

## **INFORMATION SHEET**

ORDER NO. R5-201X-XXX  
CITY OF SACRAMENTO UTILITIES DEPARTMENT  
SYLVIA DELLAR SURVIVOR'S TRUST  
DELLAR LANDFILL  
SACRAMENTO COUNTY

### **Background Information**

The Dellar Landfill is a partially-closed, unlined landfill on A Street about 1½ mile northeast of downtown Sacramento. The 23.9 acre landfill is on a 29-acre site owned by the Sylvia Dellar Survivor's Trust. The landfill is one of several parcels in a 130-acre area west of 28<sup>th</sup> Street historically used by the City of Sacramento and/or public for landfilling. A map of the historical fill area and summary table of its operational history are attached to this Information Sheet.<sup>1</sup> The landfill operated from 1957 through 1963, accepting primarily household wastes from the City of Sacramento area. The City operated the landfill during its entire active period. Onsite facilities include the landfill, two storm water detention basins and associated controls, perimeter containment berms, the American River levee, groundwater monitoring wells, and access roads. The site also includes an active, unmanned radio transmission tower used by a local radio station, power poles, and a perimeter fence.

### **Site Description**

The landfill was sited immediately south of the American River about two miles upstream of the confluence with the Sacramento River. Although in the American River flood plain, the site is protected from a 100-year flood event by the adjoining American River levee. Topographic relief in the area is generally flat with surface elevations ranging from about 25 to 40 feet above mean sea level (MSL). Soil in the project area generally consists of flood plain deposits and alluvial material deposited prior to construction of river levees.<sup>2</sup> Some of the sediment is material washed down from historical gold mining activities conducted upstream in the American River corridor.

### **Landfill Design & Operations**

Construction of the landfill predated Title 27 and Subtitle D regulations such that the landfill is unlined and has no leachate collection and recovery system (LCRS). The side slopes of

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1. See also June 1991 *Revised Final Closure and Post-Closure Maintenance Plan Amendment, 28<sup>th</sup> Street Landfill* and June 1987 *28<sup>th</sup> Street Landfill Calderon Report* (i.e., SWAT Report), both prepared by the City of Sacramento Department of Public Works.
  2. After major flood events in 1850 and 1862, the American River was straightened to its current course and many of the western city streets raised by as much as 10 feet. Great floods in 1907 and 1909 spurred the design of a comprehensive Sacramento Flood Control System including levees on the lower American River protecting Sacramento. The first major upgrade to the original system occurred in the 1950's with the construction of Folsom Dam and extension of the levees upstream to their present terminal. Folsom and the new levee system saved Sacramento from flooding in 1955. Additional and ongoing improvement projects were undertaken after flooding was narrowly averted in 1986.

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the landfill are supported by soil berms constructed to a height of about 11 feet above surrounding grade on the west and east sides of the unit, the American River levee to the north, and the A Street Road embankment to the south. Waste disposal operations consisted of trench fill, discharge to deep borrow pits, and area fill. Landfill disposal rates and in-place tonnage are unknown due to a lack of historical records, but may be estimated as follows:

<u>Pit</u>	<u>Area</u> (acres)	<u>Avg. Fill</u> <u>Thickness</u>	<u>Waste In Place</u>		<u>Disposal Rate</u> <sup>2</sup>	
			<u>Volume</u>	<u>Tonnage</u> <sup>1</sup>	<u>Tons/day</u>	<u>Cu Yd/D</u> <sup>3</sup>
		Feet	KCu Yd	KTons		
East Half	13.2	45	767	384	309	1,550
West Half	12.5	25	403	182		
Overall	25.7	35.2	1,170	566		

1. Estimates assume waste-to-cover-soil ratio of about 4:1 and an in-place waste density of about 0.5 tons per cu yd,
2. Rate estimate based on 365-day year and 5-year operating period.
3. Rate prior to waste compaction assuming compaction ratio of 2.5:1.

The above estimate is more than twice an estimate previously provided by the City for a nearby parcel operated in the historical fill area immediately prior to the Dellar Landfill. The latter estimate was based on service population rather than estimated waste in place, however. See SWAT Report, Page 44.

#### Inactive Period

Reports on file indicate that upon cessation of landfill operations in 1963, the landfill was left with uncompacted soil cover of varying thickness rather than an engineered (i.e., compacted and graded) final cover required under current regulations. Subsequent Central Valley Water Board staff inspections conducted since 1992 confirmed that the landfill cover was not adequate and indicated that the site had been abandoned. These inspections typically found that the landfill cover surface was hummocky from long term differential settlement, had desiccation cracks, and/or that it did not adequately drain. Several inspections found ponded storm water on the landfill surface and likely storm water infiltration into landfill wastes. The landfill also had a history of subsurface fires during its inactive period dating back to the mid-1980s. Such fires may have been attributable to trespass or spontaneous combustion associated with the waste decomposition process. Such conditions may have constituted a nuisance under the Water Code.

#### Groundwater

The uppermost aquifer beneath the site occurs in Modesto/Riverbank alluvium at an

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average elevation of about 6 feet MSL +/- 3 feet of seasonal variation. The depth to groundwater at the site ranges from about 18 to 24 feet below ground surface (bgs) and wastes are believed to be in contact with groundwater in some areas of the site. The groundwater flow direction also varies seasonally and is subject to gradient reversals. In the wet season, groundwater flow is generally toward the southwest away from the bend in the river, while in the summer, the gradient is either flat or, when there is a flow reversal, flows in a radial fashion toward the river bend to the northeast. The magnitude of the gradient varies from about 0 to 1 ft/1,000 ft depending of the time of year.

The Dellar Property is within the groundwater monitoring well field for the 28<sup>th</sup> Street Landfill and does not have a separate groundwater monitoring system. There are currently seven 28<sup>th</sup> Street Landfill groundwater monitoring wells completed in the uppermost aquifer proximate to the Dellar Property. Historical monitoring data for the downgradient wells shows low to trace concentrations of volatile organic compounds (VOCs) in some of these wells, including Chlorobenzene (1.4 mg/L), 1,4-Dichlorobenzene (3.5 mg/L), Chloroform (9.5 mg/L), Trichloroethylene (1.8 mg/L), and other intermittently-detected VOCs. Time series plots of VOC monitoring data since 1996 do not indicate any clear trends in any of the wells. The monitoring data also shows elevated concentrations of general minerals in groundwater down gradient of the landfill, including alkalinity up to 930 mg/L, chloride up to 405 mg/L, sulfate up to 40 mg/L, TDS up to 1,500 mg/L, specific conductance up to 3,100 mhos/cm, and dissolved iron up to 70 mg/L. Time series plots for these wells generally show strong-to-moderate declining trends for chloride and TDS, and stable levels or slight declining trends for specific conductance and alkalinity, over the past 20 years. One VOC and several of the general minerals exceeded water quality limits, as follows:

<b>Constituent</b>	<b>WQ Objective</b>	<b>2013 Maximum Concentration</b> (mg/L, except where noted)		
		<i>WQ Limit</i>	<i>Background</i>	<i>Downgradient</i>
Chloroform, mg/L	Chemical Constituents	1.0 <sup>1</sup>	<0.2	<b>4.0</b>
Chloride		106 <sup>2</sup>	4.3	<b>170</b>
Specific Conductance, mhos/cm		700 <sup>2</sup>	280	<b>1,800</b>
	Taste & Odor	900 <sup>3</sup>		
TDS	Chemical Constituents	450 <sup>2</sup>	170	<b>920</b>

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	Taste & Odor	500 <sup>3,4</sup>		
Dissolved Iron		0.3 <sup>3,4</sup>	<b>25</b>	<b>18</b>

1. California Public Health Goal.
2. Agricultural Goal
3. California Secondary Maximum Contaminant Level (MCL)
4. Federal Secondary MCL.

**Corrective Action/Closure**

On 4 June 2008, the Water Board's Executive Officer issued Cleanup and Abatement Order (CAO) No. R5-2008-0705 to the Discharger (Sylvia Dellar Survivor's Trust and City of Sacramento) finding that the landfill was a "closed, abandoned, or inactive" landfill under Title 27, sections 20080(g). The CAO required that the Discharger submit a plan for closure of the landfill as a corrective action measure under Title 27, section 20430. The City subsequently submitted an October 2009 Final Closure and Postclosure Maintenance Plan (FC/PCMP), which was subsequently approved by Board staff. The October 2009 FC/PCMP was, however, never implemented due to discovery of Elderberry bushes at the site, a known habitat for the Elderberry beetle, a federally protected species. Closure of the Elderberry Bush areas under the FC/PCMP would have required removal of the bushes, which would have required preparation of a full Habitat Conservation Plan (HCP) and obtaining project approvals from the U.S. Fish and Wildlife Service, a process that could take several years.

To expedite the project, the Discharger (Sylvia Dellar Survivor's Trust) subsequently submitted a 22 July 2011 partial FC/PCMP with plans to work around the Elderberry bush areas. The main elements of the plan included installation of a non-prescriptive engineered soil cover over most of the landfill unit (except for the Elderberry bush and levee corridor areas) and the construction of two onsite detention basins and associated drainage and pumping facilities to collect and discharge storm water to the City's Combined Sewer System. See WDR Findings 65 through 76. Closure of the Elderberry bush areas would be deferred until such time as the Elderberry beetle is delisted as a federally protected species (expected to occur within a few years) so that the bushes could be removed. Closure of the levee corridor area was not addressed in the plan, which proposed that the cover terminate a horizontal distance of about 18 feet from the inland edge of the top of the American River levee (about 6 feet beyond the estimated base of the levee).

On 26 October 2012, the Discharger submitted a Closure Certification Report documenting the site preparation and closure activities implemented under the 2011 partial FC/PCMP and exceptions to the plan implemented during project construction. The exceptions included adjustments to the final cover elevation; an additional (16.8 foot) setback from the river levee as part of a 35-foot "No Construction Zone" negotiated with the American River

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Flood Control District, which has an historical right of access to the levee area of the property by deed); and various drainage system improvements. See WDR Finding 77. A review of the files indicates, however, that the report has not yet been approved.

### Waste Discharge Requirements

These WDRs prescribe requirements for completing closure of the landfill and implementing landfill postclosure maintenance and corrective action monitoring. The WDR findings summarize the landfill design and operational history; groundwater monitoring results collected over the past 10 to 20 years; the status of the Water Quality Protection Standard for the site under Title 27 regulations; closure activities implemented under the 2011 FC/PCMP; and other relevant information. The requirements in the WDRs include, but are not limited to, the following:

- New Monitoring Well – A Point of Compliance well is needed down gradient of the landfill to meet Title 27 performance standards for monitoring. WDR Provision J.5.b therefore requires submission of work plan for installation of a Point of Compliance monitoring well along the southwestern perimeter of the landfill.
- Completion of Closure
  - Closure and Postclosure Specification E.2 requires that the Discharger submit a revised FC/PCMP with plans for closing the remainder of the landfill consistent with the construction and design requirements of the WDRs and the closure schedules specified in Provision J.6.
  - Construction Specification F.4 requires that the remaining areas of the landfill not yet closed (i.e., Elderberry and levee corridor areas) be closed in accordance with the 2011 FC/PCMP approved design absent a demonstration of infeasibility and satisfaction of other criteria listed in Corrective Action Specification D.5.
- Landfill Gas Investigation - Corrective Action Specification D.5 requires that the Discharger submit a work plan for the installation probes to investigate whether the landfill is generating landfill gas and to assess the need for landfill gas controls. The results of the investigation will be used in preparing the revised FC/PCMP for the landfill per the Closure and Postclosure Specifications of the WDRs.
- Water Quality Protection Standard -- A Water Quality Protection Standard Report reflecting installation and monitoring of the Point of Compliance well and background monitoring at well B-4 and/or C-15 (or alternative proposed locations consistent with Title 27 regulations) is required to be submitted under WDR Provision J.5.f.
- Topographic Survey -- An updated topographic site survey is required to be performed every 5 years, beginning **within 30 days** of completion of landfill closure per WDR Closure and Postclosure Specification E.16. See also MRP Section B.6.
- Geotracker -- The WDRs require that the Discharger establish and maintain an account

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with the SWRCB's Geotracker data base within 90 days of adoption of this Order.

### **Monitoring and Reporting Program**

The monitoring and reporting program (MRP) in the WDRs requires both groundwater and surface water monitoring. Semiannual soil gas monitoring is required for any gas probes installed to define the extent of landfill gas migration under the revised FC/PCMP submitted under this Order. If, based on the results of the landfill gas investigation conducted under Corrective Action Specification D.5, the Discharger is able to demonstrate to the satisfaction of Central Valley Water Board staff that the landfill is not generating significant amounts of landfill gas that could degrade groundwater quality beneath the site, soil gas monitoring is not required. Monitoring of the in situ probes installed as part of the landfill gas investigation may also be discontinued upon such demonstration to the satisfaction of Board staff.

Monitoring frequencies are generally semiannually for field and monitoring parameters, and every five years for landfill Constituents of Concern. The monitoring parameters generally consist of volatile organic compounds (VOCs), general minerals, and dissolved iron. Other dissolved metals have not been included in semiannual monitoring because they have not been confirmed as part of the release from the unit. MRP Section A authorizes the Discharger to use the results of sampling conducted by the City under the 28<sup>th</sup> Street Landfill WDRs in lieu of separate sampling under this Order to the extent that the latter monitoring would be duplicative.

Areas of the site north of the American River levee are drained by the American River, which flows into the Sacramento River. The remainder of the site is generally drained by the City of Sacramento's Combined Sewer System. (JDM)