INFORMATION SHEET

ORDER R5-2014-XXXX
MERCED COUNTY REGIONAL WASTE MANAGEMENT AUTHORITY
FOR OPERATION, CONSTRUCTION, POST-CLOSURE MAINTENANCE
AND CORRECTIVE ACTION
HIGHWAY 59 SOLID WASTE LANDFILL
MERCED COUNTY

The Merced County Regional Waste Management Authority (hereinafter Discharger) owns and operates the Highway 59 Solid Waste Landfill (facility) about six miles north of the City of Merced. The facility contains four closed unlined Class III waste management units (Phases 1 through 4) covering a total of approximately 89 acres, one single-composite lined Class III unit (Phase 5, Modules 5A-5C, inactive) covering a total of 25 acres, one single-composite lined Class III unit (Phase 6, Module 6A, active and Modules 6B-6F, future) covering a total of 140 acres, two Class II surface impoundments, and three storm water retention basins. The facility is currently regulated by Waste Discharge Requirements Orders R5-2006-0022, providing for construction and operation, and R5-2010-0111, providing for closure and post-closure maintenance of Phases 1 through 4.

The waste management facility is located within the San Joaquin Valley, a large northwest trending asymmetric structural trough that has been filled with as much as six vertical miles of sediment composed of marine and continental rocks and sedimentary deposits. The sediments in the region consist predominantly of continental deposits derived from the Sierra Nevada and a heterogeneous mix of poorly sorted clay, silt, sand and gravel, with some beds of claystone, siltstone, and conglomerate. The local geology of the site, based on observations of soil borings drilled during well installation, were interpreted to be predominantly unconsolidated, poorly sorted, fine-grained arkosic sediments, which correlate to regionally-occurring alluvial deposits.

The Highway 59 Landfill has been operating since 1973. In 1996, Merced County prepared an Environmental Impact Report pursuant to the requirements of the California Environmental Quality Act ("CEQA")(Pub. Resources Code, § 21000 et seq.) to analyze the potentially-significant environmental effects associated with the expansion of the Facility. On 13 August 1996, the Merced County Board of Supervisors certified the final EIR for the Phase 6 expansion. Prescribing these WDRs, which impose regulatory requirements on the existing facility in order to ensure the continued protection of groundwater resources, is exempt from the provisions of CEQA in accordance with California Code of Regulations, title 14, section 15301, which exempts the "operation, repair, maintenance, [and] permitting … of existing public or private structures, facilities, mechanical equipment, or topographical features" from environmental review.

As part of the expansion, the United States Fish and Wildlife Service issued a Biological Opinion pursuant to the federal Endangered Species Act. The Discharger is required under its federal CWA Section 404 permit and the Biological Opinion to preserve, in perpetuity, a 168-acre wetland preserve and mitigation area. In addition, Title 40 of the Code of Federal Regulations, Part 258.12, (40 C.F.R. § 258.12) requires that certain demonstrations be made to allow the location of a landfill expansion within wetlands. Activities conducted at the Facility will continue to be managed according to the Discharger's Vernal Pool Mitigation, Management and Monitoring Plan, which was developed for the purpose of satisfying these regulatory requirements.

Based upon the most recent groundwater monitoring report (2nd Semiannual and Annual 2013), the first encountered groundwater ranges from about 65 feet to 114 feet below the native

ground surface. Groundwater elevations range from about 107.84 feet to 88.80 feet above MSL. The groundwater is unconfined. Background groundwater quality for first encountered groundwater has electrical conductivity (EC) ranging between 250 and 500 micromhos/cm, with total dissolved solids (TDS) ranging between 200 and 300 milligrams per liter (mg/L). The direction of groundwater flow is generally toward the southwest. The direction of groundwater flow varies seasonally and periodically flows toward the south-southwest. The estimated average groundwater gradient is approximately 0.001 feet per foot. The estimated average groundwater velocity is 1.5 to 1.9 feet per year.

Volatile organic compounds (VOCs) that are not naturally occurring have been detected in groundwater along the point of compliance. The VOCs consistently identified as the primary impact constituents include: tetrachloroethene (PCE), trichlorofluoromethane (Freon 11), and dichlorodifluoromethane (Freon 12).

The Discharger submitted the Evaluation Monitoring Program Report in November 2010. The nature of the release was demonstrated to be volatile organic compounds that appear to have migrated from the unlined modules (Phases 1 through 4) of the landfill in the form of landfill gas. Inorganic waste constituents did not appear to have been released from the landfill, thus indicating that the release of waste constituents is due to landfill gas migration. Groundwater data from the facility indicate that VOC impacts to groundwater are limited to the shallow groundwater and primarily limited to wells adjacent to Phases 1 through 4 (MW-2A, MW-11 and MW-12). VOC impacts to groundwater have been observed as far as 1,500 feet southwest of the unlined modules.

The Discharger submitted the Engineering Feasibility Study (EFS) and Corrective Action Plan (CAP) in July 2011 and December 2012, respectively. The EFS and CAP concluded that the most technically and economically feasible corrective action alternative was to install a dual phase (groundwater and soil gas) extraction and treatment system with landfill gas extraction as a source control. Extracted soil gas will be directed to the existing landfill gas flare for destruction. Extracted groundwater will be remediated through a granular activated carbon (GAC) treatment system. Treated effluent from the GAC system is proposed to be discharged to an on-site storm water retention basin(s) or Class II surface impoundment(s).

The tentative revised Order provides for operation, construction, post-closure maintenance and implementation of corrective action, and requires the Discharger to implement the corrective action plan and the remediation system to be fully operating by a specified date.