CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER NO. R5-2007-0148

WASTE DISCHARGE REQUIREMENTS

FOR THE
MA-RU HOLDING COMPANY, INC. AND
BONZI SANITATION LANDFILL

FOR
OPERATION, CLOSURE AND CORRECTIVE ACTION
AT THE
BONZI SANITATION LANDFILL
STANISLAUS COUNTY

The California Regional Water Quality Control Board, Central Valley Region, (hereafter Regional Water Board) finds that:

1. The Ma-Ru Holding Company, Inc. and Bonzi Sanitation Landfill. Partnership (hereafter jointly referred to as "Discharger") are joint operators of the Bonzi Sanitation Landfill facility. The Discharger has submitted a Joint Technical Document, a revised closure plan and results from a monitoring well installation program to update their waste discharge requirements (WDRs). The facility currently is regulated by WDRs Order No. 98-093 in conformance with Title 27 of California Code of Regulations, Division 2, Subdivision 1 (hereafter Title 27). In addition, WDRs Order No. 90-215 regulates the treated groundwater land application area. Both of these WDRS will be rescinded and replaced with the adoption of this Order.

2. The Bonzi Sanitation Landfill is on a 128-acre parcel and is comprised of Assessor's Parcel Numbers 017-41-36 and 017-41-11. The Discharger also owns, directly south of the landfill parcels, 140 acres that historically has been used for land application of groundwater treatment system effluent and could potentially still be used as a land application area. As identified in the April 2006 Report of Waste Discharge, the parcel number for the discharge area is 017-42-001. The landfill and the adjacent land application area are three miles southwest of Modesto near the Tuolumne River in Section 12, T4S, R4E, MDB&M as shown in Attachment A, which is incorporated herein and made part of this Order by reference.

3. In 2005, the Discharger reported they received 10,398 tons of material. The facility has four waste management units (WMUs) as described below and as shown on Attachment B, which is attached hereto and made part of this Order by reference:

   - WMU I is a 35 acre Class III landfill closed pursuant to Title 27. In 1999, WMU I was capped with a two-foot thick foundation layer, a 30-mil PVC flexible membrane and an

18-inch vegetative layer. Approximately two million cubic yards of municipal refuse, agricultural wastes, industrial wastes and construction debris was landfilled from 1967 to 1978. WMU I was constructed without a bottom liner or a leachate collection and removal system (LCRS).

- WMU II is a Class III waste management unit that covers 18 acres in the central eastern area of the facility. Wastes were accepted from 1978 to 1984. Approximately 750,000 cubic yards of municipal refuse, agricultural wastes, industrial wastes and construction wastes were landfilled. This unit is presently covered with intermediate cover. There is no bottom liner or LCRS.

- WMU III-A, III-B, and III-C are Class III waste management units covering about 11 acres in the central southern portion of the facility. Approximately 250,000 cubic yards of agricultural waste, industrial waste, and construction wastes were accepted from 1984 to March 1992. These units are presently covered with intermediate cover. There is no bottom liner or LCRS.

- WMU III-D, WMU III-E, and WMU III-F are three “unclassified” waste management units. The WDRs allowed only inert wastes, as defined in Title 27 Section 20230, to be discharged to these units. Wastes were discharged to these units between the years of 1992 and 1999. These units are presently covered with intermediate cover. There is no bottom liner or LCRS.

- WMU IV is an active inert waste management unit covering 20 acres in the northeastern portion of the facility and resides in a soil borrow pit that was created during construction of the other units. The WDRs allow only inert waste (as defined in Title 27 Section 20230) to be discharged to this unit. The Discharger began using this unit in 1999. The WMU is at capacity and is now covered with intermediate cover and will be closed with WMU II and III. The unit has no bottom liner or LCRS.

4. A ten million gallon retention pond located in the southwest corner of the Landfill property encompasses an area of approximately 4.4 acres (see Attachment B). It is lined with a 60-mil HDPE geomembrane liner. This retention pond receives treated water from a groundwater treatment system and storm water from areas adjacent to the pond. Because the pond does not receive designated waste, it is not required to have an LCRS or a secondary liner system.

5. On 6 July 2006, the Discharger submitted a Report of Waste Discharge (RWD) as part of the Joint Technical Document (JTD) for the landfill. The information in the RWD/JTD has been used in writing these WDRs. The RWD contains the applicable information required in Title 27. The Discharger proposes to vertically expand WMU II and WMU III with the discharge of inert solid waste. This expansion will be limited to the existing footprints of WMU II and WMU III. This additional material is necessary to bring the existing cells up to

the required three percent slope to allow for the installation of the final cover on WMUs II and III.

PREVIOUS ENFORCEMENT

6. In 1984, the Discharger reported that a release of volatile organic compounds to groundwater had occurred. Consequently, Cease and Desist Order (CDO) No. 84-153 directed the Discharger to evaluate the extent of the contaminant plume. The Discharger did not comply in a timely manner, and was therefore issued a $3,500 Administrative Civil Liability order. CDO No. 84-153 was rescinded on 22 September 1989.

7. As a result of the Order, and the subsequent data evaluation, the Board adopted Cleanup and Abatement Order No. 89-185 to implement the necessary groundwater remediation.

8. Following adoption of Cleanup and Abatement Order No. 89-185, the Discharger failed to install and operate the required groundwater treatment system. On 23 March 1990, the Executive Officer signed Administrative Civil Liability (ACL) Complaint No. 90-093 in the amount of $50,000. The groundwater treatment system was then installed in the summer of 1991 and began pumping on 1 November 1991.

9. The Discharger has complied with Cleanup and Abatement Order No. 89-185 and therefore it will be rescinded with the adoption of this Order.

10. Prior to discharging the treated groundwater to the adjacent vineyard, the Regional Water Board adopted WDRs Order No. 90-215 to regulate the land application. Order No. 90-215 will be rescinded and replaced with the adoption of this Order.

11. In April 2005, following a facility inspection and review of the case file, the Regional Water Board adopted CDO No. R5-2005-0073 to address a number of issues. The Order included requirements to address poor maintenance of closed waste management unit 1; the acceptance of unauthorized waste; the closure of waste management units II and III; the lack of operation of the groundwater treatment system; the update of the financial assurance; and required an evaluation of the groundwater monitoring system.

12. Following the adoption of CDO No. R5-2005-0073, the Discharger began submitting reports to comply with this Order. However, upon review, staff found that these submittals were incomplete and did not address the requirements of the CDO. Due to the continuing pattern of non-compliance, Regional Water Board staff met with the Stanislaus County Deputy District Attorney to evaluate enforcement options. In October 2005, Regional Water Board staff, Regional Water Board counsel and the DA met with the Discharger, their consultant and their legal counsel to negotiate the terms of a Stipulated Judgment. The settlement included a compliance schedule with assigned penalties for missing deadlines and a payment of $450,000. The stipulated judgment was signed on 23 December 2005. CDO No. R5-2005-0073 is still active.

13. Eight days after the stipulated judgment had been signed, the Discharger violated the time schedule. Consequently, on 26 January 2006, the Regional Water Board adopted Resolution Order No. R5-2006-0002, in the amount of $50,000, for failure to repair the Retention Pond. Following an appeal to the State Water Board, the Discharger paid the $50,000 fine.

14. The Discharger continued to fail to comply with the stipulated judgment. Therefore on 5 May 2006, the Regional Water Board adopted Resolution Order No.R5-2006-0036, in the amount of $50,000, for failure to complete the 5-year sampling event. The Discharger subsequently conducted the required groundwater monitoring and paid the $50,000 fine.

15. On 2 August 2006, the Regional Water Board adopted Cleanup and Abatement Order No. R5-2006-0721 requiring the Discharger to evaluate the vertical and lateral extent of groundwater pollution. Based on that evaluation, the Discharger was also required to (a) submit a feasibility study with alternatives to cleanup groundwater in compliance with Title 27, (b) implement source control, (c) restore the water quality of the polluted aquifer and (d) conduct a human health risk assessment for the Riverdale Community. This Order is still active and the Discharger is complying with its requirements.

SITE DESCRIPTION

16. The hydraulic conductivity of the shallow water bearing formations underlying the Landfill is estimated to range from approximately 7.9×10^{-3} to 2.5×10^{-2} centimeters per second.

17. The Ortigalita fault zone is located approximately 27 miles southwest of the Landfill, while the Greenville fault zone is located approximately 28 miles west of the Landfill. Both of these faults have been designated as Alquist-Priolo Special Studies Zones. Portions of these faults and fault zones are of considerable length and have been characterized by the California Division of Mines and Geology as major Late Quaternary fault zones. The maximum historic peak horizontal ground acceleration experienced at the site was on the order of 0.12g and was associated with a magnitude 5.8 earthquake about 16 miles from the landfill.

18. Land use within 1,000 feet of the facility in each four compass directions is as follows (see Attachment B):

    - The Riverdale Park Tract subdivision is approximately 100 feet north of the Landfill boundary. Also to the north-northwest is a transfer station/materials recovery facility (TS/MRF) owned and operated by Waste Management, Inc. Included on the TS/MRF property is an old burn dump formerly operated by Modesto Disposal Service, Inc. A Veterans of Foreign Wars (VFW) facility is located west and adjacent to the TS/MRF property (i.e., northwest of the Landfill). The Tuolumne River, approximately 1,000 to

1,200 feet north of the Landfill, is directly north of the Riverdale Park Track, TS/MRF and VFW facility.

- Land use west of the Landfill is mixed agricultural, commercial, and residential. An auto wrecking yard and residence are adjacent to the northern part of the western landfill boundary.
- Land use south of the Landfill is agriculture.
- Land use east of the Landfill is primarily agriculture. A small food market and house, which is situated on a 0.65-acre parcel that is bound to the west, south, and east by Landfill property, is located near the northeast corner of the Landfill. A trucking company borders a portion of the Landfill near the southeast property corner.

19. The facility has received an average of 12-inches of precipitation per year from 1889 through 2004, as report at the Modesto Station, California Department of Water Resources (DWR) station number BOO 5738-00. The station is approximately three miles southwest of the Landfill.

20. Evaporation data recorded for the 23-year period from 1950 through 1972 at the Westley Station show a mean annual Class A Pan evaporation of 71.04 inches (DWR, 1979). A minimum monthly mean evaporation of 1.38 inches was reported for January, and a maximum mean monthly evaporation of 10.9 inches was reported for July.

21. Based on the DWRs historical rainfall data, the 100-year, 24-hour precipitation event is estimated to be 2.52 inches.

22. In 1997, the Tuolumne River overflowed its banks and flooded the adjacent Riverdale community and portions of the Landfill. The FEMA Flood Insurance Rate Map for this area of Stanislaus County shows the landfill within “Zone AE” and “Zone X”. Zone AE is defined as the 100- year flood plain, while Zone X is defined as the area of the 100-year flood with average depths of less than 1-foot. Because of the 100-year flood danger, the Discharger must provide protective measures to prevent inundation of the landfill.

23. The following list provides a brief description of other facilities at the Landfill. These facilities are outside the limits of buried refuse, and are found on Attachment C, which is attached hereto and made part of this Order by reference. These facilities are not regulated by this Order, with the exception of the groundwater treatment system, the retention pond, and stormwater generated at the tipping area

    - A 102,000 square feet open aired concrete covered tipping/processing area is within the north-central portion of the Landfill between WMUs I and IV. This uncovered area is used for sorting material received by the landfill. Waste placed on this pad has direct contact with rainfall and poses a threat to water quality;

- An equipment maintenance shop;
- A hazardous materials storage container for temporarily storing waste discovered during the sorting process;
- A single-family residence;
- A 10,000-gallon aboveground water tank which is used to store water for dust control;
- A Groundwater Treatment System complex and landfill gas (LFG) flare station (including two 3,200-gallon high-density polyethylene [HDPE] condensate storage tanks); and
- A Groundwater Treatment System retention pond (approximately 4.4 acres in size) located in the southwest corner of the Landfill property.

WASTE CLASSIFICATION

24. The Discharger proposes to discharge only nonhazardous inert solid waste into unlined WMUs II, III and IV. These classified wastes may be discharged only in accordance with Title 27, Resolution No. 93-62, and the Code of Federal Regulations, Title 40, Part 258 as required by this Order.

25. Section 17388(k) of CCR Title 14 defines inert waste as solid waste and recyclable materials that are source separated or separated for reuse and do not contain hazardous waste (Section 66261.3 of CCR Title 22) or soluble pollutants at concentrations in excess of applicable water quality. Inert debris may not contain any putrescible wastes. Gravel, rock, soil, sand and similar materials, whether processed or not, that have never been used in connection with any structure, development, grading or other similar human purpose, or that are uncontaminated, may be commingled with inert debris.

26. Section 17388(k) of CCR Title 14 defines "Type A" inert debris as including but not limited to concrete (including fiberglass or steel reinforcing bar embedded in the concrete), fully cured asphalt, crushed glass, fiberglass, asphalt or fiberglass roofing shingles, brick, slag, ceramics, plaster, clay and clay products.

SURFACE AND GROUND WATER CONDITIONS

27. The *Water Quality Control Plan for Sacramento and San Joaquin River Basins, Fourth Edition* (hereafter Basin Plan), designates beneficial uses, establishes water quality objectives, contains implementation plans and policies for all waters of the Basin and incorporates by reference plans and policies adopted by the State Water Resources Control Board. Pursuant to Section 13263(a) of the California Water Code (CWC), waste discharge requirements must implement the Basin Plan.

28. Surface water drainage away from the site is north toward the Tuolumne River, which is in the Turlock Hydrologic Area (535.50) of the San Joaquin Valley Floor Basin.

29. The designated beneficial uses of the Tuolumne River from the New Don Pedro Dam to the San Joaquin River, as specified in the Basin Plan, are municipal and domestic supply; agricultural supply; water contact recreation; non-contact water recreation; warm fresh water habitat; preservation of rare, threatened or endangered species; and groundwater recharge.

30. The designated beneficial uses of the groundwater, as specified in the Basin Plan, are domestic and municipal water supply, agricultural supply, industrial service supply, and industrial process supply.

31. The 13 October 2006 Groundwater Monitoring System Upgrade Report states that the first encountered groundwater is between 10 and 20 feet below the native ground surface (bgs). The water-bearing zone beneath the Landfill consists of interbedded alluvial deposits of sands, silty sands and sandy silts overlying the Corcoran Clay. The unconfined aquifer in the Landfill vicinity is estimated to average approximately 70 to 85 feet in thickness. Groundwater surface elevations at the Landfill are influenced by river-aquifer interactions. The hydraulic conductivity of the shallow waterbearing formations underlying the Landfill is estimated to range from approximately 7.9×10^{-3} to 2.5×10^{-2} centimeters per second. Detailed descriptions of the Landfill hydrogeology are presented in the Site Investigation Report (1987) and Hydrogeologic Summary Report (1989) prepared by Dames & Moore.

32. The predominant groundwater flow direction in the Landfill vicinity is presently toward the north-northwest. The local groundwater gradient is strongly influenced by the Tuolumne River. Groundwater gradients vary in direction and magnitude as influenced by changing river stages. The direction of regional groundwater flow does not appear to be influenced by any cone of depression which may be formed by pumping of the municipal supply well located in the Riverdale Park Tract, approximately 500 feet north of the Landfill. Groundwater surface elevations have historically ranged from approximately 35 to 50 feet MSL.

33. Groundwater flow gradients based on Third Quarter 2006 measurements yielded a maximum and minimum value of 0.0033 ft/ft and 0.0001 ft/ft, respectively. Average groundwater flow gradients for the northern and southern portion of the landfill are 0.0013 ft/ft and 0.002 ft/ft respectively.

34. There are at least six known domestic, irrigation and municipal wells that are downgradient of the facility, which are or may be affected by the plume of groundwater pollution emanating from the Bonzi Landfill. The well locations are shown on Attachment D, which is attached hereto and made part of this Order by reference, and are described in the following table.

Address	Use
Riverdale Park Community Well	Municipal
Ace Well – 2736 Hatch Road	Domestic
VFW Well – 2801 Hatch Road	Domestic
Helmer Well – 2954 Hatch Road	Domestic
Waste Management Inc. - 2769 Hatch Road	Domestic and Industrial

35. The Riverdale Park Community municipal well is approximately 500-feet from the northern boundary of the landfill and directly downgradient of WMU I. This 14-inch diameter, 200-feet deep open bottom well provides drinking water for the adjacent Riverdale Park Community.

GROUNDWATER MONITORING

36. To comply with Item No. 3 of the December 2005 Stipulated Judgment, the Discharger implemented a program to upgrade the deficient groundwater monitoring system. Attachment D illustrates the location of the system's current monitoring wells. In August 2006, the Discharger completed the following tasks:

- Abandonment of 27 monitoring wells which were found to be redundant, damaged, not listed in MRP Order No.98-093 or improperly constructed;
- Installation of ten monitoring wells to replace certain wells abandoned during this work and to fill data gaps in the groundwater monitoring system;
- Installation of two new monitoring wells in the vicinity of the Riverdale Community supply well for effective down-gradient off-Site monitoring;
- Re-development of two existing Site monitoring wells to remedy high turbidity conditions; and
- Completion of a new survey of all new and existing groundwater-monitoring wells at the Site to the California state coordinate plane.

The following new groundwater monitoring wells were installed to update the monitoring system:

06-01A and **06-01B** – These wells were placed downgradient of the Site, but upgradient of the Riverdale well. Well 06-01A was installed within the shallow (upper 30-feet bgs) groundwater zone to monitor groundwater quality at the groundwater table, and was constructed to accommodate fluctuations in water levels of approximately five-feet. Well 06-01B was installed at a deeper groundwater zone (80.5-ft bgs to 90.5 ft bgs) in order to sample from the same depth as the center of the Riverdale well screen. Wells 06-01A and 06-01B were installed approximately 30-feet

north of Riverdale Avenue, approximately 100-ft west of the Riverdale Avenue and Rosemore Avenue intersection.

06-02 – Monitoring well 06-02 replaced former monitoring well 86-2 that was abandoned due to improper construction. Well 06-02 monitors the groundwater quality approximately 400-ft downgradient of the Site, and is approximately 500-ft west of former well 86-2 within the northern road shoulder of Riverdale Avenue.

06-03 – Monitoring well 06-03 replaced former monitoring well MW-1 that was abandoned due to improper construction. Well 06-03 monitors the groundwater quality at the northwestern portion of the Site, and is approximately 250-ft east of former well MW-1.

06-04 – Monitoring well 06-04 replaced former monitoring well MW-2 that was abandoned due to improper construction. Well 06-04 monitors the groundwater quality at the northern extent of the Site, and is approximately 300-ft east of former well MW-2.

06-05 – Monitoring well 06-05 replaced former monitoring well 84-6 that was abandoned due to improper construction. Well 06-05 monitors the groundwater quality at the central portion of the Site, and is approximately 10-ft south of former well 84-6.

06-06 – Monitoring well 06-06 replaced former monitoring well 85-3AR that was abandoned due to improper construction. Well 06-06 monitors the groundwater quality at the western extent of the Site, and is approximately 5-ft south of former well 85-3AR.

06-07 – Monitoring well 06-07 replaced former monitoring well 84-18 that was abandoned due to improper construction. Well 06-06 monitors the groundwater quality at the western extent of the Site, and is approximately 125-ft north of former well 84-18.

06-08 – Monitoring well 06-08 replaced former monitoring well 84-10 which was abandoned due to questionable well construction and is at a location identified as a data gap in the Site groundwater monitoring system. Well 06-08 monitors groundwater quality at the eastern extent of the Site and is approximately 750-ft north of former well 84-10.

06-09 – Similar to well 06-08, monitoring well 06-09 replaced former monitoring well 84-10, which was abandoned due to questionable well construction and is at a location identified as a data gap in the Site groundwater monitoring system. Well 06-09 monitors the groundwater quality at the eastern portion of the Site (south of well 06-08) and is approximately 250-ft south of former well 84-10.

06-10 – Monitoring well 06-10 replaced former monitoring well 84-20 that was abandoned due to improper construction. Well 06-10 monitors the groundwater quality south and upgradient of the Site, and is approximately 300-ft east of former well 84-20.

37. Table 1 provides the geographical coordinates for the Discharger's current groundwater system monitoring wells. All of these wells must be monitored per Monitoring and Reporting Program No. R5-2007-0148.

Table 1
Groundwater Monitoring Well Coordinates

Well ID	Northing (x)	Easting (y)	Top of Casing, Elev. (msl)
06-10	2039660.58	6404718.02	73.64
86-9	2041901.43	6404961.66	79.35
92-A1L	2043028.73	6404908.70	81.18
92-C1L	2044329.64	6404980.84	72.77
90-2	2043673.17	6405399.28	75.62
P-1	2044788.00	6406270.18	65.59
06-08	2043583.71	6406684.03	70.35
06-09	2042668.10	6406684.73	71.21
84-13R	2042590.35	6406017.42	80.64
90-1	2043633.16	6405988.83	78.87
06-07	2042502.24	6404513.91	75.21
06-06	2043129.68	6404505.50	76.25
MW-6R	2043807.12	6404490.50	70.93
EW-2	2043858.31	6404540.10	70.89
86-1	2044205.96	6404496.53	67.94
EW-1	2044742.00	6404566.39	68.01
85-4	2044788.70	6404520.19	63.37
85-4A	2044794.65	6404523.59	63.27
86-5A	2044560.74	6404178.75	61.03
86-5B	2044570.91	6404179.58	61.46

EW-3	2044450.60	6404176.70	59.24
86-6A	2044017.24	6404177.98	61.44
86-6b	2044027.18	6404178.98	61.07
86-3	2045041.45	6404126.06	63.91
88-1	2044811.40	6403749.14	60.78
86-4	2044377.51	6403521.47	62.08
84-24	2044942.23	6404457.60	62.66
85-7	2044953.12	6404657.72	62.96
06-02	2045178.99	6405790.66	61.29
06-04	2044833.54	6405835.28	61.07
06-03	2044830.29	6405073.52	60.65
85-10	2042894.43	6405372.72	79.50
06-05	2044111.73	6405419.62	60.51
06-01A	2045178.98	6405016.04	60.93
06-01B	2045181.04	6404985.93	61.36
85-25	2044968.80	6404804.55	62.82

Notes:

The horizontal coordinates (x, y) were referenced to the California Coordinate System Zone 3 (NAVD88)

The vertical control (z) elevation was related to NVGD 29 as referenced to the City of Modesto Bench Marks and published by the City of Modesto Public Works.

msl = mean sea level.

38. Five monitoring wells (84-13, 84-14 and 86-10, 85-11 and 86-8) were not abandoned during the monitoring system upgrade. These wells could not be located. The Discharger is required to locate these wells and abandoned them in accordance with Stanislaus County's well regulations.

GROUNDWATER DEGRADATION

Methods to Identify a Release of Volatile Organic Compounds

39. Volatile organic compounds (VOCs) are often detected in a release from a landfill, and are the primary waste constituents detected in groundwater beneath a municipal solid waste

landfill. Since volatile organic compounds are not naturally occurring and thus have no upgradient value (unless due to a confirmed upgradient source), they are not amenable to the statistical analysis procedures contained in Title 27 for the determination of a release of wastes from a Unit.

40. Title 27 CCR Sections 20415(e)(8) and (9) provide for the non-statistical evaluation of monitoring data that will provide the best assurance of the earliest possible detection of a release from a Unit in accordance with Title 27 CCR Section 20415(b)(1)(B)2.-4. However, Title 27 CCR does not specify a specific method for non-statistical evaluation of monitoring data.

41. The Regional Water Board may specify a non-statistical data analysis method pursuant to Title 27 CCR Section 20080(a)(1). Section 13360(a)(1) of the California Water Code allows the Regional Water Board to specify requirements to protect underground or surface waters from leakage from a solid waste site, which includes a method to provide the best assurance of determining the earliest possible detection of a release.

42. In order to provide the best assurance of the earliest possible detection of a release of non-naturally occurring waste constituents from a Unit, this Order specifies a non-statistical method for the evaluation of monitoring data.

43. The specified non-statistical method for evaluation of monitoring data provides two criteria (or triggers) for making the determination that there has been a release of non-naturally occurring waste constituents from a Unit. The presence of two non-naturally occurring waste constituents above their respective method detection limit (MDL), or one non-naturally occurring waste constituent detected above its practical quantitation limit (PQL), indicates that a release of waste from a Unit has occurred. Following an indication of a release, verification testing will be conducted to determine whether there has been a release from the Unit, or there is a source of the detected constituents other than the landfill, or the detection was a false detection. Although the detection of one non-naturally occurring waste constituent above its MDL is sufficient to provide for the earliest possible detection of a release, the detection of two non-naturally occurring waste constituents above the MDL as a trigger is appropriate due to the higher risk of false-positive analytical results and the corresponding increase in sampling and analytical expenses from the use of one non-naturally occurring waste constituent above its MDL as a trigger.

Historical Release to Groundwater

44. Bonzi Sanitation Landfill has, and continues to have, releases to groundwater. These releases will continue until final covers are placed on all the units and the landfill waste is removed from the groundwater. A groundwater monitoring system has been installed, as well as a groundwater extraction and treatment system. However, based on data provided by the Discharger, the groundwater extraction system likely is not capturing the

entire present plume. Downgradient domestic wells have been polluted, and the Riverdale Community well is threatened by the Bonzi plume.

45. WMUs I, II and III were all filled without an underlying protective liner system. WMUs II and III do not have an engineered final cover that minimizes the infiltration of water. Without these protective barriers, additional landfill leachate is created. This leachate freely drains to the underlying groundwater. In addition, the Discharger has also reported that groundwater itself rises into the waste. During the 2006 second quarter monitoring event, groundwater was measured to have inundated the bottom seven feet of WMU I Consequently, the condition of these WMUs promotes landfill gas generation, uncontrolled leachate drainage, and groundwater pollution.

46. Since 2002, the Discharger's groundwater monitoring program has found detectable levels of VOCs in 31 of 49 historical and current off-site and onsite wells monitoring wells. The detected VOCs include: 1,1 dichloroethene, 1,1 dichloroethane, 1,1,1 trichloroethane, 1,2 dichlorobenzene, 1,2 dichloroethane, 1,2 dichloropropane, 1,4 dichlorobenzene, benzene, bromomethane, chlorobenzene, chloroethane, chloroform, chloromethane, cis-1,2-dichloroethene, dibromochloromethane, dichlorodifluoromethane, ethylbenzene, tetrachloroethene, toluene, trans-1,2-dichloroethene, trichloroethylene, trichlorofluoromethane, vinyl chloride, and total xylenes.

47. The 2005 Annual Groundwater Monitoring Report shows that elevated levels of chloride and total dissolved solids (TDS) are present in wells downgradient of the facility. During the fourth quarter 2005 sampling event, background well 84-20 contained chloride and TDS at 11.2 mg/l and 370 mg/l, respectively. During the same monitoring event, monitoring well 85-7, which is directly downgradient of WMU I and extraction well EW1, contained chloride and TDS at 127 mg/l and 746 mg/l, respectively.

48. During the third quarter 2006 sampling event, TDS was measured in the background well 06-10 at 380 mg/l. During the same period, directly in the center of Waste Management Unit I, TDS was measured in the leachate sump at 7,400 mg/l. Monitoring wells 06-01A and 06-01B are downgradient of the facility and directly upgradient of the Riverdale Community well. These wells had TDS measured at 440 mg/l and 300 mg/l, respectively.

49. As required by the Stipulated Judgment, the Discharger upgraded the detection monitoring system. The results of the monitoring system upgrade are as follows:

- TDS concentrations reported for monitoring wells 06-09, 86-1, and 86-9 are 1,100 mg/l, 1,200 mg/l, and 1,000 mg/l, respectively. These concentrations exceed water quality protection standard of 980 mg/l.

- Nitrate (as N) concentrations ranged from <1.0 mg/l to 160 mg/l with elevated concentrations in the central and eastern portions of the Landfill. There were seven monitoring wells samples with nitrate results above the WQPS limit of 34.4 mg/l.

- The VOC analytical results show that only three of the 11 newly installed wells (06-01B, 06-08, and 06-09) had reported concentration of VOCs above the detection limit.

    - Monitoring well 06-01B (See Attachment D) was installed approximately 30 ft south of the Riverdale Community supply well and sampled at a depth equivalent to the center of the supply well screen interval. Well 06-01B has reportable concentrations of bromodichloromethane, carbon disulfide, chloroform, and dibromochloromethane above the reporting limit. There is not enough data to identify the source of these contaminates. Monitoring well 06-01B also had a reported detection of carbon disulfide at 0.75 micrograms per liter (µg/l). No other wells this quarter had a reported detection of this compound. The California Public Health Goal (PHG) for carbon disulfide in drinking water is 4 µg/l and the Maximum Contaminant Level (MCL) is 5 µg/l.

    - Monitoring well 06-08, located along the central eastern boundary of the Landfill (See Attachment D), has concentrations of 1,4-dichlorobenzene, benzene, cis-1,2-dichloroethene (cis-1,2-DCE) at 1.4 µg/l, 0.66 µg/l, and 0.83 µg/l, respectively. In addition, monitoring well 06-08 has estimated concentrations, above the MDL, but below the PQL for chlorobenzene and methyl tert-butyl ether (MTBE) at 0.37 µg/l and 0.43 µg/l, respectively.

    - Monitoring well 06-09, located along the southeastern upgradient boundary of the landfill (See Attachment D), has concentrations of 1,1,1-trichloroethane, 1,1-dichloroethane (1,1-DCA), cis-1,2-DCE, dichlorodifluoromethane, MTBE, tetrachloroethene (PCE), trichloroethene (TCE), and trichlorofluoromethane at 0.89 µg/l, 38 µg/l, 0.92 µg/l, 0.87 µg/l, 1.2 µg/l, 1.1 µg/l, 0.90 µg/l and 2.5 µg/l, respectively. In addition, Well 06-09 had a detection of 1,1-dichloroethene (DCE) between the MDL and PQL at 0.43 µg/l. The constituents and concentrations present in well 06-09 are consistent with previous historical data from monitoring well 84-10 (abandoned in August 2006) that was located approximately 200 ft to the north.

50. In 2006, the Riverdale well was sampled for the 40CFR 258 Appendix I and II analytes. The following analyte groups had no detectable concentrations: polychlorinated biphenyls, chlorinated herbicides, semivolatile organic compounds, volatile organic compounds, organophosphorus pesticides, mercury, or total cyanide. The Riverdale well had nitrogen as N at 7.9 mg/l, and TDS was reported at 380 mg/l. The detected concentrations of dissolved metals were: 6.71 ug/l arsenic, 56.5 ug/l barium, 0.2 ug/l cobalt, 2.41 ug/l

chromium, 1.94 ug/l copper, 1.59 ug/l molybdenum, 1.12 ug/l nickel, 9.6 ug/l lead, 37 ug/l vanadium and 13.3 ug/l zinc.

51. During the 5-year required sampling event, the Discharger sampled all of the detection and monitoring wells at the facility using EPA method 6020. The results identified that the following analytes exceeded their water quality protection standard: arsenic, barium, chromium, cobalt, copper, lead, manganese, mercury, vanadium, tin, selenium and molybdenum. These metals are identified as a constituent of concern and will be required to be monitored on a semi-annual basis.

GROUNDWATER CLEANUP / CORRECTIVE ACTION PROGRAM

52. On 1 October 1984, the Discharger submitted a report titled *Groundwater Study, Bonzi Landfill*. This report disclosed that in the winters of 1981-1982 and 1982-1983 the groundwater rose and percolated through the landfilled refuse, and that the groundwater beneath the site has been polluted with VOCs, metals and TDS. C&D Order No. 84-153 was adopted on 28 November 1984, directing the Discharger to evaluate the extent of the groundwater plume. As a result of the Order, the following reports were prepared:

    i. Site Investigation Report, Bonzi Sanitary Landfill, dated 8 May 1987;

    ii. Design Reports/Operation and Closure Plans, dated 16 April 1987;

    iii. Feasibility Study, Bonzi Sanitary Landfill, dated 1 July 1987; and

    iv. Soil Gas Tube Investigation, dated June 1989.

53. The data in the above reports document that as of 1989, ten groundwater monitoring wells and three leachate monitoring wells were contaminated by VOCs. The Regional Water Board subsequently adopted C&A Order No. 89-185, requiring the Discharger to implement groundwater remediation and provide drinking water for downgradient municipal water well users.

54. The Discharger subsequently installed the required remediation system. The groundwater treatment system currently consists of five components: three, six-inch groundwater extraction wells (EW1, EW2, and EW3), an air stripper, a lined pond to contain the effluent, a land application area, and a landfill gas collection system.

55. The groundwater remediation system was brought on-line on 1 November 1991. Following extraction from the underlying aquifer, groundwater is sent through a single tower air stripper treatment system, which removes the volatile organic chemicals. Then the treated groundwater is piped to a retention pond lined with 60-mil solar resistant

HDPE geomembrane. The Discharger has estimated that the treatment system discharges approximately 125 gallons/minute of effluent into the retention basin.

56. On 2 August 2006, the Regional Water Board adopted C&A Order No. R5-2006-0721. Finding numbers 20 through 42 of the Order contain a detailed chronology of the operational history and performance of the corrective action system. The C&A Order requires the Discharger to upgrade its groundwater extraction system such that it can capture all groundwater contaminates from the Bonzi Landfill at the point of compliance. After the Discharger has made a reasonable attempt to capture all groundwater contaminates and if the Discharger believes it is technically or economically infeasible to achieve this criteria, then the Discharger must provide a report to Regional Water Board demonstrating its conclusion. If the Regional Water Board does not concur with the report's conclusion, the Discharger must make further attempts to comply with the criteria.

57. In April 2006, the Discharger hired a new firm to oversee the operation of the groundwater treatment system. From July 2006 through December 2006, the groundwater treatment system pumped 19,473,430-gallons of groundwater. That equates to an average operational discharge of 79 gallons/minute into the retention basin. No VOCs were detected at the air stripping system or in the detention pond. During this period, there was one detection of 0.27 ug/l of 1,1-dichloroethane (1,1-DCA) detected in extraction well EW2. No other VOCs were reported from the extraction well samples. Concentrations of TDS were reported at 486 mg/l in the air stripper and at 530 mg/l in the EW2 samples.

58. The 10 million gallon retention pond, located in the southwest corner of the Landfill property, encompasses an area of approximately 4.4 acres. It is lined with a 60-mil HDPE geomembrane liner. The maximum depth is 10 ft. The Discharger has placed sand on the liner to prevent it from floating. The pond has no LCRS or a secondary liner system, because the effluent discharge is not considered a designated waste and therefore is not subject to Title 27 regulations. In January 2006, to comply with the December 2005 Stipulated Judgment, the Discharger repaired the numerous holes in the pond's HDPE liner and then certified its integrity.

59. During the third quarter 2006 monitoring event, no VOCs were detected in the effluent discharge from the groundwater treatment system. However, during the same sampling event, arsenic and chromium were reported at 3.54 ug/l and 4.24 ug/l, respectively. The background well in the first quarter of 2007 had arsenic and chromium concentrations at 2.54 ug/l and 0.8 ug/l, respectively. For comparison, the USEPA IRIS Reference Dose as a drinking water level for arsenic is 2.1 ug/l while the Primary MCL for chromium is 50 ug/l. To comply with State Board Resolution No. 68-16, this Order contains effluent limitations for VOCs, arsenic, and chromium.at background levels.

60. The Discharger has proposed to land apply the effluent in the retention pond to an adjacent 20 acre land application area. Poplar trees have recently been planted to promote evapotranspiration.

61. Staff's review of the Discharger's 3 August 2007 retention pond water balance found that the Discharger proposed to reduce pumping of the groundwater extraction system during the winter. However, the current groundwater extraction system does not capture the entire groundwater plume, so a winter-time reduced pumping rate does not comply with the Stipulated Judgment. CAO No. R5-2006-0721 requires submittal of a proposal to upgrade the groundwater extraction system such that the entire plume is captured and remediated. This document will be submitted following the evaluation monitoring program investigation, which begins 1 November 2007. It is expected that significantly more treated wastewater will be generated and will need to be disposed of with expansion of the extraction system.

    Historically, the Discharger land applied the effluent from the groundwater treatment system across a 140-acre vineyard. The Discharger is planning on selling the majority of this land, and now plans to land apply the effluent across 20 acres of poplar trees. Staff is concerned that the Discharger will not have adequate acreage to dispose of the treated wastewater once the system is upgraded to capture and treat the entire groundwater plume. Therefore, this Order provides the Discharger with a timeline to investigate and select another disposal method for treated wastewater. The Order also allows an interim groundwater extraction system pumping rate, based on current performance, and does not allow a reduction during the winter. It is expected that the interim pumping rate will increase substantially upon expansion of the system.

VADOSE MONITORING

62. The generation of landfill gases poses a threat to groundwater quality. The presence of water in the waste promotes the generation of gases. The unlined WMUs at this facility generate landfill gases. While this landfill currently monitors for methane and carbon monoxide, there is no information regarding VOCs in the vadose zone. This Order requires the Discharger to execute a tiered monitoring program for all landfill gases.

STORMWATER MONITORING

63. This facility conducts sorting operations of newly received waste, including wood chips, on a 102,000 square foot cement pad. This area is uncovered. Rainfall comes in direct contact with this waste, percolates through the piles, and runsoff the cement pad. This runoff accumulates in the depressed area in front of WMU IV, and may adversely affect groundwater. Therefore this Order requires the Discharger to implement a stormwater monitoring program for water that runs-off this sorting pad. If constituent concentrations

are such that groundwater could be impacted, then the Discharger is required to implement mitigation measures.

CONSTRUCTION AND ENGINEERED ALTERNATIVE

64. On 17 June 1993, the State Water Resources Control Board (State Water Board) adopted Resolution No. 93-62 implementing a State Policy for the construction, monitoring, and operation of municipal solid waste landfills that is consistent with the federal municipal solid waste regulations promulgated under Title 40, Code of Federal Regulations, Part 258 (Subtitle D).

65. State Water Board Resolution No. 93-62 requires the construction of a specified composite liner system at new municipal solid waste landfills, or expansion areas of existing municipal solid waste landfills, that receive wastes after 9 October 1993.

66. State Water Board Resolution No. 93-62 also allows the Regional Water Board to consider the approval of engineered alternatives to the prescriptive standard. Section III.A.b. of Resolution No. 93-62 requires that the engineered alternative liner systems be of a composite design similar to the prescriptive standard.

67. Title 27 CCR Section 20080(b) allows the Regional Water Board to consider the approval of an engineered alternative to the prescriptive standard. In order to approve an engineered alternative in accordance with Title 27 CCR Sections 20080(c)(1) and (2), the Discharger must demonstrate that the prescriptive design is unreasonably and unnecessarily burdensome and will cost substantially more than an alternative which will meet the criteria contained in Title 27 CCR Section 20080(b), or would be impractical and would not promote attainment of applicable performance standards.

68. The Discharger has proposed an engineered alternative cover system for WMUs II, III, and IV which is consistent with the performance goal addressed by the particular prescriptive standard, and provides protection against water quality impairment equivalent to the prescriptive standard in accordance with Title 27 CCR Section 20080(b)(2).

69. Section 13360(a)(1) of the California Water Code allows the Regional Water Board to specify the design, type of construction, and/or particular manner in which compliance must be met in waste discharge requirements or orders for the discharge of waste at solid waste disposal facilities.

70. The Discharger proposes a cover system for WMUs II, III, and IV which will be designed, constructed, and maintained in accordance with the criteria set forth in Title 27, and the provisions in State Water Board Resolution No. 93-62 for municipal solid wastes.

71. The Discharger submitted a Final Closure Plan requesting approval of an engineered alternative for its cover system on 31 July 2006.

72. The engineered alternative proposed by the Discharger for the cover system for WMUs II, III and IV consists of, in ascending order:

- A 2-ft thick compacted foundation layer;
- A low permeability layer consisting of 60-mil linear low density polyethylene (LLDPE);
- A double-sided geocomposite drainage layer on top of the LLDPE where slopes are steeper than 10 percent; and
- 1.5-ft thick soil, which is capable of supporting vegetation.

73. Waste Management Units II and III are currently under interim cover. The Discharger has requested to reopen these units in an effort to bring the landfill up to the required grade for closure. Inert material will be the only waste allowed to be discharged on these units.

74. The Discharger adequately demonstrated that construction of a Subtitle D prescriptive standard cover would be burdensome when compared to the proposed engineered alternative design. The climate in the area is dry, such that it promotes desiccation of any clay material. The Discharger has demonstrated that the proposed engineered alternative is consistent with the performance goals of the prescriptive standard and affords at least equivalent protection against water quality impairment.

75. Stability analyses were performed to support the design of the proposed final cover system and preparation of the Final Closure Plan. Static stability analyses were based on the infinite slope limit equilibrium procedure summarized in Koerner and Soong (1998). The results of the analyses indicate static safety factors greater than 1.5 for all potential failure surfaces under the assumption that the final cover does not become saturated. Seepage analyses suggest that sliding of the vegetative soil layer could occur on the steeper portions of the cover if this layer becomes fully saturated. However, this is a common final cover stability analysis result that does not necessarily indicate an unstable condition because the geocomposite drainage layer is intended to prevent saturation. Additionally, full vegetative soil layer saturation, should it occur, would be a transient condition. Pseudostatic stability analyses were on a seismic coefficient of 0.15g. For cases where the pseudostatic safety factor was less than 1.5, deformation analyses would typically be performed using the generally accepted procedure described by Makdisi and Seed (1978). As summarized in the Discharger's Closure Plan, all pseudostatic safety factors were greater than 1.5, and therefore a deformation analyses was not necessary.

76. At the northeast corner of the site, the base flood elevation is approximately 64-ft msl; at the mid-point of the north side of the landfill, the base flood elevation is approximately 63-ft msl; and at the northwest corner of the site, the base flood elevation is approximately 62-ft msl. The base elevation of a 100-year flood is 70 ft msl. To prevent inundation or washout due to the 100-year flood, the existing perimeter berms on the east, north, and west sides of the site will be extended or raised to a level one-foot above the base flood elevations. On the east side of the site, the top of the perimeter berm should be at a

minimum elevation of 65-ft msl. Along the north side of the site, the top of the perimeter berm should vary uniformly from an elevation of 65-ft msl at the northeast corner to an elevation of 63-ft msl at the northwest corner. On the west side of the site, the top of the perimeter berm should be at a minimum elevation of 63-ft msl.

77. Item No. 17 of C&A Order No. R5-2006-0721 requires the Discharger to submit the final Construction Quality Assurance Report for Waste Management Units II and III by 31 December 2011. This document shall provide evidence that the CQA plan was implemented as proposed and that the construction proceeded in accordance with design criteria, plans, and specifications. This Order reiterates the due date in the C&A Order.

78. The Landfill is currently equipped with a landfill gas control system. The landfill gas control system was originally installed in 1999, with expansions in 2003 and 2005. The current system components include a total of eight horizontal collector trenches, 53 perimeter landfill gas control extraction wells (EW1 through EW53), and six interior landfill gas control extraction wells (EW54 through EW59). The horizontal collector trenches and perimeter landfill gas control extraction wells are connected to a series of header pipes and laterals which convey the collected gas to the flare station located near the north end of WMU I. The header pipes (8-inch diameter) and laterals (4-inch diameter) are constructed of HDPE pipe. The flare station, in turn, consists of a skid-mounted packaged flare system that includes the following primary equipment components:

- Two, 15 horsepower pressure blowers;
- A Condensate knock-out pot;
- A system control panel equipped with a programmable logic controller.

79. The Landfill is also equipped with a perimeter landfill gas control-monitoring network consisting of 39 monitoring points that are located at various locations along the entire landfill property boundary. Both the landfill gas control system and perimeter landfill gas control-monitoring points are currently monitored on a monthly basis (minimum) to ensure safe operation and adequate landfill gas control migration control.

CLOSURE, POST-CLOSURE MAINTENANCE, AND FINANCIAL ASSURANCE

80. The RWD/JTD submitted by the Discharger contains a preliminary closure and post-closure maintenance plan (PCPCMP) for the landfill. The PCPCMP includes information required by Title 27 CCR Section 21769(b), and includes a lump sum estimate of the cost of carrying out all actions necessary to close each Unit, to prepare detailed design specifications, to develop the final closure and post-closure maintenance plan, and to carry out the first thirty years of post-closure maintenance. The total amount of the closure cost estimate is $4,753,000, and the amount of the post-closure maintenance cost estimate is $3,755,599. This Order requires that the Discharger maintain financial assurance with the CIWMB in at least the amount of this cost estimate.

81. The Discharger has also submitted a cost estimate for corrective action of all known or reasonably foreseeable releases as required by Title 27 Section 22221. The amount of the approved cost estimate is $1,615,581. This Order requires that the Discharger maintain financial assurance with the CIWMB in at least the amount of this cost estimate.

CEQA AND OTHER CONSIDERATIONS

82. The existing Solid Waste Facilities Permit (SWFP) for the landfill references a Negative Declaration that was prepared and certified by the Stanislaus County Department of Environmental Resources and submitted to the State Clearinghouse (State Clearinghouse No. 92012070) on January 23, 1992. It is uncertain whether the Negative Declaration specifically addresses closure of the landfill. In the event the current Negative Declaration addresses closure, the project is CEQA compliant. If additional CEQA documentation is required for compliance, it is assumed that this will include preparation of documents to support certification of a Negative Declaration or Mitigated Negative Declaration for the closure project. Preparation of a new or Supplemental Environmental Impact Report (SEIR) is not anticipated. In the event additional CEQA work is required, the Discharger will be required to complete the documents prior to closure and approximately on the schedule described in this Final Closure Plan.

83. This Order implements:

- The Regional Water Board's Water Quality Control Plan for the Sacramento River and San Joaquin River Basins, Fourth Edition;
- The prescriptive standards and performance goals of Chapters 1 through 7, Subdivision 1, Division 2, Title 27, of the California Code of Regulations, effective 18 July 1997, and subsequent revisions;
- The prescriptive standards and performance criteria of RCRA Subtitle D, Part 258; and
- State Water Board Resolution No. 93-62, *Policy for Regulation of Discharges of Municipal Solid Waste*, adopted 17 June 1993.

84. Section 13267(b) of California Water Code provides that: "In conducting an investigation specified in subdivision (a), the regional water board may require that any person who has discharged, discharges, or is suspected of discharging, or who proposed to discharge within its region, or any citizen or domiciliary, or political agency or entity of this state who had discharged, discharges, or is suspected of discharging, or who proposed to discharge waste outside of its region that could affect the quality of the waters of the state within its region shall furnish, under penalty of perjury, technical or monitoring program reports which the regional water board requires. The burden, including costs of these reports, shall bear a reasonable relationship to the need for the reports and the benefits to be obtained from the reports."

85. The technical reports required by this Order and the attached "Monitoring and Reporting Program No. R5-2007-0148" are necessary to assure compliance with these waste discharge requirements. The Discharger owns and operates the facility that discharges the waste subject to this Order.

PROCEDURAL REQUIREMENTS

86. All local agencies with jurisdiction to regulate land use, solid waste disposal, air pollution, and to protect public health have approved the use of this site for the discharges of waste to land stated herein.

87. The Regional Water Board notified the Discharger and interested agencies and persons of its intent to prescribe waste discharge requirements for this discharge, and has provided them with an opportunity for a public hearing and an opportunity to submit their written views and recommendations.

88. The Regional Water Board, in a public meeting, heard and considered all comments pertaining to the discharge.

89. Any person affected by this action of the Regional Water Board may petition the State Water Board to review the action in accordance with Sections 2050 through 2068, Title 23, California Code of Regulations. The petition must be received by the State Water Resources Control Board, Office of Chief Counsel, P.O. Box 100, Sacramento, California 95812, within 30 days of the date of issuance of this Order. Copies of the laws and regulations applicable to the filing of a petition are available on the Internet at http://www.waterboards.ca.gov/water_laws/index.html and will be provided on request.

IT IS HEREBY ORDERED, pursuant to Sections 13263 and 13267 of the California Water Code, that WDRs Order Nos. 98-093 and 90-215, and Cleanup and Abatement Order No. 89-185 are rescinded, and the Ma-Ru Holding Company, Inc. and Bonzi Sanitation Landfill their agents, successors, and assigns, in order to meet the provisions of Division 7 of the

California Water Code and the regulations adopted there under, shall comply with the following:

A. PROHIBITIONS

1. Landfill area

    a. The discharge of ‘hazardous waste’, ‘designated waste’, or “non-hazardous waste’ not allowed by Discharge Specification B1a is prohibited. For the purpose of this Order, the term ‘hazardous waste’ is as defined in Title 23, California Code of Regulations, Section 2510 et seq., and ‘designated waste’ is defined in Title 27.

    b. The discharge of wastes outside of a Unit or portions of a Unit specifically designed for their containment is prohibited.

    c. The discharge of waste to a closed Unit is prohibited.

        - The discharge of municipal solid waste, and garbage as defined in California Code of Regulations, Title 27, Section 20164 is prohibited.

        - The storage or discharge of putrescible waste is prohibited.

        - The land application of landfill gas condensate is prohibited.

        - Surface water runoff from the tipping/processing area may not impact water quality.

    d. The discharge of waste to WMU II and III above 94.5 feet mean sea level is prohibited.

2. Retention Pond and Land Application Area

    - The discharge of solid or liquid waste, leachate, treated groundwater, or tailwater from the land application area to surface waters, surface water drainage courses, or groundwater is prohibited.

    - The application of water from the groundwater treatment system in a manner or location other than that described in Findings 3 and 54 is prohibited.

    - The discharge of liquid waste or stormwater runoff into the retention basin other than water from the groundwater treatment system stripping tower is prohibited.

- Land application of wastewater to areas other than those described in Finding No. 2 and 58 is prohibited unless new land application areas are approved in writing by the Executive Officer. Such areas shall be limited to land owned by the Discharger as shown on Attachment B.

- Land application of wastewater to any field that does not have a fully functional tailwater return and runoff control system is prohibited.

- The bypass of extracted groundwater around the groundwater treatment system (air stripper and retention pond), or any other treatment system installed after adoption of this Order, is prohibited.

- The discharge of volatile organic compounds into the retention basin is prohibited.

- Discharge of irrigation tailwater from any of the designated land application areas to any off-site area or drainage course is prohibited.

B. DISCHARGE SPECIFICATIONS

1. Landfill Area

   a. The Discharger may only discharge inert material to WMUs II, and III. Section 17388(k) of CCR Title 14 defines "Type A" inert debris to include concrete (including fiberglass or steel reinforcing bar embedded in the concrete), fully cured asphalt, crushed glass, fiberglass, asphalt or fiberglass roofing shingles, brick, ceramics, plaster, clay and clay products earth, rock, mortar, tile, stucco, composition shingles, brick, linoleum, glass, aluminum window frames, scrap rubber products, electrical wiring, ductwork, polyvinyl chloride (PVC) pipe, vitrified clay pipe, ductile iron pipe, cast iron pipe, copper tubing, plaster, stainless steel fixtures, “inert-plastic”, non-treated lumber products, and porcelain fixtures such as sinks, toilet, and tubs. Only these materials may be discharged to WMUs II, III, and IV.

   b. WMUs II and III may only take enough inert material beyond what already been placed in these units to obtain the required three percent slope for closure.

   c. For the bottom five feet of WMU IV, only concrete, clean earth, rock, mortar, tile, stucco, brick, glass, and porcelain fixtures such as sinks, toilets and tubs may be discharged.

   d. The discharge shall remain within the designated disposal area at all times.

   e. Objectionable odors originating at the facility shall not be perceivable beyond the limits of the property owned by the Discharger.

f. The staging of waste in the tipping/processing area may not create nuisance conditions.

2. Retention Pond and Land Application Area

a. The maximum flow of treated wastewater entering the retention pond, shall not exceed a flow that would cause the pond to violate the 2-foot freeboard limit established in these WDRs.

b. Objectionable odors originating from the wastewater ponds and all land application areas shall not be perceivable beyond the Discharger's property limits.

c. As a means of discerning compliance with Specification No. 2.b, the dissolved oxygen in the retention pond shall never be less than 1 mg/L.

d. The Discharger shall operate all systems and equipment to maximize treatment of wastewater and optimize the quality of the discharge.

e. All land application areas shall be managed to prevent breeding of mosquitoes and other vectors. Specifically:

1) All wastewater applied to land must infiltrate completely or drain back to the retention pond as tailwater within 24 hours.

2) Low-pressure pipelines, unpressurized pipelines, and ditches that are accessible to mosquitoes shall not be used to store wastewater.

3) Tailwater ditches shall be maintained essentially free of emergent, marginal, and floating vegetation.

f. All wastewater storage ponds shall also be managed to prevent breeding of mosquitoes. Specifically:

1) Erosion control measures shall be implemented to minimize small coves and irregularities around the perimeter of the water surface.

2) Weeds within and around the perimeter of the pond shall be minimized through control of water depth, harvesting, or herbicides.

3) Dead algae, vegetation, and debris shall not accumulate on the water surface.

g. All treatment, storage, and disposal facilities shall be designed, constructed, operated, and maintained to prevent inundation or washout due to floods with a 100-year return frequency.

h. No waste constituent shall be released or discharged, or placed where it will be released or discharged, in a concentration or in a mass that causes violation of the Water Quality Protection Standards.

i. The facility shall have sufficient treatment, storage, and disposal capacity to accommodate allowable wastewater flow and design seasonal precipitation during the winter months. Design seasonal precipitation shall be based on total annual precipitation using a return period of 100 years, distributed monthly in accordance with historical rainfall patterns.

j. Freeboard in any pond shall never be less than two feet as measured from the water surface to the lowest point of overflow.

k. On or about **15 October** of each year, available pond storage capacity shall at least equal the volume necessary to comply with Discharge Specifications i and j.

l. Neither the treatment nor the discharge of waste shall cause a condition of nuisance or pollution as defined by the California Water Code, Section 13050.

m. The Discharger shall operate and maintain the retention pond to prevent (a) growth of vegetation within the pond, (b) animal burrows (c) the entrapment of landfill gas under the liner, and (d) any other condition that may compromise the liner.

n. Wastewater stored in the retention pond shall be applied to a land application area of sufficient acreage as to meet compliance with all aspects of this Order.

C. FACILITY SPECIFICATIONS

1. The Discharger shall, in a timely manner, remove and relocate any wastes discharged at this facility in violation of this Order.

2. The Discharger shall immediately notify the Regional Water Board of any flooding, unpermitted discharge of waste off-site, equipment failure, slope failure, or other change in site conditions, which could impair the integrity of waste or leachate containment facilities or precipitation and drainage control structures.

3. Water used for facility maintenance shall be limited to the minimum amount necessary for dust control and construction.

4. The staging, sorting, chipping or discharge of waste shall not cause a condition of nuisance or pollution as defined by the California Water Code, Section 13050.

5. The Discharger shall maintain in good working order any facility, control system, or monitoring device installed to achieve compliance with the waste discharge requirements.

6. Once the required operations and maintenance manual has been approved by the Executive Officer, the Discharger shall fully implement and document the maintenance of the groundwater extraction and landfill gas extraction systems.

7. Methane and other landfill gases shall be adequately vented, removed from the Unit, or otherwise controlled to prevent the danger of adverse health effects, nuisance conditions, degradation, or the impairment of the beneficial uses of surface water or groundwater due to migration through the unsaturated zone.

8. Surface drainage within the waste management facility shall either be contained on-site or be discharged in accordance with applicable storm water regulations.

9. The Discharger shall maintain a *Storm Water Pollution Prevention Plan* and *Monitoring Program and Reporting Requirements* in accordance with State Water Resources Control Board Order No. 97-03-DWQ, or retain all storm water on-site.

10. The Discharger shall maintain the final cover on the closed WMU I to meet the performance standards in Section 20950(a)(2)(A) and Section 21090 of CCR Title 27.

D. TREATED WASTEWATER EFFLUENT LIMITATIONS

1. Treated wastewater discharged to the retention pond shall not exceed the following monthly average effluent limits, or lower concentrations as the Discharger determines necessary to ensure compliance with the Groundwater Limitations:

	As of 26 October 2007	As of 26 October 2008
Constituent	Concentration Limit	
Volatile Organic Compounds[1]	Non-detect, <0.5 ug/l	Non-detect, <0.5 ug/l
Arsenic	5 ug/l	3 ug/l[2]
Chromium	10 ug/l	1 ug/l[2]
Total Dissolved Solids	980 mg/l	980 mg/l[2]

[1] Using USEPA Method 8260B

[2] If the background groundwater concentration for this constituent is higher than this value, then the background concentration becomes the effluent limit.

E. GROUNDWATER LIMITATIONS FOR LAND APPLICATION AREA

1. The discharge from the retention pond, in combination with other sources, shall not cause the groundwater underlying the land application area to contain waste

constituents in concentrations statistically greater than Water Quality Protection Standards for the landfill (background) water quality.

2. A groundwater monitoring system must be maintained and monitored to evaluate the impacts of land application.

F. LAND APPLICATION AREA SPECIFICATIONS

1. Hydraulic loading of wastewater to the land application areas shall be at rates designed to minimize percolation of waste constituents below the evaporative zone, except as needed to promote surface soil chemistry that is consistent with sustainable agricultural land uses.

2. Crops shall be grown on the land application areas. The Discharger has selected to grow poplar trees, based on their nutrient uptake capacity, tolerance of anticipated soil conditions, water needs, and evapotranspiration rates. The Regional Water Board shall be notified prior to harvesting the trees.

3. The drip irrigation system shall be designed and managed to ensure even application of wastewater over each irrigation field.

4. Irrigation with wastewater shall not be performed within 24 hours before a predicted storm, during precipitation, or within 24 hours after the end of any precipitation event, nor shall it be performed when the ground is saturated.

5. There shall be no standing water in any portion of the irrigated fields more than 24 hours after application of wastewater ceases.

6. The Discharger shall provide and maintain the following setbacks for all wastewater land application areas:

Setback Definition	Surface Irrigation Setback (feet)
Edge of irrigated area[1] to public property (e.g., street)	10
Edge of irrigated area to other agricultural property not owned by the Discharger	10
Edge of irrigated area disposal area to occupied residence	50
Edge of irrigated area to a domestic well	50

[1] As defined by the wetted area produced during irrigation.

7. Application of process wastewater shall only occur where checks are graded to provide uniform water distribution, minimize ponding, and provide complete tailwater control.

8. Check runs shall be no longer, and slopes shall be no greater, than that which permits uniform infiltration and maximum practical irrigation efficiency.

9. Irrigation or impoundment of wastewater shall not occur within 50 feet of any domestic well unless it is demonstrated to the satisfaction of the Executive Officer that a shorter distance is justified.

10. Tailwater ponds and ditches shall be maintained essentially free of emergent, marginal, and floating vegetation.

G. CONSTRUCTION SPECIFICATIONS

1. The Discharger shall submit for review and approval **prior to** construction, design plans and specifications for expansions of existing Units, including a Construction Quality Assurance Plan meeting the requirements of Title 27 CCR Section 20324.

2. Construction shall proceed only after all applicable construction quality assurance plans have been approved.

3. Following the completion of construction of a Unit or portion of a Unit, the final documentation required in Title 27 CCR Section 20324(d)(1)(C) shall be submitted **within 77 days**. The report shall be certified by a registered civil engineer or a certified engineering geologist. It shall contain sufficient information and test results to verify that construction was in accordance with the design plans and specifications, and with the prescriptive standards and performance goals of Title 27.

4. A third party independent of both the Discharger and the construction contractor shall perform all of the construction quality assurance monitoring and testing during the construction of the cover system.

5. The cover system for WMUs II, III and IV shall consist of, in ascending order:

    - A 2-ft thick compacted foundation layer;
    - A low permeability layer consisting of 60-mil linear low density polyethylene (LLDPE);
    - A double-sided geocomposite drainage layer on top of the LLDPE where slopes are steeper than 10 percent; and

- 1.5-ft thick soil, which is capable of supporting vegetation within the first rainy season.

H. POST-CLOSURE MAINTENANCE SPECIFICATIONS

1. The Discharger shall submit **prior to** construction, design plans and specifications for any on-site construction or major repairs to landfill structures demonstrating compliance with Title 27.

2. The Discharger shall perform periodic monitoring of site security systems, final soil cover, drainage system, vegetative cover, final grading, groundwater monitoring system, groundwater treatment system, retention pond and land application area, and landfill soil-pore gas monitoring system.

3. The Discharger shall perform periodic monitoring to identify and address cover problems including at least:

    a) Areas of the vegetative cover requiring replanting;

    b) Eroded portions of the erosion-resistant layer requiring regrading, repair, or increased erosion resistance;

    c) Eroded portions of the low-hydraulic conductivity layer needing repair or replacement;

    d) Areas lacking free drainage;

    e) Areas damaged by equipment operation; and

    f) Localized areas identified in the iso-settlement survey as having sustained repeated or severe differential settlement.

4. The Discharger shall repair forthwith any breach or other cover problem discovered by periodic monitoring.

5. Annually, prior to 1 October, any necessary erosion control measures shall be implemented, and any necessary construction, maintenance, or repairs of precipitation and drainage control facilities shall be completed to prevent erosion or flooding and to prevent surface drainage from contacting or percolating through wastes.

6. The Discharger shall maintain the vegetative cover, including fertilization, elimination of species that violate the rooting depth limit, and replanting.

7. At least every five years after completing closure of the individual waste management units (WMU I, II, III, and IV) the Discharger shall produce and submit to the Regional

Water Board an iso-settlement map accurately depicting the estimated total change in elevation of each portion of the final cover.

8. Prior to conducting any periodic grading operations on the closed landfill, the Discharger shall note on a map of the landfill the approximate location and outline of any areas where differential settlement is visually obvious.

9. Construction shall proceed only after all applicable construction quality assurance plans have been submitted to the Regional Water Board staff and has received concurrence.

10. Following the completion of any landfill construction, the final documentation required in §20324(d)(1)(C) of Title 27 shall be submitted to the Regional Water Board staff. The report shall be certified by a registered civil engineer or a certified engineering geologist. It shall contain sufficient information and test results to verify that construction was in accordance with the design plans and specifications, and with the prescriptive standards and performance goals of Title 27.

11. A third party independent of both the Discharger and the construction contractor shall oversee the performance of all of the construction quality assurance monitoring and testing.

12. All waste management units that are closed shall be maintained in compliance with the approved post closure maintenance plan and Title 27.

I. DETECTION MONITORING SPECIFICATIONS

1. The Discharger shall comply with the detection monitoring program provisions of Title 27 for groundwater, surface water, and the unsaturated zone, and in accordance with Monitoring and Reporting Program No. R5-2007-0148.

2. The Discharger shall submit an annual report certifying that all monitoring points identified in MRP No. R5-2007-0148 meet the performance standards in Section 20415(b)(4) of CCR Title 27.

3. The Discharger shall provide Regional Water Board staff a minimum of **one week** notification prior to commencing any field activities related to the installation, repair, or abandonment of monitoring devices, and a minimum 48 hour notification prior to the collection of samples associated with a detection monitoring program, evaluation monitoring program, or corrective action program.

4. The Discharger shall comply with the Water Quality Protection Standard as specified in this Order, Monitoring and Reporting Program No. R5-2007-0148, and the Standard Provisions and Reporting Requirements, dated April 2000.

5. The Water Quality Protection Standard for organic compounds which are not naturally occurring and not detected in background groundwater samples shall be taken as the detection limit of the analytical method used (i.e., US-EPA methods 8260 and 8270). The repeated detection of one or more non-naturally occurring organic compounds in samples above the Water Quality Protection Standard from detection monitoring wells is evidence of a release from the Unit.

6. The concentrations of the constituents of concern in waters passing the Point of Compliance shall not exceed the concentration limits established pursuant to Monitoring and Reporting Program No. R5-2007-0148.

7. For each monitoring event, the Discharger shall determine whether the landfill is in compliance with the Water Quality Protection Standard using procedures specified in Monitoring and Reporting Program No. R5-2007-0148 and Title 27 CCR Section 20415(e).

8. For any given monitored medium, the samples taken from all monitoring points and background monitoring points to satisfy the data analysis requirements for a given reporting period shall all be taken **within a span not to exceed 30 days**, unless a longer time period is approved, and shall be taken in a manner that ensures sample independence to the greatest extent feasible. Specific methods of collection and analysis must be identified. Sample collection, storage, and analysis shall be performed according to the most recent version of USEPA Methods, such as the latest editions, as applicable, of: (1) Methods for the Analysis of Organics in Water and Wastewater (USEPA 600 Series), (2) Test Methods for Evaluating Solid Waste (SW-846, latest edition), and (3) Methods for Chemical Analysis of Water and Wastes (USEPA 600/4-79-020), and in accordance with the approved Sample Collection and Analysis Plan.

9. If methods other than USEPA-approved methods or Standard Methods are used, the exact methodology shall be submitted for review and approval prior to use.

10. The **methods of analysis and the detection limits** used must be appropriate for the expected concentrations. For the monitoring of any constituent or parameter that is found in concentrations which produce more than 90% non-numerical determinations (i.e., “trace” or “ND”) in data from background monitoring points for that medium, the analytical method having the lowest method detection limit (MDL) shall be selected from among those methods which would provide valid results in light of any matrix effects or interferences.

11. **“Trace” results** - results falling between the MDL and the practical quantitation limit (PQL) - shall be reported as such, and shall be accompanied both by the estimated MDL and PQL values for that analytical run.

12. **MDLs and PQLs** shall be derived by the laboratory for each analytical procedure, according to State of California laboratory accreditation procedures. These MDLs and PQLs shall reflect the detection and quantitation capabilities of the specific analytical procedure and equipment used by the lab, rather than simply being quoted from USEPA analytical method manuals. In relatively interference-free water, laboratory-derived MDLs and PQLs are expected to closely agree with published USEPA MDLs and PQLs.

13. If the laboratory suspects that, due to a change in matrix or other effects, the true detection limit or quantitation limit for a particular analytical run differs significantly from the laboratory-derived MDL/PQL values, the results shall be flagged accordingly, along with estimates of the detection limit and quantitation limit actually achieved. The **MDL shall always be calculated such that it represents the lowest achievable concentration associated with a 99% reliability of a nonzero result**. The PQL shall always be calculated such that it represents the lowest constituent concentration at which a numerical value can be assigned with reasonable certainty that it represents the constituent's actual concentration in the sample. Normally, PQLs should be set equal to the concentration of the lowest standard used to calibrate the analytical procedure.

14. All **QA/QC data** shall be reported, along with the sample results to which they apply, including the method, equipment, analytical detection and quantitation limits, the percent recovery, an explanation for any recovery that falls outside the QC limits, the results of equipment and method blanks, the results of spiked and surrogate samples, the frequency of quality control analysis, and the name and qualifications of the person(s) performing the analyses. Sample results shall be reported unadjusted for blank results or spike recoveries. In cases where contaminants are detected in QA/QC samples (i.e., field, trip, or lab blanks), the accompanying sample results shall be appropriately flagged.

15. Unknown chromatographic peaks shall be reported, flagged, and tracked for potential comparison to subsequent unknown peaks that may be observed in future sampling events. Identification of unknown chromatographic peaks that recur in subsequent sampling events may be required.

16. The statistical method shall account for data below the practical quantitation limit (PQL) with one or more statistical procedures that are protective of human health and the environment. Any PQL validated pursuant to Title 27 CCR Section 20415(e)(7) that is used in the statistical method shall be **the lowest concentration (or value) that can be reliably achieved** within limits of precision and accuracy specified in the WDRs for routine laboratory operating conditions that are available to the facility. The Discharger's technical report, pursuant to Title 27 CCR Section 20415(e)(7), shall consider the PQLs listed in Appendix IX to Chapter 14 of Division 4.5 of Title 22, CCR,

for guidance when specifying limits of precision and accuracy. For any given constituent monitored at a background or downgradient monitoring point, an indication that falls between the MDL and the PQL for that constituent (hereinafter called a "trace" detection) shall be identified and used in appropriate statistical or nonstatistical tests. Nevertheless, for a statistical method that is compatible with the proportion of censored data (trace and ND indications) in the data set, the Discharger can use the laboratory's concentration estimates in the trace range (if available) for statistical analysis, in order to increase the statistical power by decreasing the number of "ties".

17. Background for water samples or soil-pore gas samples shall be represented by the data from all samples taken from applicable background monitoring points during that reporting period (at least one sample from each background monitoring point). The Discharger may propose an alternate statistical method [to the methods listed under Title 27 CCR Section 20415(e)(8)(A-D)] in accordance with Title 27 CCR Section 20415(e)(8)(E).

18. The Discharger may propose an alternate statistical method [to the methods listed under Title 27 CCR Section 20415(e)(8)(A-D)] in accordance with Title 27 CCR Section 20415(e)(8)(E). Upon receiving written approval, alternate statistical procedures may be used for determining the significance of analytical results for common laboratory contaminants (i.e., methylene chloride, acetone, diethylhexyl phthalate, and di-n-octyl phthalate). Nevertheless, analytical results involving detection of these analytes in any background or downgradient sample shall be reported and flagged for easy reference by Regional Water Board staff.

19. The Discharger shall use the following non-statistical method for all analytes that are detected in less than 10% of the background samples. The non-statistical method shall be implemented as follows:

    a. From the constituent of concern or monitoring parameter list, identify each analyte in the **current** sample that exceeds either its respective MDL or PQL. The Discharger shall conclude that the exceedance provides a preliminary indication of a release or a change in the nature or extent of the release, at that monitoring point, if ***either:***

        1) The data contains two or more analytes that are detected in less than 10% of background samples that equal or exceed their respective MDLs; or

        2) The data contains one or more analyte that equals or exceeds its PQL.

b. **Discrete Retest** [Title 27 CCR Section 20415(e)(8)(E)]:

1) In the event that the Discharger concludes (pursuant to paragraph 19.a., above) that there is a preliminary indication of a release, then the Discharger shall immediately notify Regional Water Board staff by phone or e-mail and, within 30 days of such indication, shall collect two new (retest) samples from the monitoring point where the release is preliminarily indicated.

2) For any given retest sample, the Discharger shall include, in the retest analysis, **only the laboratory analytical results for those analytes detected in the original sample**. As soon as the retest data are available, the Discharger shall conclude that there is measurably significant evidence of a release if two or more analytes equal or exceed their respective MDLs or if one or more analyte equals or exceeds its PQL and shall:

a) **Immediately** notify the Regional Water Board about any constituent or constituents verified to be present at the monitoring point, and follow up with written notification submitted by certified mail **within seven days** of validation; and

b) Comply with ¶20, below if any constituent or constituents were verified to be present.

3) Any analyte that is confirmed per this method shall be added to the monitoring parameter list such that it is monitored during each regular monitoring event.

20. If the Discharger determines that there is measurably significant evidence of a release from the Unit at any monitoring point, the Discharger shall **immediately** implement the requirements of **XI. Response To A Release, C. Release Has Been Verified**, contained in the Standard Provisions and Reporting Requirements.

J. Corrective Action Program

1. The groundwater treatment system shall continuously operate (24 hours a day, 365-days a year) at a rate to comply with J6 and J7. Until the system has been expanded per C&A Order No. R5-2006-0721, or subsequent Orders, an interim monthly average pumping rate of 90 gpm (based on the April 2007 system operating summary) shall be maintained at all times. The groundwater treatment system may only be turned off for short periods of time for maintenance outlined in the operations and maintenance plan required by this Order.

2. Within 24 hours of a shutdown, the Discharger must notify the Regional Water Board both verbally and by e-mail. The notification must include an explanation of the

problem and the remedies taken to restart the system. The Discharger shall submit a summary report of the repair within fourteen (14) days of the initial notification.

3. If the groundwater treatment system is off for more than 24 hours, then the Discharger must immediately sample the Riverdale well for VOCs (EPA method 8260B), arsenic (EPA method 7062), and chromium (EPA method 7196A). The Discharger must repeat the sampling every seven days until the system is operational. "Operational" is defined as one seven day period with no system failures. The results from each sampling event must be submitted by certified mail to the Regional Water Board, Stanislaus County and the Board of the Riverdale Park Tract CSD within seven days of validation.

4. The Discharger shall immediately verbally notify Regional Water Board staff (within 24 – hours) and by e-mail (within seven days) of knowledge of the presence of any volatile organic compound or other constituent of concern above background levels in the landfill gas probes. A copy of the notification shall be included in the facility operating record. Within 90 days of the detection, the Discharger shall submit an amended report of waste discharge in compliance with Section 20430 of Title 27 that provides modifications to the system to prevent the release of VOCs to groundwater.

5. The Discharger shall immediately verbally notify Regional Water Board staff (within 24 – hours) and by e-mail (within seven days of validation) of the presence of any volatile organic compound in the treatment system effluent or the retention pond. A copy of the notification shall be included in the facility operating record. Within 14 days, a written report shall be submitted which explains why the system failed and how the problem was resolved.

6. The groundwater treatment system shall capture all groundwater contaminates from the Bonzi Landfill at the point of compliance. Title 27 Section 20405 defines the "point of compliance" as the vertical surface located at the hydraulically downgradient limit of the Unit that extends through the uppermost aquifer underlying the Unit. The following groundwater monitoring wells are recognized as point of compliance wells: P-1, 06-08, 06-06, MW-6R, 86-1, 85-4, 85-4A, 06-04, 06-03, and 85-10.

7. The groundwater treatment system shall prevent groundwater from inundating the bottom of the four waste management units, in accordance with the timeline and specifications required by C&A Order No. R5-2006-0721, or subsequent orders.

8. The landfill gas extraction system shall be capable of preventing landfill gas within the vadose zone from polluting the underlying groundwater.

9. The Discharger shall maintain a corrective action monitoring system, in compliance with Section 20415(b)(1)(D) of CCR Title 27 to evaluate the continuous operational performance of the corrective action remediation systems.

10. The Discharger shall follow the maintenance schedule presented in the groundwater extraction and landfill gas extraction systems operations and maintenance manuals required in Provision K.16. h. and K.16. i. of this Order.

K. PROVISIONS

1. The Discharger shall maintain a copy of this Order at the facility and make it available at all times to facility operating personnel, who shall be familiar with its contents, and to regulatory agency personnel.

2. The Discharger shall comply with all applicable provisions of Title 27 and 40 Code of Federal Regulations Part 258 (Subtitle D) that are not specifically referred to in this Order.

3. The Discharger shall comply with Monitoring and Reporting Program No. R5-2007-0148, which is incorporated into and made part of this Order.

4. For the landfill and its operations, the Discharger shall comply with the applicable portions of the Standard Provisions and Reporting Requirements for Waste Discharge Requirements for Nonhazardous Solid Waste Discharges Regulated by Title 27 and/or Subtitle D (Title 27 CCR Section 20005 et seq. and 40 CFR 258 et seq.), dated April 2000, which are hereby incorporated into this Order.

5. For the Land Application Area, the Discharger shall comply with the “Standard Provisions and Reporting Requirements for Waste Discharge Requirements”, dated 1 March 1991, which are hereby incorporated into this Order.

6. In the event the Discharger does not comply or will be unable to comply with any prohibition or limitation of this Order for any reason, the Discharger shall notify the appropriate Regional Water Board office by telephone **as soon as** it or its agents have knowledge of such noncompliance or potential for noncompliance, and shall confirm this notification in writing **within two weeks**. The written notification shall state the nature, time, and cause of noncompliance, and shall describe the measures being taken to prevent recurrences and shall include a timetable for corrective actions.

7. All reports and transmittal letters shall be signed by persons identified below:

    a. For a corporation: by a principal executive officer of at least the level of senior vice-president.

b. For a partnership or sole proprietorship: by a general partner or the proprietor.

c. For a municipality, state, federal or other public agency: by either a principal executive officer or ranking elected or appointed official.

d. A duly authorized representative of a person designated in a, b or c above if;

1) The authorization is made in writing by a person described in a, b, or c of this provision;

2) The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, operator of a Unit, superintendent, or position of equivalent responsibility. (A duly authorized representative may thus be either a named individual or any individual occupying a named position); and

3) The written authorization is submitted to the Regional Water Board.

e. Any person signing a document under this Section shall make the following certification:

"I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all Attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment."

8. The Discharger shall take all reasonable steps to minimize any adverse impact to the waters of the State resulting from noncompliance with this Order. Such steps shall include accelerated or additional monitoring as necessary to determine the nature, extent, and impact of the noncompliance.

9. The owner of the waste management facility shall have the continuing responsibility to assure protection of waters of the state from discharged wastes and from gases and leachate generated by discharged waste during the active life, closure, and postclosure maintenance period of the Unit(s) and during subsequent use of the property for other purposes.

10. The fact that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with this Order shall not be regarded as a defense for the Discharger's violations of the Order.

11. To assume ownership or operation under this Order, the succeeding owner or operator must apply in writing to the Regional Water Board requesting transfer of the Order within 14 days of assuming ownership or operation of this facility. The request must contain the requesting entity's full legal name, the State of incorporation if a corporation, the name and address and telephone number of the persons responsible for contact with the Regional Water Board, and a statement. The statement shall comply with the signatory requirements contained in Provision F.5. and state that the new owner or operator assumes full responsibility for compliance with this Order. Failure to submit the request shall be considered a discharge without requirements, a violation of the California Water Code. Transfer of this Order shall be approved or disapproved by the Regional Water Board.

12. The Discharger shall IMMEDIATELY establish cost estimates for initiating and completing corrective action for all known or reasonably foreseeable releases from the landfill, and submit these estimates for review and approval.

13. The Discharger shall IMMEDIATELY obtain and maintain assurances of financial responsibility for initiating and completing corrective action for all known or reasonably foreseeable releases from the landfill in the amount of the approved cost estimate. The Discharger shall submit the approved cost estimate and proposed financial assurance mechanism meeting the requirements of Chapter 6, Title 27 to the Financial Assurances Section of the California Integrated Waste Management Board (CIWMB). If the CIWMB determines that either the amount of coverage or the mechanism is inadequate, then within 90 days of notification, the Discharger shall submit an acceptable mechanism for at least the amount of the approved cost estimate.

14. The Discharger shall update the preliminary closure and post-closure maintenance plan (PCPCMP) any time there is a change that will increase the amount of the closure and post-closure maintenance cost estimate. The updated PCPCMP shall be submitted to the Regional Water Board, the Local Enforcement Agency, and the CIWMB. The PCPCMP shall meet the requirements of Title 27 CCR Section 21769(b), and include a lump sum estimate of the cost of carrying out all actions necessary to close each Unit, to prepare detailed design specifications, to develop the final closure and post-closure maintenance plan, and to carry out the first thirty years of post-closure maintenance. A final (or partial final) closure and post-closure maintenance plan shall be submitted prior to closure and closure shall not be conducted in the absence of closure WDRs.

15. The Discharger shall IMMEDIATELY obtain and maintain assurances of financial responsibility for closure and post-closure maintenance costs in the amount of the cost estimates in the approved preliminary or final closure and post-closure maintenance plan, as applicable. The Discharger shall submit a proposed financial assurance mechanism for closure and post-closure maintenance meeting the requirements of

Chapter 6, Title 27 to the Financial Assurances Section of the CIWMB. If the CIWMB determines that either the amount of coverage or the mechanism is inadequate, then within 90 days of notification, the Discharger shall submit an acceptable mechanism for at least the amount of the approved cost estimate.

16. The Discharger shall complete the tasks contained in these waste discharge requirements in accordance with the following time schedule. Reports shall be prepared by a registered professional, as required by provision K.17.

a. **Facility Groundwater, Vadose Zone, and Surface Water Monitoring**

1) By **31 December 2007,** the Discharger shall provide documentation from Stanislaus County that monitoring wells 84-13, 84-14 and 86-10, 85-11 and 86-8 were abandoned in compliance with the applicable well regulations. This will require the Discharger to locate all these wells and properly abandoned them.

2) By **1 April 2008** the Discharger shall propose water quality protection standards for the detection monitoring wells listed in MRP No. R5-2007-0148. The standards shall comply with Sections 20385, 20395, 20400, and 20415 of CCR Title 27 for the following constituents of concern: barium and manganèse.

b. Land Application Area

1) By **1 November 2007**, the Discharger shall submit a *Setback and Tailwater/Runoff Control Compliance Report* that demonstrates that all setbacks are met and all land application fields have fully functional tailwater/runoff control systems, as required by Land Application Area Specifications F6 and F7.

2) By **1 May 2008** the Discharger shall submit a report providing groundwater quality protection standards for the land application area for the following constituents of concern: total dissolved solids, carbonate, bicarbonate, chloride, nitrate – nitrogen, sulfate, calcium, magnesium, potassium, selenium, nickel, lead, arsenic, antimony, barium, beryllium, cadmium, chromium, cobalt, copper, iron, manganese, aluminum, zinc, thallium, and silver.

c. Corrective Action Program

1) The Discharger must provide auto-notification to the Regional Water Board and to the Board of the Riverdale Park Tract CSD of any shutdown and provide either a verbal, email, or auto-notification of successful startup of the groundwater treatment system. A copy of the notification shall be included in the facility operating record.

2) By **1 April 2008**, the Discharger shall submit a *Treated Wastewater Disposal Report* which evaluates and describes how wastewater generated by the expanded groundwater treatment system shall be disposed of. The report shall evaluate different disposal options and shall provide the selected alternative. Flows shall be based on that needed to contain the entire groundwater plume (as described in the document required by Item 14 of CAO No. R5-2006-0721). The report shall contain a proposed schedule for implementation of the selected alternative; the schedule shall be as short as practicable, and unless specifically approved by the Executive Officer, shall not extend beyond 1 April 2009.

3) By **1 February 2008**, the Discharger shall submit an *Operations and Maintenance Manual* for the existing groundwater extraction system. This report shall include:

(A) A *detailed* explanation and description of the components of the system, why each was installed, the name of the contractors that installed the system, process and instrumentation diagrams, and a plan of the system..

(B) The operation section shall describe at a minimum:

- how the system is turned on and off;
- the operations of any valves on the discharge pipes;
- the response to any system alarms (i.e. lights or audible) and by whom;
- troubleshooting procedures during system failures; and
- instructions on how major system failures will be fixed.

(C) Diagrams of all operations panels, valves, electrical panels or switches showing both open/closed or on/off positions.

(D) A maintenance section with:

- Detailed weekly, monthly, and annual maintenance schedules that address each component (i.e. electrical, well screen, discharge piping) of the system;
- A detailed well maintenance plan;
- A parts list for each major component of the system with the correct manufacturer's replacement part number;
- An appendix that includes the manufacture's manuals (i.e. grundfos pumps); and
- A plan for storing all appropriate records associated with the system.

(E) Within **30-days** of any system upgrades, repairs or modifications, the Discharger shall submit an addendum to the Manual with any necessary changes.

(F) A copy of the *Operations and Maintenance Manual* shall be included in the facility operating record.

4) By **1 February 2008**, the Discharger shall submit an *Operations and Maintenance Manua*l for the existing landfill gas extraction system. This report shall include:

(A) A *detailed* explanation and description of the components of the system, why each was installed, the name of the contractors that installed the system, process and instrumentation diagrams, and a plan of the system.

(B) The operation section shall describe at a minimum:

- how the system is turned on and off;
- the operations of any valves on the discharge pipes;
- the response to any system alarms (i.e. lights or audible) and by whom;
- troubleshooting procedures during system failures; and
- instructions on how major system failures will be fixed.

(C) Diagrams of all operations panels, valves, electrical panels or switches showing both open/closed or on/off positions.

(D) The maintenance section must include:

- Detailed weekly, monthly, and annual maintenance schedules that address each component (i.e. electrical, well screen, discharge piping) of the system;
- A detailed well maintenance plan;
- A parts list for each major component of the system with the correct manufacturer's replacement part number;
- An appendix that includes the manufacture's manuals (i.e. grundfos pumps); and
- A plan for storing all appropriate records associated with the system.

(E) Within **30-days** of any system upgrades, repairs or modifications, the Discharger shall submit an addendum to the Manual with any necessary changes.

(F) A copy of the *Operations and Maintenance Manual* shall be included in the facility operating record.

d. Waste Management Unit Closure

1) On **31 January of each year** prior to reaching capacity, the Discharger shall submit an updated certified grading plan for WMUs II and III. This grading plan must include an estimate of the remaining capacity for WMUs II and III.

2) Upon reaching capacity or no later than **30 April 2011,** the Discharger may no longer discharge any waste to WMUs II or III. On that date, if additional soil material is required for closure, it shall only be obtained from an approved clean borrow source.

3) Thirty days following reaching capacity or no later than **31 May 2011**, the Discharger shall initiate construction of the final cover. The Discharger shall notify the Regional Water Board in writing 48 hours prior to initiating fieldwork. All components of the final cover (including the landfill gas system) shall be installed and operating at their design specification no later than **15 October 2011**.

4) Upon closure of each waste management unit and no later than **15 October 2011**, the Discharger shall fully implement the approved post-closure maintenance plan for all waste management units at the facility.

5) By **31 December 2011**, the Discharger shall submit the final Construction Quality Assurance Report for Waste Management Units II and III that contains all reports submitted concerning the placement of the final cover. This document shall provide evidence that the CQA plan was implemented as proposed and that the construction proceeded in accordance with design criteria, plans, and specifications. The Discharger shall submit copies of the Final Documentation report to the Regional Water Board as prepared by the CQA officer.

17. In accordance with California Business and Professions Code Sections 6735, 7835, and 7835.1, engineering and geologic evaluations and judgments shall be performed by or under the direction of registered professionals competent and proficient in the fields pertinent to the required activities. All technical reports specified herein that contain workplans for, that describe the conduct of investigations and studies, or that contain technical conclusions and recommendations concerning engineering and geology shall be prepared by or under the direction of appropriately qualified professional(s), even if not explicitly stated. Each technical report submitted by the Discharger shall contain the professional's signature and stamp of the seal.

I, PAMELA C. CREEDON, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Central Valley Region, on 26 October 2007.

_____
PAMELA C. CREEDON, Executive Officer

hfh/vji/wsw: 26Sep07

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM NO. R5-2007-0148
FOR

FOR THE
MA-RU HOLDING COMPANY, INC. AND
BONZI SANITATION LANDFILL

FOR
OPERATION, CLOSURE AND CORRECTIVE ACTION
AT THE
BONZI SANITATION LANDFILL
STANISLAUS COUNTY

The Discharger shall comply with this Monitoring and Reporting Program, with Title 27, California Code of Regulations, Section 20005, et seq. (hereafter Title 27), and with the *Standard Provisions and Reporting Requirements for Waste Discharge Requirements for Nonhazardous Solid Waste Discharges Regulated by Title 27 and/or Subtitle D (27 CCR §20005 et seq. and 40 CFR 258)*, dated April 2000, is ordered by Waste Discharge Requirements Order No. R5-2007-0148.

A. REQUIRED MONITORING REPORTS

	Report	Due
1.	Groundwater Monitoring (Section D.1)	**See Table I**
2.	Annual Monitoring Summary Report (Section E.5.)	**Annually**
3.	Unsaturated Zone Monitoring (Section D.2)	**See Table II**
4.	Leachate Monitoring (Section D.3)	**See Table III**
5.	Surface Water Monitoring (Section D.4)	**See Table IV**
6.	Facility Monitoring (Section D.5)	**As necessary**
7.	Corrective Action System & Land Application Area Monitoring (Section D.6)	
.	Response to a Release (Standard Provisions and Reporting Requirements)	**As necessary**

B. REPORTING

The Discharger shall report monitoring data and information as required in this Monitoring and Reporting Program and as required in Order No. R5-2007-0148 and the Standard Provisions and Reporting Requirements. Reports which do not comply with the required format will be **REJECTED** and the Discharger shall be deemed to be in noncompliance with the waste discharge requirements. In reporting the monitoring data required by this program, the Discharger shall arrange the data in tabular form so that the date, the constituents, the concentrations, and the units are readily discernible. The data shall be summarized in such a manner so as to illustrate clearly the compliance with waste discharge requirements or the lack thereof. Data shall also be submitted in a digital format acceptable to the Executive Officer.

Each monitoring report shall include a compliance evaluation summary as specified in E. Reporting Requirements, below.

Field and laboratory tests shall be reported in each monitoring report. Monthly, quarterly, semiannual, and annual monitoring reports shall be submitted to the Board in accordance with the following schedule for the calendar period in which samples were taken or observations made.

Sampling Frequency	Reporting Frequency	Reporting Periods End	Report Date Due
Monthly	Quarterly	Last Day of Month	**by Semiannual Schedule**
Quarterly	Semiannually	30 June 31 December	**31 July** **31 January**
Semiannually	Semiannually	30 June 31 December	**31 July** **31 January**
Annually	Annually	31 December	**31 January**
5-Year	Every 5 years	31 December	**31 January 2011**

The Discharger shall submit an **Annual Monitoring Summary Report** to the Board covering the previous monitoring year. The annual report shall contain the information specified in E. Reporting Requirements, below, and a discussion of compliance with the waste discharge requirements and the Water Quality Protection Standard.

The results of **all monitoring** conducted at the site shall be reported to the Board in accordance with the reporting schedule above for the calendar period in which samples were taken or observations made.

C. WATER QUALITY PROTECTION STANDARD AND COMPLIANCE PERIOD

1. Water Quality Protection Standard Report

For each waste management unit (Unit), the Water Quality Protection Standard shall consist of all constituents of concern, the concentration limit for each constituent of concern, the point of compliance, and all water quality monitoring points for each monitored medium.

The Water Quality Protection Standard for naturally occurring waste constituents consists of the constituents of concern, the concentration limits, and the point of compliance and all monitoring points. The Water Quality Protection Standard, or any modification thereto, shall be submitted in a report for review and approval.

The report shall:

a. Identify **all distinct bodies of surface and ground water** that could be affected in the event of a release from a Unit or portion of a Unit. This list shall include at least the uppermost aquifer and any permanent or ephemeral zones of perched groundwater underlying the facility.

b. Include a map showing the monitoring points and background monitoring points for the surface water monitoring program, groundwater monitoring program, and the unsaturated zone monitoring program. The map shall include the point of compliance in accordance with §20405 of Title 27.

c. Evaluate the perennial direction(s) of groundwater movement within the uppermost groundwater zone(s).

The Water Quality Protection Standard shall be certified by a California-registered civil engineer or geologist as meeting the requirements of Title 27. If subsequent sampling of the background monitoring point(s) indicates significant water quality changes due to either seasonal fluctuations or other reasons unrelated to waste management activities at the site, the Discharger may request modification of the Water Quality Protection Standard.

2. Constituents of Concern

The constituents of concern include all the waste constituents, their reaction products, and hazardous constituents that are reasonably expected to be in or derived from waste contained in the Unit. The constituents of concern for all Units at the facility are those listed in Tables I through IV for the specified monitored medium, and Table VI. The Discharger shall monitor all constituents

of concern every five years, or more frequently as required in accordance with a Corrective Action Program.

The following constituents of concern have been detected in the samples collected from the Dischargers groundwater monitoring wells: 1,1 dichloroethene, 1,1 dichloroethane, 1,1,1 trichloroethane, 1,2 dichlorobenzene, 1,2 dichloroethane, 1,2 dichloropropane, 1,4 dichlorobenzene, benzene, bromomethane, chlorobenzene, chloroethane, chloroform, chloromethane, cis-1,2-dichloroethene, dibromochloromethane, dichlorodifluoromethane, ethylbenzene, tetrachloroethene, toluene, trans-1,2-dichloroethene, trichloroethylene, trichlorofluoromethane, vinyl chloride, and total xylenes.

The following metals exceeded their water quality protection standard during the 2006 5-year sampling event: antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, copper, lead, molybdenum, nickel, selenium, silver, thallium, vanadium, tin, manganese, mercury and zinc.

a. **Monitoring Parameters**

Monitoring parameters are constituents of concern that are the waste constituents, reaction products, hazardous constituents, and physical parameters that provide a reliable indication of a release from a Unit. The monitoring parameters for all Units are those listed in Tables I through V for the specified monitored medium.

3. Concentration Limits

For a naturally occurring constituent of concern, the concentration limit for each constituent of concern shall be determined as follows:

a. By calculation in accordance with a statistical method pursuant to §20415 of Title 27(e)(8); or

b. By an alternate statistical method meeting the requirements of §20415(e)(8)(E) of Title 27.

The current water quality protection standards include a limited list of constituents in the following table. Consequently, the Discharger is required, by the WDRs, to update the standards by **1 April 2008**

Constituent	Concentration limit
Barium	189 ug/l
Iron	1040 ug/l
Chloride	166 mg/l
Nitrate – N	34.4 mg/l
Total Dissolved Solids	980 mg/l

At a minimum, the revised water quality protection standards must include values for barium and magnésium,

4. Point of Compliance

The point of compliance for the water standard at each Unit is a vertical surface located at the hydraulically downgradient limit of the Unit that extends through the uppermost aquifer underlying the Unit. The groundwater monitoring wells that are considered point of compliance wells include: 90-2, P-1, 06-08, 90-1, 06-06, MW-6R, 86-1, 85-4, 85-4A, 06-04, 06-03, 85-10, 06-05

5. Compliance Period

The compliance period for each Unit shall be the number of years equal to the active life of the Unit plus the closure period. The compliance period is the minimum period during which the Discharger shall conduct a water quality monitoring program subsequent to a release from the Unit. The compliance period shall begin anew each time the Discharger initiates an evaluation monitoring program.

D. MONITORING

The Discharger shall comply with the detection monitoring program provisions of Title 27 for groundwater, surface water, and the unsaturated zone, in accordance with Detection Monitoring Specification E.2 and E.4 of Waste Discharge Requirements, Order No. R5-2007-0148. All monitoring shall be conducted in accordance with a Sample Collection and Analysis Plan, which include quality assurance/quality control standards, that shall be submitted for review and approval.

All point of compliance monitoring wells established for the detection-monitoring program shall constitute the monitoring points for the groundwater Water Quality Protection Standard. All detection monitoring program groundwater monitoring wells,

unsaturated zone monitoring devices, leachate, and surface water monitoring points shall be sampled and analyzed for monitoring parameters and constituents of concern as indicated and listed in Tables I through IV.

Method detection limits and practical quantitation limits shall be reported. All peaks shall be reported, including those, which cannot be quantified and/or specifically identified. Metals shall be analyzed in accordance with the methods listed in Table VI.

The Discharger may use alternative analytical test methods, including new USEPA approved methods, provided the methods have method detection limits equal to or lower than the analytical methods specified in this Monitoring and Reporting Program.

1. Groundwater

The Discharger shall operate and maintain a groundwater detection monitoring system that complies with the applicable provisions of §20415 and §20420 of Title 27 in accordance with an approved Detection Monitoring Program. The detection monitoring system shall be certified by a California-licensed professional civil engineer or geologist as meeting the requirements of Title 27. The Discharger shall collect, preserve, and transport groundwater samples in accordance with the approved Sample Collection and Analysis Plan.

The Discharger shall determine the groundwater flow rate and direction in the uppermost aquifer and in any zones of perched water and in any additional zone of saturation monitored pursuant to this Monitoring and Reporting Program, and report the results semiannually, including the times of highest and lowest elevations of the water levels in the wells.

Hydrographs of each well shall be submitted showing the elevation of groundwater with respect to the elevations of the top and bottom of the screened interval and the elevation of the pump intake. Hydrographs of each well shall be prepared quarterly and submitted annually.

Groundwater samples shall be collected from the point-of-compliance wells, background wells, corrective action wells and any additional wells added as part of the approved groundwater monitoring system using the following schedule:

Well Program	Well ID	
Background	06-10, 86-9, 07-01	Quarterly
Detection Monitoring	06-09, P-1, MW-6R, 84-13R, 86-1, 85-4, 85-4A, 85-10, 06-04, 06-03	Quarterly
	06-07, 90-2, 06-08, 90-1, 06-05, 06-06, 06-08	Semi annual
Corrective Action Monitoring	86-5A, 86-5B, 86-6A, 86-6B, 86-3, 88-1, 86-4, 84-24, 85-7, 06-02, 06-01A, 06-01B, 85-25	Quarterly

Samples shall be collected and analyzed for the monitoring parameters in accordance with the methods and frequency specified in Table I.

The monitoring parameters shall also be evaluated each reporting period with regards to the cation/anion balance, and the results shall be graphically presented using a Stiff diagram, a Piper graph, or a Schueller plot. Samples for the constituents of concern specified in Table I shall be collected and analyzed in accordance with the methods listed in Table VI every five years.

Groundwater elevations shall be collected quarterly from all monitoring wells included in the system.

All newly installed wells or replaced wells shall be monitored on a quarterly basis for the constituents of concern specified in Table I.

There are at least six known domestic, irrigation and municipal wells (listed below) that are downgradient of the facility, which are or may be affected by the plume of groundwater pollution emanating from the Bonzi Landfill.

The Helmer Well will be sampled on a conditional basis. If the upgradient-monitoring well 86-4 has any Constituent of Concern (COC) above its Water Quality Protection Standard, then the Helmer Well must sampled within seven days for the detected COC. If a COC is detected in the Helmer Well or monitoring well 86-4 continues to have detections, the Helmer Well will be sampled on the same frequency as monitoring well 86-4.

Offsite Groundwater Wells

Address	Use
Riverdale Community Well	**Municipal**
Ace Well – 2736 Hatch Road	**Domestic**
VFW Well – 2801 Hatch Road	**Domestic**
Helmer Well – 2954 Hatch Road	**Domestic**
Waste Management Inc. - 2769 Hatch Road	**Domestic and Industrial**

All water quality monitoring data collected in accordance with this Order, including actual values of constituents and parameters, shall be maintained in the facility Operating Record as well as distributed amongst the well owners listed in the table above.

Groundwater samples shall be collected semi annually from the offsite wells, as part of the approved corrective action monitoring program. Samples shall be collected and analyzed for the monitoring parameters in accordance with the methods and frequency specified in Table I.

Within **45 days** of the sample collection the Discharger shall submit the sampling results report to Regional Water Board, the well owners, and Stanislaus County. This report shall include: an evaluation of each well's water chemistry, and documentation that the owners received the data for their well with an explanation of the results.

2. Unsaturated Zone Monitoring

The Discharger shall operate and maintain an unsaturated zone detection monitoring system that complies with the applicable provisions of §20415 and §20420 of Title 27 in accordance with an approved Detection Monitoring Program. The Discharger shall collect, preserve, and transport samples in accordance with the quality assurance/quality control standards contained in the approved Sample Collection and Analysis Plan.

In addition to the existing landfill gas monitoring program where points are measured monthly for methane, oxygen, carbon dioxide and pressure using a landfill gas analyzer and magnehelic(tm) pressure gauge, a two-tiered program will be implemented for evaluating volatile organic compounds (VOCs) in the vadose zone. In the first tier, a portable ionization detector (PID) with an ionization potential of 11.7Ev will be used to assess the presence of VOCs at the 39 landfill gas monitoring points on a monthly basis. The results of this monitoring will be reported in the monthly landfill gas monitoring reports. If during the Tier- 1 monitoring, the presence of volatile organic compounds are

detected at concentrations greater than 1 $\mu g/cm^3$, then a sample will be collected. The vapor probe will then need to be monitored on a semi-annual basis. The Tier-2 semi-annual sampling program will consist of collecting a sample from the monitoring probe(s) for analysis of VOCs by EPA Method TO-15. If the results received from the Tier-2 sample collection are non-detect for VOCs by Method TO-15, the monitoring probe will return to the Tier-1 program.

All monitoring parameters shall be graphed so as to show historical trends at each monitoring point. Every five years, regardless of historical data, all vapor monitoring points, shall have a sample collected and analyzed in accordance with the methods listed in Table VI.

3. Leachate/Seep Monitoring

Leachate that seeps to the surface from any Unit shall be sampled and analyzed for the Monitoring Parameters and Constituents of Concern listed in Table III upon detection. The quantity of leachate shall be *estimated* and reported as Leachate Flow Rate (in gallons/day). Leachate shall be monitored at wells 92-A1L and 92-C1L. Wells 92-A1L and 92-C1L shall be checked monthly for liquid. The volume of liquid removed from these wells shall be measured and reported. Leachate shall then be sampled and analyzed annually during the fourth quarter thereafter, with a retest during the following second quarter if constituents are detected that have not been previously detected. Leachate samples shall be collected and analyzed for the listed constituents in accordance with the methods and frequency specified in Table III. The constituents of concern list shall include all constituents listed in Table VI. The quantity of leachate pumped from each sump shall be measured and reported monthly as Leachate Flow Rate (in gallons).

4. Waste Sorting Area Monitoring

The Discharger shall monitor runoff from the 102,000 square feet open aired concrete covered tipping/processing area. The sampling shall consist of a maximum of two samples per month, from rain events that produce runoff from the pad area. The individual grab samples shall be collected from the pad area's stormwater runoff discharge point, as well as from the depressed area in front of WMU IV.

All monitoring parameters shall be graphed to show historical trends at each sample location. Each monitoring point shall include a surveyed coordinates that may be tied into the groundwater monitoring system network.

Within **45 days** of the sample collection the Discharger shall submit the

sampling results report to Regional Water Board.

5. Groundwater Treatment System Effluent

The groundwater treatment system effluent discharge point shall be monitored as it enters the retention pond on a weekly basis for VOCs (by EPA method 8260B) and monthly for arsenic (by EPA method 7062), chromium (by EPA method 7196A) and total dissolved solids.

6. Facility Monitoring

a. **Facility Inspection**

Annually, prior to the anticipated rainy season, but no later than **30 September**, the Discharger shall conduct an inspection of the facility. The inspection shall assess damage to the drainage control system, groundwater-monitoring equipment (including wells, etc.), and shall include the Standard Observations contained in Section F.4.f., below. Any necessary construction, maintenance, or repairs shall be completed by **31 October**. By **15 November** of each year, the Discharger shall submit an annual report describing the results of the inspection and the repair measures implemented, including photographs of the problem and the repairs.

b. **Storm Events**

The Discharger shall inspect all precipitation, diversion, and drainage facilities for damage **within 7 days** following *major storm events*. Necessary repairs shall be completed **within 30 days** of the inspection. The Discharger shall report any damage and subsequent repairs within 45 days of completion of the repairs, including photographs of the problem and the repairs.

c. Waste Management Unit Capacity

Annually, the Discharger shall submit an updated certified grading plan, which includes a certified topographic map of the upper surface of WMUs II and III; the percent of remaining capacity; and a revised schedule of the remaining lifespan of the waste management unit.

6. Corrective Action System & Land Application Area Monitoring

a. Groundwater Extraction / Landfill Gas Treatment System.

i. By the tenth day of each month, the Discharger shall submit a progress report on the status of the groundwater and landfill gas corrective action measures during the previous month. The report shall include: total hours of operation of all remediation systems/per day (estimated for holidays and weekends); the exact time of any system failure and restart; a description of any repairs; an evaluation of the performance of each individual extraction point (both landfill gas and groundwater); the volume of water discharged from the system; the flow (in gallons) from each well on a daily basis; the amount of kilowatts used by the gas extraction system; the mass of contaminates removed by the gas extraction system and the groundwater extraction system; and the location of discharge of the treated water. A copy of any notifications shall be included in the facility operating record.

ii. The Discharger shall also submit a quarterly progress report on the status of the corrective action measures during the previous quarter. The report shall evaluate the data from the monthly monitoring program, and shall include:

- The total hours of operation of all remediation systems/per day (estimated for holidays and weekends);
- The total hours of operation of all extraction wells/per day;
    - A graph that shows the total hours of operation of all extraction wells/per day;
- The total volume of water (gallons) extracted from each well/per day;
    - A graph that shows the volume of water (gallons) extracted from each well/per day.
- The amount of down time for the system in the month/per hour;
    - A graph that shows the down time for the system over time/per day.
- The amount of time (hours) needed for repair;
- The action taken to repair the system;
- An evaluation of the performance of each individual extraction point (both landfill gas and groundwater);
- The quarterly water levels from each groundwater well included in the corrective action-monitoring program;
- The volume of water (gallons) discharged from the system;
- The volume of water (gallons) discharged from the retention basin;
- The amount of kilowatts used by both the gas extraction system;;
- The mass of contaminates removed by the gas extraction system and the groundwater extraction system; and
- The location of discharge of the treated water.

b. Groundwater Retention Basin:

The groundwater retention basin shall be monitored as follows:

Constituent/ Parameter	Units	Sample Type	Sampling Frequency	Reporting Frequency
Waste Water Chemistry – Table I constituents		Grab	Quarterly	Quarterly
Freeboard	0.1 feet	Staff Gauge Measurement	Weekly	Quarterly

c. Land Application Area Effluent Monitoring

During periods of discharge to the land application areas, the Discharger shall monitor the quantity and quality of the discharge. The Discharger shall establish one or more permanent monitoring stations within the wastewater conveyance system as needed to ensure that all samples are representative of the actual discharge to the fields. At a minimum, the Discharger shall monitor the effluent wastewater as follows:

Constituent/ Parameter	Units	Sample Type	Sampling Frequency	Reporting Frequency
Flow to each field	gallons	Measurement	Daily	Monthly
pH	pH units	Grab	Weekly	Monthly
Total dissolved solids	mg/L	Grab	Monthly	Quarterly
Nitrate Nitrogen	mg/L	Grab	Monthly	Quarterly

d. Daily Pre-Application Inspections
The Discharger shall inspect the land application areas at least **once daily** prior to and during irrigation events, and observations from those inspections shall be documented for inclusion in the monthly monitoring reports. The following items shall be documented for each check or field to be irrigated on that day:

a. Evidence of erosion;
b. Containment berm condition;
c. Condition of each standpipe and flow control valve (if applicable);
d. Proper use of valves;
e. Soil saturation;
f. Ponding;
g. Tailwater ditches and potential runoff to off-site areas;
h. Potential and actual discharge to surface water;
i. Odors that have the potential to be objectionable at or beyond the property boundary; and
j. Insects.

Temperature; wind direction and relative strength; and other relevant field conditions shall also be observed and recorded. The notations shall also document any corrective actions taken based on observations made. A copy of entries made in the log during each month shall be submitted as part of the Monthly Monitoring Report. If no irrigation with wastewater takes place during a given month, then the monthly monitoring report shall so state.

e. Routine monitoring

The Discharger shall perform the following routine monitoring and loading calculations during all months when land application occurs, and shall present the data in the Monthly and Annual Monitoring Reports.

Constituent	Units	Type of Sample	Sampling Frequency	Reporting Frequency
Precipitation	0.1 in.	Rain Gauge [1]	Daily	Monthly, Annually
Irrigation fields and checks receiving wastewater	--	Observation	Daily	Monthly, Annually
Hydraulic loading rate				
Wastewater	in.	Calculated [2]	Daily	Quarterly
Fresh water	in.	Calculated [2]	Daily	Quarterly
Nitrogen loading rate, other sources (fertilizer, etc.)	lb/ac/mo	Calculated [2, 3]	Monthly	Quarterly
Total dissolved solids loading rate	lb/ac/mo	Calculated [2, 3]	Monthly	Quarterly

[1] Data obtained from the nearest National Weather Service rain gauge is acceptable.

[2] Rate shall be calculated for each irrigation check.

[3] Loading rates for supplemental nitrogen shall be calculated using the actual load and the application area.

E. REPORTING REQUIREMENTS

1. The Discharger shall retain records of all monitoring information, including all calibration and maintenance records, all original strip chart recordings of continuous monitoring instrumentation, copies of all reports required by this Order, and records of all data used to complete the application for this Order. Records shall be maintained throughout the life of the facility including the postclosure period.

   Such legible records shall show the following for each sample:

   a. Sample identification and the monitoring point or background monitoring point from which it was taken, along with the identity of the individual who obtained the sample;

   b. Date, time, and manner of sampling;

   c. Date and time that analyses were started and completed, and the name of the personnel and laboratory performing each analysis;

   d. Complete procedure used, including method of preserving the sample, and the identity and volumes of reagents used;

   e. Calculation of results; and

   f. Results of analyses, and the MDL and PQL for each analysis.

2. A transmittal letter explaining the essential points shall accompany each report. At a minimum, the transmittal letter shall identify any violations found since the last report was submitted, and if the violations were corrected. If no violations have occurred since the last submittal, this shall be stated in the transmittal letter. The transmittal letter shall also state that a discussion of any violations found since the last report was submitted, and a description of the actions taken or planned for correcting those violations, including any references to previously submitted time schedules, is contained in the accompanying report.

3. Each monitoring report shall include a compliance evaluation summary. The summary shall contain at least:

   a. For each monitoring point and background monitoring point addressed by the report, a description of:

      1) The time of water level measurement;

2) The type of pump - or other device - used for purging and the elevation of the pump intake relative to the elevation of the screened interval;

3) The method of purging (the pumping rate; the equipment and methods used to monitor field pH, temperature, and conductivity during purging; the calibration of the field equipment; results of the pH, temperature, conductivity, and turbidity testing; and the method of disposing of the purge water) to remove all portions of the water that was in the well bore while the sample was being taken;

4) The type of pump - or other device - used for sampling, if different than the pump or device used for purging; and

5) A statement that the sampling procedure was conducted in accordance with the approved Sampling and Analysis Plan.

b. A map or aerial photograph showing the locations of observation stations, monitoring points, and background monitoring points.

c. For each groundwater body, a description and graphical presentation of the gradient and direction of groundwater flow under/around the Unit, and the groundwater flow rate, based upon water level elevations taken prior to the collection of the water quality data submitted in the report.

d. Laboratory statements of results of all analyses evaluating compliance with requirements.

e. An evaluation of the effectiveness of the leachate monitoring and control facilities, and of the run-off/run-on control facilities.

f. A summary and certification of completion of all **Standard Observations** for the Unit(s), for the perimeter of the Unit, and for the receiving waters. Standard observations for ACTIVE landfill units shall be conducted **weekly** during the wet season (1 October to 30 April) and **monthly** during the dry season (1 May to 30 September). Standard observations for INACTIVE or CLOSED landfill units shall be conducted **monthly** during the wet season (1 October to 30 April) and **quarterly** during the dry season (1 May to 30 September). Standard The Standard Observations shall include:

1) For the Unit:

a) Evidence of ponded water at any point on the facility (show affected area on map);

b) Evidence of odors - presence or absence, characterization, source, and distance of travel from source; and

c) Evidence of erosion and/or of day-lighted refuse.

2) Along the perimeter of the Unit:

a) Evidence of liquid leaving or entering the Unit, estimated size of affected area, and flow rate (show affected area on map);

b) Evidence of odors - presence or absence, characterization, source, and distance of travel from source; and

c) Evidence of erosion and/or of day-lighted refuse.

4. The Discharger shall report by telephone any seepage from the disposal area **immediately** after it is discovered. A written report shall be filed with the Regional Water Board **within seven days**, containing at least the following information:

a. A map showing the location(s) of seepage;

b. An estimate of the flow rate;

c. A description of the nature of the discharge (e.g., all pertinent observations and analyses);

d. Verification that samples have been submitted for analyses of the Monitoring Parameters and Constituents of Concern listed in Table III of this MRP, and an estimated date that the results will be submitted to the Regional Water Board; and

e. Corrective measures underway or proposed, and corresponding time schedule.

5. The Discharger shall submit an **Annual Monitoring Summary Report** to the Regional Water Board covering the reporting period of the previous monitoring year. This report shall contain:

a. All monitoring parameters and constituents of concern shall be graphed so as to show historical trends at each monitoring point and background monitoring point, for all samples taken within at least the previous five calendar years. Each such graph shall plot the concentration of one or more constituents for the period of record for a given monitoring point or background monitoring point, at a scale appropriate to show trends or variations in water quality. The graphs shall plot each datum, rather than plotting mean values. For any given constituent or parameter, the scale for background plots shall be the same as that used to plot downgradient data. Graphical analysis of monitoring data may be used to provide significant evidence of a release.

b. All historical monitoring data, including data for the previous year, shall be submitted in tabular form as well as in a digital file format (i.e. excel worksheet format .xls, or equivalent) . The Regional Water Board regards the submittal of

data in hard copy and in digital format as "...the form necessary for..." statistical analysis [Title 27 CCR Section 20420(h)], in that this facilitates periodic review by the Regional Water Board.

c. A comprehensive discussion of the compliance record, and the result of any corrective actions taken or planned which may be needed to bring the Discharger into full compliance with the waste discharge requirements.

d. A map showing the area and elevations in which filling has been completed during the previous calendar year and a comparison to final closure design contours.

e. A written summary of the monitoring results, indicating any changes made or observed since the previous annual report.

f. An evaluation of the effectiveness of the leachate monitoring/control facilities including the results of the annual testing of leachate collection and removal systems required under VIII.P of the Standard Provisions and Reporting Requirements.

6. Within **45 days** of the sample collection from the offsite wells listed above, the Discharger shall submit the sampling results report to Regional Water Board, the well owners, and Stanislaus County. This report shall include: an evaluation of each well's water chemistry, and documentation that the owners received the data for their well with an explanation of the results.

The Discharger shall implement the above monitoring program on the effective date of this Program.

Ordered by:_____
PAMELA C. CREEDON, Executive Officer

26 October 2007
(Date)

hfh:26-Oct-07

TABLE I

GROUNDWATER DETECTION AND CORRECTIVE ACTION MONITORING PROGRAM

Parameter	Units	Frequency
Field Parameters		
Groundwater Elevation	Ft. & hundredths, M.S.L.	Quarterly
Temperature	^{o}C	As required by
Electrical Conductivity	µmhos/cm	Section D1
pH	pH units	
Turbidity	Turbidity units	
Monitoring Parameters		
Total Dissolved Solids (TDS)	mg/L	As required by
Arsenic	mg/L	Section D1
Barium	mg/L	
Chromium	mg/L	
Manganese	mg/L	
Cobalt	mg/L	
Copper	mg/L	
Nickel	mg/L	
Molybdenum	mg/L	
Vanadium	mg/L	
Lead	mg/L	
Tin	mg/L	
Zinc	mg/L	
Chloride	mg/L	
Chloride	mg/L	
Carbonate	mg/L	
Bicarbonate	mg/L	
Nitrate - Nitrogen	mg/L	
Sulfate	mg/L	
Calcium	mg/L	
Magnesium	mg/L	
Potassium	mg/L	
Sodium	mg/L	
Volatile Organic Compounds (USEPA Method 8260, see Table V)	µg/L	
Constituents of Concern (see Table VI)		
Total Organic Carbon	mg/L	5 years
Inorganics (dissolved)	mg/L	5 years
Volatile Organic Compounds (USEPA Method 8260B, extended list)	µg/L	5 years
Semi-Volatile Organic Compounds (USEPA Method 8270C)	µg/L	5 years

Chlorophenoxy Herbicides (USEPA Method 8151A)	µg/L	5 years
Organophosphorus Compounds (USEPA Method 8141A)	µg/L	5 years

TABLE II

UNSATURATED ZONE DETECTION MONITORING PROGRAM

SOIL-PORE GAS

Parameter	Units	Frequency
Monitoring Parameters		
Volatile Organic Compounds (USEPA Method TO-15)	µg/cm^3	Semiannual
Methane	%	Semiannual

TABLE III

LEACHATE DETECTION MONITORING PROGRAM

Parameter	Units	Frequency
Field Parameters		
Electrical Conductivity	µmhos/cm	Semiannual
pH	pH units	Semiannual
Monitoring Parameters		
Total Dissolved Solids (TDS)	mg/L	Annually
Arsenic	mg/L	Semiannual
Barium	mg/L	Semiannual
Chromium	mg/L	Semiannual
Manganese	mg/L	Semiannual
Cobalt	mg/L	Semiannual
Copper	mg/L	Semiannual
Nickel	mg/L	Semiannual
Molybdenum	mg/L	Semiannual
Vanadium	mg/L	Semiannual
Lead	mg/L	Semiannual
Tin	mg/L	Semiannual
Zinc	mg/L	Semiannual
Chloride	mg/L	Annually
Carbonate	mg/L	Annually
Bicarbonate	mg/L	Annually
Nitrate - Nitrogen	mg/L	Annually
Sulfate	mg/L	Annually
Calcium	mg/L	Annually
Magnesium	mg/L	Annually
Potassium	mg/L	Annually
Sodium	mg/L	Annually
Volatile Organic Compounds (USEPA Method 8260B, see Table V)	µg/L	Annually
Constituents of Concern (see Table VI)		
Total Organic Carbon	mg/L	5 years
Inorganics (dissolved)	mg/L	5 years
Volatile Organic Compounds (USEPA Method 8260B, extended list)	µg/L	5 years
Semi-Volatile Organic Compounds (USEPA Method 8270C)	µg/L	5 years
Chlorophenoxy Herbicides (USEPA Method 8151A)	µg/L	5 years
Organophosphorus Compounds (USEPA Method 8141A)	µg/L	5 years

TABLE IV

WASTE SORTING AREA MONITORING PROGRAM

Parameter	Units	Frequency*
Field Parameters		
pH	pH units	Rain Event
Turbidity	Turbidity units	Rain Event
Monitoring Parameters		
Total Dissolved Solids (TDS)	mg/L	Rain Event
Carbonate	mg/L	Rain Event
Bicarbonate	mg/L	Rain Event
Chloride	mg/L	Rain Event
Nitrate - Nitrogen	mg/L	Rain Event
Sulfate	mg/L	Rain Event
Sodium	mg/L	Rain Event
Tannins and Lignins	mg/L	Rain Event
Volatile Organic Compounds (USEPA Method 8260B, see Table V)	µg/L	Rain Event

* No more than two samples per location, per month is required.

TABLE V

MONITORING PARAMETERS FOR DETECTION MONITORING

Surrogates for Metallic Constituents:

pH
Total Dissolved Solids
Electrical Conductivity
Chloride
Sulfate
Nitrate nitrogen

Constituents included in VOC:

USEPA Method 8260B
Acetone
Acrylonitrile
Benzene
Bromochloromethane
Bromodichloromethane
Bromoform (Tribromomethane)
Carbon disulfide
Carbon tetrachloride
Chlorobenzene
Chloroethane (Ethyl chloride)
Chloroform (Trichloromethane)
Dibromochloromethane (Chlorodibromomethane)
1,2-Dibromo-3-chloropropane (DBCP)
1,2-Dibromoethane (Ethylene dibromide; EDB)
o-Dichlorobenzene (1,2-Dichlorobenzene)
m-Dichlorobenzene (1,3-Dichlorobenzene)
p-Dichlorobenzene (1,4-Dichlorobenzene)
trans- l ,4-Dichloro-2-butene
Dichlorodifluoromethane (CFC-12)
1,1-Dichloroethane (Ethylidene chloride)
1,2-Dichloroethane (Ethylene dichloride)
1,1 -Dichloroethylene (1,1 -Dichloroethene; Vinylidene chloride)
cis- 1,2-Dichloroethylene (cis- 1,2-Dichloroethene)
trans-1,2-Dichloroethylene (trans-1,2-Dichloroethene)
1,2-Dichloropropane (Propylene dichloride)
cis- 1,3-Dichloropropene
trans- 1,3-Dichloropropene
Di-isopropylether (DIPE)
Ethanol
Ethyltertiary butyl ether
Ethylbenzene
2-Hexanone (Methyl butyl ketone)
Hexachlorobutadiene

TABLE V

MONITORING PARAMETERS FOR DETECTION MONITORING

Continued

Hexachloroethane
Methyl bromide (Bromomethene)
Methyl chloride (Chloromethane)
Methylene bromide (Dibromomethane)
Methylene chloride (Dichloromethane)
Methyl ethyl ketone (MEK: 2-Butanone)
Methyl iodide (Iodomethane)
Methyl t-butyl ether
4-Methyl-2-pentanone (Methyl isobutylketone)
Naphthalene
Styrene
Tertiary amyl methyl ether
Tertiary butyl alcohol
1,1,1,2-Tetrachloroethane
1,1.2,2-Tetrachloroethane
Tetrachloroethylene (Tetrachloroethene; Perchloroethylene)
Toluene
1,2,4-Trichlorobenzene
1,1,1-Trichloethane (Methylchloroforrn)
1,1,2-Trichloroethane
Trichloroethylene (Trichloroethene)
Trichlorofluoromethane (CFC- 11)
1,2,3-Trichloropropane
Vinyl acetate
Vinyl chloride
Xylenes

TABLE VI

CONSTITUENTS OF CONCERN & APPROVED USEPA ANALYTICAL METHODS

Inorganics (dissolved):	**USEPA Method**
Aluminum	6020
Antimony	6020
Barium	6020
Beryllium	6020
Cadmium	6020
Chromium	7196A
Chromium^{+6}	7199
Cobalt	6020
Copper	6020
Silver	6020
Tin	6020
Vanadium	6020
Zinc	6020
Iron	6020
Manganese	6020
Arsenic	7062
Lead	6020
Mercury	7470A
Nickel	6020
Selenium	7742
Thallium	6020
Cyanide	9010B
Sulfide	9030B

Volatile Organic Compounds:

USEPA Method 8260

Acetone
Acetonitrile (Methyl cyanide)
Acrolein
Acrylonitrile
Allyl chloride (3-Chloropropene)
Benzene
Bromochloromethane (Chlorobromomethane)
Bromodichloromethane (Dibromochloromethane)
Bromoform (Tribromomethane)
Carbon disulfide
Carbon tetrachloride
Chlorobenzene
Chloroethane (Ethyl chloride)
Chloroform (Trichloromethane)
Chloroprene
Dibromochloromethane (Chlorodibromomethane)

TABLE VI

CONSTITUENTS OF CONCERN & APPROVED USEPA ANALYTICAL METHODS

Continued

1,2-Dibromo-3-chloropropane (DBCP)
1,2-Dibromoethane (Ethylene dibromide; EDB)
o-Dichlorobenzene (1,2-Dichlorobenzene)
m-Dichlorobenzene (1,3-Dichlorobenzene)
p-Dichlorobenzene (1,4-Dichlorobenzene)
trans- 1,4-Dichloro-2-butene
Dichlorodifluoromethane (CFC 12)
1,1 -Dichloroethane (Ethylidene chloride)
1,2-Dichloroethane (Ethylene dichloride)
1,1 -Dichloroethylene (1, l-Dichloroethene; Vinylidene chloride)
cis- l ,2-Dichloroethylene (cis- 1,2-Dichloroethene)
trans- l ,2-Dichloroethylene (trans- 1,2-Dichloroethene)
1,2-Dichloropropane (Propylene dichloride)
1,3-Dichloropropane (Trimethylene dichloride)
2,2-Dichloropropane (Isopropylidene chloride)
1,1 -Dichloropropene
cis- 1,3-Dichloropropene
trans- l ,3-Dichloropropene
Di-isopropylether (DIPE)
Ethanol
Ethyltertiary butyl ether
Ethylbenzene
Ethyl methacrylate
Hexachlorobutadiene
Hexachloroethane
2-Hexanone (Methyl butyl ketone)
Isobutyl alcohol
Methacrylonitrile
Methyl bromide (Bromomethane)
Methyl chloride (Chloromethane)
Methyl ethyl ketone (MEK; 2-Butanone)
Methyl iodide (Iodomethane)
Methyl t-butyl ether
Methyl methacrylate
4-Methyl-2-pentanone (Methyl isobutyl ketone)
Methylene bromide (Dibromomethane)
Methylene chloride (Dichloromethane)
Naphthalene
Propionitrile (Ethyl cyanide)
Styrene
Tertiary amyl methyl ether
Tertiary butyl alcohol
1,1,1,2-Tetrachloroethane
1,1,2,2-Tetrachloroethane
Tetrachloroethylene (Tetrachloroethene; Perchloroethylene; PCE)

TABLE III

CONSTITUENTS OF CONCERN & APPROVED USEPA ANALYTICAL METHODS

Continued

Toluene
1,2,4-Trichlorobenzene
1,1,1 -Trichloroethane, Methylchloroform
1,1,2-Trichloroethane
Trichloroethylene (Trichloroethene; TCE)
Trichlorofluoromethane (CFC- 11)
1,2,3-Trichloropropane
Vinyl acetate
Vinyl chloride (Chloroethene)
Xylene (total)

Semi-Volatile Organic Compounds:

USEPA Method 8270 - base, neutral, & acid extractables

Acenaphthene
Acenaphthylene
Acetophenone
2-Acetylaminofluorene (2-AAF)
Aldrin
4-Aminobiphenyl
Anthracene
Benzo[a]anthracene (Benzanthracene)
Benzo[b]fluoranthene
Benzo[k]fluoranthene
Benzo[g,h,i]perylene
Benzo[a]pyrene
Benzyl alcohol
Bis(2-ethylhexyl) phthalate
alpha-BHC
beta-BHC
delta-BHC
gamma-BHC (Lindane)
Bis(2-chloroethoxy)methane
Bis(2-chloroethyl) ether (Dichloroethyl ether)
Bis(2-chloro-1-methyethyl) ether (Bis(2-chloroisopropyl) ether; DCIP)
4-Bromophenyl phenyl ether
Butyl benzyl phthalate (Benzyl butyl phthalate)
Chlordane
p-Chloroaniline
Chlorobenzilate
p-Chloro-m-cresol (4-Chloro-3-methylphenol)
2-Chloronaphthalene
2-Chlorophenol
4-Chlorophenyl phenyl ether
Chrysene

TABLE VI

CONSTITUENTS OF CONCERN & APPROVED USEPA ANALYTICAL METHODS

Continued

o-Cresol (2-methylphenol)
m-Cresol (3-methylphenol)
p-Cresol (4-methylphenol)
4,4'-DDD
4,4'-DDE
4,4'-DDT
Diallate
Dibenz[a,h]anthracene
Dibenzofuran
Di-n-butyl phthalate
3,3'-Dichlorobenzidine
2,4-Dichlorophenol
2,6-Dichlorophenol
Dieldrin
Diethyl phthalate
p-(Dimethylamino)azobenzene
7,12-Dimethylbenz[a]anthracene
3,3'-Dimethylbenzidine
2,4-Dimehtylphenol (m-Xylenol)
Dimethyl phthalate
m-Dinitrobenzene
4,6-Dinitro-o-cresol (4,6-Dinitro-2-methylphenol)
2,4-Dinitrophenol
2,4-Dinitrotoluene
2,6-Dinitrotoluene
Di-n-octyl phthalate
Diphenylamine
Endosulfan I
Endosulfan II
Endosulfan sulfate
Endrin
Endrin aldehyde
Ethyl methanesulfonate
Famphur
Fluoranthene
Fluorene
Heptachlor
Heptachlor epoxide
Hexachlorobenzene
Hexachlorocyclopentadiene
Hexachloropropene
Indeno(1,2,3-c,d)pyrene
Isodrin
Isophorone
Isosafrole

TABLE VI

CONSTITUENTS OF CONCERN & APPROVED USEPA ANALYTICAL METHODS

Continued

Kepone
Methapyrilene
Methoxychlor
3-Methylcholanthrene
Methyl methanesulfonate
2-Methylnaphthalene
1,4-Naphthoquinone
1-Naphthylamine
2-Naphthylamine
o-Nitroaniline (2-Nitroaniline)
m-Nitroaniline (3-Nitroaniline)
p-Nitroaniline (4-Nitroaniline)
Nitrobenzene
o-Nitrophenol (2-Nitrophenol)
p-Nitrophenol (4-Nitrophenol)
N-Nitrosodi-n-butylamine (Di-n-butylnitrosamine)
N-Nitrosodiethylamine (Diethylnitrosamine)
N-Nitrosodimethylamine (Dimethylnitrosamine)
N-Nitrosodiphenylamine (Diphenylnitrosamine)
N-Nitrosodipropylamine (N-Nitroso-N-dipropylamine; Di-n-propylnitrosamine)
N-Nitrosomethylethylamine (Methylethylnitrosamine)
N-Nitrosopiperidine
N-Nitrosospyrrolidine
5-Nitro-o-toluidine
Pentachlorobenzene
Pentachloronitrobenzene (PCNB)
Pentachlorophenol
Phenacetin
Phenanthrene
Phenol
p-Phenylenediamine
Polychlorinated biphenyls (PCBs; Aroclors)
Pronamide
Pyrene
Safrole
1,2,4,5-Tetrachlorobenzene
2,3,4,6-Tetrachlorophenol
o-Toluidine
Toxaphene
2,4,5-Trichlorophenol
0,0,0-Triethyl phosphorothioate
sym-Trinitrobenzene

Chlorophenoxy Herbicides:

USEPA Method 8l51A
2,4-D (2,4-Dichlorophenoxyacetic acid)
Dinoseb (DNBP; 2-sec-Butyl-4,6-dinitrophenol)
Silvex (2,4,5-Trichlorophenoxypropionic acid; 2,4,5-TP)
2,4,5-T (2,4,5-Trichlorophenoxyacetic acid)

Organophosphorus Compounds:

USEPA Method 8081B
Atrazine
Chlorpyrifos
0,0-Diethyl 0-2-pyrazinyl phosphorothioate (Thionazin)
Diazinon
Dimethoate
Disulfoton
Ethion
Methyl parathion (Parathion methyl)
Parathion
Phorate
Simazine

Information Sheet

Order No. R5-2007-0148
Ma-Ru Holding Company, Inc.
Bonzi Sanitation Landfill
for Operation, Closure and Corrective Action
at the Bonzi Sanitation Landfill, Stanislaus County

FACILITY DESCRIPTION

Ma-Ru Holding Company, Inc. and Bonzi Sanitation Landfill, Inc. Partnership (hereafter jointly referred to as "Discharger") own and operate the Bonzi Sanitation Landfill (Bonzi Landfill), in Modesto California. The facility is on a 128-acre parcel that is three miles southwest of Modesto near the Tuolumne River. The facility currently is regulated by Waste Discharge Requirements (WDRs) Order No 98-093 in conformance with California Code of Regulations Title 27, Division 2, Subdivision 1 (hereafter Title 27). In addition, WDRs Order No 90-215 regulates the land application area. Both of these WDRs will be rescinded with the adoption of this Order. These WDRs prescribe requirements for current landfilling, post closure maintenance of the closed unit, closure of Waste Management Unit (WMU) II and III, environmental monitoring and the corrective action program. The facility is also regulated under Cleanup and Abatement Order No. 89-185 which will also be rescinded with the adoption of this Order.

The majority of the landfill is not constructed to today's standards, and portions of the wastes are in contact with the shallow groundwater. None of the four waste management units were constructed with a bottom liner or a leachate collection and recovery system, as is required of modern landfills. The landfill has created a plume of groundwater pollution, which must be contained and treated through a groundwater extraction and treatment system. In 2005, the Discharger reported they received 10,398 tons of material.

Site History

In 1984, the Discharger reported that its activities had resulted in a release of volatile organic compounds to groundwater. The Regional Board subsequently adopted Cease and Desist (CDO) Order No. 84-153, which directed the Discharger to evaluate the extent of the contaminant plume. Upon completion of that task, the Regional Board adopted Cleanup and Abatement Order No. 89-185, requiring the installation and operation of a groundwater remediation system. While the Discharger installed a groundwater extraction and treatment system, the Discharger failed to operate it for at least one year, from March 2004 through March 2005. In addition, the system is not adequate to contain the contaminant plume or lower the groundwater table enough to prevent groundwater from contacting the waste at the bottom of the landfill. As evidenced by 17 Notice of Violations issued since January 2001, the Discharger until recently (since early 2006) has had a long history of failing to address noncompliance issues, failing to operate its groundwater extraction system, and failing to submit adequate reports.

Cease and Desist Order

After site inspections in March and April 2005, staff prepared a Cease and Desist Order to address the numerous regulatory violations. Among other items, the CDO Order includes a schedule for the Discharger to: stop accepting non-permitted waste, repair the soil cover on the closed unit, repair the storm water conveyance system, complete final closure for the two inactive units, evaluate the adequacy of the groundwater detection and corrective action systems, establish a financial assurance fund, and continuously operate the groundwater extraction and treatment system. After many meetings and revisions by staff, the Discharger elected to accept the terms of the proposed CDO. The Regional Water Board at its 29 April 2005 Board meeting adopted as an uncontested item Order No. R5-2005-0073.

Stipulated Judgment

Following the adoption of Cease and Desist Order No. R5-2005-0073, the Discharger began submitting the required reports. However, staff's review found that these submittals were incomplete and did not address the requirements of the CDO nor the applicable landfill regulations. Although the operator complied with a few aspects of the CDO, it did not comply with the majority of the requirements, as evidenced by the seven Notices of Violation that were issued since the Order was adopted.

In September 2005, the Stanislaus County District Attorney and Regional Board staff began a joint enforcement action against the landfill. The District Attorney's complaint alleged that the Discharger has failed to comply with numerous requirements of the CDO, including failing to demonstrate that the groundwater detection and extraction system is adequate for site conditions, and failing to post financial assurances for corrective action, closure and post closure maintenance activities at the landfill. In addition, the Discharger has failed to provide at least one-foot of interim soil cover on two of the landfill units and has allowed un-permitted waste to be deposited in the active unit. The parties agreed to a Stipulated Judgment, which was filed with the Superior Court of Stanislaus County on 23 December 2005. Terms of the stipulated judgment include:

- Payment of $450,000 to the Stanislaus County District Attorney's Office and the State of California over a two year period;
- Payment of $100,000 if the Discharger submits fraudulent reports at any time in the next three years; and
- Payment of $1.4 million in penalties has been stayed contingent upon Discharger's satisfactory completion of 21 studies and improvements to the landfill.

These tasks must be completed by the timelines described in the judgment or the Discharger must pay the specific penalty associated with each task. The stipulated judgment does not

relieve the landfill owners and operators from the need to comply with all aspects of their WDRs and the CDO Order, nor does it prohibit the Regional Board from taking additional enforcement actions for items not addressed in the judgment.

Cleanup and Abatement Order

In August 2006, the Executive Officer signed Cleanup and Abatement Order No. R5-2006-0172 that required preparation of a revised closure plan for WMU II, III, and IV; to define the extent of the groundwater pollution; to re-evaluate the design and capabilities of their groundwater treatment system; and upgrade the groundwater monitoring system.

DESCRIPTION OF ORDER

As a result of Cease and Desist Order No. R5-2005-0073, the 23 December 2005 Stipulated Judgment, and Cleanup and Abatement Order No. R5-2006-0172, the Discharger has submitted a Joint Technical Document to update the facilities operations, Closure and Post Closure Plans for WMUs II, III and IV, a groundwater monitoring system upgrade report, and the 5-year groundwater sampling event data. These WDRs include an update of the general site conditions, as well as requirements for the groundwater Corrective Action Program, the groundwater-monitoring program, the post closure maintenance of Waste Management Unit I, and the closure design of Waste Management Units II and III.

Groundwater Corrective Action Program - On 1 October 1984, the Discharger submitted a report titled *Groundwater Study, Bonzi Landfill*. This report disclosed that in the winters of 1981-1982 and 1982-1983 the groundwater rose and percolated through the landfilled refuse, and that volatile organic compounds (VOCs), elevated levels of metals and total dissolved solids have been detected in the downgradient monitoring wells. Following the confirmed release, Cease and Desist Order No 84-153 directed the discharger to evaluate the extent of the contaminant plume. As a result of the Order, and the subsequent data evaluation, the Board adopted Cleanup and Abatement Order No. 89-185 to implement the necessary groundwater remediation. Since the adoption of Cleanup and Abatement Order No. 89-185, the Discharger has installed the required remediation system, yet the monitoring data has consistently shown that the system is not functioning as planned. At this time, VOCs continue to be reported by the Discharger downgradient from the WMU I point of compliance, and in off-site wells. The continued pollution of groundwater may be attributed to the non-operation of the groundwater remediation system. The discharger informed Board staff during an April 2005 inspection that the system has not been operational for over a year.

This Order requires the Discharger to maintain a corrective action monitoring system, in compliance with Title 27 Section 20415(b)(1)(D) to evaluate the continuous operational performance of their corrective action remediation systems. The performance standards for

their corrective action system are listed in Cleanup and Abatement Order No. R5-2006-0721, and include the following:

- *Capture all groundwater contaminates from Bonzi Landfill at the point of compliance. After the Discharger has made a reasonable attempt to capture all groundwater contaminates and if the Discharger believes it is technically or economically infeasible to achieve this criteria, then the Discharger must provide a report to Regional Water Board demonstrating their conclusion. If the Regional Water Board does not concur with the report's conclusion, the Discharger must make further attempts to comply with the criteria.*
- *Prevent groundwater from inundating the bottom of the four waste management units. After the Discharger has made a reasonable attempt to prevent groundwater from inundating the bottom of the waste management units and if the Discharger believes it is technically or economically infeasible to achieve this criteria, then the Discharger must provide a report to Regional Water Board demonstrating their conclusion. If the Regional Water Board does not concur with the report's conclusion, the Discharger must make further attempts to comply with the criteria.*
- *Clean-up groundwater to background or a concentration limit greater than background (CLGBC) in compliance with Section 20400(c) CCR Title 27. This includes the entire groundwater plume as described in Section 20430(c) CCR Title 27.*
- *Be able to monitor the groundwater and leachate levels from three locations within the footprint of each landfill unit.*
- *Remove any leachate generated from with the unit.*
- *Continuous treatment system (24 hours a day, 365-days a year) operation until the groundwater plume is remediated to background or a concentration limit greater than background (CLGBC) in compliance with Section 20400(c) CCR Title 27.*
- *Corrective action monitoring program that meets the requirements in Section 20430(d) CCR Title 27.*

Land Application Area (Corrective Action Program) – In an effort to better manage the wastewater generated from the groundwater extraction system, the Discharger has proposed to discharge treated water to a land application field. This water will be stripped of all volatile organic compounds, but it will still have elevated total dissolved solids. The 10-acres land application area is in the southwestern portion of the property. Poplar trees will be planted for the evaportranspiration of the applied water.

Groundwater Monitoring Program – As a requirement of the Stipulated Judgment the Discharger was to upgrade their groundwater monitoring system to comply with the Standards outlined in Title 27.

This Order identifies the new wells that were installed to replace wells that were no longer serving their monitoring purpose. It also requires the Discharger to recalculate the landfills water quality protection standards. The current water standards include only barium, iron, chloride, nitrate-n and total dissolved solids. This Order requires the Discharger to also establish standards for magnesium.

The Discharger will also be required to install monitoring wells adjacent to the new land application area to monitor any changes in groundwater quality.

Post Closure Maintenance of Waste Management Unit I – Closure of Waste Management Unit I was completed in January 1999. The WDRs require that the Discharger maintain the integrity of the cap. On 16 October 2003, the Discharge was sent a Notice of Violation for inadequate post closure maintenance for WMU I. These violations caused the cover system to no longer comply with the performance standard in Title 27. These violations included: the runoff/run-on ditches were choked with vegetation; the cover was not maintained to prevent ponding, and the surveyed monuments could not be located.

This Order requires that the Discharger to maintain WMU I's cover in compliance with Title 27.

Closure of Waste Management Units II, III, and IV – Cleanup and Abatement Order No. R5-2006-0721 requires that WMUs II, III, and IV be closed no later than **31 December 2011**. The Discharger has proposed an engineered alternative cover system, which is consistent with the performance goal of the landfill cover prescriptive standard in Title 27. This alternative also provides protection against water quality impairment equivalent to the prescriptive standard as required in Title 27 Section 20080(b)(2).

The engineered alternative proposed by the Discharger for the cover system for WMUs II, III and IV consists of, in ascending order:

- A 2-ft thick compacted foundation layer;
- A low permeability layer consisting of 60-mil linear low density polyethylene (LLDPE);
- A double-sided geocomposite drainage layer on top of the LLDPE where slopes are steeper than 10 percent; and
- 1.5-feet thick soil layer, which is capable of supporting vegetation.

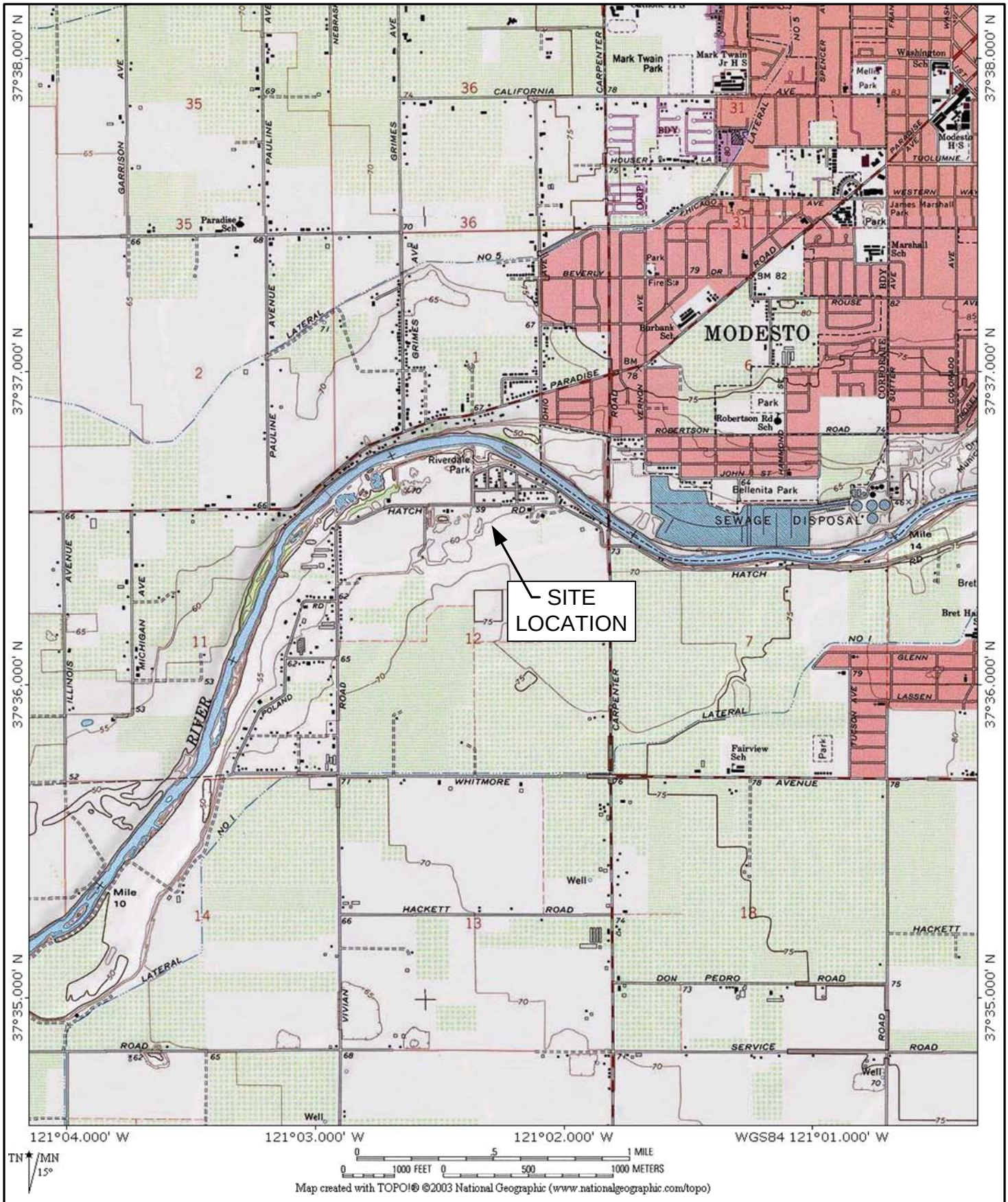
Monitoring and Reporting Program: This Order requires that significant data be gathered regarding the groundwater, landfill gas and the treatment system performance. As with any other facility, the Discharger may request revisions to the Monitoring and Reporting Program (i.e. identify new wells, remove a monitored constituent, add a newly identified compound, etc…) upon its review of the existing data. Modifications to the Monitoring and Reporting

Program can be requested at any time. Any changes to the MRP can be approved by the Regional Water Board's Executive Officer.

SUMMARY

These WDRs incorporate the information collected by the Discharger in an effort to comply with Cease and Desist Order No. R5-2005-0073, the 23 December 2005 Stipulated Judgment, and Cleanup and Abatement Order No. R5-2006-0721. The intent of these enforcement Orders is to have the Discharger comply with CCR Title 27. These requirements address the remaining issues at the landfill and if complied with will bring this facility into compliance with the current regulations.

hfh



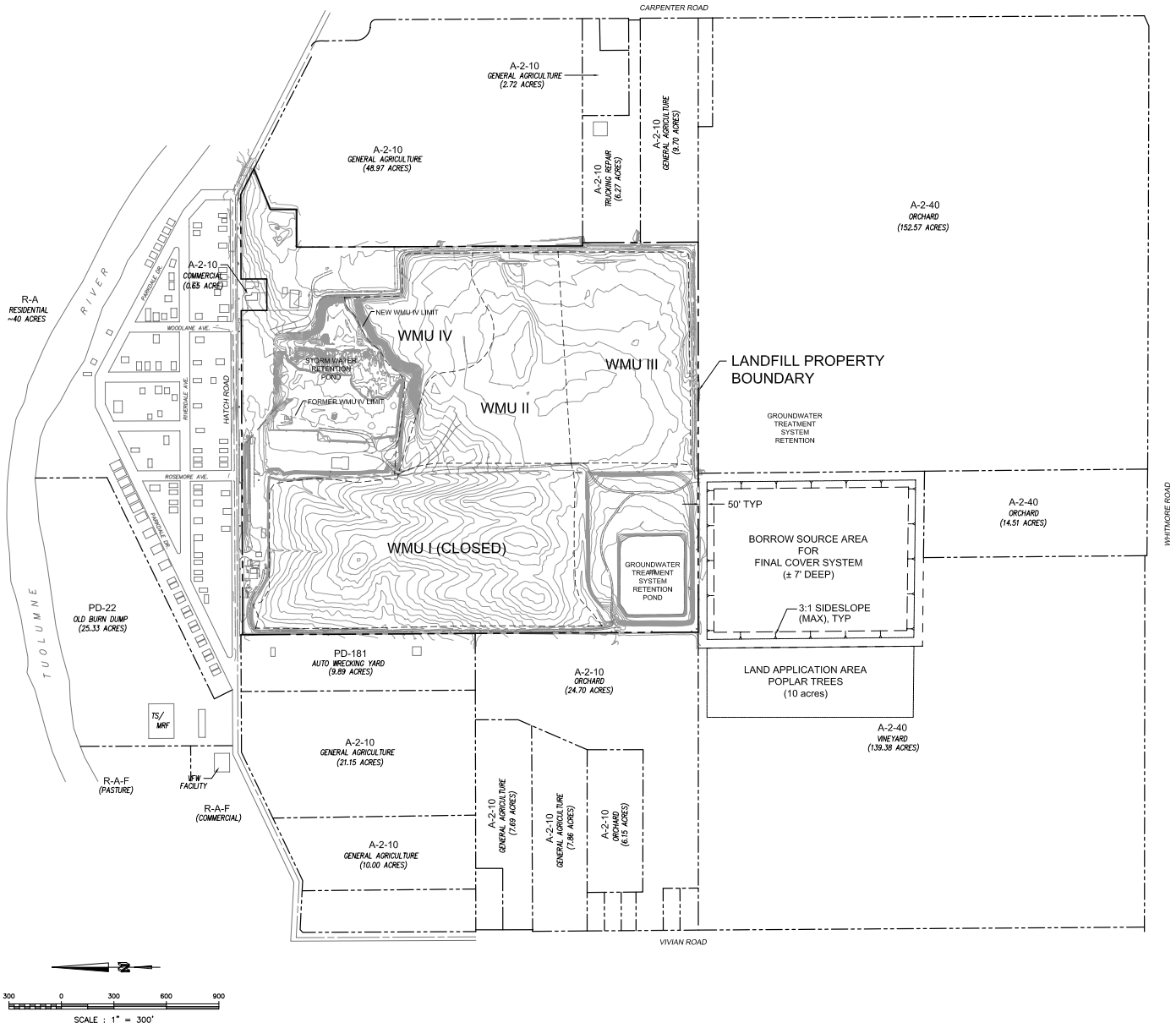
Map Source: National Geographic California Seamless USGS Topographic Maps on CD-ROM

Attachment A
WDR Order No. R5-2007-0148

SITE LOCATION MAP

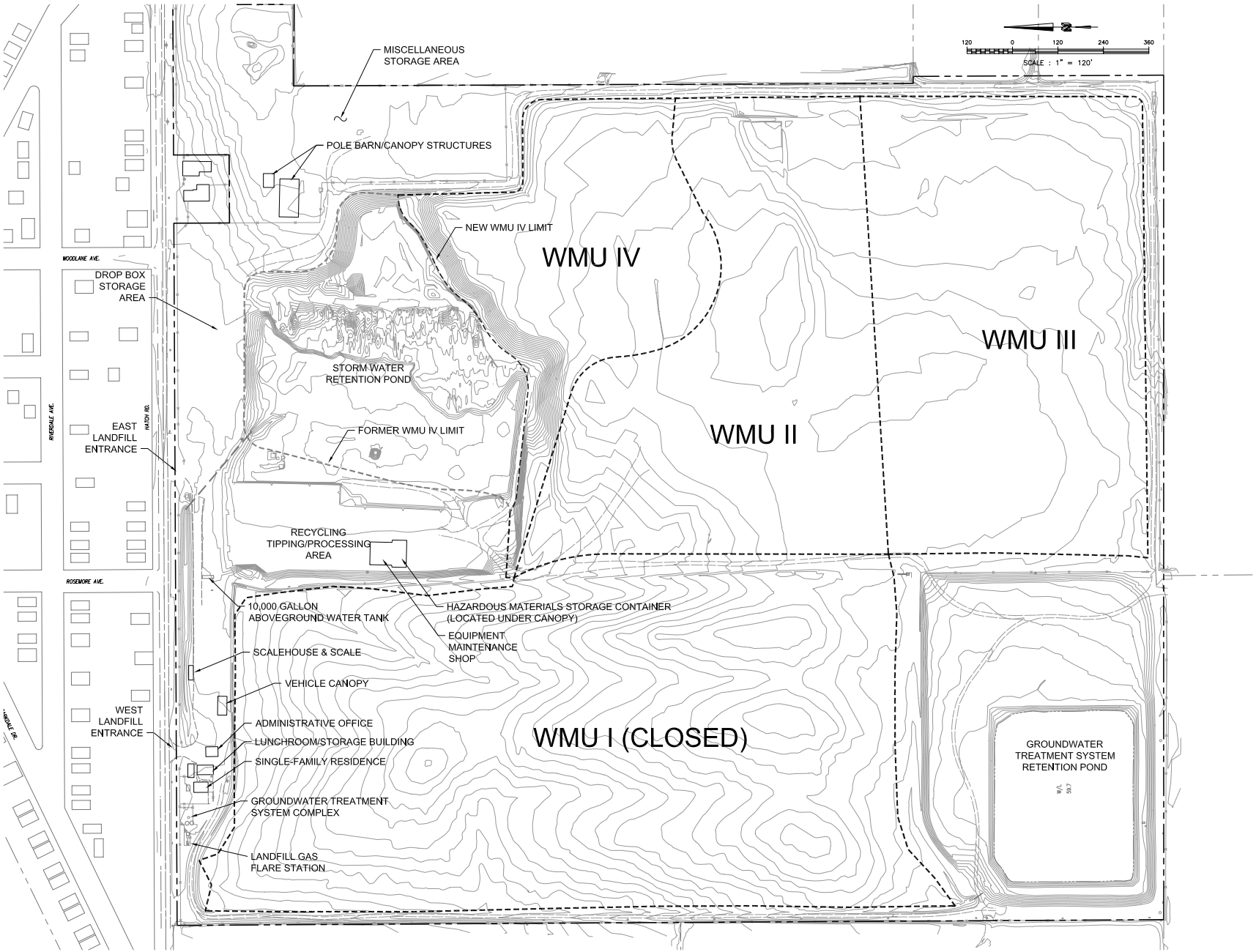
Bonzi Sanitary Landfill
2650 West Hatch Road
Modesto, California

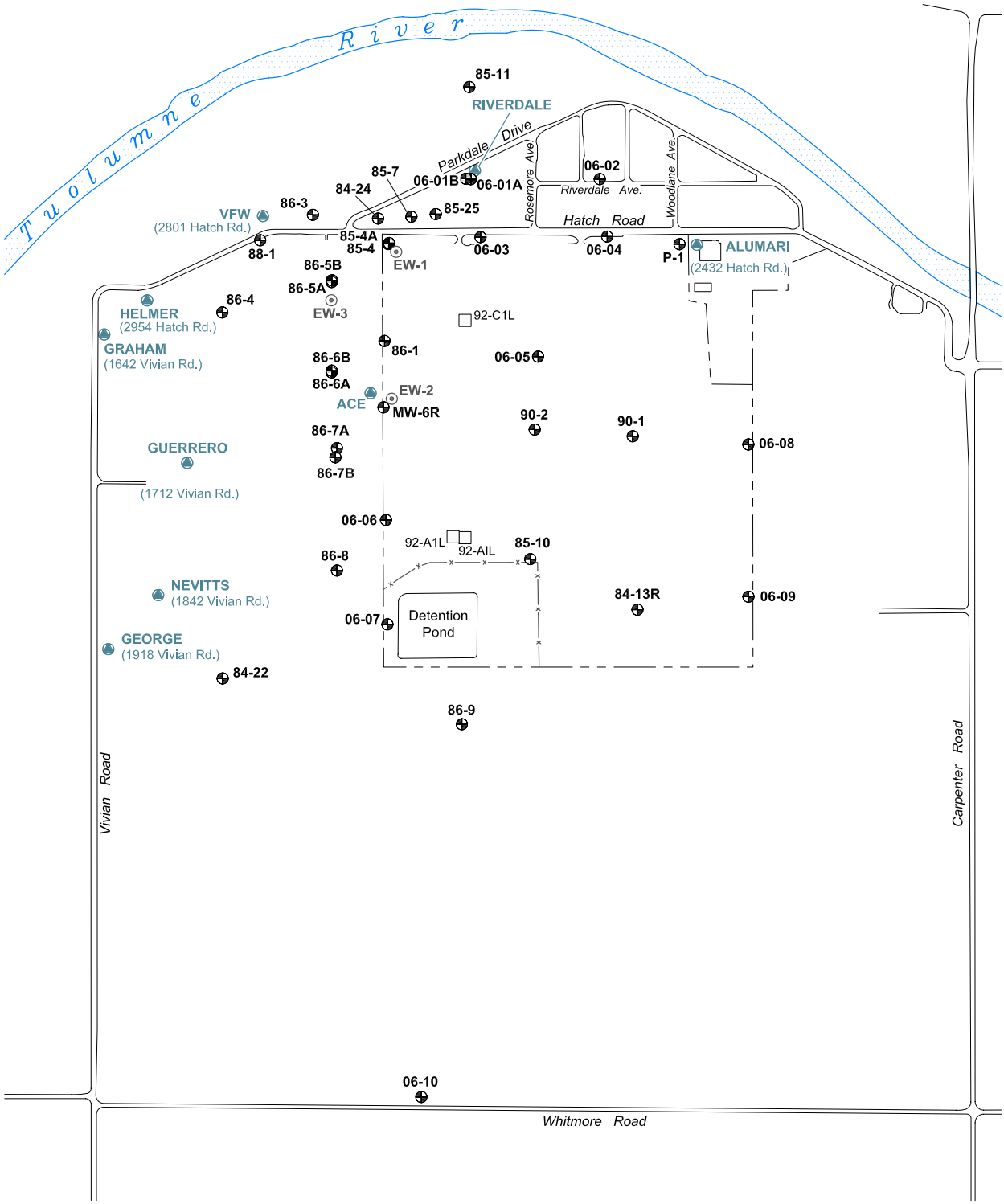
I:\Project\12000s\Bonzi Landfill\Documents\GWMSU Report\Figures\Figure_1-Site Location



LEGEND

	PROPERTY LINE
WMU	WASTE MANAGEMENT UNIT
TS/MRF	TRANSFER STATION/MATERIAL RECOVERY FACILITY
A-2-10	EXCLUSIVE AGRICULTURAL DISTRICT WITH A MINIMUM PARCEL DESIGNATION OF 10 ACRES
R-A	RURAL RESIDENTIAL DISTRICT
R-A-F	RURAL RESIDENTIAL DISTRICT (FLOOD PLAIN)
PD	PLANNED DEVELOPMENT


MISCELLANEOUS STORAGE AREA
POLE BARN/CANOPY STRUCTURES
NEW WMU IV LIMIT
WMU IV
WMU III
WMU II
WMU I (CLOSED)
WOODLANE AVE.
DROP BOX STORAGE AREA
STORM WATER RETENTION POND
FORMER WMU IV LIMIT
EAST LANDFILL ENTRANCE
HATCH RD.
RIVERDALE AVE.
ROSEMORE AVE.
RECYCLING TIPPING/PROCESSING AREA
10,000 GALLON ABOVEGROUND WATER TANK
HAZARDOUS MATERIALS STORAGE CONTAINER (LOCATED UNDER CANOPY)
EQUIPMENT MAINTENANCE SHOP
SCALEHOUSE & SCALE
VEHICLE CANOPY
WEST LANDFILL ENTRANCE
ADMINISTRATIVE OFFICE
LUNCHROOM/STORAGE BUILDING
SINGLE-FAMILY RESIDENCE
GROUNDWATER TREATMENT SYSTEM COMPLEX
LANDFILL GAS FLARE STATION
GROUNDWATER TREATMENT SYSTEM RETENTION POND
W/L 59.7
120 0 120 240 360
SCALE : 1" = 120'



Explanation

- **06-08** ⊕ Monitoring well
- **EW-3** ⊙ Extraction well
- **NAME** (Address) Private well
- 92-C1L □ Landfill leachate well