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**Central Valley Regional Water Quality Control Board**

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**REVIEW OF THE ENGINEERING FEASIBILITY STUDY AND AMENDED REPORT OF WASTE DISCHARGE, SOUTH AREA LANDFILL LF-1, YUBA SUTTER DISPOSAL, INC. LANDFILL, YUBA COUNTY**

Central Valley Water Board staff has reviewed the 29 June 2012 Engineering Feasibility Study (EFS) and Amended Report of Waste Discharge (ROWD) for the Yuba Sutter Disposal, Inc. Landfill. This response focuses on the EFS portion of the report and is prepared by the Title 27 Compliance and Enforcement Unit. The Title 27 Permitting Unit will respond to the ROWD separately.

Current conditions indicate that a release from waste management unit (WMU) LF-1 is ongoing and has affected both the vadose zone and groundwater beneath the WMU. As the EFS Report suggests, the source of the release is likely landfill gas (LFG). To investigate the gas release, four gas probes (GP-12 through GP-15) were installed along the east-southeast WMU boundary and gas samples were collected. Gas probe GP-14 has confirmed methane detections and up to seven volatile organic compounds (VOCs) have been reported. As an additional step to investigate the release, the Discharger installed up to nine soil vapor probes in the unpaved portions of LF-1.

Five of the nine probes reported concentrations of methane between 1.3% and 47.9% by volume. The highest methane detection was measured in soil vapor probe 3, located at the southern boundary of LF-1. Methane detections were also detected in probe 1, 4, and 8 at concentrations of 6.5%, 19.7%, and 26.7% by volume. Methane detections measured in these probes indicates that LFG is being generated within the landfill mass and is migrating uncontrolled toward the site boundaries.

The EFS evaluates several potential cleanup alternatives based on criteria provided in 40 CFR 258.56 and 258.57. These alternatives included: groundwater extraction, reduction of water infiltration into the landfill (cover and underground piping repairs), landfill gas extraction, leachate extraction, and monitored natural attenuation. Board staff agrees that infiltration of water into LF-1 is the likely catalyst for the formation of LFG and leachate releasing from the WMU. Since infiltration of water has been identified as a catalyst in the generation of LFG and leachate, the Discharger's proposed corrective action is to expand the LFG system to control

migration and to evaluate underground piping and paved surfaces of LF-1 for differential settlement and cracking that are in need of repair.

The EFS provides a Corrective Action Implementation Schedule for the chosen corrective action that includes preparing a landfill gas remediation plan that was submitted to the Local Enforcement Agency (LEA) by 5 August 2012. Staff has reviewed the plan, which was forwarded to staff by the LEA. The remediation plan was much less comprehensive than that proposed in the EFS. The plan stated that following the shallow and deep zone methane detections recorded in gas probe GP-14 on 6 June 2012, the Discharger increased extraction rates from extraction wells along the northwestern site boundary as an attempt to capture LFG in the vicinity of GP-14. GP-14 is approximately 1,000 feet from the northwest site boundary. Subsequent soil gas sampling conducted on 27 June 2012 showed minor changes to the methane detections in GP-14 suggesting the LFG extraction wells have little influence at the northeast site boundary.

Based on the information provided to date, staff concludes that a release from LF-1 has been documented in the vadose zone and groundwater, that increased extraction rates have had little effect on migrating gas measured at GP-14, and that the remediation plan submitted provides no long term solution to prevent future methane or VOC migration from the landfill.

However, the EFS establishes goals for a corrective action plan, which are to remediate releases from the landfill and to achieve compliance with the water quality protection standard (WQPS) consistent with Title 27, Section 20430(c). Section 20430(c) states: *The discharger shall implement corrective action measures that ensure that COCs achieve their respective concentration limits at all monitoring points and throughout the zone affected by the release, including any portions thereof that extend beyond the facility boundary, by removing the waste constituents or treating them in place. The discharger shall take other action approved by the RWQCB to prevent noncompliance with those limits due to a continued or subsequent release from the Unit, including but not limited to, source control. The WDRs shall specify the specific measures that will be taken.*

As discussed above, the Discharger's proposed corrective actions in response to the release of LFG in the vadose zone and groundwater are to expand the LFG system into LF-1 and to evaluate subsurface piping and paved surfaces of LF-1 for cracks and leaks.

Board staff agree with the recommendation to expand the LFG system into LF-1 and evaluate the existing cover and subsurface piping. By **15 October 2012** the Discharger shall submit a Corrective Action Work Plan and schedule that provides design details of the LFG expansion into LF-1. The Plan shall describe steps that need to be taken to modify the landfill gas system to control the source of LFG from entering the vadose zone and underlying groundwater throughout the entire footprint of the LF-1 landfill and shall not be limited to the area of GP-14 or the southeastern portion of LF-1 only. The work plan shall also include piping diagrams of the sanitary sewer and storm drains and provide a schedule of inspection and repair. The work plan shall be prepared under the direction of and signed by a Professional Civil Engineer registered with the State of California.

The Discharger shall continue with the corrective action program that includes the expansion of the LFG system into LF-1 and evaluation of the cover and underground piping. The Discharger shall collect and analyze all data necessary to assess the success of corrective

actions in accordance with Reporting Requirements D.3 of WDR R5-2003-0093. This semi-annual assessment shall include an evaluation of the spatial distribution and concentration of each COC throughout the zones affected by the release. If the Discharger monitors and samples gas probes quarterly for the LEA, that data shall be presented in the semi-annual assessment also. Based on the data collected the corrective action may be revised, or discontinued.

If you have questions please call me at 916-464-4737.



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