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*Surface Water Quality Bureau*

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DAVE MARTIN  
Secretary

RAJ SOLOMON, P.E.  
Deputy Secretary

*Certified Mail - Return Receipt Requested*

April 6, 2011

Colonel Stephen A. Clark, Commander  
Cannon Air Force Base New Mexico  
100 S DL Ingram Blvd., Suite 1000  
Cannon AFB, New Mexico 88103-5214

**RE: Minor Non-Municipal, SIC 4952, NPDES Compliance Evaluation Inspection, Cannon Air Force Base, Waste Water Treatment Plant, New Mexico, NM0030236, March 1, 2011**

Dear Colonel Clark,

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 checklist and 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  
Region VI Enforcement Branch (6EN-WM)  
1445 Ross Avenue, Suite 1200  
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 Mr. John Redman and staff from National O&M, Inc. during the 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: 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  
Frank Fiore, NMED Environmental Health Division (NMED District IV) by e-mail  
John Rebman, Water Quality Program Manager, Environmental, CAFB 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	2	3	6	11	12	1	1	0	3	0	1	17	18	C	19	S	20	4
Remarks																												
U S A I R F O R C E B A S E W W T P																												
Inspection Work Days						Facility Evaluation Rating						BI		QA		Reserved												
67						70						71		72		73 74 75 76 77 78 79 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)		Entry Time /Date		Permit Effective Date	
Cannon Air Force Base Waste Water Treatment Plant (WWTP), 400 North Perimeter Road, Cannon AFB NM 88103. From US 60/84 (west of Clovis, NM), take CAFB exit, turn south and follow signs to Visitor Entrance Station. Curry County.		0830 hours / 03/01/2011		April 1, 2006	
		Exit Time/Date		Permit Expiration Date	
		1330 hours / 03/01/2011		March 31, 2011	
Name(s) of On-Site Representative(s)/Title(s)/Phone and Fax Number(s)				Other Facility Data	
John Rebman, Water Quality Program Manager, Environmental, CAFB / 575-784-1099, fax 784-1093 Jesse Frogge, Level IV Operator & Contract Manager, National O&M, Inc. / 575-784-3990 Brenda Schiller, Level IV Operator & Laboratory Analysis, National O&M, Inc. / 575-784-3990 Jimmy Martinez, Level III Operator & Laboratory Analysis, National O&M, Inc. / 575-784-3990				WWTP Entrance Latitude N. 34.391373° Longitude W. -103.304158°	
Name, Address of Responsible Official/Title/Phone and Fax Number				SIC 4952	
Colonel Stephen A. Clark, Cannon Air Force Base New Mexico, 100 S DL Ingram Blvd., Suite 1000, Cannon AFB, New Mexico 88103-5214 / Commander / 575-784-2727				Outfall 001 (Playa Lake) Outfall 002 (Golf Course Pond)	
				Contacted Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	

#### Section C: Areas Evaluated During Inspection

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

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

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

- SEE ATTACHED CHECKLIST REPORT WITH FURTHER EXPLANATIONS.
- A COMPLIANCE EVALUATION INSPECTION REPORT FOR INDUSTRIAL STORMWATER (NPDES TRACKING NO. #NMMU001720) WAS SUBMITTED UNDER A SEPARATE EPA 3560 FORM.

Name(s) and Signature(s) of Inspector(s) <b>Erin S. Trujillo /s/Erin S. Trujillo</b>	Agency/Office/Telephone/Fax <b>NMED/SWQB/505-827-0418</b>	Date <b>04/06/2011</b>
Signature of Management QA Reviewer <b>Richard E. Powell /s/Richard E. Powell</b>	Agency/Office/Phone and Fax Numbers <b>NMED/SWQB/505-827-2798</b>	Date <b>04/06/2011</b>

**SECTION A - PERMIT VERIFICATION**

PERMIT SATISFACTORILY ADDRESSES OBSERVATIONS  S  M  U  NA (FURTHER EXPLANATION ATTACHED No)  
 DETAILS: **CAFB's application was received by USEPA on 10/01/2010. Mailing/street address is correct address for Permittee's main contact. Future design flow increases are in application.**

- 1. CORRECT NAME AND MAILING ADDRESS OF PERMITTEE **See above comments.**  Y  N  NA
- 2. NOTIFICATION GIVEN TO EPA/STATE OF NEW DIFFERENT OR INCREASED DISCHARGES **See above comments.**  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 submitted DMRs since previous inspection on 12/10/2008. Reviewed record keeping for June 2010.**

- 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) DAATES, TIMES(S) AND LOCATIONS(S) OF SAMPLING **TRC bench sheets did not refer to 001 or Playa effluent**  Y  N  NA
  - b) NAME OF INDIVIDUAL PERFORMING SAMPLING  Y  N  NA
  - c) ANALYTICAL METHODS AND TECHNIQUES. **TRC bench sheets did not refer to Standard Method.**  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. **Not all calibration records retained.**  S  M  U  NA
- 4. PLANT RECORDS INCLUDE SCHEDULES, DATES OF EQUIPMENT MAINTENANCE AND REPAIR. **Maintain It-2 Program**  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.  S  M  U  NA (FURTHER EXPLANATION ATTACHED No)  
 DETAILS:

- 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. **Maintain It-2 Program**  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 No)  
 DETAILS:

1. PRIMARY FLOW MEASUREMENT DEVICE PROPERLY INSTALLED AND MAINTAINED.  Y  N  NA  
 TYPE OF DEVICE **9-inch Parshall flume (Outfall 001) and Fischer & Porter Mag Flow Meter (Outfall 002)**

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. **Flume (1/Qtr); Meter (N/A unless converter replaced)**  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. **Meter Range 0 - 1000 GPM**  Y  N  NA

**SECTION F - LABORATORY**

PERMITTEE LABORATORY PROCEDURES MEET PERMIT REQUIREMENTS.  S  M  U  NA (FURTHER EXPLANATION ATTACHED Yes)  
 DETAILS: **WET DMRs for TX1S and TX2S submitted 03/21/2011. On-site lab conducts pH, TRC, E.coli, FC, TSS, & BOD5. Commercial laboratories not inspected. Order of pH buffers did not match approved calibration instructions.**

1. EPA APPROVED ANALYTICAL PROCEDURES USED (40 CFR 136.3 FOR LIQUIDS, 503.8(b) FOR SLUDGES) **See comments above.**  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.  S  M  U  NA

4. QUALITY CONTROL PROCEDURES ADEQUATE.  S  M  U  NA

5. DUPLICATE SAMPLES ARE ANALYZED. TSS and BOD5 = 100 % OF THE TIME. **But, pH and TRC not documented.**  Y  N  NA

6. SPIKED SAMPLES ARE ANALYZED. Varies % OF THE TIME. **pH = 1/wk, BOD/TSS/Bacteria = 1/mo**  Y  N  NA

7. COMMERCIAL LABORATORY USED.  Y  N  NA

LAB NAME **1) Ask Labs, 806-353-4425** **2) Bio-Aquatic Testing, Inc., 972-242-7750**  
 LAB ADDRESS **5935 Glenoak Lane, Amarillo, TX 79109** **2501 Mayes Road, Ste 100, Carrollton, TX 75006**  
 PARAMETERS PERFORMED **Sludge (metals, PCBs, %Solids)** **WET**

**SECTION G - EFFLUENT/RECEIVING WATERS OBSERVATIONS.**

S  M  U  NA (FURTHER EXPLANATION ATTACHED No).

OUTFALL NO.	OIL SHEEN	GREASE	TURBIDITY	VISIBLE FOAM	FLOAT SOL.	COLOR	OTHER
001	None						
002	No Discharge						

RECEIVING WATER OBSERVATIONS: **There have been no reported exceedance of effluent limitations since the last inspection.**

**SECTION H - SLUDGE HANDLING/DISPOSAL**

SLUDGE DISPOSAL MEETS PERMIT REQUIREMENTS.  S  M  U  NA (FURTHER EXPLANATION ATTACHED Yes).

DETAILS: **Reviewed sewage sludge record keeping associated with certification by facility operator dated 10/21/2009.**

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: Federal Facility (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

**Cannon Air Force Base – Waste Water Treatment Plant**  
**NPDES Permit No. NM0030236**  
**Compliance Evaluation Inspection**  
**March 1, 2011**

**Further Explanations**

**Introduction**

On March 1, 2011, Erin Trujillo of the New Mexico Environment Department (NMED), Surface Water Quality Bureau (SWQB) conducted a Compliance Evaluation Inspection (CEI) at the Cannon Air Force Base (CAFB) waste water treatment plant (WWTP) approximately 5 miles west of Clovis in Curry County, New Mexico. The CAFB WWTP has a design flow of 0.75 million gallons per day (MGD) and 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 NM0030236, which regulates discharge of treated effluent from outfall 001 to North Playa Lake and outfall 002 to Golf Course Pond in the Southern High Plains River Basin *State of New Mexico Standards for Interstate and Intrastate Surface Waters, 20.6.4 New Mexico Administrative Code (NMAC)*.

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. A CEI report for industrial stormwater (NPDES Tracking No. NMU001720) for the facility was submitted under a separate EPA 3560 form.

The inspector arrived at the CAFB WWTP at approximately 0830 hours. The inspector made introductions, explained the purpose of the inspection and presented credentials to Mr. Jesse Frogge, Level IV Operator & Contract Manager and Ms. Brenda Schiller, Level IV Operator & Laboratory Analysis, National O&M, Inc.; and upon his arrival, Mr. John Rebman, Water Quality Program Manager, Environmental, CAFB. The inspector, Mr. Frogge, Ms. Schiller and Mr. Rebman toured the facility. Following the inspection, an exit interview to discuss preliminary findings was conducted with Mr. Rebman. The inspector left the facility at approximately 1330 hours on March 1, 2011.

This inspection report is based on information provided by the Permittee's representatives, observations made by the NMED inspectors, and records and reports kept by the Permittee and/or NMED.

**Treatment Scheme**

CAFB WWTP serves a population of approximately 6,200, but the number fluctuates due to personnel changes at the base. The population is expected to grow with a new mission that the base has accepted. The WWTP also receives wastewater from eating establishments (restaurants, cafeterias), one commissary, and industrial wastewater from various operations conducted at the base such as some aircraft washing and floor cleaning maintenance. CAFB completed a collection system inflow and infiltration study in 2007. Programmed collection system projects at the base included repairs to sanitary sewer manholes; abandoning inactive lines, replacing cleanout pipes with caps, replacing cleanout caps, and repairing and replacing degraded sanitary sewer lines.

The treatment plant is a sequencing batch reactor (SBR) treatment system with chlorine disinfection and dechlorination. Wastewater first enters the headworks consisting of an Auger Monster automatic screening system and bypass manual bar screen, Parshall flume, and grit and grease collection system with traveling bridge, grit pump, grit classifier with auger, grease blade, and grease auger, and influent pump station. Screenings removed from the headworks are allowed to dry in a concrete lined bed before disposal at the City of Clovis Solid Waste Facility landfill. Diesel back-up generators are available on-site to run the headworks and main plant in the event of a power outage.

CAFB has constructed an 8-million gallon storage basin for raw wastewater. Use of the raw wastewater basin is intended for unsuitable material that may enter the treatment system (e.g., firefighting foam) or in the event the plant needs to be shut down for repairs or maintenance. As discussed in previous CEI reports, CAFB uses a surfactant called Aqueous Film Forming Foam (AFFF) for aircraft maintenance activities and this agent has entered the plant causing foaming in the chlorine basin. CAFB has reduced the frequency of AFFF foaming, which had been a common problem in past years, by capping drains that lead to the sanitary sewer system. According to on-site permittee representatives, there has been no recent foaming problems since capping drains. In January of 2011, the raw wastewater basin was used to temporarily store flow from the SBR after a pipe froze. The partially treated flow from the raw wastewater basin was being returned to the SBR through the original headworks on the day of this inspection. The original headworks consists of a mechanical (traveling) bar screen with automatic timer and floats, bypass channel with back up manual screen, influent Parshall flume and influent pump station.

After the headworks, influent pumps in the wet wells lift wastewater into the SBR basins. Secondary treatment system consists of two approximately 400,000 gallon basins (SBR#1 and SBR#2). Each basin operates with a 144 minute filling and 144 minute processing cycle (static fill, mixed fill, react fill, react, settle, decant, sludge waste and idle time). A Programmable Logic Controller (PLC) monitors various treatment indicators within the plant and controls the SBR phases based on information gathered from sensors and programmed timers. The facility operators can also manually override the PLC when necessary. SBR basins are aerated with coarse bubble diffused air system supplied by three blowers and floating downdraft mixer pump. The SBR basins are decanted below the water surface to limit floatables from entering the disinfection and de-chlorination chamber.

An aerobic sludge digester, in common wall arrangement with the SBR basins, has coarse bubble aeration supplied by two blowers. Air supply for the aerobic digester is from the plant's two positive displacement blowers. Waste Activated Sludge (WAS) is withdrawn from the bottom of the digester by gravity or submersible sewage pump if necessary and sent to sludge drying beds.

Disinfection occurs in a chlorine contact basin where sodium hypochlorite solution is added at the head of the basin followed by mechanical mixing. The basin has baffles that create a serpentine flow through three narrow channels. Solids and grease that escape the SBR is manually removed by a slotted pipe skimmer. Dechlorination is done with sodium bisulfite solution in the last chamber of the chlorine contact chamber.

Treated water from the chlorine chamber is batch discharged to an on-site playa lake Outfall 001 (North Playa Lake) and intermittently piped to a 190,000 gallon storage tank then discharged to an on-site partially synthetically-lined golf course lagoon Outfall 002 (Golf Course Pond). Treated wastewater and stormwater from both the North Playa Lake and Golf Course Pond is used for irrigation at CAFB.

Based on verbal information from on-site permittee representatives, the facility defines a day based on flow sampling from 0600 hours to 0600 hours for purposes of representative samples for BOD and TSS. For example, the facility's defined day for May 31 starts on May 31 at 0600 hours and ends on June 1 at 0600 hours. BOD and TSS samples taken between June 1 at 0600 hours and June 2 at 0600 hours would be recorded as June 1 data. When samples were taken before 0600 hours for pH and TRC for Outfall 001 (Playa) effluent, the facility records indicate the actual day of sample collection.

## **Solids Management**

Sludge removed from the aerobic digester is placed into on-site drying beds for 120-180 days. Ten beds are available for storage and include center drains that collect liquid for return to the plant headworks. Sludge is no longer disposed at a landfill. Sewage sludge is stockpiled after being removed from the drying beds and further treated to reduce pathogens and to meet vector reduction requirements in 40 CFR 503 then land applied at the WWTP grounds. The facility is also considering land applying sewage sludge to other areas of the base.

Based on sewage sludge certifications and record keeping at the facility, CAFB has selected § 503.32(a) Alternative 5, in this case the density of Coliform in the sewage sludge shall be less than 100 Most Probable Number per gram of total solids (dry weight basis), to meet Class A pathogen requirements. This alternative also requires that sewage sludge that is used or disposed shall be treated in one of the Processes to Further Reduce Pathogens (PFRP) described in Appendix B of the 40 CFR 503. CAFB has selected PFRP composting (Option 1), specifically in this case using the static aerated pile composting method--the temperature of the sewage sludge is maintained at 55 degrees Celsius or higher for three days. The facility does not add a bulking agent to the sewage sludge for aeration. CAFB has also selected a method for vector attraction reduction, in this case § 503.33(b)(1) the mass of volatile solids in the sewage sludge shall be reduced by a minimum of 38 percent.

## **Future Plant Changes and Expansion**

CAFB has constructed an 8-million gallon storage basin for treated effluent which is scheduled to be operational in the Summer of 2011. When finished, water from the chlorine contact basin could be routed by gravity flow to the North Playa Lake or could be diverted by a diaphragm pump to the effluent storage basin. Treated wastewater from the effluent storage basin will be discharged to the Golf Course Pond utilizing the existing pipeline from the 190,000 gallon storage tank. This storage tank will no longer be used except during contingencies. Diversion valves will be installed on the discharge line to the effluent storage basin so that the flow can also be directed back to the headworks of the WWTP, if the water is not acceptable for discharge after treatment or to the North Playa Lake. CAFB plans to expand the existing WWTP from 0.75 to 1 MGD facility which includes construction of a new 250,000 gallon aerobic digester to support the SBRs.

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

### **Permit Requirements** for Recordkeeping and Reporting

Part III.C.3 (Standard Conditions, Retention of Records) of the permit states:

*The permittee shall retain records of all monitoring information, including all calibration and maintenance records...*

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.*

**Findings** for Recordkeeping and Reporting

Information on calibration for the drying oven and incubator was located on the equipment. But, record keeping or other logs of these periodic calibrations were not retained according to the on-site permittee representative.

Bench sheets for TRC compliance monitoring refer to the analytical method used, in this case HACH Method #10014 DPD Method. The bench sheet states that this method is accepted for reporting wastewater analysis, but the bench sheets did not refer to the specific method and edition approved in 40 CFR 136.3.

**Section F – Laboratory – Overall Rating of “M = Marginal”**

**Permit Requirements** for Laboratory

Part III.B.3.a (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.a and c (Standard Conditions, Monitoring Procedures) of the permit states:

*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.*

*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 Laboratory

Calibration to standardize the pH instrument before monitoring using three buffers was not conducted in the order described in USEPA approved methods. Approved analytical methods for pH, in this case 4500-H+B Electrometric Method, Standard Methods, 20<sup>th</sup> Edition--in describing instrument calibration procedures for initial, second and third buffers--states, “*third buffer below pH 10, approximately 3 pH units different from the second.*” The facility used a buffer of 10 for the third buffer. On-site representatives stated that the buffer order used in calibrations before monitoring would be changed to meet procedures in the approved method.

It was noted that the facility’s analytical balance is calibrated, but not with National Institute of Standards and Technology weights. Monitoring for TSS using approved Standard Methods requires an analytical balance, capable of weighing to 0.1 mg. For a laboratory control standard, definitions in Standard Methods 20<sup>th</sup> Edition, Section 1010 C. Glossary states, “*...use National Institute of Standards and Technology (NIST) Standard Reference Materials when they are available.*” EPA’s NPDES Inspection manual states, “*Sources of standards are documented and where possible traceable to a national standard [e.g., National Institute of Standards and Technology (NIST)].*”

Duplicate samples (two samples taken at the same time from one location) was not documented for pH and TRC monitoring. EPA’s NPDES Inspection Manual states, “*10 percent of the samples should be duplicated.*”

## **Section H – Sludge Handling – Overall Rating of “M = Marginal”**

### **Permit Requirements** for Sewage Sludge

Part IV, Element 1 (Land Application), Section I.C (Monitoring Requirements) of the permit states, “*Representative samples of sewage sludge shall be collected and analyzed in accordance with the methods referenced in 40 CFR 503.8(b).*” Approved methods in 40 CFR § 503.8(b) Sampling and Analysis include:

*Fecal coliform. Part 9221 E. or Part 9222 D., “Standard Methods for the Examination of Water and Wastewater”, 18th Edition, 1992, American Public Health Association, 1015 15th Street, NW., Washington, DC 20005.*

*Total, fixed, and volatile solids. Part 2540 G., “Standard Methods for the Examination of Water and Wastewater”, 18th Edition, 1992, American Public Health Association, 1015 15th Street, NW., Washington, DC 20005.*

Recordkeeping requirements in Part IV, Element 1 (Land Application), Section III, 5, Page 8 of Part IV) of the permit include:

*(c) A description of how the Class A pathogen requirements are met.*

*(d) A description of how one of the vector attraction reduction requirements are met.*

### **Findings** for Sewage Sludge Handling

Based on the test method listed for Fecal Coliform analysis in the facility’s contract laboratory report dated October 1, 2009, the results would not document that sewage sludge met Class A pathogen reduction requirements. The method cited on the report (Method 9222D Standard Total Coliform-Membrane Filter Procedure, Standard Methods 18<sup>th</sup> Edition is listed as approved in 40 CFR § 503.8(b). However, USEPA Environmental Regulations and Technology, Control of Pathogens and Vector Attraction in Sewage Sludge guidance states, “*The membrane filter method is not allowed for Class A because, at the low fecal coliform densities expected, the filter would have too high a loading of sewage sludge solids to permit a reliable count of the number of fecal Coliform colonies.*”

Sewage sludge records, in this case, the facility’s Drying Bed Data logs and Total Solids bench sheets, did not document the analytical method used for total and volatile solids.

Calculations and conversion methods used by the facility to demonstrate required sewage sludge monitoring frequency were not documented in the facility’s written description.

Record keeping of compost data during the active phase included total solids monitoring ranged between 65 to 93%, but did not include oxygen content monitoring. USEPA Environmental Regulations and Technology, Control of Pathogens and Vector Attraction in Sewage Sludge guidance (see Chapter 7, Page 52) states, “*...overly dried compost can cause both odor problems and vector attraction if moisture is reintroduced into the material and microbial activity resumes. It is therefore recommended that the composting process be maintained at moisture levels between 45-60% (40-55% total solids).*” Also, Appendix J of the above-referenced guidance states, “*For optimum aerobic biological activity, air within the pile should have oxygen levels of between 5% and 15%*” and “*Operational parameters such as moisture, oxygen...should be monitored at a frequency necessary to assure that the compost operation is operating within acceptable ranges.*”