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DAVE MARTIN
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Deputy Secretary

JAMES H. DAVIS, Ph.D.
Director
Resource Protection Division

July 31, 2012

Michael Sloane, Division Chief
Hatchery Management Division
New Mexico Department of Game & Fish
One Wildlife Way
P.O. Box 25112
Santa Fe, New Mexico 87504

RE: Minor Non-Municipal, SIC 0921, NPDES Compliance Evaluation Inspection, New Mexico Department of Game & Fish / Red River State Trout Hatchery, NM0030147, July 9, 2012

Dear Mr. Sloane,

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. Further, you are encouraged to notify in writing, both the USEPA and NMED regarding modifications and compliance schedules at the addresses below:

Diana McDonald
US Environmental Protection Agency
Allied Bank Tower
Region VI Enforcement Branch (6EN-WM)
1445 Ross Avenue
Dallas, Texas 75202-2733

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

I appreciate the cooperation of both Steve Hooper and Dan Arevalo, both of the NMDG&F Red River Trout Fish Hatchery, during this inspection. If you have any questions about this inspection report, please contact me at 505-827-0418.

Sincerely,

/s/ Erin S. Trujillo
Erin S. Trujillo
Surface Water Quality Bureau

cc: Rashida Bowlin, USEPA (6EN) 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
Hannah Branning, USEPA (6EN-WC) by e-mail
Larry Giglio, USEPA (6WQ-PP) by e-mail
Robert Italiano, NMED District II Manager by e-mail



Form Approved
OMB No. 2040-0003
Approval Expires 7-31-85

NPDES Compliance Inspection Report

Section A: National Data System Coding

Transaction Code	NPDES										yr/mo/day					Inspec. Type	Inspector	Fac Type						
1 N	2 5	3 N	M	0	0	3	0	1	4	7	11	12	1	2	0	7	0	9	17	18 C	19 S	20 2		
Remarks																								
S T A T E F I S H H A T C H E R Y																								
Inspection Work Days						Facility Evaluation Rating						BI	QA	-----Reserved-----										
67						70 2						71 N	72 N	73	74	75	M I N O R						80	

Section B: Facility Data

Name and Location of Facility Inspected (For industrial users discharging to POTW, also include POTW name and NPDES permit number) NMDG&F, Red River Hatchery, P.O. Box 410, Questa NM 87556. From Taos, travel north on US 64, continue north on NM 522, turn northwest onto NM 515, travel approximately 2 miles to hatchery. Taos County	Entry Time /Date 1130 hours / 07/09/2012	Permit Effective Date February 1, 2012
	Exit Time/Date 1430 hours / 07/09/2012	Permit Expiration Date January 31, 2017
Name(s) of On-Site Representative(s)/Title(s)/Phone and Fax Number(s) Stephen (Steve) Hooper, Production Manager, NMDG&F / 575-444-7774 Dan Arevalo, Hatchery Manager, NMDG&F / 575-586-0222 and Fax 575-586-0783	Other Facility Data Outfalls (Latitude, Longitude) 001= 36.683767°, -105.651953° 002= 36.683281°, -105.652931° 003= 36.682942°, -105.653872°	
Name, Address of Responsible Official/Title/Phone and Fax Number Michael Sloane, Hatchery Management Division, New Mexico Department of Game & Fish, One Wildlife Way, P.O. Box 25112, Santa Fe, NM 87504 / Division Chief / 505- 476-8055	Contacted Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
SIC 0921		

Section C: Areas Evaluated During Inspection

(S = Satisfactory, M = Marginal, U = Unsatisfactory, N = Not Evaluated)

U	Permit	U	Flow Measurement	U	Operations & Maintenance	N	CSO/SSO
M	Records/Reports	M	Self-Monitoring Program	N	Sludge Handling/Disposal	N	Pollution Prevention
M	Facility Site Review	N	Compliance Schedules	N	Pretreatment	N	Multimedia
M	Effluent/Receiving Waters	U	Laboratory	N	Storm Water	N	Other:

Section D: Summary of Findings/Comments (Attach additional sheets if necessary)

1. SEE ATTACHED CHECKLIST REPORT WITH FURTHER EXPLANATIONS AND PHOTO LOG.

Name(s) and Signature(s) of Inspector(s) Erin S. Trujillo /s/ Erin S. Trujillo	Agency/Office/Telephone/Fax NMED/SWQB/505-827-0418	Date 07/31/2012
Signature of Management QA Reviewer Richard E. Powell /s/ Richard E. Powell	Agency/Office/Telephone/Fax NMED/SWQB/505-827-2798	Date 07/31/2012

SECTION A - PERMIT VERIFICATION

PERMIT SATISFACTORILY ADDRESSES OBSERVATIONS S M U NA (FURTHER EXPLANATION ATTACHED Yes)

DETAILS: **See further explanations for one time application of copper algacide in "Show Pond."**

- 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. S M U NA (FURTHER EXPLANATION ATTACHED Yes)

DETAILS: **Reviewed DMRs since last inspection on 06/10/2012. Reviewed flow for 2012 and analytical for March & April 2012.**

- 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 **Times not correct, labeled correctly and/or consistently.** Y N NA
 - b) NAME OF INDIVIDUAL PERFORMING SAMPLING Y N NA
 - c) ANALYTICAL METHODS AND TECHNIQUES. **SS = No; pH = Method not documented** Y N NA
 - d) RESULTS OF ANALYSES AND CALIBRATIONS. Y N NA
 - e) DATES AND TIMES OF ANALYSES. **Recorded SS time incorrect** 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. **Not Evaluated** Y N NA

SECTION C - OPERATIONS AND MAINTENANCE

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

DETAILS: **Part II.D of the permit requires Best Management Practices (BMP) plan wi/ three months of effective date of permit--due May 1, 2012--which has not been to submitted to USEPA (copy to NMED).**

- 1. TREATMENT UNITS PROPERLY OPERATED. **upper and lower settling ponds operated in series** S M U NA
- 2. TREATMENT UNITS PROPERLY MAINTAINED. **maintenance (dredging) appeared needed** 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. **But, BMP plan not finalized.** 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 Yes).
 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 **Sample Container Cleaning** Y N NA

a) SAMPLES REFRIGERATED DURING COMPOSITING. **Not documented for TSS** Y N NA

b) PROPER PRESERVATION TECHNIQUES USED. **Not documented for SS** Y N NA

c) CONTAINERS AND SAMPLE HOLDING TIMES CONFORM TO 40 CFR 136.3. **pH holding time exceeded in March 2012** 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: **Algal growth, vegetation and roots observed in weirs. Water height overtopped weir end contractions (i.e., higher than opening or notch) at Outfall 001 and did not appear adequate to handle flow.**

1. PRIMARY FLOW MEASUREMENT DEVICE PROPERLY INSTALLED AND MAINTAINED. Y N NA
 TYPE OF DEVICE **3ft (Outfall 001), 1 ft (Outfall 002), & 2ft (Outfall 003) Trapezoidal Cipolletti Weirs**

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. Y N NA
 RECORDS MAINTAINED OF CALIBRATION PROCEDURES. Y N NA
 CALIBRATION CHECKS DONE TO ASSURE CONTINUED COMPLIANCE. **No level (settling) checks since installation** 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. **Outfall 001** Y N NA

SECTION F - LABORATORY

PERMITTEE LABORATORY PROCEDURES MEET PERMIT REQUIREMENTS. S M U NA (FURTHER EXPLANATION ATTACHED Yes)
 DETAILS: **Contract laboratory not inspected. pH and SS conducted on site.**

1. EPA APPROVED ANALYTICAL PROCEDURES USED (40 CFR 136.3 FOR LIQUIDS, 503.8(b) FOR SLUDGES) **pH = Yes, SS = No** Y N NA

SECTION F - LABORATORY (CONT'D)

2. IF ALTERNATIVE ANALYTICAL PROCEDURES ARE USED, PROPER APPROVAL HAS BEEN OBTAINED Y N NA
3. SATISFACTORY CALIBRATION AND MAINTENANCE OF INSTRUMENTS AND EQUIPMENT. **pH Tester Storage** S M U NA
4. QUALITY CONTROL PROCEDURES ADEQUATE. **See Further Explanations** S M U NA
5. DUPLICATE SAMPLES ARE ANALYZED. 10 % OF THE TIME. Y N NA
6. SPIKED SAMPLES ARE ANALYZED. % OF THE TIME. Y N NA
7. COMMERCIAL LABORATORY USED Y N NA

LAB NAME **1) NMDOH Scientific Laboratory Division (SLD)** **2) Huther & Associates Inc**
 LAB ADDRESS **1101 Camino de Salud NE, Albuquerque, NM 87102** **1156 N Bonnie Brae St, Denton, TX 76201-2421**
 PARAMETERS PERFORMED **TSS, Aluminum** **WET**

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
001	No	No	No	No	No	Clear	No
002	No	No	No	No	No	Clear	No
003	No	No	No	Some	Some	Clear	No

RECEIVING WATER OBSERVATIONS: **Some algal growth in Red River. No numeric effluent limit exceedances have been reported since the last inspection or effective date of this inspection.**

SECTION H - SLUDGE DISPOSAL

SLUDGE DISPOSAL MEETS PERMIT REQUIREMENTS. S M U NA (FURTHER EXPLANATION ATTACHED **No**).

DETAILS: **No sewage sludge**

1. SLUDGE MANAGEMENT ADEQUATE TO MAINTAIN EFFLUENT QUALITY. 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: **Not Applicable** (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

New Mexico Department of Game & Fish / Red River State Trout Hatchery
NPDES Permit No NM0030147
Compliance Evaluation Inspection
July 9, 2012

Further Explanations

Introduction

On July 9, 2012, Erin Trujillo, accompanied by Sandra Gabaldón, both of the New Mexico Environment Department (NMED), Surface Water Quality Bureau (SWQB), conducted a Compliance Evaluation Inspection (CEI) at the New Mexico Department of Game & Fish (NMDG&F), Red River State Trout Hatchery approximately 3.5 miles southwest of Questa, New Mexico in Taos County, New Mexico.

The facility is classified as a minor industrial 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 NM0030147 which regulates discharge from three outfalls (001, 002 and 003) to Red River in Segment 20.6.4.122 *State of New Mexico Standards for Interstate and Intrastate Surface Waters, 20.6.4 New Mexico Administrative Code (NMAC)* in the Rio Grande Basin. This segment includes the designated uses of coldwater aquatic life, fish culture, irrigation, livestock watering, wildlife habitat and primary contact.

The NMED performs a certain number of CEIs each year for the U.S. Environmental Protection Agency (USEPA), Region VI. The purpose of this inspection is to provide the USEPA with information to evaluate the Permittee's compliance with the NPDES permit. This inspection report is based on information provided by the Permittee's representatives, observations made by the NMED inspector, and records and reports kept by the Permittee and/or NMED.

The inspectors arrived at the facility at approximately 1130 hours on the day of this inspection and waited for hatchery management staff to arrive. Ms. Trujillo made introductions, presented credentials and explained the purpose of the inspection to Steve Hopper, Production Manager, NMDG&F upon his arrival. The inspectors and Dan Arevalo, Hatchery Manager, NMDG&F toured the facility. Mr. Hopper was not on site during tour. An exit interview to discuss preliminary findings was conducted with Mr. Arevalo on site. The inspectors left the facility at approximately 1430 hours on the day of this inspection. Additional information was obtained from Mr. Hopper by telephone on July 17, 2012, NMDG&F web site at <https://www.redriver.hatchery@state.nm.us> and product label information from <http://www.appliedbiochemists.com/algae.htm?selApplication=plus.htm>.

Facility Description/Treatment Scheme

A hatchery has been on site since 1941. Disinfection of the hatchery occurred in 2004 following discovery of whirling disease. The hatchery produces about 1.7 million rainbow trout a year, including more than 500,000 catchable 9- and 10-inch fish for stocking statewide. Brown trout is no longer raised at the facility.

The flow-through hatchery has a hatch house, three sets of covered raceways ("A", "B" and "C") and a public exhibition pond or "show pond." Rainbow trout eggs are incubated in the hatch house, then upon reaching certain size are transferred first to "A", then "B", then "C" raceways. A fourth un-covered raceway ("D") exists at the facility, but is no longer used. Fish mortalities are composted with wood chip or mulch materials in a separate lined pit north of the raceways approximately 550 feet from Red River. Expansion of the raceways is not planned.

Water from on site warm springs and one cold water spring located in Questa, NM is gravity fed through the three raceways in series and the “show pond.” NMDG&F plans to replace water transmission line piping from the springs to the hatchery in the Fall of 2012. The 12-inch and 30-inch pipes will be replaced with a 45-inch pipe. The Permittee is also considering replacing a section pipe from the cold water spring to the hatchery.

From the “A” then “B” then “C” raceways, flow from a drain line discharges at Outfall 001. A diversion is located after the “B” raceway to provide water to the “show pond” that has a drain line that discharges at Outfall 002. Each raceway is equipped with a standpipe that is closed except when the raceway is cleaned. Raceways are cleaned three days a week on the current schedule of “B” on Tuesday, “C” on Wednesday and “A” on Thursday. Intake flows are not diverted from the raceways during cleaning (scraping), but the standpipe in the raceways is removed. Removing the standpipe allows the flow and waste solids to flow to two settling ponds operated in series (first upper, then lower pond). The outlet pipe from the lower pond discharges at Outfall 003. Flow measurements at each outfall are taken at the beginning of the work day at approximately 0800 hours, except on cleaning days when flow measurements are taken one hour after the drain plugs are pulled in the raceway being cleaned. On the day of this inspection, no cleaning occurred and discharge occurred at all three outfalls

The hatchery does not use non-FDA approved drugs, medications and/or other chemicals (DMC) in the hatchery or raceways according to the Permittee on-site representative. Ranch House Stock Salt (sodium chloride stress reducing agent), hydrogen peroxide (fungicide) and Betadyne (disinfection agent for troughs) are used. According to the Permittee on-site representative, three pounds of Cutrine Plus Granular, an algaecide which contains 3.7% elemental copper, was used in an attempt to control algal growth in the “Show Pond” prior to this inspection on June 4, 2012. The algaecide is Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) approved with a recommended dosage of 60 lbs per acre. Further treatment of the pond with the product was stopped because of fish mortality (five trout) in the “Show Pond.” According to Mr. Hopper, the trout fed on the granular product during application.

NMDG&F also has a fishing pond south of the Red River that is stocked by the hatchery. Surface water from Red River is diverted to the fishing pond then returns to Red River downstream. No chemicals are used in the fishing pond according to the Permittee on-site representative.

Section A – Permit Verification - Overall Rating of “U = Unsatisfactory”

Part III.D.1.a (Reporting Requirements, Planned Changes, Industrial Permits) of the permit states:

The permittee shall give notice to the Director as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required only when: (2) The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged.

There was no prior notification to USEPA of the different or additional pollutants discharged at Outfall 002 from the one time application of a copper algaecide in the “Show Pond.” No testing was conducted to determine if the addition of the copper algaecide significantly changed the nature of the pollutants discharged, but the application was toxic to fish in the pond that flows to Red River.

Following this inspection, USEPA Region 6 contacted NMDG&F by e-mail on June 20, 2012 requesting more information. The hatchery does not plan to use chemical products to control algal growth in the future according to the Permittee on-site representatives.

Section B - Recordkeeping and Reporting Evaluation – Overall Rating of “M = Marginal”

Permit Requirements for Recordkeeping and Reporting

Part III.C.4 (Standard Conditions, Record Contents) of the permit states:

Records of monitoring information shall include:

- a. The date, exact place, and time of sampling or measurements;*
- b. The individual(s) who performed the sampling or measurements;*
- c. The date(s) and time(s) analyses were performed;*
- d. The individual(s) who performed the analyses;*
- e. The analytical techniques or methods used; and*
- f. The results of such analyses.*

Part III.C.5.b of the permit states:

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 II.D.9 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

Sampling and analyses for SS and pH data recorded on handwritten bench sheets did not include the analytical method. For pH monitoring, the edition of Standard Method (SM) was recorded on bench sheets, but the specific method was not reference on the sheet. On-site written procedures reference for the pH method was incorrect (incorrectly refers to Method 4100). Effective June 18, 2012, the method's approval or revision date is listed in 40 CFR 136.3. Approved methods in 40 CFR 136.3 for Hydrogen ion (pH) testing include SM 4500–H+ B–2000 which was first published in SM 21st edition.

Sampling and analyses data did not include correct, correctly labeled, or consistently labeled times. Records of calibration time were not correct. For example:

- The “Exact Sample Time for TSS” recorded on the bench sheet was the time of sample collection for not only TSS, but all composite samples collected on that day, in this case at the end of the composite set at Outfall 001, according to the Permittee on-site representatives. “Exact Sample Time for Setttable Solids” and “Exact Sample Time for pH” were not correctly labeled as analysis times.
- The times recorded in “Exact Sample Time Settleable Solids” were not consistent--recorded start of analysis time on the March bench sheet and the end of analysis time on the April bench sheet.
- The same time was recorded for pH Tester calibration and sample collection. According to Permittee on-site representatives, the same person conducted sample collection at the outfalls and pH instrument calibration in the office; therefore, these times could not be the same. Mr. Hopper was the recorded sampler and analyst and also conducted the pH instrument calibration for the April 2012 monitoring. According to Mr. Hopper, the recorded pH instrument calibration time on the bench sheet was incorrect.

- The same time was recorded for sample collection and the start of analysis for SS monitoring. According to Permittee on-site representatives, the same person conducted sample collection at the outfalls and SS analysis in the office ; therefore, these times could not be the same. Also, the SS end of analysis time also appears incorrect.

Flow measurement record keeping was inconsistent with data reported on DMRs. For example:

- Units are incorrect on the on-site electronic spreadsheets with flow measurement record keeping for Max Daily Flow. Spreadsheets indicate the measurement was in million gallons per day (MGD). But, the units for maximum daily flow on electronic spreadsheets are actually gallons per day. It was noted that the conversion from gallons per day to MGD was correctly done for reporting on DMRs.
- Recorded flow measurements were over reported on the February 2012 DMR. On-site electronic spreadsheets with flow measurement record keeping for February 2012 indicated that the average flow was 7,943 gallons per minute (GPM) based on a calculation of the sum of the total GPM, in this case 222,406 GPM, divided by 28 days in the month. However, in February 2012, there were 29 days in the month not 28 days used in the calculation. The 11.44 MGD DAILY AVG reported on the DMR was incorrectly calculated. The February 2012 flow DAILY AVG was 11.04 MGD $[(222,406 \text{ GPM} / 29) \times 60 \text{ minutes/hour} \times 24 \text{ hrs/day} / 1,000,000 = 11.04 \text{ MGD}]$.

Accurate record keeping is important in order to verify that monitoring and laboratory procedures meet approved sample holding times and preservation requirements. Approved analytical methods, holding times and preservation requirements are discussed below. Record keeping will need to be corrected and/or otherwise indicated on past bench sheets. Incorrect information on DMRs also needs to be corrected.

Section C - Operations and Maintenance – Overall Rating of “U = Unsatisfactory” and Section G - Effluent Observations– Overall Rating of “M = Marginal”

Permit Requirements for Effluent Operations and Maintenance

Part I.A of the permit states, *“There shall be no discharge of floating solids or visible foam in other than trace amounts.”*

Part II.D of the permit states, *“...The permittee shall develop and implement a Best Management Practices (BMP) Plan...A copy of the plan shall be submitted to EPA and NMED within three (3) months of the effective date of the permit...”*

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) 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...

b. 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 Operation and Maintenance

Treatment units, in this case both the upper and lower settling ponds that discharge at Outfall 003, were shallow with accumulated solids on the day of this inspection. Vegetation, algae growth and solids were observed entering the riser pipes in the ponds. Some foam and solids were observed in the effluent at

Outfall 003. Increased capacity and/or solids removal (dredging) of the settling ponds appeared needed. Additional measures (e.g., pond construction, inlet screens and/or higher riser pipes) may also need to be considered to ensure proper retention time to allow settling and to prevent floating solids or visible foam from being discharged.

Flow measurement weirs and the open channel boxes above the weir were not kept clear of vegetation and algae growth. Maintenance of the constructed weirs is further discussed below.

A written BMP Plan had not been submitted to USEPA within three (3) months of the effective date of the permit, in this case due by May 1, 2012, or by the date of this inspection. Minimum practices required and implemented in the BMP plan are to include solids control, materials storage, structural maintenance, record keeping, and training. A draft written BMP plan was on site, but had not been finalized.

It did not appear that an adequate number of staff was provided to ensure compliance with the operation and maintenance and effluent limitation conditions of the permit. According to Permittee on-site representatives, the hatchery used to have eight, but now only has four staff for operations and maintenance.

Section E - Flow Measurement – Overall Rating of “U = Unsatisfactory”

Permit Requirements for Flow Measurement

Part I.A of the permit requires reporting of weir collection system total flow at a frequency of once/day and Footnote 3 states, “*Flow shall be recorded from each outfall by measuring flow over the weir. The flow from each outfall shall be totaled...*”

Part III.C.6 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

Primary flow measurement devices, in this case Trapezoidal (Cipolletti) weirs, did not appear properly installed and maintained. NMDG&F used information in Appendix D, Use of Weirs to Measure Flow, Fish Hatchery Management, Department of the Interior, U.S. Fish and Wildlife Service (USFWS) to construct weirs at outfalls according to Permittee on-site representative. Excerpts from the above-referenced USFWS manual states:

- *The weir crest must be exactly level and the weir faces exactly vertical, or the standard head-to-discharge calibrations will not apply.*
- *The weir crest, formed with a metal plate, must be leak-proof, sharp or square-edged, and no thicker than 1/8 inch.*
- *The channel above the weir must be straight, level, and clean to ensure smooth water flow.*
- *Sediment and debris should not be allowed to collect on or behind the weir.*

Weirs crests were square edge approximately 1.5 inches wide. The Permittee did not have documentation on-site that the standard head to discharge calculations from the USFWS manual would apply to the wider crest width. Isco Open Channel Flow Measurement Handbook, Sixth Edition, Chapter 3 Weirs, Figure 3-2 also show a sharp-crested weir width of approximately 1/8 inch. The above-referenced Isco Handbook states, *“To ensure accurate discharge measurement, there are certain general weir design requirements that apply to all types:…The weir should consist of a thin plate 1/8 to 1/4 inch thick…”* Isco Handbook states, *“The details of a particular installation may justify a deviation from these recommendations, based on sound engineering judgment.”*

Algal growth was observed on weir crests; and algal growth, vegetation and roots were observed in the constructed open channel box above the weirs on the day of this inspection. Cleaning appeared needed to help ensure smooth water flow.

Flow entering the weir at Outfalls 001, 002 and 003 was not well distributed across the channel and was not free of turbulence on the day of this inspection. Small whirlpools formed in the flow in the channel box above the weir at Outfall 003. Flow from the drain line pipe at Outfall 002 dropped into the channel box above the weir with substantial turbulence at the head measuring location (i.e., there did not appear to be sufficient length of open channel to allow smooth water flow). Backflow at the contractions and substantial turbulence was observed in the channel above the weir at Outfall 001. Water height overtopped weir end contractions (i.e., water level was higher than opening or notch) at Outfall 001. The flow measurement device at Outfall 001 did not appear adequate to handle expected range of flow rates and/or to allow smooth water flow.

The drain line pipe from the upper and lower ponds was leaking where it entered the constructed channel at Outfall 003 on the day of this inspection. A portion of the flow did not enter the weir to be measured. The flow around the constructed channel could affect the integrity of the bank at the base of the constructed box and cause settling.

Calibration checks, in this case horizontal and vertical surface levels or checks for settling, including the measuring scales, had not been conducted at Outfalls 001, 002 and 003 since installation according to the Permittee on-site representative.

Accurate flow measurement data is important, because the data is used in Aluminum loading calculations and to determine composite sample volumes. If a change to the type of flow measurement device is needed because of site conditions at the outfalls, then the Permittee would need to contact the USEPA.

Section D - Self-Monitoring – Overall Rating of “U = Unsatisfactory” and Section F – Laboratory – Overall Rating of “U = Unsatisfactory”

Permit Requirements for Self-Monitoring and Laboratory

Part I.A of the permit requires a sample type of composite grab for analytical monitoring. Footnote 2 of Part I.A states:

During periods when Outfall 003 is discharging, obtain a grab aliquot and record the flow from each outfall. When all three outfalls have been sampled and flows recorded, make a composite sample by mixing each individual outfall’s aliquot in proportion to the flow from each outfall to the sum of the total flow…

Part III.B.3 (Standard Conditions, Proper Operation and Maintenance) of the permit states, *“Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures.”*

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

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.

c. An adequate analytical quality control program, including the analyses of sufficient standards, spikes and duplicate samples to insure the accuracy of all required analytical results shall be maintained by the permittee or designated commercial laboratory.

Findings for Self-Monitoring and Laboratory

Settleable Solids (SS)

Proper preservation techniques were not documented for SS monitoring. Reviewed bench sheets did not have accurate analysis time information to confirm that SS samples were analyzed within 15 minutes of collection; and therefore, did not require cooling preservation. According to a Permittee on-site representative, samples collected for SS are not cooled before analysis. Table II—Required Containers, Preservation Techniques, and Holding Times in 40 CFR 136.3 requires SS samples to be cooled to 6 deg C and preservation Footnote 18 of Table II states, “*The preservation temperature does not apply to samples that are analyzed immediately (less than 15 minutes).*”

USEPA approved analytical procedures in 40 CFR 136.3 were not used for SS analysis. According to a Permittee on-site representative, the sample was allowed to settle for 1 hour and no agitation was conducted. Agitation was not described in the on-site written procedures or on reviewed bench sheets. Approved method for Solids Residue—Settleable testing, Standard Method (SM) 2540 F, using a volumetric or Imhoff cone technique states, “*Fill an Imhoff cone to the 1-L mark with a well-mixed sample. Settle for 45 min, gently agitate sample near the sides of the cone with a rod or by spinning, settle 15 min longer, and record volume of settleable solids in the cone as millileters per liter.*” Proper approval for alternative analytical procedures was not obtained.

pH

Sample holding times did not conform to 40 CFR 136.3 for pH monitoring conducted on March 20, 2012. Table II—Required Containers, Preservation Techniques, and Holding Times in 40 CFR 136.3 requires pH samples to be analyzed within 15 minutes. Footnote 4 of 40 CFR 136.3 Table II regarding maximum holding times states, “*Samples should be analyzed as soon as possible after collection. The times listed are the maximum times that samples may be held before the start of analysis and still be considered valid....For a set of grab samples composited in the field or laboratory, the holding time begins at the time of collection of the last grab sample in the set.*” On-site bench sheets indicate that the last grab sample in the set collected at 12:00 was analyzed for pH at 12:25 on March 20, 2012.

Permittee on-site representatives described different techniques for when pH Tester standardization using three buffers was conducted prior to sample analysis. Calibration and standardization prior to sample collection, as described on on-site written procedures, may be needed to ensure that maximum holding times are not exceeded and to maintain sample stability. Footnote 4 of 40 CFR 136.3 Table II states, “*Some samples may not be stable for the maximum time period given in the table. A permittee or monitoring laboratory is obligated to hold the sample for a shorter time if it knows that a shorter time is*

necessary to maintain sample stability.” SM 20th and 21st Edition Part 1060C (Sample Storage and Preservation) states, “pH may change significantly in a matter of minutes.”

The pH Tester may not be stored properly to prevent storage solution from draining out of the protective cap. Dried residue that appeared to be from the storage solution existed on the cap. Hanna Instruments HI 98127/98128 Waterproof pH Testers with replaceable Electrode maintenance instructions states, “When not in use, rinse the electrode with water to minimize contamination and store it with a few drops of HI 70300 storage solution in the protective cap....If the electrode has been left dry, soak in storage solution for at least one hour to reactivate it.”

Written Procedures

Written procedures for taking water samples provided for review during this inspection did not include essential quality control elements, correct references to approved methods or copies of methods, procedures to ensure all sampling equipment was cleaned before use, or procedures to ensure proper preservation techniques. For example:

Essential QC Elements: Effective June 18, 2012, USEPA added new quality assurance and quality control language at 40 CFR 136.7 to specify twelve essential quality control elements that must be in the laboratory’s documented quality system unless a written rationale is provided to explain why these quality control elements are inappropriate for a specific analytical method or application.

Methods: Copies of analytical methods conducted on site (pH and SS) were not on site or readily available to the Permittee on-site representative during this inspection.

Equipment Cleaning: According to a Permittee on-site representative, an approximate 2 gallon container was used to collect composite samples. Effluent from Outfall 003 was used to rinse the container before sample collection. SM 20th and 21st Edition Part 1060 A (Collection and Preservation of Samples, Introduction, General Requirements) states, “Fill sample containers without prerinsing with sample... prerinsing...sometimes can bias results high when certain components adhere to the sides of the container.”

Sample Preservation: Table II of 40 CFR 136.3 requires TSS samples to be cooled to 6 deg C. Preservation Footnote 2 of Table II states, “...preserve each grab sample within 15 minutes of collection...For a composite sample to be split into separate aliquots for preservation and/or analysis, maintain the sample @ 6 °C, unless specified otherwise in this Table II or in the method(s), until collection, splitting, and preservation is completed...” Neither written procedures nor sample collection procedures described by Permittee on site representatives verified that cooling of TSS samples occurred within 15 minutes of collection. It was noted that reviewed chain of custody forms did document that samples are cooled when transported and shipped to the contract laboratory.

Chain of custody forms were not completed with signatures, time and dates to document persons involved in the chain of possession of samples being transported and shipped to the contract laboratory.

NMED/SWQB
Official Photograph Log
Photo # 1

Photographer: Erin S. Trujillo	Date: 07/09/212	Time: 1236 hours
City/County: Near Questa / Taos County	State: New Mexico	
Location: NMDG&F / Red River State Trout Hatchery / NM0030147		
Subject: "Show Pond" with algal growth. Algal growth can be an indicator of increased nutrients.		



**NMED/SWQB
Official Photograph Log
Photo # 2**

Photographer: Erin S. Trujillo	Date: 07/09/212	Time: 1241 hours
City/County: Near Questa / Taos County	State: New Mexico	
Location: NMDG&F / Red River State Trout Hatchery / NM0030147		
Subject: Flow from upper settling pond entering open inlet to lower settling pond. No raceway cleaning was conducted on the day of this inspection.		



NMED/SWQB
Official Photograph Log
Photo # 3

Photographer: Erin S. Trujillo	Date: 07/09/212	Time: 1244 hours
City/County: Near Questa / Taos County	State: New Mexico	
Location: NMDG&F / Red River State Trout Hatchery / NM0030147		
Subject: Shallow water, accumulated sediments, algal growth in lower settling pond.		



NMED/SWQB
Official Photograph Log
Photo # 4

Photographer: Erin S. Trujillo	Date: 07/09/212	Time: 1245 hours
City/County: Near Questa / Taos County	State: New Mexico	
Location: NMDG&F / Red River State Trout Hatchery / NM0030147		
Subject: Arrow points to flow in lower settling pond entering open inlet to Outfall 003. Vegetation and solids in the shallow pond was observed to enter inlet on day of this inspection.		



NMED/SWQB
Official Photograph Log
Photo # 5

Photographer: Erin S. Trujillo	Date: 07/09/212	Time: 1252 hours
City/County: Near Questa / Taos County	State: New Mexico	
Location: NMDG&F / Red River State Trout Hatchery / NM0030147		
Subject: Flow at leak where drain line pipe from settling ponds enters constructed channel box at Outfall 003. Flow that does not enter box would not measured by weir device.		



NMED/SWQB
Official Photograph Log
Photo # 6

Photographer: Erin S. Trujillo	Date: 07/09/212	Time: 1253 hours
City/County: Near Questa / Taos County	State: New Mexico	
Location: NMDG&F / Red River State Trout Hatchery / NM0030147		
Subject: Roots, algal growth and floating solids in constructed channel box ahead of weir at Outfall 003.		



NMED/SWQB
Official Photograph Log
Photo # 7

Photographer: Erin S. Trujillo	Date: 07/09/212	Time: 1255hours
City/County: Near Questa / Taos County	State: New Mexico	
Location: NMDG&F / Red River State Trout Hatchery / NM0030147		
Subject: Algal growth and foam in channel box at Outfall 003.		



NMED/SWQB
Official Photograph Log
Photo # 8

Photographer: Erin S. Trujillo	Date: 07/09/2012	Time: 1259 hours
City/County: Near Questa / Taos County	State: New Mexico	
Location: NMDG&F / Red River State Trout Hatchery / NM0030147		
Subject: Algal growth at crest of weir at Outfall 003.		



NMED/SWQB
Official Photograph Log
Photo # 9

Photographer: Erin S. Trujillo	Date: 07/09/2012	Time: 1303 hours
City/County: Near Questa / Taos County	State: New Mexico	
Location: NMDG&F / Red River State Trout Hatchery / NM0030147		
Subject: Flow from drain line pipe from "Show Pond" drops into channel ahead of weir at Outfall 002. Substantial turbulence existed in the approach of the open channel at the head measurement location and before weir.		



NMED/SWQB
Official Photograph Log
Photo # 10

Photographer: Erin S. Trujillo	Date: 07/09/212	Time: 1309 hours
City/County: Near Questa / Taos County	State: New Mexico	
Location: NMDG&F / Red River State Trout Hatchery / NM0030147		
Subject: Vegetation, roots and turbulence in channel ahead of weir at Outfall 001. Although grate makes observation difficult, the flow at the weir end contractions was very turbulent and overflowed the weir opening notch.		



NMED/SWQB
Official Photograph Log
Photo # 11

Photographer: Erin S. Trujillo	Date: 07/09/212	Time: 1341 hours
City/County: Near Questa / Taos County	State: New Mexico	
Location: NMDG&F / Red River State Trout Hatchery / NM0030147		
Subject: Dried residue on protective cover of pH tester on day of inspection.		

