in the grit chamber.



NMED/SWQB
Official Photograph Log
Photo #3

Photographer: B. Cooney

Date: 23 May 2012

Time: 10:37 a.m. est.

City/County: Bloomfield / San Juan

State: New Mexico

Location: Bloomfield WWTP

Subject: Above Ground Aeration Basins and Secondary Clarifier



NMED/SWQB
Official Photograph Log
Photo #4

Photographer: B. Cooney

Date: 23 May 2012

Time: 10:42 a.m. est.

City/County: Bloomfield / San Juan

State: New Mexico

Location: Bloomfield WWTP

Subject: Secondary Clarifier Cement Condition - extensive cracks and aging noted throughout the WWTP. The plant was built in 1978 and has exceeded the expected life of the treatment systems by nearly 15 years.



NMED/SWQB
Official Photograph Log
Photo # 5

Photographer: B. Cooney

Date: 23 May 2012

Time: 10:53 a.m. est.

City/County: Bloomfield / San Juan

State: New Mexico

Location: Bloomfield WWTP

Subject: Aeration Basin with surface aerators. The aeration occurs in the top approximately six feet of the basins. Incomplete mixing is occurring in the basins. The lower portions of the basin are likely to be anaerobic.



NMED/SWQB
Official Photograph Log
Photo # 6

Photographer: B. Cooney

Date: 23 May 2012

Time: 10:53 a.m. est.

City/County: Bloomfield / San Juan

State: New Mexico

Location:

Subject: Drive motor for surface aerator paddles. Note these motors are very worn and are leaking oil that could potentially reach the basins.



NMED/SWQB
Official Photograph Log
Photo # 7

Photographer: B. Cooney

Date: 23 May 2012

Time: 11:00 a.m. est.

City/County: Bloomfield / San Juan

State: New Mexico

Location: Bloomfield WWTP

Subject: Anaerobic Digest / Sludge Thickener was septic. Note also the concrete is deteriorating along the sidewalls of this treatment unit built in 1978.



NMED/SWQB
Official Photograph Log
Photo # 8

Photographer: B. Cooney

Date: 23 May 2012

Time: 11:09 a.m. est.

City/County: Bloomfield / San Juan

State: New Mexico

Location: Bloomfield WWTP

Subject: Secondary Clarifier. New weirs were recently install to assist in preventing excess solids from being sent to the chlorine contact chamber. Note however that some amount of sedimentary material is in bottom of the outer ring, indicating that some solids are still passing over the weirs.



NMED/SWQB
Official Photograph Log
Photo # 9

Photographer: B. Cooney

Date: 23 May 2012

Time: 11:09 a.m. est.

City/County: Bloomfield / San Juan

State: New Mexico

Location: Bloomfield WWTP

Subject: Secondary Clarifier (South) The sludge blanket was 4 feet and dispersed solids in the water column above. To improve effluent quality, an increase of solids wasting may be advisable. The floating solids in this unit also indicate older solids and less effective biological treatment in the aeration basins.



NMED/SWQB
Official Photograph Log
Photo # 10

Photographer: B. Cooney

Date: 23 May 2012

Time: 11:06 a.m. est.

City/County: Bloomfield / San Juan

State: New Mexico

Location: Bloomfield WWTP

Subject: Chlorine Contact Chamber - Two parallel units.



NMED/SWQB
Official Photograph Log
Photo # 11

Photographer: B. Cooney

Date: 23 May 2012

Time: 11:33 a.m. est.

City/County: Bloomfield / San Juan

State: New Mexico

Location: Bloomfield WWTP

Subject: Chlorine gas used for disinfection in the Chlorine Contact Chamber. Dosing is flow dependent.



NMED/SWQB
Official Photograph Log
Photo # 12

Photographer: B. Cooney

Date: 23 May 2012

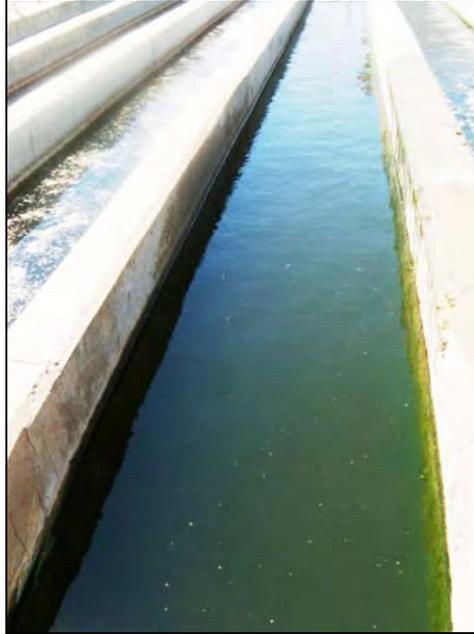
Time: 11:29 a.m. est.

City/County: Bloomfield / San Juan

State: New Mexico

Location: Bloomfield WWTP

Subject: Chlorine Contact chamber - very turbid water and floating solids are visible through the water column that is eventually being released to the San Juan River .



NMED/SWQB
Official Photograph Log
Photo # 13

Photographer: B. Cooney

Date: 23 May 2012

Time: 11:27 a.m. est.

City/County: Bloomfield / San Juan

State: New Mexico

Location: Bloomfield WWTP

Subject: Chlorine Contact Chamber - again floating solids are visible and are being released.



**NMED/SWQB
Official Photograph Log
Photo # 14**

Photographer: B. Cooney

Date: 23 May 2012

Time: 1:48 p.m. est.

City/County: Bloomfield / San Juan

State: New Mexico

Location: Bloomfield WWTP

Subject: Effluent Flow Meter. Staff Gauge and Ultrasonic Totalizer. Effluent water is turbid greenish-brown. The channel design for the lead to the Parshall flume is too short and causes turbulence that could be adversely impacting the accuracy of the flow measurements.



**NMED/SWQB
Official Photograph Log
Photo # 15**

Photographer: B. Cooney

Date: 23 May 2012

Time: 2:03 p.m.

City/County: Bloomfield / San Juan

State: New Mexico

Location: Bloomfield WWTP

Subject: Effluent Flow Meter Ultrasonic read out.



NMED/SWQB
Official Photograph Log
Photo #16

Photographer: B. Cooney

Date: 23 May 2012

Time: 1:20 p.m. est.

City/County: Bloomfield / San Juan

State: New Mexico

Location: Bloomfield WWTP

Subject: Outfall pipe at th San Juan River is below the water surface because of the high flow of the river at the time the photo was taken.



NMED/SWQB
Official Photograph Log
Photo #17

Photographer: B. Cooney

Date: 23 May 2012

Time: 10:55 a.m. est.

City/County: Bloomfield / San Juan

State: New Mexico

Location: Bloomfield WWTP

Subject: Sludge Drying Beds. Septage hauler releasing contents into bed designated for septage. The septage beds are not plumbed so that liquids go to the head works.



NMED/SWQB
Official Photograph Log
Photo # 18

Photographer: B. Cooney

Date: 23 May 2012

Time: 10:54 a.m. est.

City/County: Bloomfield / San Juan

State: New Mexico

Location: Bloomfield WWTP

Subject: Drying beds. The white substance is Lime used as an odor reduction treatment.



NMED/SWQB
Official Photograph Log
Photo # 19

Photographer: B. Cooney

Date: 23 May 2012

Time: 11:38 a.m. est.

City/County: Bloomfield / San Juan

State: New Mexico

Location: Bloomfield WWTP

Subject: Sludge Processing - Belt press to dewater solids and conveyor belt to move sludge to dump trucks for transport to sludge drying beds.



NMED/SWQB
Official Photograph Log
Photo # 20

Photographer: B. Cooney

Date: 23 May 2012

Time: 11:54 a.m. est.

City/County: Bloomfield / San Juan

State: New Mexico

Location: Bloomfield WWTP

Subject: Dump Truck for hauling sludge.



NMED/SWQB
Official Photograph Log
Photo # 21

Photographer: B. Cooney

Date: 23 May 2012

Time: 11:48 a.m. est.

City/County: Bloomfield / San Juan

State: New Mexico

Location: Bloomfield WWTP

Subject: Dump trucks that haul sludge are washed on the bare ground leaving sludge and liquid wash water. The wash water can soak into and potentially contaminate groundwater, and the solids can also cause contamination.



NMED/SWQB
Official Photograph Log
Photo # 22

Photographer: B. Cooney

Date: 23 May 2012

Time: 11:47 a.m. est.

City/County: Bloomfield / San Juan

State: New Mexico

Location: Bloomfield WWTP

Subject: This photo also show liquid wash water and spilled sludge on bare ground. Dump Trucks should be washed in contained areas.

