

**STAFF REPORT  
CONSIDERATION OF CEASE AND DESIST ORDER  
FOR  
CALIFORNIA DEPARTMENT OF CORRECTIONS AND REHABILITATION  
MULE CREEK STATE PRISON WASTEWATER TREATMENT PLANT  
AMADOR COUNTY**

## **Introduction**

The California Department of Corrections and Rehabilitation (CDCR) owns and operates the Mule Creek State Prison wastewater treatment plant (WWTP), which treats, stores, and disposes of wastewater generated from CDCR's Mule Creek State Prison, Preston Youth Correctional Facility, and California Department of Forestry Fire Training Academy. The WWTP is regulated by Waste Discharge Requirements Order No. 5-00-088, which allows a monthly average dry weather flow of up to 740,000 gallons per day (gpd), and a peak wet weather flow of 2.2 million gpd. CDCR, Preston Youth Correctional Facility, and the California Department of Forestry are jointly responsible for compliance of the WDRs. However, this Order pertains to issues at the Mule Creek State Prison WWTP, and therefore is issued solely to the CDCR. The term "Discharger", as used in this staff report refers only to CDCR.

The WWTP consists of an oxidation ditch, two clarifiers, chlorination facilities, a filter belt press operation for dewatering sludge, sludge drying beds, a 4,000-gallon sodium hypochlorite storage tank, a 525 acre-foot storage reservoir, and 296 acres of irrigated land. Wastewater effluent is disposed of via spray irrigation on the land and by evaporation/percolation from the effluent storage reservoir. In addition, Mule Creek State Prison is under contract to deliver between 80 and 130 acre-feet of treated wastewater annually to the Amador Regional Sanitation Authority's (ARSA's) wastewater treatment and disposal system.

## **History of Violations**

On 25 July and 14 August 2006, the Discharger notified Regional Water Board staff that effluent was being discharged in violation of the WDRs. Specifically, the Discharger's staff stated that the effluent limits (prescribed by the WDRs) for total coliform organisms and BOD were being exceeded because the WWTP was hydraulically overloaded due to overcrowding in the prison. Additionally, on 15 August 2006, Regional Water Board staff was contacted by the ARSA WWTP operator who stated that he had toured the Discharger's WWTP on 8 August 2006 and found that the plant was severely hydraulically overloaded, resulting in wastewater not being adequately treated, and solids bypassing the treatment system and being discharged onto land.

On 16 August 2006, Regional Water Board staff conducted a facility compliance inspection. Several violations of the WDRs were noted, including bypass of wastewater from the treatment system due to hydraulic overload, and discharge of wastewater to a

surface water drainage course due to over irrigation of the sprayfields and tailwater runoff. Additionally, the Discharger stated that another spill had occurred at one of the spray disposal fields approximately three week prior to staff's inspection. The spill occurred when a sprayfield distribution line broke, allowing treated effluent to flow into Mule Creek. Staff was not notified of the spill, which is a violation of the Standard Provisions.

During the inspection, the Discharger provided Regional Water Board staff a letter describing the treatment plant problems. The letter stated that the treatment plant was poorly designed and that the WWTP equipment and sprayfields are undersized. This has led to treatment and irrigation problems, and the continued increase in the prisoner population has resulted in increased flows that the treatment plant cannot adequately treat.

Following staff's 16 August 2006 inspection, staff conducted a compliance review of the Board's case file for the prison, including a review of the Discharger's self-monitoring reports for the months of June 2005 through June 2006. Based on the compliance review staff, determined that the Discharger had violated its WDRs as follows:

- Exceeded the flow limitation (740,000 gpd) prescribed in the WDRs. Monthly average dry weather flows were exceeded in the months of July, September, and October 2005, and May and June 2006, and ranged from 757,000 to 814,000 gallons per day.
- Failed to notify Regional Water Board staff of flow limit exceedences as required by the Standard Provisions.
- Failed to consistently comply with the effluent limitations prescribed in the WDRs for total coliform organisms and BOD.
- Failed to submit monthly monitoring reports or submitted incomplete monitoring reports.

In addition, the WDRs contain the standard land-discharge specifications that the effluent storage reservoir be designed and operated to accommodate all wastewater, precipitation, inflow/infiltration, and runoff generated during a 100-year annual precipitation event, and that storage reservoir have sufficient winter storage capacity to maintain two feet of freeboard throughout the winter. Because the average dry weather flow limit prescribed in the WDRs has been exceeded, and because staff's inspection found that the effluent storage reservoir was approximately half full near the end of the summer irrigation season, staff is concerned that the Discharger can not comply with these WDRs specifications.

On 5 September 2006, the Executive Officer issued a Notice of Violation (NOV) to the Discharger for the violations noted during staff's 16 August 2006 inspection and the compliance review of the case file. The NOV required the Discharger to submit a

number of reports, including: a *“Wastewater Inflow and Reduction Evaluation Report”*, a water balance showing whether the WWTP has sufficient treatment, storage, and disposal capacity to comply with the requirements of the WDRs, a description of how the Discharger will consistently comply with the Monitoring and Reporting Program, a description of how the Discharger will consistently comply with the WDRs effluent limitations, a *“Tailwater Containment Report”*, and a *“Long Term Wastewater Facilities Upgrade and Financing Plan”*.

Since issuance of the 5 September 2006 NOV, the Discharger has had two spills at the WWTP sprayfields and one at the WWTP sludge drying facility’s filtrate wet well. All three spills entered surface water drainage courses, which is a violation of the Discharge Prohibitions A.1 and A.2 of the WDRs. The spills at the sprayfields were a result of over irrigation, saturated conditions, and tailwater runoff.

Staff conducted an inspection of the sprayfields on 29 September 2006. Staff noted additional violations of the WDRs, including: spray heads located within the required 100-foot setback from creeks and drainages; sprayfields saturated from over-irrigation; and seepage from the effluent storage reservoir. Staff found other areas of concern, including lack of access to numerous sprayfields and overgrown vegetation within the sprayfields that limits the fields from being properly inspected and maintained. Staff also noted a lack of tailwater control to prevent discharges into surface waters and a tailwater collection sump being constructed in a seasonal waterway. On 23 October 2006, the Executive Officer issued a NOV for three spills that occurred at the WWTP, and for violations noted during the 29 September 2006 inspection.

### **Discharger’s Response To Violations**

On 28 August 2006, Regional Water Board staff met the Discharger to discuss violations noted during the 16 August 2006 inspection. The Discharger stated that increases in prisoner population has caused wastewater flows to increase beyond the limits prescribed in the WDRs, which has resulted in an hydraulic overload of the wastewater treatment system. The Discharger also stated that they were looking at mitigation measures to reduce the volume of wastewater inflows and to improve the quality of the effluent. Mitigation measures could include installing flushometers on toilets, limiting the number of showers that can be taken a day, reducing wastewater from the prison industries (which include laundry, meat packing, and coffee roasting), and adding polymer to the wastewater treatment system to increase solids settling rates.

On 10 and 16 October, the Discharger submitted the reports required by the 5 September 2006 NOV. The reports are summarized as follows:

- The *Wastewater Inflow and Reduction Evaluation Report* indicates that the average inflow to the treatment plant is approximately 42,000 gpd over the permitted flow limit (based on August and the first two weeks of September 2006 flow data). The Discharger has implemented some mitigation measures to

reduce inflow the WWTP. Mitigation measures include installing push-button shower valves and electronic water saving devices in some of the buildings within the prison, but not all. Additionally, the Discharger contacted Preston Youth Corrections Facility and the Department of Forestry and requested that water conservation measures be implemented at those facilities. The Discharger's report stated that it plans to further reduce inflows by installing additional push-button showers, electronic water saving devices, and flushometers in the remaining housing units. It will also reduce flows from the prison industry facilities. The report did not specify how flows would be reduced at the industrial sources.

- The *Wastewater Inflow and Reduction Evaluation Report* states that if the effluent storage pond is in danger of encroaching upon the required minimum of two feet of freeboard, then the Discharger "will review" trucking of wastewater to another wastewater treatment plant. The Discharger has already identified a trucking vendor and is in the process of identifying a wastewater plant that could accept its wastewater.
- The Discharger submitted three water balance calculations in response to the NOV; one water balance assumed current wastewater flows and 100-year annual precipitation returns, while the other two assumed 20 and 30 percent flow reductions (based on improvements described in the *Wastewater Inflow and Reduction Evaluation Report*), and 100-year annual precipitation return. The water balance for current flows and 100-year precipitation return shows that the WWTP does not have enough storage and disposal capacity. An additional 108 million gallons of disposal and 31.1 million gallons of storage capacity are needed under these conditions. With a flow reduction of 20 to 30 percent, the calculations show the WWTP lacks sufficient disposal capacity.
- The *Tailwater Containment Report* states that the Discharger will make improvements to the sprayfields by installing tailwater control berms and ditches, and removing sprinkler heads within low lying areas of the sprayfields. This work has begun, and the Discharger estimates that all improvements will be completed by 30 June 2007. To replace the loss of disposal capacity due to removing sprinkler heads in low lying areas, the Discharger has installed water cannons around the effluent storage reservoir to increase evaporation rates, and installed water cannons in the sprayfields to increase disposal rates.

### **Requirements of the Cease and Desist Order**

The Cease and Desist Order addresses all known violations at the facility and are summarized below.

### General Issues

The Discharger must immediately begin reporting all sanitary sewer overflows and any overflows from any treatment, storage, or disposal component in compliance with the Standard Provisions and Reporting Requirements. All spills shall be reported to the appropriate agencies.

The Discharger must submit and immediately implement a *Spill Contingency Plan* containing the interim measures necessary for preventing unauthorized discharges to surface watercourses from the effluent storage pond. The Spill Contingency Plan shall remain in effect until all elements of the Long Term Wastewater Facilities Upgrade have been completed.

The Discharger must submit *Quarterly Progress Reports* describing the work completed to date regarding each of the reporting requirements described in the C&D Order.

With the exception of Discharge Specification No. B.1 of WDRs Order No. 5-00-088 (pertaining to the dry weather inflow to the wastewater treatment plant), the Discharger must **immediately** comply with all aspects of WDRs Order No. 5-00-088. In no case shall the Discharger exceed a dry weather influent flow of 782,000 gpd (that amount generated in August 2006).

### Sprayfield Improvements

The Discharger must **immediately** begin monitoring spray disposal areas on an hourly basis when the disposal areas are used, and the results shall be included in the monthly monitoring report.

The Discharger must submit a *Sprayfield Improvement Report and Management Plan* showing that it has made improvements and implemented measures to comply with all prohibition and specifications required by the WDRs.

The Discharger must submit a *Staffing Analysis Report* for the wastewater storage and disposal system. The analysis shall include a review of current staffing levels, allocation of staff tasks, an analysis of whether current staff allocation is adequate, and if necessary, describe the shortfalls and make recommendations for future staffing needs.

### Flow Reductions

The Discharger must submit a report describing the installation of water cannons around the effluent storage reservoir. The report shall describe the number of cannons installed, the expected disposal rate, how the cannons will be managed to control spray drift outside of the reservoir, and an operating plan.

The Discharger must submit a report showing that it has reduced flows at the prison industry facilities by 30% in relation to flows measured in August 2006. The report shall

describe the improvements made or actions taken and shall show that this is a permanent flow reduction.

The Discharger must submit a report showing that it has reduced flows from the toilets and sinks in Buildings 1-15 by 30% in relation to flows measured in August 2006. The report shall describe the improvements made or actions taken and shall show that this is a permanent flow reduction.

The Discharger must submit a report showing that it has reduced flows from the showers at Buildings 1-15 by 18% in relation to flows measured in August 2006. The report shall describe the improvements made or actions taken and shall show that this is a permanent flow reduction.

The Discharger must submit a *Flow Meter Installation and Calibration Report*. The report shall (1) certify that a new influent flow meter has been installed, is operational, and accurately recording influent flows from Mule Creek State Prison, (2) provide the location where the meter has been installed, (3) demonstrate that the flow meters used to monitor flows from the Prison, Preston, and the Department of Forestry have been independently calibrated by a third party such that all flow meters and are accurately recording influent flows, and (4) provide standard procedures for the treatment plant operators to use when taking and recording flow measurements.

The Discharger must submit a report certifying that it has installed an alarm feature on the sludge drying facilities filtrate wet well to notify WWTP staff of potential overflows of the wet well.

The Discharger must submit an *Operation and Maintenance Plan* (O&M plan) for the wastewater treatment and disposal facilities.

### Groundwater Monitoring

The Discharger must submit a *Groundwater Monitoring Well Installation Workplan and Well Installation Report*, and quarterly groundwater monitoring shall commence starting the third quarter of 2007.

### Long Term Improvements

The Discharger must submit a *Dam Seepage Evaluation Report*, which provides the results of an evaluation to determine whether the effluent is seeping from the base of the effluent storage reservoir. If it is determined that effluent is seeping from the storage reservoir dam, then the Discharger must submit a *Dam Seepage Improvement and Containment Report*, which describes what improvements will be made to the dam to stop the seepage of effluent, and/or describe how the wastewater will be contained to the seepage areas to prevent discharges to surface waters.

The Discharger must submit a *Flow Reduction Evaluation Report*, which shall describe the success in reducing influent flows over the previous year. The report must evaluate whether other measures should be taken to reduce flows in to the wastewater treatment plant, and if necessary, provide a schedule for implementation.

The Discharger must submit a *Long Term Wastewater Facilities Upgrade and Financing Plan* for all work and improvements needed to provide adequate treatment, storage, and disposal capacity for existing and/or future expansion of Mule Creek State Prison, Preston School of Industry, and the California Department of Forestry training facility.

The Discharger must submit a *Report of Waste Discharge (RWD)* to allow WDRs to be revised to reflect the proposed upgrades outlined in the Discharger's *Long Term Wastewater Facilities Upgrade and Financing Plan*.

## **PUBLIC COMMENTS ON THE DRAFT CEASE AND DESIST ORDER**

The draft Cease and Desist Order was transmitted for public review on 18 September 2006. Comments were received from the Discharger, the Amador County Environmental Health Department, and the City of Lone. The comments were received within the comment period. Copies of the letters are provided in Attachment A to the staff report.

### **Discharger's Comments**

The Discharger's comments were mostly related to time extension requests for some of the required reports. The due dates for some of those reports were extended. Those comments that were not addressed are discussed below.

The Discharger requests that the submittal of the *Spray Irrigation Improvement Report and Management Plan* be extended to 30 June 2007, since CDCR recently hired a consulting firm to prepare the report, and that time is needed to determine what work needs to be done. However, since August 2006, the Discharger has had multiple spills into surface drainage courses and surface waters from the spray disposal system. In addition, staff have identified numerous problems with the way the sprayfields are operated and maintained. Staff believe that all of the needed sprayfield improvements should be completed prior to the 2007 irrigation season (i.e., May), and therefore did not allow the requested time extension.

The draft Order required that the Discharger reduce the flows from the prison laundry and meat packing plant by 30% by 30 May 2007. This requirement was taken directly from the Discharger's 10 October 2006 response to the NOV, and reflects the percentage flow reduction and date proposed by the Discharger. However, the Discharger now states that the prison industries are run by the Prison Industry Authority, which is a separate entity from CDCR, and that CDCR has limited involvement in the operation and progress of projects under PIA jurisdiction. Therefore, the Discharger requests an eight-month extension of the requirement to reduce flows within the prison industry operations by 30 percent. Staff do not believe that such an extension is appropriate, as the Discharger has

not provided information as to what facts have changed in the four weeks since its NOV response, and more importantly, based on the Discharger's water balance, it is critical that flows be reduced as soon as possible.

The tentative Order requires that the Discharger submit two reports showing that it has reduced flows from Buildings 1-15. The first report is due by 30 August 2007, and is to show that flows from the toilets and sinks have been reduced by 30%. The second report is due by 30 January 2008, and is to show that flows from the showers have been reduced by 18%. These requirements were taken directly from the Discharger's 10 October 2006 response to the NOV. However, the Discharger now requests that it not be held to a specific flow reduction. Staff cannot agree to make this change, as the Discharger's water balance quite clearly shows that there is a lack of storage and disposal capacity with the existing flows, and even if flows are reduced by 30%, there is still a lack of 13 million gallons of disposal capacity. As stated above, it is critical that the Discharger make improvements at the prison to reduce the wastewater flows, and it is critical that these improvements be completed as soon as possible.

### **Amador County Environmental Health Department Comments**

Amador County Environmental Health Department provided numerous comments, focusing on clarification and formatting and typographic errors. The draft C&D was revised as appropriate.

### **City of Lone Comments**

The City of Lone submitted two comments. One comment was providing additional details on the contract between Mule Creek State Prison and ARSA, and the other was related to groundwater monitoring frequencies in Attachment A of the C&D. The Finding discussing the contract between Mule Creek State Prison and ARSA has been revised to add the additional information. The groundwater monitoring frequencies in Attachment A were revised to require quarterly monitoring four times a year.

### **SUMMARY AND RECOMMENDATION**

Staff recommends that the Regional Water Board adopt the Cease and Desist Order as proposed.