

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
SAN FRANCISCO BAY REGION**

**ORDER NO. 01-022  
UPDATED WASTE DISCHARGE REQUIREMENTS AND  
REVISION OF ORDER NO. 86-70 FOR:**

**SAN QUENTIN LANDFILL AND CAL-POX, INC.  
CLASS III LANDFILL  
SAN RAFAEL, MARIN COUNTY**

The California Regional Water Quality Control Board, San Francisco Bay Region, (hereinafter called the Board), finds that:

**SITE OWNER AND LOCATION**

1. The San Quentin Solid Waste Disposal Site is currently owned by Cal-Pox Incorporated and was operated by the San Quentin Disposal Company. The San Quentin Disposal Company, Cal-Pox Inc., and all future owners of properties within the disposal site are hereinafter called the Discharger (this definition may be changed by the Board in the future to reflect changes in ownership). The site is located adjacent to the San Rafael Bay in the City of San Rafael as shown in **Figure 1**, which is incorporated herein as part of this Order. The site encompasses an area of approximately 38 acres of low-lying diked land. The site is located at 1615 East Francisco Boulevard, San Rafael, California, 94901 and is bounded on the north by the San Rafael Drainage Assessment Holding Pond, east by the San Rafael Bay and the City of San Rafael open space, southeast by Kerner Boulevard, south by the Marin Municipal Water District's Inactive Landfill and the west by open space, as shown in **Figure 2** of this Order.

**PURPOSE OF ORDER UPDATE**

2. The primary purposes of this order are to update the existing Waste Discharge Requirements (WDRs) and assure compliance with the appropriate portions of Title 27 of the California Code Of Regulations (formerly known as Chapter 15, Title 23), referred to hereinafter as Title 27.

**SITE DESCRIPTION**

3. The San Quentin Landfill is a closed, unlined Class III landfill. The landfill operated from 1968 to 1987, and was used for the disposal of non-hazardous solid wastes such as construction and yard debris. No waste has been disposed of at the site since 1987. Prior to 1968, the San Quentin Landfill area consisted of the San Rafael Bay, portions of which were diked and dredged by the City of San Rafael. Waste disposal operations resulted in

the extension of the shoreline approximately 2,000 feet to the northeast of the pre-landfill shoreline. Consistent with landfill practices at that time, no liner was installed at the site. Instead, the waste materials were placed directly onto the Young Bay Mud.

4. Following closure in 1987, the landfill was divided into multiple parcels for future land development. In 1996 and 1999, two buildings were constructed within the refuse limits of the former landfill, the Home Depot and the Benjamin Building, respectively. Furthermore, in 1999 BMW completed construction of a car dealership directly adjacent and southwest of the former landfill.

## REGULATORY HISTORY

5. In 1967, the Regional Board adopted WDRs for the landfill in Resolution No. 67-36. The Resolution addressed a Staff observed dike failure, which placed landfill waste in direct contact with Bay water. Prohibitions per the Resolution include: the discharge of readily decomposable material or oil or grease into waters of the State; the presence of macroscopic floatable waste material in any position where it is, or can be, carried from the disposal site by water; atmospheric odors recognizable as being of waste origin at any place outside the disposal site; any substance, or any combination of substances, in concentrations that are harmful to fish or aquatic life; and, set criteria for dissolved oxygen, dissolved sulfides, and pH.
6. In 1969, the Regional Board updated the WDRs for the landfill in Resolution No. 69-2. The Resolution prohibited the discharge of waste or water in contact with waste (leachate) from the landfill. Prohibited discharges to waters of the State included decomposable material, oil or grease, suspended solids, direct discharges of liquid and/or toxic industrial wastes and the release of atmospheric odors from the landfill. The WDR further prohibited changes in apparent color, temperature, or turbidity beyond present natural background levels in waters of the State caused by waste disposal activities.
7. In 1969, the Regional Board issued Resolution No. 69-50 ordering the San Quentin Disposal Site and Mr. H. Heifetz to cease and desist in response to violations of requirements prescribed in Resolution No. 69-2.
8. In 1979, the Regional Board rescinded Resolution No. 69-50 with the issuance of Order 79-10.
9. In 1979, the Regional Board issued WDR Order Number 79-11. This Order updated and rescinded Resolutions 67-36 and 69-2. Order updates included: a site closure plan pursuant to Regional Board Resolution No. 77-7; prohibition of municipal wastes from being placed in contact with ponded water, prohibited hazardous wastes from being stored or disposed of at the site; prohibited waste material from being disposed of in any location where they can be carried from the disposal site and discharged into water of the

State; prohibited sewage sludge and high moisture content municipal wastes from being disposed of at the site without prior approval from the Board's Executive Officer; prohibited removal or relocation of any wastes disposed of at the site; prohibited leachate from being discharged to waters of the State; limited the use of water to that necessary for dust control and fire suppression; set criteria of erosion and flood control; set vertical and lateral hydraulic conductivity requirements for barrier soils; and, prohibited the migration of methane gas from the disposal site.

10. In 1982, the Regional Board issued WDR Order Number 82-11, which amended the site closure specifications in Order 79-11.
11. In 1985, the Regional Board issued WDR Order Number 85-103. Order 85-103 updated the WDRs and rescinded Orders 79-11 and 82-11. Order 85-103 updates include: the prohibition of wastes containing less than 50 percent solids from being disposed of at the site; truck wash water or oil from being discharged to the landfill; required that the leachate containment pond be lined in accordance to Section 2542 and 2341 of Subchapter 15; and, required graded slopes of a minimum of 3 percent for all closed portions of the landfill.
12. In 1986, the Regional Board issued WDR Order Number 86-70. Order 86-70 updated the WDRs and rescinded Order 85-103. Updates to the previous Order addressed final closure and post closure maintenance at the site. This Order rescinds Order 86-70.

#### **LANDFILL CONSTRUCTION HISTORY**

13. Waste containment features were constructed consistent with regulatory and industry practices throughout the operational history of the landfill, from 1968 through its closure in 1987. Liners were not installed at the landfill. Individual cells were created for disposal convenience however, segregation of waste did not occur. According to available documents, only construction debris and yard trimmings were accepted at the landfill and hazardous waste and household refuse was prohibited. Waste fill was placed directly within diked portions of the San Rafael Bay and directly on the native soils. Dikes were constructed of earthen material primarily composed of Bay Mud.
14. In 1987 the landfill began final closure. Final cover consisted of approximately 1-foot of foundation soil, a minimum of a least 1-foot of low hydraulic conductivity layer ( $<10^{-6}$  cm/s), and approximately 3-feet of topsoil. All of the cover materials were compacted to at least 90 percent of the maximum dry density as determined by ASTM D1557-78. In portions of the landfill, the foundation layer and part of/or the entire topsoil layer consists of clay. Closure procedures, including placement of final cover, concluded in 1987.

## **SITE WASTE DISPOSAL HISTORY**

15. The San Quentin Landfill began receiving waste in 1968 and continued until 1987. During this time period, approximately 841,500 tons of material consisting primarily of demolition debris, asphalt, and incidental waste such as yard trimmings and brush clippings were disposed of at the site.
16. As Bay Mud was excavated for use as daily and intermediate cover, debris was backfilled into the resulting excavations. Borings show that these excavations varied from about 3.4 feet below Mean Sea Level (MSL) at well GR-1 in the northwestern corner of the site to approximately 26 feet below MSL at well GR-3 on the eastern edge of the site. The mean depth of the excavations was typically around 10 feet below MSL. Because the depth of the excavation varied, the thickness of the debris is likewise variable.

## **SITE GEOLOGIC SETTING**

17. The site is a relatively flat to slightly domed, artificial fill area, ranging in elevation from 7 to 25 feet MSL, which overlies alluvium consisting of estuarine deposits referred to as the Bay Mud. The Bay Mud deposits are found throughout the San Francisco Bay Region and generally consist of plastic, silty marine clays with high organic content and can range in thickness of up to approximately 90 feet below ground surface (bgs) at the site. The Bay Mud typically has localized lenticle deposits of poorly graded sand, silt, peat beds, and fossiliferous horizons. Bedrock (The Franciscan Complex) at the landfill underlies the Bay Mud and is composed of sandstone, shale and conglomerate and is approximately Upper Jurassic to Lower Cretaceous in age and is exposed directly to the west of the site.
18. The site is located approximately halfway between two major fault systems, the San Andreas and the Hayward. The San Andreas Fault is located approximately 10 miles to the southwest and has an expected maximum credible earthquake (MCE) Richter magnitude of 8.5 and has displayed significant movement as early as October 17, 1989 during the Loma Prieta Earthquake (Richter magnitude = 7.1) of which the epicenter was located approximately 65 miles to the south-southwest. The Hayward Fault is located approximately 8 miles to the northeast and has an MCE Richter magnitude of 7.25. Both faults are considered Historic faults (Active <200 years before present (bp)) and could potentially cause excessive damage to improperly engineered structures. Other Holocene faults (Active <10,000 bp) located near the site include the Rodgers Fault, West Napa Fault, Green Valley Fault, Concord Fault, and the Calvaras Fault located approximately 15, 21, 24, 25, and 30 miles from the site, respectively. All of these faults have the potential to significantly impact the site.

## SITE HYDROGEOLOGIC SETTING

19. The hydrogeologic units in the vicinity of the site include the Franciscan Formation, Bay Mud and the landfill itself. The landfill is an unconfined hydrostratigraphic unit.
20. An 80 to 90 foot sequence of Bay Mud, located at the site, acts as a confining layer between the underlying Franciscan Formation and the landfill refuse. Wells screened beneath landfill debris and in the Bay Mud exert higher potentiometric surfaces than wells screened directly within debris. Furthermore, wells screened deeper in Bay Mud exert higher potentiometric surfaces than wells screened in the shallower Bay Mud.
21. The observed upward vertical gradient is likely caused either by surface loading or recharge under confined conditions. Surcharging of the Bay Mud by surface loading can cause high Bay Mud pore pressure, which dissipates slowly because of the low hydraulic conductivity of the Bay Mud. High pore pressures of the Bay Mud would subsequently cause locally higher potentiometric surface for groundwater. Recharge under confined conditions can also cause an upward vertical gradient. Recharge occurs at local upland areas directly to the west, where the Franciscan Formation is exposed at the surface. As the Franciscan Formation becomes covered and confined by Bay Mud the underlying water could exert a higher potentiometric surface, therefore resulting in the observed upward vertical gradient. Water elevations that increase with depth are expected in the vicinity of groundwater discharge areas, such as the San Rafael Bay. The thick sequence of the Bay Mud and the observed upward vertical groundwater gradient likely act to prevent the downward migration of contaminants at the site.
22. Leachate was historically monitored by four wells. However, three of the wells were either covered or destroyed by development and grading activities at the site. The leachate level in the remaining well, GR4, is at approximately 19 feet msl. Groundwater elevations in perimeter and background wells range between approximately -2 to 11 feet msl, indicating the potential for a relatively strong outward gradient. Replacement leachate wells were installed in December 2000 (GR-1B, GR-2A, GR-3A, GR-8A, and GR-9) to measure leachate levels within the landfill.
23. The primary sources of leachate recharge in the landfill are through direct infiltration of precipitation, upward vertical gradient of groundwater in Bay Mud, and tidal seepage from the Bay.
24. The slow and attenuated response of the wells to tidal fluctuation suggests low hydraulic conductivities in the Bay Mud present beneath and in the diked portions of the landfill.

## **GROUNDWATER CONTAMINATION AND WATER QUALITY**

25. Landfill leachate is known to contain dissolved metals, ammonia, volatile organic compounds (VOCs), and semi volatile organic compounds (SVOCs). Landfill leachate is brackish to saline. The following VOCs have been detected at maximum concentrations of: carbon disulfide at 21 micrograms per liter (ug/L), 1,1-dichloroethane at 3 ug/L, Cis-1,2-dichloroethene at 6 ug/L, 2-butanone at 10 ug/L, benzene at 10 ug/L, toluene at 120 ug/L, ethylbenzene at 38 ug/L, and total xylenes at 60 ug/L. The following SVOCs have been detected at maximum concentrations of: phenol at 13 ug/L, 2,4-dimethylphenol at 150 ug/L, naphthalene at 140 ug/L, and 2-methylnaphthalene at 15 ug/L.
26. Shallow groundwater along the perimeter of the landfill generally does not contain VOCs, SVOCs, or elevated values of ammonia. However, low levels of VOCs and dissolved metals have been observed in perimeter wells G-7 and G-6. Groundwater in perimeter wells is brackish to saline.

## **CURRENT AND FUTURE LAND USES**

27. The landfill is currently a mixture of undeveloped land and developed commercial space including a Home Depot Center and a commercial office building.
28. In 1986, the closure plan was approved for post-closure development and use of the landfill for light industrial and commercial office buildings.

## **SITE INVESTIGATIONS**

29. In 1972, a portion of the northern perimeter of the landfill was ordered turned over to the city of San Rafael in order to increase the capacity of the storm water retention pond. This portion of the landfill was fully excavated and removed and subsequently regraded following excavation activities.
30. In 1987, many subsurface structures were sealed to prevent the release of landfill gas. Other structures required quarterly monitoring and were subsequently vented when site analytical data dictated.
31. In 1988, Harding Lawson Associates conducted a Solid Waste Assessment Test (SWAT) investigation to determine the landfills potential to have adverse effects on water quality. The report documented that low levels of organic compounds have been detected in five perimeter-monitoring wells G-6, G-7, G-10, G-11, and GU. The report further noted that the Young Bay Mud is an effective barrier and coupled with the observed upward vertical groundwater gradient, should prevent the downward migration of contaminants. The report also concluded that groundwater levels across the site are affected by several local

influences, such as drainage into backfill and low areas, and periodic recharge. Furthermore, groundwater tidal responses indicate that there is poor hydrologic connection between the landfill and the Bay.

32. In 1990, a leachate extraction well was installed in the northern corner of the site. The purpose of the extraction well was to mitigate seeps observed along the toe of the landfill. Leachate was discharged to the city of San Rafael sanitary sewer system under a POTW discharge permit.

## MONITORING PROGRAMS

33. **Groundwater Monitoring** – The site contains seven groundwater-monitoring wells (G-1A, G-2R, G-4A, G-5B, G-6A, G-7A, and G-11). The groundwater-monitoring program is detailed in the Discharge Monitoring Plan attached to this Order (Attachment A). The Discharger is required to analyze for the monitoring parameters as presented in **Attachment A** of this Order.
34. **Leachate Monitoring** – The site contains five leachate monitoring wells (GR-1B, GR-2A, GR-3A, GR-4, and GR-9) and one leachate extraction well (EX-1). The Leachate Monitoring Program is detailed in the Discharge Monitoring Plan attached to this Order (Attachment A). The Discharger is required to analyze for the monitoring parameters as presented in **Attachment A** of this Order.
35. **Surface Water Monitoring** – Surface water monitoring shall be conducted as part of the Discharge Monitoring Plan and approved Construction Storm Water Monitoring Plans.
36. **Vadose Zone Monitoring** – Limited vadose zone monitoring is conducted through the landfill gas monitoring program approved as part of the post-closure land use plan.
37. **Basin Plan** - The Regional Board adopted a revised Water Quality Plan for the San Francisco Bay Basin (Basin Plan) in June 21, 1995. This updated and consolidated plan represents the Board's master water quality control planning document. The State Water Resource Control Board and the Office of the Administrative Law approved the revised Basin Plan on July 20 and November 13, respectively, of 1995. A summary of regulatory provisions is contained in Title 23 of the California Code of Regulations at Section 3912. The Basin Plan defines beneficial uses and water quality objectives for waters of the State, including surface waters and groundwaters.

Board Resolution No. 89-39, "Sources of Drinking Water," defines potential sources of drinking water to include all groundwater in the region, with limited exceptions for areas containing high TDS, high background contaminant levels, or those areas with a low-yield. Shallow groundwater at the site exceeds TDS concentrations of 3000 mg/L and as such is not considered a potential drinking water source however; deeper groundwater quality has not been fully evaluated. As such, any groundwater at the site meeting

Resolution 89-39 requirements of TDS concentrations below 3000 mg/L, electrical conductivities below 5,000 micro-Siemens per centimeter, and with production yields greater than 200 gallons per day will be considered a potential drinking water source. Currently there is no current use of the site's shallow or deep groundwater, nor any anticipated plans for its use.

38. **Beneficial Uses** - The beneficial uses of the Central San Francisco Bay include:
- a. Ocean, Commercial, and Sport Fishing
  - b. Estuarine Habitat;
  - c. Industrial Service Supply;
  - d. Fish Migration;
  - e. Navigation;
  - f. Industrial Process Supply;
  - g. Preservation of Rare and Endangered Species;
  - h. Water Contact Recreation;
  - i. Non-Contact Water Recreation;
  - j. Shellfish Harvesting;
  - k. Fish Spawning; and,
  - l. Wildlife Habitat.

The present and potential beneficial uses of groundwater meeting Resolution 89-39 requirements are as follows:

- a. Domestic and municipal water supply;
- b. Freshwater Replenishment;
- c. Industrial Process supply;
- d. Industrial Service supply; and
- e. Agricultural supply.

## **CALIFORNIA ENVIRONMENTAL QUALITY ACT**

39. The Discharger has completed an Environmental Impacts Report (EIR) that was certified complete on September 7, 1993. The report lists potential site wide impacts and impacts that are specific to the 1996 Home Depot construction. The impacts listed below are those that address site wide issues as they pertain to groundwater quality.

**Impacts of geology, soils, and seismicity outlined in the EIR.** The EIR list several potential impacts of geology, soils, and seismicity including grading and earthwork construction, settlement, slope instability, seismic hazards, soil erosion, and soil production. The EIR incorporated mitigation measures for each of the above-mentioned impacts. The proposed mitigation measures addressed general facility conditions, foundations, settlement, earthwork, loading, slope stability, seismic hazards, erosion control, and soil production.

**Impacts to hydrology, grading, and drainage outlined in the EIR.** The EIR lists several potential impacts to water quality including larger runoff volumes and increased flows, erosion and decrease in water quality during constructions, decrease in water quality post-construction, and altered hydrology. The EIR lists several mitigation measures including the statement that the Discharger shall apply for a notice of intent to be covered under the State of California National Pollutant Discharge Elimination System (NPDES) general permit for construction.

**Impacts to water quality outlined in the EIR.** The EIR lists several potential impacts to water quality including increased discharge of leachate to surface and ground waters. The EIR further lists several mitigation measures including using flow meters to perform regulatory water balances so that leaks can be detected and repaired, requiring regulatory approval for any grading and construction activities at the site, and complying with the Board's criteria for pile construction in landfills and to act in accordance with all performance standards and regulatory requirements stipulated under Title 14 CCR, Article 7.8 Section 17796.

40. The Board has notified the Discharger and interested agencies and persons of its intent to issue waste discharge requirements for the Discharger and has provided them with an opportunity for a public hearing and an opportunity to submit their written views and recommendations.
41. The Board, in a public meeting heard and considered all comments pertaining to the discharge.

**IT IS HEREBY ORDERED** that the Discharger, its agents, successors and assigns shall meet the applicable provisions contained in Title 27, Division 2, Subdivision 1 of the California Code of Regulations and Division 7 of the California Water Code and shall comply with the following:

**A. PROHIBITIONS**

1. Waste shall not be in contact with ponded water from any source whatsoever.
2. No further waste shall be deposited or stored at this site.
3. Leachate from waste and ponded water containing leachate or in contact with solid wastes shall not be discharged to waters of the State or of the United States.
4. Neither the treatment nor the discharge of waste shall create a condition of pollution, contamination or nuisance, as defined by Section 13050 of the California Water Code (CWC). (H & SC Section 5411, CWC Section 13263)

5. The Discharger, or any future owner or operator of the site, shall not cause the following conditions to exist in waters of the State at any place outside the waste management facility:

- a. Surface Waters

1. Floating, suspended, or deposited macroscopic particulate matter or foam.
2. Bottom deposits or aquatic growths.
3. Alteration of temperature, turbidity, or apparent color beyond natural background levels.
4. Visible, floating, suspended or deposited oil or other products of petroleum origin.
5. Toxic or other deleterious substances to be present in concentrations or quantities which may cause deleterious effects on aquatic biota, wildlife or waterfowl, or which render any of these unfit for human consumption either at levels created in the receiving waters or as a result of biological concentrations.

- b. Groundwater

Groundwater shall not be impacted as a result of waste degradation.

## **B. SPECIFICATIONS**

1. All reports pursuant to this order shall be prepared under the supervision of a registered civil engineer, California registered geologist or certified engineering geologist.
2. The site shall be protected from any washout or erosion of wastes or cover material and from inundation that could occur as a result of a 100-year, 24-hour precipitation event, or as the result of flooding with a return frequency of 100 years.
3. Surface drainage from tributary areas and internal site drainage from surface or subsurface sources shall not contact or percolate through wastes during the life of the site.
4. The existing containment, drainage, and monitoring systems at the facility, shall be maintained as long as leachate is present and poses a threat to water quality.
5. The Discharger shall assure that the foundation of the site, the solid waste fill, and the structures, which control leachate, surface drainage, erosion and gas are maintained to withstand conditions generated during the maximum probable earthquake. Furthermore,

- new structures shall be constructed and maintained to withstand conditions generated during the maximum probable earthquake.
6. The final cover system shall be graded and maintained to promote lateral runoff and prevent ponding and infiltration of water.
  7. The Discharger shall analyze the samples from the existing groundwater wells as outlined in the Discharge Monitoring Program (Attachment A).
  8. In the event of a release of a constituent of concern beyond the Point of Compliance (Section 20405, Title 27), the site begins a Compliance Period (Section 20410, Title 27). During the Compliance Period, the Discharger shall perform an Evaluation Monitoring Program and a Corrective Action Program. The Point of Compliance is defined as the vertical surface located along the hydraulically downgradient limit of the waste management unit and extending through the uppermost aquifer underlying the unit.
  9. The Discharger shall install any reasonable additional groundwater and leachate monitoring devices required to fulfill the terms of any future Discharge Monitoring Program issued by the Executive Officer.
  10. Landfill gases shall be adequately vented, removed from the landfill, or otherwise controlled to minimize the danger of explosion, adverse health effects, nuisance conditions, or the impairment of beneficial uses of water.
  11. The Discharger is subject to performance standards adopted by the California Integrated Waste Management Board for post-closure land use, which specify that the maintenance and design of devices and features installed in accordance with this order continue to operate as intended without interruption.
  12. The Discharger shall provide a minimum of two surveyed permanent monuments near the landfill from which the location and elevation of wastes, containment structures, and monitoring facilities can be determined throughout the operation and post-closure maintenance period. A licensed land surveyor or registered civil engineer shall install these monuments.
  13. The Regional Board shall be notified immediately of any failure occurring in the waste management unit. Any failure that threatens the integrity of containment features or the landfill shall be promptly corrected after approval of the method and schedule by the Executive Officer.
  14. The Discharger shall comply with all applicable provisions of Title 27 that are not specifically referred to in this Order.

15. The Discharger shall maintain the facility so as to prevent a statistically significant increase in water quality parameters at points of compliance as provided in Section 20415 (e) (7) of Title 27.

**C. PROVISIONS**

1. The Discharger shall comply with all Prohibitions, Specifications and Provisions of this Order. All required submittals must be acceptable to the Executive Officer. The Discharger must also comply with all conditions of these Waste Discharge Requirements. Violations may result in enforcement actions, including Regional Board orders or court orders requiring corrective action or imposing civil monetary liability, or in modification or revocation of these waste discharge requirements by the Regional Board. (CWC Section 13261, 13263, 13265, 13267, 13268, 13300, 13301, 13304, 13340, 13350).
2. All technical and monitoring reports required to be submitted pursuant to this Order are being requested pursuant to Section 13267 of the California Water Code. Failure to submit reports in accordance with schedules established by this Order or failure to submit a report of sufficient technical quality to be acceptable to the Executive Officer may subject the Discharger to enforcement action pursuant to Section 13268 of the California Water Code.
3. The Discharger shall file with the Regional Board, Discharger Monitoring Report, performed according to any Discharge Monitoring Program issued by the Executive Officer.
4. The Discharger shall submit an **Annual Monitoring Report**, in a form acceptable to the Executive Officer, by January 31 of each year in accordance with the attached Discharge Monitoring Program (Attachment A). The annual report to the Board shall cover the previous calendar year as described in Part A of the Discharge Monitoring Program. In addition to the requirements outlined in Attachment A, this report shall also include the surveyed location (Site Map and GPS Location) and operational condition of all leachate and groundwater monitoring wells. Furthermore, the Discharger shall submit semi-annual monitoring reports, to be submitted no later than July 31 and January 31 of each year; the January 31 semi-annual report may be combined with the annual report.

**REPORT DUE DATES:**

**SEMI-ANNUAL AND ANNUAL REPORTS:**

**ANNUAL REPORT– January 31 (Each Year)**

**SEMI-ANNUAL REPORT – July 31 and January 31 (Each Year)**

5. Groundwater and leachate elevations shall be measured quarterly (January, April, July, and October) and reported in the semi-annual self-monitoring report. Data compiled from leachate elevations shall be presented, in a leachate contour map with respect to mean sea level (MSL) and tabulated within the report. Data compiled from groundwater

elevations shall be presented in a tabular format and referenced on the leachate contour map (i.e., groundwater monitoring well ID and head elevation in MSL) Groundwater elevations need not be contoured. Tabular data shall include but not be limited to: well ID, date measured, time measured, time of low tide, and groundwater and leachate elevations in MSL.

**REPORT DUE DATES:**

**COMBINED WITH THE SEMI-ANNUAL AND ANNUAL  
SELF MONITORING REPORTS – July 31 and January 31(Each Year)**

6. The Discharger shall submit a letter report to the Board, acceptable to the Executive Officer, detailing the repair and maintenance activities that need to be completed prior to the commencement of the next rainy season (October 15<sup>th</sup>). This letter report shall also include a schedule for repair and maintenance activities, and a cost analysis detailing the anticipated expense for all repairs, maintenance and monitoring during the next 12 months. Repair and maintenance estimates shall be based on rainy season inspections conducted throughout the winter as required in the Discharge Monitoring Plan. The report shall also contain a demonstration of the adequacy of the funds needed for the site repair and maintenance.

**REPORT DUE DATE: July 31 (Each Year)**

7. For all new development within the landfill, the Discharger shall assure that :
  - A cap that is in compliance with the intent of Title 27 shall be placed and/or maintained within the entire development area. The existing approved cap meets the intent of Title 27;
  - Any penetrations of the cap, such as from piles, utility pipes, foundations, plants, etc., shall be adequately sealed to prevent infiltration of water and to further prevent a conduit for landfill gas migration;
  - Stormwater run-on and run-off shall be adequately controlled to prevent excessive erosion and damage to the cap. Any applied irrigation water shall likewise be controlled;
  - All constructed buildings and utilities shall be built to accommodate the maximum anticipated settlement without damage; and
  - New construction shall not promote additional standing water on top of the landfill.

8. The Discharger is required to monitor leachate buildup over time and implement a **Leachate Management Plan**, acceptable to the Executive Officer, to contain leachate within the waste management unit.

**REPORT DUE DATE: March 30, 2001**

9. The Discharger or the developer under the direction of the Discharger shall prepare and submit a **Development Proposal**, acceptable to the Executive Officer, for each individual development proposed for the landfill.

**REPORT DUE DATE: 90 days prior to commencement of construction**

10. The Discharger shall immediately notify the Board of any flooding, equipment failure, slope failure, or other change in site conditions that could impair the integrity of waste or leachate containment facilities or precipitation and drainage control structures.

**REPORT DUE DATE: Immediately**

11. For each proposed development, the Discharger or the developer under the direction of the Discharger shall prepare, implement and submit a **Storm Water Pollution Prevention Plan** in accordance with requirements specified in State Water Resources Control Board General Permit for Storm Water Discharges Associated with Construction Activities (NPDES Permit No. CAS000002).

**COMPLIANCE DUE DATE: 45 days prior to commencement of construction**

12. The Discharger shall submit a **Water Quality Sampling and Analysis Plan (SAP)**, acceptable to the Executive Officer, which gives a complete and detailed description of the physical process of obtaining field information, measurements, and water quality samples. The SAP should be usable as a stand-alone document and a copy of the current SAP must be available to each member of the sampling team. The SAP must contain sufficient detail for a sampler with limited experience to understand and follow and to insure that sampling will be conducted in the same manner by different samplers.

**COMPLIANCE DUE DATE: March 31, 2001**

13. The Discharger shall submit a **Well Installation Report**, acceptable to the Executive Officer, that provides well construction details, geologic boring logs, and well development logs for all new wells installed as part of the attached Discharge Monitoring Program (Attachment A).

**COMPLIANCE DUE DATE: 45 days following completion of well installation activities**

14. The Discharger shall maintain a copy of these waste discharge requirements and these requirements shall be available to site personnel at the facility at all times. (CWC Section 13263).
15. This Board considers the property owner and site operator to have continuing responsibility for correcting any problems that arise in the future as a result of the waste discharged or related operations.
16. In the event that the Discharger-owned property adjacent to the landfill is developed into residential dwellings, the Discharger will notify perspective home purchasers of the presence of the landfill.
17. The Discharger shall permit the Regional Board or its authorized representative, upon presentation of credentials, during normal business hours:
  - a. Immediate entry upon the premises on which wastes are located or in which any required records are kept.
  - b. Access to copy any records required to be kept under the terms and conditions of this order.
  - c. Inspection of any treatment equipment, monitoring equipment, or monitoring methods required by this order or by any other California State Agency.
  - d. Sampling of any discharge or groundwater governed by this order.
18. These requirements do not authorize commission of any act causing injury to the property of another or of the public; do not convey any property rights; do not remove liability under federal, state or local laws; and do not authorize the discharge of wastes.
19. The Discharger shall notify the succeeding owners or operators of this Order by letter in the event of any change in control, ownership of land, or waste discharge facilities presently owned or controlled by the Discharger. The Discharger must notify the Executive Officer, in writing at least 30 days in advance of any proposed transfer of this Order's responsibility and coverage to a new discharger. The notice must include a written agreement between the existing Discharger and new dischargers containing a specific date for the transfer of this order's responsibility and coverage between the current Discharger and the new dischargers. This agreement shall include an acknowledgment that the existing Discharger is liable for violations up to the transfer date and that the new dischargers are liable from the transfer date on. (CWC Sections 13267 and 13263). The request must contain the requesting entity's full legal name, and the address and telephone number of the persons responsible for contact with the Board. Failure to submit the request shall be considered a discharge without requirements, a violation of the California Water Code.
20. This Order is subject to Board review and updating, as necessary, to comply with changing State and Federal laws, regulations, policies, or guidelines; changes in the Board's Basin Plan; or changes in the discharge characteristics (CWC Section 13263).

21. Where the Discharger becomes aware that it failed to submit any relevant facts in a Report of Waste Discharge or submitted incorrect information in a Report of Waste Discharge or in any report to the Regional Board, it shall promptly submit such facts or information (CWC Sections 13260 and 13267).
22. This Order does not convey any property rights of any sort or any exclusive privileges. The requirements prescribed herein do not authorize the commission of any act causing injury to persons or property, do not protect the Discharger from his liability under Federal, State or local laws, nor do they create a vested right for the Discharger to continue the waste discharge [CWC Section 13263(g)].
23. Provisions of these waste discharge requirements are severable. If any provision of these requirements is found invalid, the remainder of these requirements shall not be affected.
24. The Discharger shall, at all times, properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the Discharger to achieve compliance with conditions of this Order. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls including appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar systems only when necessary to achieve compliance with the conditions of this order [CWC Section 13263(f)].
25. Except for a discharge which is in compliance with these waste discharge requirements, any person who, without regard to intent or negligence, causes or permits any hazardous substance or sewage to be discharged in or on any waters of the State, or discharged or deposited where it is, or probably will be, discharged in or on any waters of the State, shall, as soon as (a) that person has knowledge of the discharge, (b) notification is possible, and (c) notification can be provided without substantially impeding cleanup or other emergency measures, immediately notify the Office of Emergency Services of the discharge in accordance with the spill reporting provision of the state toxic disaster contingency plan adopted pursuant to Article 3.7 (commencing with Section 8574.7) of Chapter 7 of Division 1 of Title 2 of the Government Code, and immediately notify the State Board or the appropriate Regional Board of the discharge. This provision does not require reporting of any discharge of less than a reportable quantity as provided for under subdivisions (f) and (g) of Section 13271 of the Water Code unless the Discharger is in violation of a prohibition in the applicable Water Quality Control Plan [CWC Section 13271(a)].
26. The Discharger shall report any noncompliance that may endanger health or the environment. Any such information shall be provided orally to the Executive officer within 24 hours from the time the Discharger becomes aware of the circumstances. A written submission shall also be provided within five days of the time the Discharger becomes aware of the circumstances. The written submission shall contain a description

of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected; the anticipated time it is expected to continue and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance. The Executive Officer, or an authorized representative, may waive the written report on a case-by-case basis if the oral report has been received within 24 hours [CWC Sections 13263 and 13267].

27. All monitoring instruments and devices used by the Discharger to fulfill the prescribed Discharge Monitoring Program (Attachment A) shall be properly maintained and calibrated as necessary to ensure their continued accuracy.
28. Unless otherwise permitted by the Regional Board Executive officer, all analyses shall be conducted at a laboratory certified for such analyses by the State Department of Health Services. The Executive Officer may allow use of an uncertified laboratory under exceptional circumstances, such as when the closest laboratory to the monitoring location is outside the State boundaries and therefore not subject to certification. All analyses shall be required to be conducted in accordance with the latest edition of "Guidelines Establishing Test Procedures for Analysis of Pollutants" (40 CFR, Part 1360) promulgated by the U.S. Environmental Protection Agency (CCR Title 23, Section 2230).
29. This Board's Order No. 86-70 is hereby rescinded.

I, Loretta K. Barsamian, Executive Officer, do hereby certify that the foregoing is a full, complete, and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on February 21, 2001.

  
Loretta K. Barsamian  
Executive Officer

Figures:      Figure 1 – Site Location Map  
                  Figure 2 – Site Plan

Attachment:   Attachment A - Discharge Monitoring Program

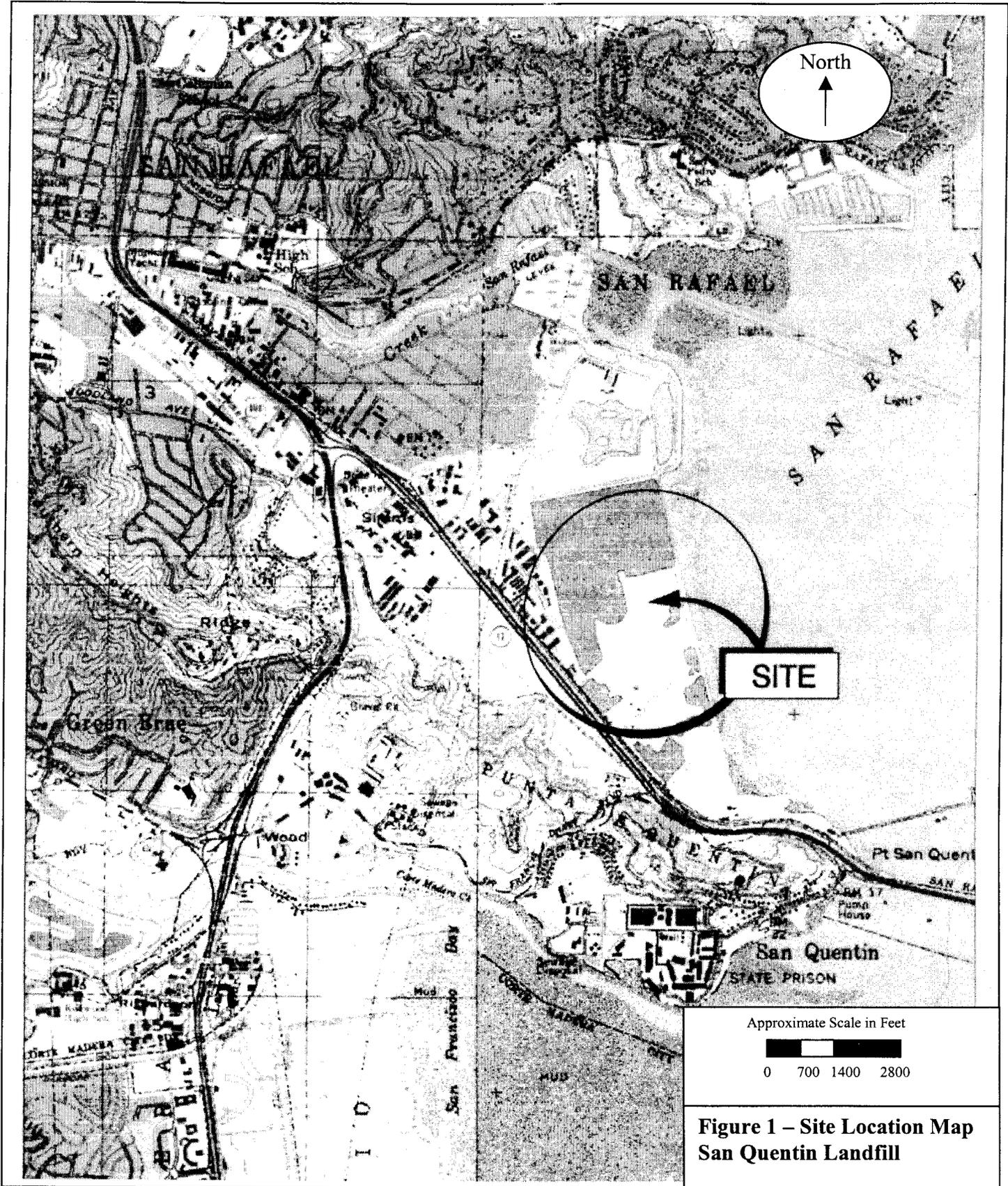
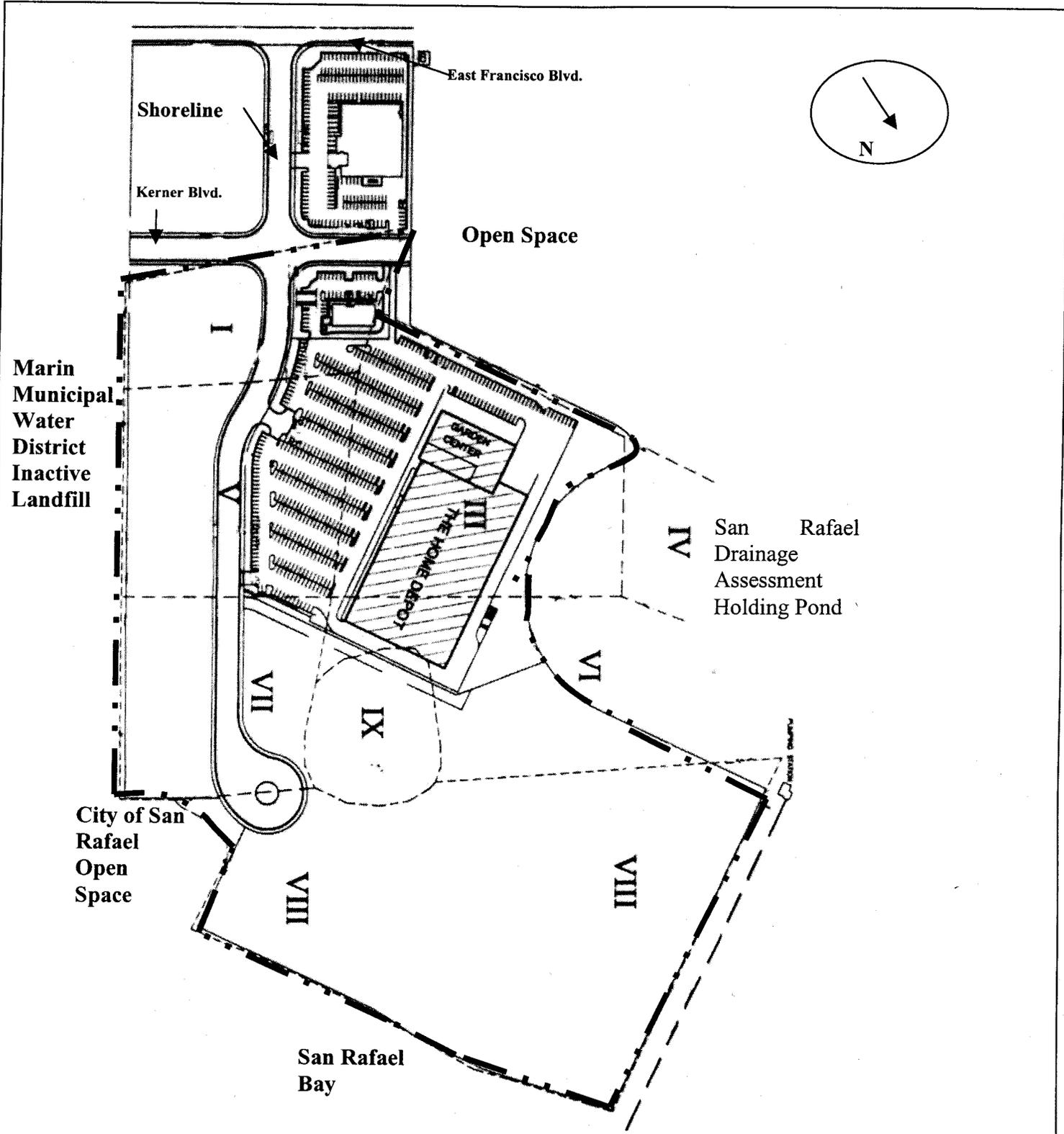


Figure 1 – Site Location Map  
San Quentin Landfill



— · — · — Landfill Footprint

Figure 2 – Site Plan  
San Quentin Landfill

**ATTACHMENT A**

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
SAN FRANCISCO BAY REGION**

**DISCHARGE MONITORING PROGRAM**

**FOR**

**SAN QUENTIN LANDFILL  
SAN RAFAEL, MARIN COUNTY**

**ORDER NO. 01-022**

**CONSISTS OF**

**PART A**

**AND**

**PART B**

## **PART A**

### **A. GENERAL**

Reporting responsibilities of waste dischargers are specified in Sections 13225(a), 13267(b), 13383, and 13387(b) of the California Water Code and this Regional Board's Resolution No. 73-16. This Discharge Monitoring Program is issued in accordance with Title 27.

The principal purposes of a Discharge Monitoring Program are: (1) to document compliance with waste discharge requirements and prohibitions established by the Board, (2) to facilitate self-policing by the waste Discharger in the prevention and abatement of pollution arising from waste discharge, (3) to develop or assist in the development of standards of performance, and toxicity standards, (4) to assist the Discharger in complying with the requirements of Title 27.

### **B. SAMPLING AND ANALYTICAL METHODS**

Sample collection, storage, and analyses shall be performed according to the most recent version of EPA Standard Methods and in accordance with an approved sampling and analysis plan.

Water and waste analysis shall be performed by a laboratory approved for these analyses by the State of California. The director of the laboratory whose name appears on the certification shall supervise all analytical work in his/her laboratory and shall sign all reports of such work submitted to the Regional Board.

All monitoring instruments and equipment shall be properly calibrated and maintained to ensure accuracy of measurements.

### **C. DEFINITION OF TERMS**

1. A grab sample is a discrete sample collected at any time.
2. Receiving waters refers to any surface water which actually or potentially receives surface or groundwaters which pass over, through, or under waste materials or contaminated soils. In this case the groundwater beneath and adjacent to the landfill areas, the surface runoff from the site, and the San Rafael Bay are considered receiving waters.

3. Standard observations refer to:
  - a. Receiving Waters
    - 1) Floating and suspended materials of waste origin: presence or absence, source, and size of affected area;
    - 2) Discoloration and turbidity: description of color, source, and size of affected area;
    - 3) Evidence of odors, presence or absence, characterization, source, and distance of travel from source;
    - 4) Evidence of beneficial use: presence of water associated wildlife.
    - 5) Flow rate; and,
    - 6) Weather conditions: wind direction and estimated velocity, total precipitation during the previous five days and on the day of observation.
  - b. Perimeter of the waste management unit.
    - 1) Evidence of liquid leaving or entering the waste management unit, estimated size of affected area and flow rate; (Show affected area on map)
    - 2) Evidence of odors, presence or absence, characterization, source, and distance of travel from source; and,
    - 3) Evidence of erosion and/or daylighted refuse.
  - c. The waste management unit.
    - 1) Evidence of ponded water at any point on the waste management facility;
    - 2) Evidence of odors, presence or absence, characterization, source, and distance of travel from source;
    - 3) Evidence of erosion, slope or ground movement, and/or daylighted refuse;
    - 4) Adequacy of access road;
    - 5) Condition of site drains, silt basin capacity; and,
    - 6) Standard Analysis and measurements are listed on Table A (attached).

#### **D. SAMPLING, ANALYSIS, AND OBSERVATIONS**

The Discharger is required to perform sampling, analyses, and observations in the following media:

1. Storm drain discharges per Section 20415 of Title 27
2. Groundwater and leachate per Section 20415 of Title 27

**E. RECORDS TO BE MAINTAINED**

Written reports shall be maintained by the Discharger or laboratory, and shall be retained for a minimum of five years. This period of retention shall be extended during the course of any unresolved litigation regarding this discharge or when requested by the Board. Such records shall show the following for each sample:

1. Identity of sample and sample station number.
2. Date and time of sampling.
3. Date and time that analyses are started and completed, and name of the personnel performing the analyses.
4. Complete procedure used, including method of preserving the sample, and the identity and volumes of reagents used.
5. Calculation of results.
6. Results of analyses, and detection limits for each analysis.

**F. REPORTS TO BE FILED WITH THE BOARD**

1. Written reports required by Section C (4) of Order 01-022 shall be filed by **January 31** and **July 31** of each year. In addition an annual report shall be filed by **January 31** of each year and may be combined with the January 31 semi-annual monitoring report. The reports shall be comprised of the following:

- a. Letter of Transmittal

A letter transmitting the essential points in each report should accompany each report. Such a letter shall include a discussion of any requirement violations found during the last report period, and actions taken or planned for correcting the violations. If the Discharger has previously submitted a detailed time schedule for correcting requirement violations, a reference to the correspondence transmitting such schedule will be satisfactory. If no violations have occurred in the last report period this shall be stated in the letter of transmittal. Monitoring reports and the letter transmitting the monitoring reports shall be signed by a principal executive officer at the level of vice president or his duly authorized representative, if such representative is responsible for the overall operation of the facility from which the discharge originates. The letter shall contain a statement by the official, under penalty of perjury, that to the best of the signer's knowledge the report is true, complete, and correct.

- b. Each monitoring report shall include a compliance evaluation summary. The summary shall contain:

- 1) A graphical description of the groundwater and leachate gradients and flow direction under/around and within the waste management unit, based upon water level elevations and pertinent visual observations.
  - 2) The method and time of water level measurement, the type of pump used for purging, pump placement in the well; method of purging, pumping rate, equipment and methods used to monitor field pH, temperature, and conductivity during purging, calibration of the field equipment, results of the pH, temperature conductivity and turbidity testing, well recovery time, and method of disposing of the purge water.
  - 3) Type of pump used, pump placement for sampling, a detailed description of the sampling procedure; number and description of equipment, field and travel blanks; number and description of duplicate samples; type of sample containers and preservatives used, the date and time of sampling, the name and qualifications of the person actually taking the samples, and any other observations.
- c. A map or aerial photograph shall accompany each report showing observation and monitoring station locations.
- d. Laboratory statements of results of analyses specified in Part B must be included in each report. The director of the laboratory whose name appears on the laboratory certification shall supervise all analytical work in his/her laboratory and shall sign all reports of such work submitted to the Board.
- 1) The methods of analyses and detection limits must be appropriate for the expected concentrations. Specific methods of analyses must be identified. If methods other than EPA approved methods or Standard Methods are used, the exact methodology must be submitted for review and approved by the Executive Officer prior to use.
  - 2) In addition to the results of the analyses, laboratory quality assurance/quality control (QA/QC) information must be included in the monitoring report. The laboratory QA/QC information should include the method, equipment and analytical detection limits; the recovery rates; an explanation for any recovery rate that is less than 80%; 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.

- e. An evaluation of the effectiveness of the leachate monitoring facilities, which includes an evaluation of leachate buildup within the disposal units.
- f. A summary and certification of completion of all standard observations for the waste management unit, the perimeter of the waste management unit, and the receiving waters.

## 2. CONTINGENCY REPORTING

A report shall be made by telephone of any **seepage** from the disposal area immediately after it is discovered. A written report shall be filed with the Board within **five days** thereafter. This report shall contain the following information:

- 1) a map showing the location(s) of discharge if any;
- 2) approximate flow rate;
- 3) nature of effects; i.e. all pertinent observations and analyses; and
- 4) corrective measures underway, proposed, or as specified in the Waste Discharge Requirements.

## 3. REPORTING

By **January 31** of each year the Discharger shall submit an annual report to the Board covering the previous calendar year. The annual report may incorporate the second semi-annual report of the previous year. The annual report shall contain:

- a. Tabular and graphical summaries of the monitoring data obtained during the previous year; the report should be accompanied by a computer data disk, tabulating the year's data in Microsoft Excel.
- b. A comprehensive discussion of the compliance record, and the corrective actions taken or planned which may be needed to bring the Discharger into full compliance with the waste discharge requirements.
- c. A written summary of the groundwater analyses indicating any change in the quality of the groundwater.
- d. An evaluation of the data based upon leachate elevations within the disposal unit.

**4. WELL LOGS**

A boring log and a monitoring well construction log shall be submitted for each new sampling well established for this monitoring program, as well as a report of inspection or certification that each well has been constructed in accordance with the construction standards of the Department of Water Resources. These shall be submitted within 45 days after well installation.

**Part B**

1. **DESCRIPTION OF OBSERVATION STATIONS AND SCHEDULE OF OBSERVATIONS**

A. **ON-SITE OBSERVATIONS** – Observe quarterly, Report Semi-annually

<b><u>STATION</u></b>	<b><u>DESCRIPTION</u></b>	<b><u>OBSERVATIONS</u></b>	<b><u>FREQUENCY</u></b>
<b><u>Standard Observations:</u></b>			
A-1 to A-'n'	Located on the area as delineated by a 500 foot grid network.	Standard observations for the waste management unit.	Quarterly
<b><u>Interior Seeps:</u></b>			
L-1 thru L-'n'	At each point of discharge. Include a map indicating locations of discharge(s)	All Parameters as outlined in Table A.	Weekly until remedial action is taken and seepage ceases.
<b><u>Perimeter Observations:</u></b>			
P-1 thru P-'n'	Located at equidistant intervals not exceeding 1000 feet around the perimeter of the waste management unit.	Standard observations for the perimeter as defined in Part A, Section C.	Quarterly
<b><u>Perimeter Observations:</u></b>			
S-1 thru S-'n'	At any point(s) at which seepage is found occurring from the disposal area. Include a map indicating locations of discharge(s)	All Parameters as outlined in Table A (perform analysis) once per seep)	Weekly until remedial action is taken and seepage ceases.

**B. SURFACE, GROUNDWATER AND LEACHATE MONITORING -**

Report Semi-annually

- i. Surface and Stormwater: Surface water shall be monitored as outlined in Table A (Attached).

**Monitoring Points:**

Surface Water	The Discharger shall determine where controlled surface water dischargers from the site and implement sampling in accordance with Table A (Attached).
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- ii. Groundwater: Groundwater samples shall be analyzed as outlined in Table A (Attached). Groundwater elevations shall be recorded quarterly (January, April, July, and October) and reported semi-annually in the July and January semi-annual monitoring reports.

**Monitoring Points:**

Groundwater	G-1A, G-2R, G-4A, G-5B, G-6A, G-7A, and G-11
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- iii. Leachate: Leachate samples shall be analyzed once every five years (First leachate chemical analysis due for the July 2001 semi-annual monitoring event) for the parameters outlined in Table A (Attached). Leachate water elevations shall be recorded quarterly (January, April, July, and October) and reported semi-annually in the July and January semi-annual monitoring reports.

**Monitoring Points:**

Leachate	GR-1B, GR-2A, GR-3A, GR-4, GR-9, and EX-1
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**C. FACILITIES MONITORING**

The Discharger shall inspect all facilities to ensure proper and safe operation once per quarter and report semi-annually.

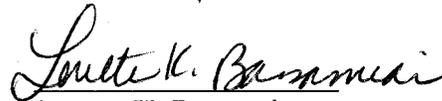
**D. MONITORING REPORT SCHEDULE**

Reports shall be due on the following schedule:

<b>First semi-annual report:</b>	<b>July 31 of each year</b>
<b>Second semi-annual Report:</b>	<b>January 31 of each year</b>
<b>Annual Report:</b>	<b>Combined with the second semi-annual report, due January 31 of each year</b>

I, Loretta K. Barsamian, Executive Officer, hereby certify that the foregoing Self-Monitoring Program:

1. Has been developed in accordance with the procedures set forth in this Board's Resolution No. 73-16 in order to obtain data and document compliance with waste discharge requirements established in this Board's Order No. 01-022.
2. Is effective on the date shown below.
3. May be reviewed or modified at any time subsequent to the effective date, upon written notice from the Executive Officer.

  
Loretta K. Barsamian  
Executive Officer

Date Ordered: February 21, 2001

Attachment: Table A - Schedule for Sampling, Measurement, and Analysis

**Table A - Discharge Monitoring Plan, List of Analytical Parameters, Surface, Stormwater, Leachate and Groundwater**

Field/Inorganic Parameters	Method <sup>1</sup>	Frequency
pH	Field	Semi-Annual <sup>2</sup>
Electrical conductivity	Field	Semi-Annual <sup>2</sup>
Leachate Elevations	Field	Quarterly
Groundwater Elevations	Field	Quarterly
Total Dissolved Solids	160.1	Semi-Annual <sup>2</sup>
Ammonia (un-ionized)	350.1	Semi-Annual <sup>2</sup>
Nitrate	9200	Semi-Annual <sup>2</sup>

Organics/Pesticides/ PCBs	Method <sup>1</sup>	Frequency
Volatile Organic Compounds (including MTBE)	8260	Semi-Annual <sup>3,4</sup>
Semi-Volatile Organic Compounds	8270	Semi-Annual <sup>3,4</sup>
Organochlorine Pesticides & PCBs	8080	Semi-Annual <sup>3,4</sup>

Metals	Method <sup>1</sup>	Frequency
Barium	6010	Semi-Annual <sup>2</sup>
Zinc	6010	Semi-Annual <sup>2</sup>

Notes:

1. Test methods per Methods for Chemical Analysis of Water and Waste, USEPA 600/4/79/029, revised March 1983, or Test Methods for Evaluating Solid Wastes: Physical/Chemical Methods, USEPA SW-846, 3<sup>rd</sup> edition, November 1986 and revisions.
2. Analysis shall be conducted semi-annual for groundwater. Analysis for leachate shall be conducted during the July 2001 sampling event and every 5 years, thereafter.
3. Analysis of groundwater shall be conducted during the July 2001 sampling event. Any identified impacted groundwater monitoring wells shall be analyzed semi-annually, thereafter. All other groundwater monitoring wells shall be monitored once every 5 years, thereafter.
4. Analysis of leachate shall be conducted during the July 2001 sampling event and once every 5 years, thereafter.