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## Central Valley Regional Water Quality Control Board

10 June 2013

Vern Millard  
Correctional Plant Manager II  
Deuel Vocational Institution  
P.O. Box 400  
Tracy, CA. 95378-0400

### **COMPLIANCE EVALUATION INSPECTION AND NOTICE OF VIOLATION, CALIFORNIA DEPARTMENT OF CORRECTIONS, DEUEL VOCATIONAL INSTITUTION, SAN JOAQUIN COUNTY**

The discharge of wastewater by the California Department of Corrections (Discharger) from the Deuel Vocational Institution (Facility) is regulated by Waste Discharge Requirements (WDRs) Order R5-2008-0164 (NPDES CA0078093) and Cease and Desist Order (CDO) R5-2008-0165-01. Central Valley Water Board staff conducted an inspection of the Deuel Vocational Institution on 16 May 2013 to determine compliance with WDRs R5-2008-0164 and CDO R5-2008-0165-01. The enclosed inspection report discusses the following violation and areas of concern:

#### **Violation**

Both the influent and effluent composite samplers were refrigerated. However, the sampler refrigerators did not contain a calibrated internal thermometer to verify proper sample preservation temperature. In order to verify proper preservation temperature during sample collection, a calibrated thermometer should be placed inside the sample refrigerators and the temperature at the time of sample collection should be recorded on the sample collection documentation.

#### **Area of Concern**

During the inspection, the Discharger was unable to provide Board staff with the San Joaquin Valley Air Pollution Control District permit required to operate the auxiliary power generator. Standard Provisions I.F.2 requires the Discharger to give access to Regional Board staff, at reasonable times, to review any records that are kept under conditions of this Order.

In addition, Board staff has the following comment in regards to the receiving water sampling locations:

#### **Comment**

It was pointed out by the Discharger that several irrigation discharge pipes, owned and operated by nearby farmers, are located throughout the Deuel Drain. As a result, upstream

and downstream receiving water monitoring results may be influenced by discharges from these irrigation pipes, which the Discharger has no control over.

By **12 July 2013**, please provide a response indicating the actions that have been implemented, or will be implemented, to address the violation and areas of concern cited above and to prevent future similar violations.

If you have any questions, please contact Mohammad Farhad at (916) 464-1181 or [mfarhad@waterboards.ca.gov](mailto:mfarhad@waterboards.ca.gov).

NICHOLE MORGAN  
Senior Water Resources Control Engineer  
NPDES Compliance and Enforcement Unit

Enclosure: Compliance Evaluation Inspection Report

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
CENTRAL VALLEY REGION**

**INSPECTION REPORT**

**DISCHARGER:** California Department of Correction and Rehabilitation

**LOCATION & COUNTY:** Deuel Vocational Institution (Facility)  
23500 Kasson Road  
Tracy, CA 95376

**CONTACT(S):** Vern Millard  
Correctional Plant Manager II  
Deuel Vocational Institution  
P.O. Box 400  
Tracy, CA. 95378-0400

**INSPECTION DATE:** 16 May 2013

**INSPECTED BY:** Mohammad Farhad, WRC Engineer, CVRWQCB

**ACCOMPANIED BY:** Rex Cherry

**WEATHER CONDITIONS:** 72 °F Partially Cloudy and Recently Precipitated

**BACKGROUND**

The California Department of Correction and Rehabilitation (Discharger) oversees the Deuel Vocational Institution (Facility) located in San Joaquin County. The Discharger is subject to Waste Discharge Requirements (WDRs) Order No. R5-2008-0164 (NPDES Permit No. CA0078093) and Cease and Desist Order (CDO) R5-2008-0165-01. The Facility serves a prison population of approximately 6,000 inmates. The Facility's treatment design capacity is 0.62 million gallons per day (MGD).

The Facility's treatment processes include headworks with coarse screening, grit removal and fine screening, alkalinity addition, extended aeration with anoxic zone for nitrate removal, membrane bioreactor (MBR) process tanks for solids separation/filtration, ultraviolet (UV) disinfection, and effluent cooling towers. The old treatment plant is no longer in use with the exception of two facultative storage lagoons which can be used for emergency storage.

The Facility's wastewater is discharged from the Facility at Discharge Point No. 001 to Deuel Drain, a water of the United States, within the Sacramento San Joaquin Delta. The Discharger also discharges storm water from the prison at Discharge Point No. 003; and commingled storm water and contaminated groundwater from discharge point No. 004 to Deuel Drain, which is also covered by the permit. The Facility is designed to provide tertiary wastewater treatment.

On 16 May 2013, Regional Board staff conducted a compliance evaluation inspection to determine compliance with the WDRs R5-2008-0164 and CDO R5-2008-0165-01.

## **FACILITY OPERATION**

Board staff visually evaluated the treatment train and site conditions in the presence of Facility representatives and determined that all mechanical treatment units were in good working condition and functioning properly.

The following treatment units and Facility features were viewed (in order from headworks to discharge):

- One automatically cleaned bar screens (**Figure 1**)
- One grit remover (**Figure 2**)
- Two fine drum screens (**Figure 3**)
- Three aeration basins (two in use, one being used for aerobic digestion) (**Figure 4**)
- Four Membrane Bioreactor (MBR) Filtration
- Three Ultraviolet (UV) disinfection channels (**Figure 5**)
- Three effluent cooling towers
- Two emergency storage lagoons (**Figure 6**)

The old treatment plant is no longer in use with the exception of: two facultative storage lagoons which can be used for emergency storage; headworks which can be used during filter failure to store wastewater; and chlorination facilities which will be maintained for use as a backup for the new UV disinfection.

### Headworks and Primary Treatment

Wastewater flows to the Facility via gravity. The influent flow rate is measured using a magnetic flow meter which was last calibrated on 18 April 2013. The Facility has one automatically cleaning bar screen and a grit remover which provide primary screening. Wastewater is then directed to fine drum screens which removes solids larger than 1mm. A disposal bin collects solids from mechanical grit removal and the drum screen. According to the Discharger these solids are hauled to a landfill for disposal.

### Secondary and Tertiary Treatment

Following primary treatment, sewage is directed to the extended aerator with anoxic and aeration zones, where it nitrifies and denitrifies. During the inspection, all of the aeration basins were in operation and appeared to be in good working condition. Following the aeration basin, sewage is directed to a Membrane Bioreactor (MBR) for filtration, where membrane filtration occurs before UV disinfection.

The Facility has three parallel enclosed UV channels with two banks, and each bank containing 12 bulbs. A turbidity meter at the UV system provides continuous monitoring of the effluent flow. After disinfection, the effluent is directed to the effluent cooling towers before being discharged to Deuel Drain.

### Receiving Water

It was pointed out by the Discharger that several irrigation discharge pipes, owned and operated by nearby farmers, are located throughout the Deuel Drain. As a result, upstream and

downstream receiving water monitoring results may be influenced by discharges from these irrigation pipes, which the Discharger has no control over (**Figure 7**).

### Biosolids

Board staff visually evaluated the solids handling system and site conditions in the presence of the primary on-site Facility representatives and determined that the solids handling system was in good working condition and functioning properly. The Discharger uses one of the aeration basins as an aerobic digester (**Figure 8**). The following bio-solids processing units were viewed:

- One sludge storage tank
- Two belt thickener belt press units (both on standby) (**Figure 9**)

Sludge is hauled off site for disposal at Vasco Road Landfill in Livermore, CA.

### Auxiliary Power Generators

The Facility has a 1000 KW auxiliary generator, which provides power to the Faculty. Operation of the generator is regulated by the San Joaquin Valley Air Pollution Control District under Permit No. N-283-35-0. During the inspection, the Discharger was unable to provide Board staff with the San Joaquin Valley Air Pollution Control District permit. Standard Provisions I.F.2 requires the Discharger to give access to Regional Board staff, at reasonable times, to review any records that are kept under the condition of the Order. Board staff provided the Discharger advance notification of the inspection (**Figure 10**).

### Sampling

Influent flow rates are measured with a magnetic flow meter which was last calibrated on 18 April 2013. The effluent flow rate is measured using a magnetic flow meter which was last calibrated on 19 April 2013.

Influent samples are collected from a sample location immediately following screening. Effluent samples are collected downstream of the cooling towers. Both grab and 24-hour composite sampling techniques are utilized.

Both the influent and effluent composite samplers were refrigerated. However, the sampler refrigerators did not contain a calibrated internal thermometer to verify proper sample preservation temperature. In order to verify proper preservation temperature during sample collection, a calibrated thermometer should be placed inside the sample refrigerators and the temperature at the time of sample collection should be recorded on the sample collection documentation (**Figures 11 and 12**).

Sample locations and methods appeared to provide representative samples. All samples are analyzed at the on-site laboratory or at a contract laboratory.

## **LABORATORY**

The on-site laboratory is not ELAP certified and the Discharger has implemented a Quality Assurance Quality Control (QA/QC) program. The operations staff conduct analyses for pH, temperature, dissolved oxygen, turbidity, and electrical conductivity for NPDES-required

samples. Analyses for the remaining required permit parameters (i.e., BOD, TSS, priority pollutants, ammonia, chloride, electrical conductivity, methylmercury, nitrate, total coliform, fecal coliform, TDS, and turbidity) are contracted to Excelchem Environmental Labs.

The on-site laboratory team is responsible for collecting samples required under Central Valley Water Board Order No. R5-2008-0164.

### **OPERATION AND MAINTENANCE**

This Facility is a Class III facility. The Facility is staffed 7 days a week from 6:30 AM to 4:30 PM. The operations staff consists of four operators: three Grade III operators and one Grade II operator. Facility operations are controlled and monitored via a SCADA system. Operators have access to the SCADA system at the control center area and at various in-plant operations areas. Deuel Vocational Institution's maintenance and operation department provides maintenance for the Facility and utilizes a computerized maintenance management system (CMMS).

Copies of the WDRs, annual, and submitted Self-Monitoring Reports (SMRs) were available for review. The inspection included the review of July 2010, November 2012, and January 2013 through March 2013 SMRs. The monitoring, chain of custody, and laboratory reports appeared to be complete. Transcription errors were not identified during the inspection. The inspection found the facility to be operating properly with appropriate staffing.

### **SUMMARY**

1. Both the influent and effluent composite samplers were refrigerated. However, the sampler refrigerators did not contain a calibrated internal thermometer to verify proper sample preservation temperature. In order to verify proper preservation temperature during sample collection, a calibrated thermometer should be placed inside the sample refrigerators and the temperature at the time of sample collection should be recorded on the sample collection documentation.
2. During the inspection, the Discharger was unable to provide Board staff with the San Joaquin Valley Air Pollution Control District permit required to operate the auxiliary power generator. Standard Provisions I.F.2 requires the Discharger to give access to Regional Board staff, at reasonable times, to review any records that are kept under conditions of this Order.

3. It was pointed out by the Discharger that several irrigation discharge pipes, owned and operated by nearby farmers, are located throughout the Deuel Drain. As a result, upstream and downstream receiving water monitoring results may be influenced by discharges from these irrigation pipes, which the Discharger has no control over.

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Mohammad Farhad  
Water Resource Control Engineer  
NPDES Compliance and Enforcement Unit

Approved:		CIWQS Inspection ID: 12527562
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**Figure 1:** Automatically cleaned bar screens located at the headworks appeared in good working condition.



**Figure 2:** The Facility has one grit remover appeared in good working condition.



**Figure 3:** Two fine drum screens appeared in good working condition.



**Figure 4:** Three aeration basins (two in use, one being used for aerobic digestion)



**Figure 5:** Three enclosed UV disinfection channels.



**Figure 6:** One of the two facultative storage lagoons, which can be used for emergency storage, part of the old treatment plant.



**Figure 7:** One of the several irrigation discharge pipe located along Deuel Drain.



**Figure 8:** Aeration basin used for aerobic digestion.



**Figure 9:** Two belt thickener both on standby.

**Figure 10:** 1000 KW auxiliary generator.



**Figure 11:** Both the influent and effluent composite samplers were refrigerated but did not contain a calibrated internal thermometer to verify proper sample preservation temperature



**Figure 12:** Effluent composite sampler appeared in good working condition.

**DANGER**  
EQUIPMENT  
STARTS  
AUTOMATICALLY

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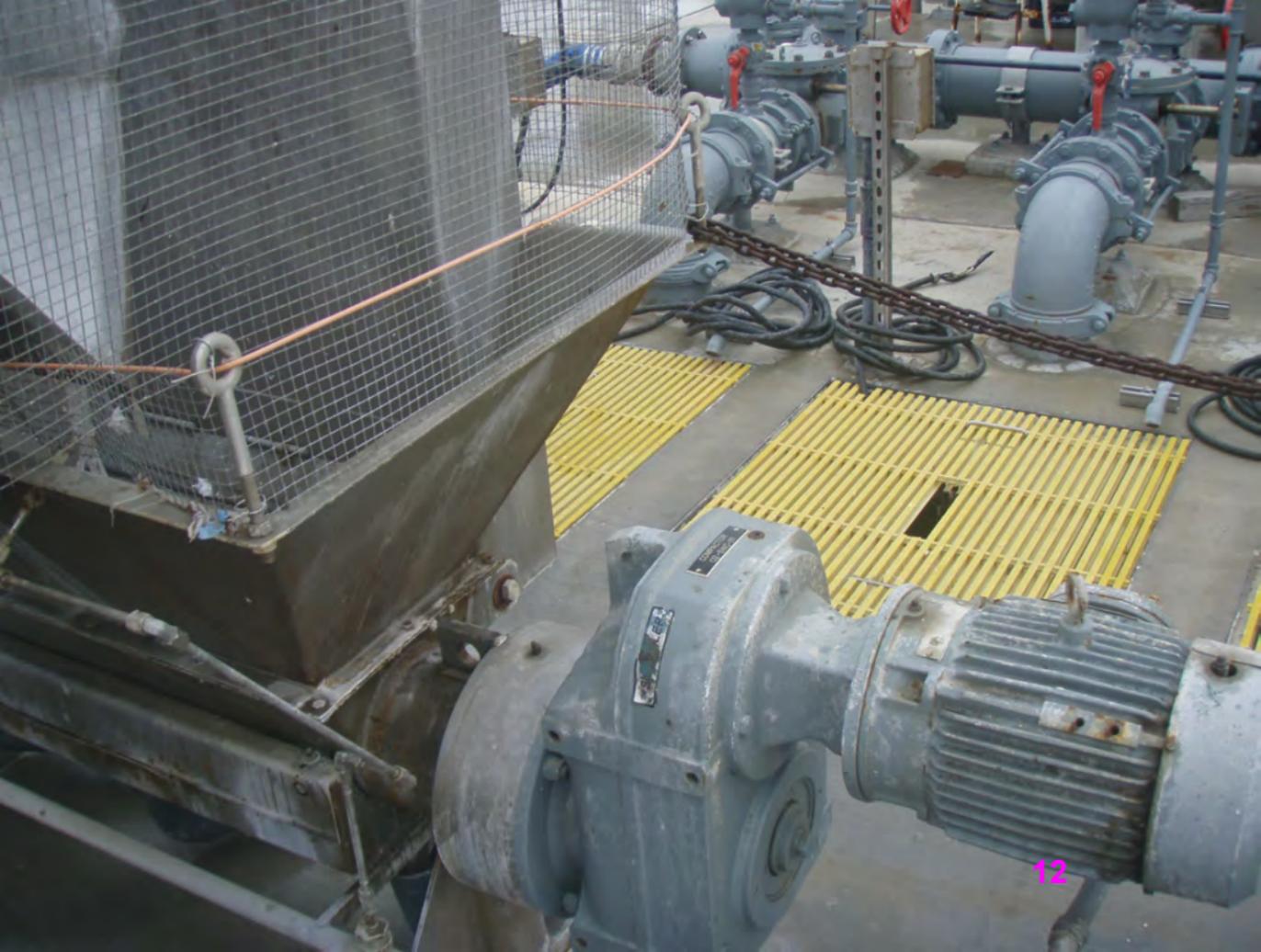


**DANGER**  
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STARTS AND STOPS  
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