

STATE OF CALIFORNIA
REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL COAST REGION

STAFF REPORT FOR REGULAR MEETING OF FEBRUARY 10, 2006

ITEM NUMBER: 11

SUBJECT: Revised Waste Discharge Requirements Order No. R3-2006-0001,
For City of Watsonville Class III Landfill, Santa Cruz County

KEY INFORMATION

Location: Approximately 3.5 miles west of the City of Watsonville at 730 San Andreas Road.
Type of Waste: Non-hazardous municipal solid wastes.
Remaining Capacity: 2.05 million cubic yards
Disposal: Area fill method.
Liner System: Phases I/II are unlined and closed, Phase III is lined (current fill area), Phase IV and V will be lined (future fill area).

Groundwater Contamination: Trace volatile organic compounds have been detected in terrace deposit groundwater monitoring wells in the vicinity of Phase I/II. Inorganic monitoring parameters also exceed concentration limits in monitoring wells in the vicinity of Phase I/II.

Existing Orders: Waste Discharge Requirements Order No. 94-020, Cease and Desist Order No. 96-08, Waste Discharge Requirements Order No. 93-84 (Landfill Super Order), and State Water Resources Control Board Water Quality Order No. 97-03 DWQ (General Industrial Stormwater Permit)

This Action: Adopt Waste Discharge Requirements Order No. R3-2006-0001

SUMMARY

The purpose of Waste Discharge Requirements Order No. R3-2006-0001 (Hereafter "Order" or "Order No. R3-2006-0001") is to update and replace existing Waste Discharge Requirements Order No. 94-020, adopted by the Regional Board on February 11, 1994. The Order incorporates corrective action requirements of Cease and Desist Order No. 96-08 (CDO) and provisions for evaluating current corrective actions, allowing for rescission of the CDO. Lastly, the Order incorporates the requirements of Waste Discharge Requirements Order No. 93-84.

Proposed Order No. R3-2006-0001 includes figures 1 through 4, and Monitoring and Reporting Program No. R3-2006-0001 (MRP). The figures

and MRP are included as Attachment 1 and 2 to the Order.

The City of Watsonville (Discharger) submitted a joint technical document on March 9, 2005, to facilitate the review and revision of Order No. 94-020. The City did not propose modifications to the design and operation of the Landfill. Although the City did not request modification, the proposed Order includes:

- Revisions to the MRP including groundwater, surface water, landfill gas and leachate monitoring.
- Modification of the waste stream to allow treated wood waste disposal.
- Language that brings the Landfill into compliance with California Code of Regulations Title 27, Solid Waste, effective

- July 18, 1997 (CCR Title 27), and 40 CFR Parts 257 and 258 Solid Waste Facility Disposal Criteria, Final Rule, as promulgated October 9, 1991 (40 CFR 257 and 258).
- Incorporation of requirements contained in Water Board Order No. 93-84.
- Incorporation of long-term requirements contained in Cease and Desist Order No. 96-08.
- Rescission of Cease and Desist Order No. 96-08.

The proposed Order covers the current Landfill operations and provides requirements for future potential changes. Design and construction specifications within the proposed Order meet or exceed requirements in both CCR Title 27 and 40 CFR 257 and 258.

DISCUSSION

Landfill Description

The Landfill covers 103 acres, and is located 1.5 miles east of Monterey Bay and 3.5 miles west of the City of Watsonville (shown in Order Attachments 1 and 2). The Landfill is bordered by Gallighan Slough to the north, agricultural land to the south and west, and the Southern Pacific rail lines to the east and north. The Buena Vista landfill is located east of the Watsonville landfill across the Southern Pacific railroad track. The Buena Vista landfill is owned and operated by the County of Santa Cruz.

The Landfill site lies within the Monterey Bay coastal plain, which consists of a broad band of gently rolling hills. More specifically, the landfill site is on a hillside that slopes northeastward and eastward toward Gallighan Slough. Original site elevations range from approximately 260 feet above mean sea level (MSL) to 100 feet MSL along the Southern Pacific Railroad track.

Proposed Landfill Changes

The Discharger submitted a Joint Technical Document (JTD) on March 9, 2005, to facilitate the review and revision of Order No. 94-020. The City's JTD did not propose landfill design or operation modifications.

Landfill History and Development

The Landfill has been used for waste disposal since 1968, and is constructed with unlined and lined areas. The waste received at the Landfill consists of non-hazardous residential, commercial and industrial solid waste, which is classified by CCR Title 27, Section 20220(a) as Class III Waste. To date, Phases I, II and III have received waste. For practical purposes Phases I and II are treated as one fill area and will be referred to as Phase I/II. Phase I/II was closed in 1997 and is unlined. Phase III is a lined landfill area and the current active disposal module. The Landfill received approximately 37,935 tons of municipal solid waste (MSW) from the general public and commercial haulers in 2004. Wastes are landfilled using the area fill method. The wastes are compacted in approximately 2-foot thick layers on a working face sloped no steeper than 3:1. The lift is covered as it advances across the landfill active area. (The working face is covered with alternative daily cover that consists of tarps). If the lift is to be left undisturbed for over 180 days the top and side slopes of the lift are covered with a 12-inch thick intermediate soil cover. Cover material is generally obtained from on-site sources, but the City also accepts clean soil from construction sites.

The Landfill will be developed in 5 waste disposal phases (Phase I/II, III, IV, and V). The landfill site is shown in Attachment 4 of the proposed Order. Full development includes sequential utilization of the five phases. Phase I/II is closed and has received an approved final cover to minimize infiltration of water into the waste mass. Phase III is lined and currently active. Phase III is expected to receive waste until 2015 at which time Phase IV will receive waste. Phase IV is expected to receive waste until 2020 at which time Phase V will receive waste. Both Phase IV and V will be constructed with a composite liner and leachate collection and removal system similar to that used in Phase III. Final landfill capacity is expected to be reached by the year 2039.

The landfill development will create final landfill grades ranging from 3:1 (horizontal to vertical) on the landfill sideslopes to 20:1 on the top deck. The maximum elevation achieved will be approximately 325 feet MSL in Phases I/II, and III, and 275 feet MSL in Phases IV and V.

Geology

The landfill is underlain by Manresa dune sands which overlie fluvial terrace deposits made up of interbedded clays, silts, and sands, followed by the Aromas Sands Formation made up of interbedded fluvial sands, gravels, silts, and clays. The thickness of the Manresa dune sands is determined by topography, at the higher elevations the dune sands are over 150 feet thick compared to 30-50 feet thick at the lower elevations. The contact between the Manresa dune sands and the underlying terrace deposits is at approximately 110 to 120 feet MSL. The contact between the terrace deposits and underlying Aromas Sands Formation is approximately -30 to -10 feet MSL.

A more detailed description is included in Findings Nos. 29 through 33 in proposed Order.

Hydrogeology

Three water-bearing zones are found below the landfill: a perched zone contained with the terrace deposits, the Aromas formation aquifer, and the Purisima formation aquifer. The perched groundwater in the terrace deposits occurs at 65 to 11 feet MSL with a general flow to the west and northwest. The principal water bearing formation is the Aromas formation aquifer, which has a groundwater elevation near sea level with a general flow to the east and south. The deepest water-bearing zone is the Purisma formation aquifer, but its use is limited since the Aromas formation produces ample water for local water users.

Site-specific groundwater information is limited to the two upper water bearing zones. In September 2004, the hydraulic gradient of the groundwater contained in the terrace deposits was approximately 0.0408 ft/ft with a calculated velocity of 2.77 ft/day, based on a hydraulic conductivity of 4.8×10^{-3} and an effective porosity of 0.20. Also in September 2004, the hydraulic gradient of the groundwater contained in the Aromas formation was approximately 0.00318 ft/ft with a calculated velocity of 0.04 ft/day (east and south), based on a hydraulic conductivity of 1.0×10^{-3} cm/sec and an effective porosity of 0.25. As the perched groundwater of the Terrace Deposits moves off of the site, with a steep gradient to the west and north, it quickly comes

into contact with the Aromas formation, which generally flows east and south back under the landfill.

Supply Wells

There are no on-site water supply wells. Water is trucked to the landfill by a certified potable water carrier and stored in two tanks. As previously stated, groundwater from the Aromas formation is the primary source of drinking and irrigation water near the landfill. The approximate locations of domestic or irrigation supply wells within a one-mile radius of the landfill are shown in Attachment 3 of the proposed Order.

Surface/Storm Water

The Landfill is located on a hillside that faces eastward within the Gallighan Slough watershed. Runoff from the hillside flows northeastward and eastward to the railroad, which abuts the site on the north and east. Runoff then passes through numerous culverts beneath the tracks, and flows down side-canyon areas to Gallighan Slough.

Gallighan Slough is located north and east of the landfill and flows southeast, joining Harkins Slough 0.75 miles southeast of the site. Harkins Slough is tributary to Watsonville Slough, which discharges to the Pajaro River. The Watsonville Slough system consists of flat alluvial valleys near sea level, which are intermittently flooded with fresh water during the winter months. The lower part of the Watsonville Slough is subject to tidal action. The low gradient of the slough bottom delays the discharge of storm water, and the slough bottoms are flooded up to several feet deep during most winters. However, the site is well above any inundation that might be caused by a 100-year flood.

Rainfall is seasonal; approximately 90 percent of the annual precipitation occurs from October through April. The average annual rainfall is 22.3 inches. January is the wettest month with an average precipitation of 4.7 inches. Based on information from the National Oceanographic and Atmospheric Administration, the peak 100-year, 24-hour storm event is approximately 6 inches.

California Code of Regulations Title 27, Section 21750(e), requires that Class III landfills be designed to handle the runoff from a 100-year, 24-

hour storm. Surface-water runoff from the side slopes of the landfill is carried by bench v-ditches and overside drains, which discharge to various on-site storm water detention basins. Retention basins and surface water sampling locations are shown in Attachment 4. Surface water is monitored at up to seven water-sampling locations, SW-1 through SW-7.

In addition to this Order, the Discharger is covered under a Statewide General Storm Water Permit. On April 2, 1992, the Discharger submitted its "Notice of Intent" to comply with the General Permit to Discharge Storm Water Associated with Industrial Activity (WQ Order No. 97-03-DWQ). The Discharger performs storm water monitoring in accordance with the General Permit's Monitoring and Reporting Program and required storm water pollution prevention plan. Storm water samples are collected twice per year. Samples are collected during the first hour of runoff from a storm event that occurs during scheduled operating hours and that was preceded by at least three working days without storm water discharge. Samples are analyzed for pH, total suspended solids, specific conductivity, oil and grease, and iron.

Leachate Management System

Leachate is formed by the infiltration of surface water, or free liquids within the waste, migrating through the waste mass to the bottom of the landfill. A leachate management system's purpose is to collect, contain, and remove leachate prior to it contacting or impacting groundwater.

Phase I/II leachate is collected by a gravity flow collection system along the fill benches and fill perimeter. The gravity flow collection system consists of 2,300 feet of 4-inch perforated PVC piping, which is set in a 2-foot by 3-foot bed of gravel. A 40-foot-wide french drain along the northern toe of the fill was later added in 1993.

Phase III leachate is collected by a perforated HDPE pipe that runs through the drain rock layer; the leachate is directed into a collection sump where it is pumped out automatically.

Leachate from both Phase I/II and III is pumped to a leachate storage area that contains four 10,000

gallon tanks. The tanks are contained on a concrete pad with secondary containment.

Water from the french drain system in Phase I/II is called seep water and is substantially cleaner than the actual leachate collected from Phase I/II. This seep water is believed to be generated by irrigation water from the adjacent farm fields that travels through the sandy soils onto the landfill site due to underlying clay layers. Seep water is used on the site for dust control outside of the lined areas.

Leachate collected from Phase I/II and Phase III is used only in lined areas (Phase III) for dust control or hauled to the City's wastewater treatment plant for disposal.

Landfill Gas Control

Landfill gas is a product of decomposition of organic wastes. Landfill gas generally consists of equal amounts of methane and carbon dioxide along with traces of other gaseous constituents. The production of landfill gas continues until all organic material is decomposed. To control landfill gas and prevent off-site migration, gas extraction wells are used to collect and pipe the gas to the flare.

Phase I/II contains 18 gas extraction wells, 14 of which were installed as part of the Phase I/II Closure Construction. Several of the interior gas wells in the southwest part of Phase I/II contain leachate and as a result effectiveness of the gas collection is limited. The City is attempting to extract leachate and gas concurrently from the impacted wells. There are seven gas extraction wells installed in the native soil around the southwest perimeter of Phase I/II. This system contains an independent blower which sends the gas from these wells through a carbon bed to remove VOCs. The system was installed in 1996 to eliminate off-site migration from Phase I/II. The perimeter gas system contains only low levels of landfill gas and is expected to be abandoned when the interior gas wells can contain the landfill gas completely. Since 2003, the perimeter system has only been needed intermittently, and is generally turned on one week per month. A series of horizontal gas wells have been installed in Phase III, and more will be added as it is filled. Landfill gas collected from Phase I/II (interior) and Phase III is piped to the adjacent Buena Vista

Landfill, where blowers provide vacuum for the City gas wells and a ground flare burns both the City and County landfill gas. Gas condensate, resulting from landfill gas collection, is stored in tanks and hauled as necessary to the City WWTP.

Groundwater Monitoring

The groundwater monitoring system consists of 12 wells in Terrace Deposits perched zone (TW-2, TW-5, TW-8, TW-9, TW-10, TW-11, TW-12, TW-13A, TW-14, TW-20, TW-21, and TW-22), 5 wells in the Aromas aquifer (AW-1, AW-3, AW-4, AW-18, AW-23), and agricultural well 240, as shown in Attachment 4 of the Order.

Background monitoring points for the future fill areas of Phase IV and V consist of wells AW-4, TW-9, TW-10, TW-11. Detection monitoring points for existing fill areas consist of wells AW-1, AW-3, AW-4, AW-23, TW-9, TW-10, TW-11, TW-13A, TW-14, TW-21, TW-22, and agricultural well 240. Corrective action points (CAPs) for unlined Phase I/II area include the following groundwater wells: AW-3, TW-2, TW-5, TW-6, TW-12, TW-18, and TW-20.

Groundwater Degradation and Remediation Effectiveness

Trace volatile organic compounds (VOCs) have been consistently detected in several groundwater monitoring wells. All impacted wells monitor the terrace deposit groundwater except for Aromas formation monitoring well AW-3 and are in the vicinity of Phase I/II. The lack of landfill related VOC impacts in groundwater phase III monitoring wells appear to demonstrate that the liner, leachate collection, and gas extraction systems are performing as designed.

Phase I/II was closed as a result of Cease and Desist Order No. 96-08 (discussed further in the compliance section of this staff report). Phase I/II received an approved final cover/cap, and a corrective action plan was developed and implemented to address groundwater impacts. Waste deposition was moved to Phase III (lined) during 1997. Since then, VOC impacts to terrace deposit monitoring wells have been stable or trending lower. Vinyl chloride impacts to AW-3 were decreasing prior to 1997 but have trended higher since. Of note, 1,2-dichloropropane,

consistently detected in wells TW-2, TW-5, TW-12, TW-13A, TW-20, and AW-23, with historically concentrations ranging from 0.4 ppb to 3.2 ppb, is typically used agriculturally as an ingredient of soil fumigant D-D, and is not commonly associated with municipal waste.

Inorganic monitoring parameters regularly exceed the concentration limits in most of the terrace deposit detection wells and several of the Aromas formation detection wells. Several of the inorganic concentration limits for evaluation monitoring wells have been exceeded in both the Aromas and terrace deposit aquifers, but are consistent with historical findings. In general, inorganic monitoring suggests that leachate impacts may still be resulting from phase I/II. Monitoring for inorganic groundwater quality in the vicinity of phase III appear to show that the liner and leachate collection for phase III are performing as designed.

Continued implementation of the existing groundwater/leachate management system and the landfill gas control system are expected to further improve groundwater quality. The proposed Order adds Provision E.29 requiring the Discharger to define the current vertical and horizontal extent of the VOC pollution in groundwater and to evaluate performance and implementation of current corrective actions.

Compliance History

Since the last Order update in 1994, there have been several compliance issues.

On July 26, 1996, the Regional Board adopted Cease and Desist Order No. 96-08 (CDO), "Requiring the City of Watsonville to Cease and Desist From Discharging Waste at the City Class III Landfill Contrary to Requirements Prescribed by the California Regional Water Quality Control Board, Central Coast Region." The CDO resulted when monitoring data from 1989 to 1996 showed groundwater contamination in the vicinity of the unlined Phase I/II waste cell. The CDO required the following:

- Cease discharging leachate at the landfill site. Cease discharging seep and contact water within fifty feet of unlined landfill areas.

- Submit a current listing of owners adjacent to the landfill and of all wells within ¼ mile of the landfill.
- Commence semiannual information mailings to affected persons.
- Cease disposing of waste over un-lined areas of the landfill.
- Define the current vertical and horizontal extent of the VOC pollution in groundwater.
- Submit a corrective action program for unlined Phase I/II waste cell including an approved final cover/cap and gas extraction system.
- Implement corrective action.

The Discharger has complied with the requirements of the CDO. Most importantly, waste is currently disposed of in a lined cell (Phase III), unlined areas (Phase I/II) were closed and received an approved final cover, and a Corrective Action Plan was developed and implemented and included leachate collection/removal and gas extraction. As a result, the updated Order includes requirements and provisions to manage the ongoing corrective action efforts and rescind the CDO

During an inspection on October 19, 2004, Regional Board staff noted violations at the Landfill, which included the following:

- Drainage ditches not cleared.
- Ponding on top of the Phase III waste cell.
- Drainage inlet to from active area goes directly to sedimentation/retention basin and had garbage in it.
- The bench road had some inappropriate inert waste incorporated into it.

The Discharger submitted photos on November 4 and 18, 2004, documenting that it had corrected the violations. Although the Phase III waste cell is lined, it is important to minimize the infiltration of water into the cell to prevent excess formation of leachate. It is Water Board staffs' opinion that a single liner system, such as that used in Phase III of the Watsonville Landfill, is suitable when leachate formation and reuse are minimized. A double liner with an appropriately designed leachate collection and removal system is recommended when large amounts of leachate are expected due to the addition or infiltration of water to the waste cell (i.e. bioreactor). The proposed Order stresses requirements minimizing ponding

and facilitating runoff of clean stormwater to drainage ways and retention basins.

Overall the Discharger is responsive to Regional Board staff's information requests and proactively addresses compliance issues. At this time, staff is not recommending changes to the existing Order or Monitoring and Reporting Program based on prior formal or informal compliance issues.

PROPOSED ORDER CONTENTS

Proposed Order No. R3-2006-0001 updates regulatory language by referencing CCR Title 27, which combined and replaced Chapter 15 and California Waste Board regulations (Title 14).

It also reflects current Federal regulations; specifically, 40 CFR 257 and 258 (Subtitle D). The proposed Order updates the Monitoring and Reporting Program to reflect current site conditions and groundwater monitoring and reporting requirements. The proposed Order adds emphasis to wet weather preparedness and operation through additional provisions to address deficiencies noted during 2004 winter inspections. These deficiencies had also been noted informally during previous inspections. Finally, the landfill is no longer subject to Waste Discharge Requirements Order No. 93-84 (Landfill Super Order), adopted by the Regional Board on October 8, 1993. The Order also rescinds Cease and Desist Order 96-08, adopted by the Regional Board on July 26, 1996, incorporating long-term corrective action planning, modification, and implementation into requirements and provisions of the proposed Order.

1. **General Information:** The section includes discussions of the site's description and history, waste type and classification, geology and hydrogeology, groundwater, storm water and surface water, water quality, control systems and monitoring programs, beneficial uses of the water, and surrounding land use.
2. **Compliance with other Regulations, Orders and Standard Provisions:** This section directs the Discharger to:
 - No longer comply with Regional Board Order No. 93-84 (Landfill Super Order).
 - Comply with all applicable requirements contained in CCR Title 27 and 40 CFR 257 and 258.

- Comply with State Water Resources Control Board Water Quality Order No. 97-03-DWQ, which addresses storm water associated with industrial activities, commonly referred to as "General Industrial Storm Water Permit."
3. **Prohibitions:** These discharge prohibitions are applicable to Class III waste disposal.
 4. **Specifications:** These are specifications that the Discharger must meet and/or implement to comply with site specific aspects of CCR Title 27 and 40 CFR 257 and 258 pertaining to solid waste disposal practices. These specifications are categorized into several groups; a) General Specifications, b) Wet Weather, c) Design Criteria and d) Closure.
 5. **Water Quality Protection Standards:** These standards outline constituents of concern, monitoring parameters, concentration limits, monitoring points, points of compliance, and compliance period.
 6. **Provisions:** This section addresses the Discharger's responsibilities regarding Landfill-related impacts to water quality and provides: Regional Board access to the Landfill and related reports, Order severability, discharge conditions, reporting and implementation provisions, a termination clause, and wet weather operations provisions.

MONITORING AND REPORTING PROGRAM (MRP) CONTENT

Part I - Monitoring and Observation Schedule: This section contains the following requirements: periodic routine Landfill inspections, intake monitoring, drainage system inspections, rainfall data collection, pollution control system(s), Landfill monitoring (groundwater, surface water, leachate and gas), analytical monitoring of groundwater and gas monitoring parameters and constituents of concern, and quarterly determination of groundwater flow rate and direction.

Part II - Sample Collection and Analysis: This section establishes criteria for sample collection and analysis, methods to determine concentration limits, and specifies how these records shall be maintained. This section also establishes

acceptable statistical and non-statistical methods the Discharger must use to perform data analysis, and outlines acceptable re-test procedures.

Part III - Reporting: This section establishes formats and requirements that the Discharger must follow when submitting analytical data, semiannual reports, and summaries to the Water Board. It includes notification requirements, contingency responses and reporting requirements.

Part IV - Definition of Terms: This section defines a number of terms used in the MRP.

ENVIRONMENTAL SUMMARY

This project involves an update of Waste Discharge Requirements initiated by the Discharger. These Waste Discharge Requirements are for an existing facility and as such are exempt from provisions of the California Environmental Quality Act (Public Resources Code, Section 21000, et seq.) in accordance with Title 14, California Code of Regulations, Chapter 3, Section 15301.

COMMENTS AND RESPONSES

The City of Watsonville submitted a comment letter dated January 6, 2006, which staff has paraphrased and responded to below.

1. Finding 48 of the draft WDR suggests that groundwater monitoring well TW2 is in close proximity to refuse. The boring log for that well does not show any evidence of refuse. It is not clear if the Board is suggesting that the City consider abandoning TW2.

Response

Regional Water Board staff has removed language suggesting TW2 may be too close or within the fill area. We are not suggesting that the City abandon groundwater monitoring well TW2 at this time. The proposed Order requires the City to evaluate the effectiveness of its groundwater monitoring well network as part of an evaluation of its corrective action program performance. The technical report is due in December 2006.

2. Regarding Finding 50, SW7 has recently become active again and was sampled during 2005.

Response

Staff concurs and modified the finding.

3. Regarding Finding 51, no specific frequency for sounding the lysimeter is specified in Title 27 or this order. The City would like to continue to sound the lysimeter on an annual basis

Response

Staff partially agrees. The Monitoring and Reporting Program has been updated to include lysimeter sounding on a **monthly** basis which is consistent with the discharger's previous monitoring and reporting program.

4. Specification C.10 requires that wind-blown refuse material, outside the active landfill area, be collected regularly and disposed in the landfill. It would seem this specification is more appropriately regulated by the California Integrated Waste Management Board (CIWMB).

Response

Staff disagrees. This specification is standard language in recently adopted WDRs for landfills. Although the CIWMB has authority over litter to prevent nuisance conditions per California Code of Regulations (CCR) Title 27, Section 20830, the Regional Water Board has authority to regulate issues that may affect water quality. Clearly windblown litter that migrates from the site may impact surface water bodies and must be addressed.

5. It appears that Specification C.19 allows inert material to be disposed within the Phase I/II area of the landfill. Please reword or clarify.

Response

Phase I/II is closed and disposal of inert waste to the Phase I/II area would be inconsistent with its approved post closure land use (CCR Title 27, Section 21190). The intent behind specification C.19 is to allow inert waste to be disposed outside of lined areas with appropriate regulatory approval.

6. Specification C.23 requires that during the rainy season, a minimum one-foot-thick compacted soil layer be maintained on all waste disposal areas excluding the working face. Implementing this specification is problematic as a one-foot thick soil layer will be required over each lift regardless of when additional waste will be placed on the lift. It is suggested this specification be revised to require the one-foot cover over landfill areas that will remain inactive for more than 6 months and landfill areas that will not be receiving waste during the rainy season.

Response

This specification is consistent with the previous WDR and other landfill WDRs. The intent behind the wet weather intermediate cover is to promote runoff and reduce percolation of rainwater into the waste. The discharger may remove the soil as new working face moves across the landfill.

7. Specification C.24 should refer to intermediate cover rather than interim cover to be consistent with Specification C.23.

Response

Staff concurs and has revised specification C.24.

8. Specification C.30 requires certification of standards be obtained for containment structures (liners) before waste discharge. Other wording seems to indicate construction report, consistent with that required by CCR Title 27 Section 20324(d).

Response

Staff agrees and has modified Specification C.30 to refer to CCR Title 27 Sections 20324 and 20310(e).

9. Specification C.34 limits permanent seismically induced displacement to 6 inches for landfill and 12 inches for final cover. There is no regulatory basis for these displacement limits. There is no available evidence that a maximum 6-inch permanent displacement is more protective of public health and environment. For final covers, there is no generally accepted maximum permanent displacement, and because any displacement of a final cover is easily seen and easily

repaired, greater permanent displacements are accepted.

Response

Staff disagrees and the City has not produced any evidence that displacements greater than six or twelve inches are acceptable. The Regional Water Board has previously contracted out slope stability analysis to the Department of Water Resources (DWR). Department of Water Resources's staff has been consistent in recommending 6 inches as the maximum limit for seismic induced displacements. This has been DWR's recommendation for more than 10 years and has been used in over 20 landfill reviews that DWR has been part of. This value is originally based on a paper by Seed and Bonaparte (1992) which includes a survey of several of the largest firms in the landfill design business and what they thought was acceptable. The final cover maximum permanent displacement of 12 inches is consistent what is required in other landfill WDRs. Additionally, the Watsonville Landfill is located on geologic materials (including shallow soils) that are highly permeable and do not meet the criteria for containment structures contained in CCR Title 27 Section 20320 (d). Therefore, the potential for a leachate or gas release that would affect groundwater quality is very high if liner displacement resulted in rupture.

10. Specification C.35(e) requires secondary containment for storage facilities associated with the leachate collection and removal system. It is assumed that this does not refer to leachate collection sumps. Please reword or clarify.

Response

Staff agrees. Specification C.35(f) requires that sumps be constructed with double liners and leak detection, therefore specification C.35(e) has been modified to address above ground storage facilities.

11. Specification C.44 requires closure of Phase III within 180 days of diverting waste to Phase IV. It is suggested that closure in accordance with an approved final closure plan also be acceptable.

Response

Staff agrees and has modified specification C.44 to require closure of Phase III within 180 days or in accordance with an approved final closure plan.

12. Provision E.4 requires that the construction quality assurance (CQA) plan for constructing a new lined waste management unit or landfill final cover system be implemented by a third party unrelated to the discharger, landfill operator, project designer, or contractor. There is no basis within CCR Title 27 for this requirement. Section 220323 requires a CQA plan for construction of a liner or final cover system and Section 20324 requires the CQA plan be prepared and supervised by either a registered civil engineer or certified geologist. Section 20324 also specifies minimum requirements of the CQA plan. The CQA plan is typically reviewed as part of its design review for a new module. The final report is submitted to the RWQCB. Based on Title 27 requirements and subsequent review, the RWQCB is extensively involved in the CQA process.

It is agreed that the contractor should not implement the CQA plan, but the discharger, landfill operator, and project designer all ultimately are exposed to liability if a landfill impacts the environment. Additionally, since Title 27 requires a registered civil engineer or certified geologist, prohibiting appropriately registered professionals from doing so because of who they work for is unfairly questioning their professional integrity. This provision takes potential work away from qualified professionals.

We understand this provision may stem from an incident at a site where the landfill operator, designer, and CQA monitor were either the same or related firms. It is unfair to impose this prohibition because of a single incident.

It is requested that this provision be reconsidered.

Response

Staff disagrees. Our experience has shown that serious construction deficiencies occur in situations where a party related to the discharger, the landfill operator, the designer, and/or the

contractor implements the CQA plan. This is not due to any single event but several events. Construction of a liner or final cover system is extremely important since there is only one chance to build the liner correctly. Once waste is deposited, there is no feasible way to correct construction flaws other than forced unit closure. A significant amount of time and money goes into the design and review of liners and final covers. Appropriately designed and constructed liners and final covers are a primary factor in preventing water quality impacts. Since it is almost impossible to see a failure in liner after construction, construction defects are only observed after a release has occurred staff believes it is necessary to continue requiring implementation of the CQA plan by an independent third party. Provision E.4 is consistent with what is required in WDRs for other Central Coast Water Board regulated landfills.

13. Provision E.32 requires submittal of an updated closure and postclosure maintenance plan by May 31, 2009, and every 5 years thereafter. Please revise to May 31, 2010, to be consistent with the current submittal cycle.

Response

Staff agrees and has revised Provision E.32 to include a due date of May 31, 2010.

14. Regarding Provision E.38, it is suggested that the phrase "at any time, during normally scheduled business hours," be added.

Response

Staff disagrees and recommends no change to the provision.

15. Regarding provision E.41, the due date for the updated closure and postclosure maintenance plan is not consistent with provision E.32. Please revise to May 31, 2010, consistent with our comment on Provision E.32 above.

Response

Staff agrees and has revised provision E.41 to be consistent with provision E.32 and a due date of May 31, 2010.

16. Section A.2(a) Receiving waters. The receiving water for the landfill site is Gallighan Slough, which is located alongside

Buena Vista Road. Due to the fact that the slough is also receiving water from the Buena Vista Landfill, is subject to litter from vehicles driving to and from Buena Vista Landfill, and is subject to illegal dumping, it unlikely that litter from Watsonville Landfill is likely to get to this point.

Response

Staff agrees that the receiving water monitored may be impacted by refuse from other sources, but the City is still responsible for monitoring the receiving water and determining if any trash observed is from its landfill. We recommend that the City of Watsonville coordinate with Buena Vista Landfill on this issue.

17. Several monitoring requirements from Part I, including section B. Intake Monitoring, section D. Rainfall Data, and Section E. Pollution Control System Inspections appear to go beyond what is normally required in a Monitoring and Reporting Program and are normally required by other regulatory agency such as the local air pollution control district or CIWMB.

Response

Staff agrees that some monitoring requirements may be the same as or similar to those required by other agencies. If data or observations are available, and applicable, the discharger may transfer them into the report required by the Monitoring and Reporting Program R3-2006-0001, rather than duplicating sampling, analysis, and observations. The monitoring and reporting as proposed is similar to programs required by WDRs for other similar landfills.

18. Part 1, section E.1(g) requires annual testing of the leachate used for dust control to determine that it is not hazardous but does not specify what tests are required to make the nonhazardous determination.

Response

At this time, Regional Water Board staff has not developed formal testing requirements or procedure for making a nonhazardous determination. Based on CCR Title 22, Division 4.5, Chapter 11, the discharger should evaluate if it is leachate and determine if it is hazardous. This requirement is similar to what is required of other

facilities and staff will evaluate information submitted on site-specific basis.

19. Part III, section B.4 requires a graphical presentation of data and comparison of geochemistry results from the groundwater monitoring wells and the Salinas River to be included in the annual report.

Response

Staff did not intend to have a graphical presentation of data and comparison geochemistry results as described above. The section has been revised to reflect conditions at the Watsonville landfill.

20. All wells in corrective action monitoring have been changed from semiannual to quarterly monitoring. Given that there has been no increase in pollutant levels in most of the Terrace and Aromas wells, this change does not seem warranted. In 1997, the Board, agreed with City staff, and our consultant, that semiannual monitoring provided the necessary level of detail for monitoring at the site.

Response

Staff agrees and has restored the semiannual monitoring for the corrective action wells. Although analytical groundwater monitoring is required semiannually, staff believes it is important to measure groundwater elevations quarterly due to the unique interactions between the groundwater zones beneath the facility and has modified the Monitoring and Reporting Program accordingly.

21. Table 2 lists monitoring parameters and USEPA approved methods for analysis. The City has its own state-certified laboratory located at its wastewater treatment facility that is capable of testing a number of the constituents but with alternate USEPA methods. The City would like to have the table amended to allow for the use of other equivalent USEPA test methods.

Response

Staff has revised the table to include the requested USEPA methods, which are primarily used for wastewater analysis but are capable of analyzing to the detection levels expected. The City's

laboratory shall be certified by the State of California for all test methods used.

22. The submission dates for semiannual reports has been changed to May 31 and Nov. 30. Currently the City submits reports on July 31 and January 31.

Response

Staff did not intend to change the reporting dates and has fixed the error.

RECOMMENDATION

Adopt Waste Discharge Requirements Order No. R3-2006-0001 as proposed.

ATTACHMENTS

1. Proposed Waste Discharge Requirements Order No. R3-2006-0001
2. Location Map
3. Vicinity Map
4. Area Well Location Map
5. Site Map
6. MRP.
7. IPL