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California Regional Water Quality Control Board
San Francisco Bay Region

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Edmund G. Brown, Jr.
Governor

Date: May 18, 2011
File No. 2129.2045 (KER)
CIWQS Place ID Nos. 248989 & 742394

Potrero Hills Landfill, Inc.
Waste Connections, Inc.
Attn: Mr. Jim Dunbar (JamesDu@WasteConnections.com)
P.O. Box 68
Fairfield, CA 94533

SUBJECT: **Order No. R2-2011-0032, Updated Waste Discharge Requirements and Water Quality Certification for Potrero Hills Landfill, Suisun, Solano County**

Dear Mr. Dunbar:

This letter transmits Order No. R2-2011-0032, Updated Waste Discharge Requirements and Water Quality Certification for the Potrero Hills Landfill. Order No. R2-2011-0032 was adopted by the Regional Water Board during its public hearing on May 11, 2011 and is effective immediately. This Order rescinds Waste Discharge Requirements Order No. 93-072.

If you have any questions, please contact me at 510-622-2404 or by email at KRoberson@waterboards.ca.gov.

Sincerely,

Keith E. Roberson

Keith Roberson, Engineering Geologist
Groundwater Protection Division

Attachment: Order No. R2-2011-0032 and Discharge Monitoring Program
cc w/attachment: Mailing List

Mailing List

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CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ORDER NO. R2-2011-0032

UPDATED WASTE DISCHARGE REQUIREMENTS, WATER QUALITY CERTIFICATION, AND RESCISSION OF ORDER NO. 93-072:

POTRERO HILLS LANDFILL, INC. and
WASTE CONNECTIONS, INC.

POTRERO HILLS LANDFILL
CLASS III SOLID WASTE DISPOSAL FACILITY
SUISUN CITY, SOLANO COUNTY

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

1) Owner, operator, and discharger named: Potrero Hills Landfill is owned and operated by Potrero Hills Landfill, Inc. (hereinafter called "the Discharger"), a wholly owned subsidiary of Waste Connections, Inc. Hereinafter, the Potrero Hills Landfill is called "PHL" or "the Landfill."

2) Location: PHL is a Class III municipal waste disposal site located in Solano County approximately one mile south of Travis Air Force Base and two miles southeast of Suisun City (Figure 1). The Landfill is located at the south end of Potrero Hills Lane, approximately one-half mile south of Highway 12.

3) Physical Description: The Discharger owns a total of about 1,428 acres of land in the Potrero Hills and the surrounding area. The existing landfill (referred to as "Phase I") occupies a 320-acre area, within which about 190 acres is permitted and used for waste disposal (Figure 2). A lateral expansion into the area east of Phase I (referred to as "Phase II") was approved by Solano County in 2005. Phase II will add an additional 215 acres to the Landfill, of which approximately 150 acres will be permitted for waste disposal. With the expansion, the landfill boundary area will total 535 acres, of which 340 acres is permitted for waste disposal. Most of the remaining area owned by the Discharger (about 893 acres) is reserved for habitat mitigation and to serve as a buffer area around the Landfill.

4) Suisun Marsh Land Use Restrictions: The Potrero Hills and the surrounding area are protected under the Suisun Marsh Preservation Act (SMPA), which was adopted by the California Legislature in 1977. The area comprising the greater Suisun Marsh is subject to developmental restrictions enforced by the San Francisco Bay Conservation and Development Commission (BCDC). The SMPA established Primary and Secondary Management Areas within Suisun Marsh. Approved land uses within both management areas are predominantly seasonal cattle grazing, waterfowl hunting clubs, right-of-way easements for transmission pipelines, and designated open space. The Primary Management Area consists mostly of low-lying marsh

lands protected by stringent developmental restrictions. Upland areas of the Potrero Hills, including the Landfill, lie within the Secondary Management Area. Land uses within the Secondary Management Area are governed by the Local Plan of Protection, which was adopted by Solano County and approved by BCDC in 1982.

5) Waste Disposal Operations: Waste disposal operations were conducted in the vicinity of the Potrero Hills prior to enactment of the SMPA. The SMPA established conditions under which waste disposal operations would be allowed to continue within the Secondary Management Area. In accordance with these conditions, waste disposal operations have been permitted by Solano County and BCDC in the Potrero Hills area since the SMPA was enacted. In addition to PHL, two other waste disposal sites occur within the Secondary Management Area. These include one closed municipal waste landfill (Solano Garbage Company Landfill) and an active animal disposal facility (Tonnesen Pet Cemetery). These smaller sites are located on the north side of PHL (Figure 1).

6) Landfill History: PHL opened and began receiving wastes in August 1986. From 1986 until 2001, PHL was owned by and operated by Potrero Hills Landfill, Inc. In May 2001, Republic Services, Inc., acquired the Discharger (Potrero Hills Landfill, Inc.). PHL operated under Republic Services' ownership until April 2009. Waste Connections, Inc., acquired Potrero Hills Landfill, Inc., from Republic Services in April 2009 and currently owns the Discharger.

7) Service Area: PHL serves as the primary municipal solid waste landfill for Solano County. The Landfill also functions as a regional solid waste landfill facility serving portions of Sonoma, Contra Costa, Mendocino, and Santa Clara counties. Waste is also received from many other counties in the San Francisco Bay area, the Sacramento area, the Sierra foothills, and from outside California.

PURPOSE OF ORDER

8) The purpose of this Order is to:
   a) Issue a Water Quality Certification pursuant to Section 401 of the federal Clean Water Act;
   b) Update the current Waste Discharge Requirements (WDRs) to reflect current landfill operations, design, and construction of waste disposal units;
   c) Update and clarify the waste acceptance criteria for disposal units that are constructed in compliance with Subtitle D;
   d) Specify monitoring, control, and collection requirements for groundwater, leachate, landfill gas condensate, and stormwater consistent with Title 27 of the California Code of Regulations (CCR);
   e) Modify the current Self-Monitoring Program (SMP);
   f) Rescind the current WDRs (Regional Water Board Order No. 93-072); and
   g) Specify requirements for minimizing impacts to waters of the U.S. and State, and habitat mitigation and monitoring for unavoidable impacts to wetlands and other waters.

SITE DESCRIPTION

9) PHL is a valley-fill disposal facility located in a valley between two east-west trending ridges that make up the Potrero Hills. Land surrounding the Landfill is primarily marsh and privately owned ranch land. The Discharger owns 1,428 acres of land adjacent to the disposal site.

10) The Phase I landfill disposal area consists of approximately 190 acres, and the Phase II expansion area will add an additional 150 acres of land available for waste disposal (Figure 2). Thus, the combined Phase I and II disposal area would occupy approximately 340 acres. About 20 acres of the westernmost part of the disposal area are closed under final cover.

11) In addition to the lateral expansion, the Phase II expansion may include a vertical component (i.e., height increase), to the extent authorized by BCDC. Based on the site development plan, the Landfill has a permitted solid waste capacity of about 21.5 million cubic yards. As of December 2010, approximately 15,473,000 cubic yards of waste have been disposed in the Landfill. At current fill rates, the Phase I portion of the Landfill would reach final capacity in about five years (2016). The newly permitted expansion adds an additional 61.6 million cubic yards of disposal airspace. At projected fill rates, the Phase II expansion is expected to add about 35 years of disposal life to the facility.

REGULATORY HISTORY

12) On October 16, 1985, the Regional Water Board adopted Order No. 85-121, which prescribed WDRs for waste disposal at PHL.

13) On July 21, 1993, the Regional Water Board adopted Order No. 93-072, which updated and replaced Order No. 85-121.

14) PHL currently operates under the following permits issued by other regulatory agencies:

a) Solid Waste Facility Permit No. 48-AA-0075, issued on December 27, 2006, by the Solano County Department of Resource Management Local Enforcement Agency (LEA) with concurrence from CalRecycle (formerly the California Integrated Waste Management Board).

b) Solano County Conditional Land Use Permit No. U-88-33, which was updated and re-approved by the Solano County Board of Supervisors on June 9, 2009.

c) Marsh Development Permit No. 3-10(M), approved by BCDC on October 21, 2010.

d) Bay Area Air Quality Management District (BAAQMD) Permit to Operate Plant No. 2039, dated December 1, 2010.

e) A Streambed Alteration Agreement was issued by the California Department of Fish and Game (Fish and Game) on November 19, 2009. However, because project activities were not initiated within a year of issuance, that agreement has expired. The Discharger has re-submitted its application for a Streambed Alteration Agreement.

15) Section 13260(c) of the California Water Code (CWC) and sections 21710 through 21760 of Title 27 CCR require the Discharger to update the Report of Waste Discharge (ROWD) and the Report of Disposal Site Information (RDSI) prior to a proposed change in use or development of the landfill. A Joint Technical Document (JTD) now takes the place of the ROWD and RDSI. The JTD must include all applicable information necessary to support the development or modification and issuance of any State or local agency permits, other than the conditional use permit, that are required to operate the Landfill. The JTD was updated in August 2006 and again in October 2006. PHL currently conducts Phase I operations under the October 2006 JTD.

    The Discharger submitted a Draft JTD in April 2010 to support the development of permits necessary for the Phase II expansion. Additional amendments to the JTD have been submitted in 2011. Provision C.6 of this Order requires the Discharger to complete an approved update of the JTD prior to the development of the Phase II landfill area.

16) The JTD includes preliminary closure and post-closure maintenance plans (PCPMPs). The PCPMPs describe the methods and controls to be used to assure protection of the quality of surface water and groundwater of the area during final operations and following final closure of the Landfill. The PCPMPs include an estimate of closure and post-closure maintenance costs and propose a financial mechanism to finance costs associated with closure and post-closure activities.

WASTES AND THEIR CLASSIFICATION

17) As a Class III waste disposal facility, PHL accepts nonhazardous solid waste and inert waste as classified in Title 27 §20220(a), from residential, commercial, and industrial sources. Nonhazardous solid waste includes, but is not limited to, putresible and nonputresible solid, semi-solid, and liquid wastes including garbage, trash, refuse, paper, rubbish, ashes, industrial wastes, demolition and construction wastes, and soil. Wastes that can be accepted at PHL include residential garbage and rubbish, commercial and nonhazardous industrial refuse, demolition and construction waste, hydrocarbon-profiled soils, industrial sludges, brush and stumps, tires and tire shreds, and street refuse.

18) Class II (Designated) Wastes: Although PHL is classified as a Class III landfill, disposal cells constructed after 1993 have been designed and constructed in compliance with Part 258 of Title 40 of the Code of Federal Regulations (CFR) (referred to as "Subtitle D") and State Water Resources Control Board (State Water Board) Resolution No. 93-62. Disposal cells constructed in compliance with Subtitle D regulations provide a lower risk of water quality degradation than is generally afforded by Class III landfills. For this reason, all Subtitle D-compliant cells, including existing cells 10, 11, 12, 13, 14, 15, 16, 17A, and portions of cells 19, 20, 31, 32, and 33, are considered suitable for disposal of designated wastes (Figure 2).

    Henceforth, the Discharger is permitted to dispose of designated wastes as defined in CWC §13173, including treated wood waste, dewatered sewage sludge and treated biosolids, and other designated wastes, in all disposal cells that have been designed and constructed in compliance with applicable criteria specified in Subtitle D and Resolution No. 93-62.

19) This Order (Provision C. 7) authorizes the Discharger to propose a Sludge Management Plan that describes how sludges will be managed on site. Title 27 §20200(d)(3) prohibits the discharge of semi-solid wastes (wastes containing free liquids or less than 50% solids by weight) other than dewatered sewage or water treatment sludges. However, §20200(d)(3) allows exceptions to be made if a discharger can demonstrate that such discharges will not exceed the moisture-holding capacity of the landfill. High-moisture sludges may be mixed or dried on site at PHL to achieve an acceptable moisture content prior to discharge or beneficial use, provided that the Sludge Management Plan contains an acceptable procedure for minimizing the production of free liquids or excessive leachate during and after waste disposal.

20) Biosolids: The management of treated biosolids in landfills and composting facilities is regulated under Title 27 and under site-specific WDRs. Title 27 allows the use of biosolids for various beneficial purposes in landfills, including use as alternate daily cover (ADC), mixing with other materials, or as compost feed stock. Biosolids can also be disposed as waste in landfills that are constructed with a composite liner and a leachate collection and recovery system.

In 2004, the State Water Board clarified its position on the land application of biosolids with the issuance of General WDRs Order No. 2004-0012-DWQ. Order No. 2004-0012-DWQ provides guidance for the land application of biosolids, and places restrictions on the conditions under which biosolids can be applied. Certain places in California that have been designated as unique and valuable public resources in the Public Resources Code (PRC) are specifically exempted from Order No. 2004-0012-DWQ (Finding 21) because in these areas other federal, regional, State and/or local regulatory agencies have jurisdiction over land management and enforce their own regulations regarding biosolids application. The Suisun Marsh, including the Primary and Secondary Management Areas as defined in PRC §29101, is one of these areas. The Solano County LEA, in cooperation with BCDC and the U.S. Environmental Protection Agency (U.S. EPA), oversees land application of biosolids within the Secondary Management Area.

Consistent with Order No. 2004-0012-DWQ, Specification 18 of this Order authorizes PHL to use biosolids as an ADC material and to dispose of biosolids as a designated waste in any disposal cell that complies with Subtitle D liner requirements. However, the land application of biosolids as a soil amendment (for example, to stimulate growth of vegetation on slopes or final landfill covers) is regulated by the Solano County LEA. It is the responsibility of the Discharger to obtain any necessary governmental agency permits or authorizations prior to biosolids application.

21) Treated Auto Shredder Waste: Acceptance of treated auto shredder waste (TASW) is dependent upon its categorization by the State Department of Toxic Substances Control (DTSC) as a non-hazardous material. In September 2008, DTSC indicated that it was repealing an earlier determination that TASW was non-hazardous. The 2008 DTSC guidance indicated that TASW was considered to be potentially hazardous and could no longer be disposed or used as ADC in Class III landfills. In September 2009, however, DTSC postponed the effective date of the TASW determination, meaning that TASW from certain shredding

facilities can be used as ADC at this time. The status of TASW acceptance is still being evaluated within the California Environmental Protection Agency and is subject to change.

22) Wastes containing asbestos may be disposed at PHL in accordance with Section 25143.7 of the Health and Safety Code and sections 66268.29 and 66268.100 (a)(13) and 66268.114 of Title 22 of the CCR.

23) Hazardous wastes, liquid wastes, or infectious wastes (i.e., Class I wastes) cannot be accepted at PHL.

PHYSICAL SETTING

Surface Hydrology

24) The Landfill is constructed in an east-to-west draining valley within the Potrero Hills and is surrounded by fairly steep, rounded hills on the north, east, and south sides. The valley is drained by Spring Branch Creek, a very small, ephemeral drainage that discharges into Suisun Slough to the west of the Potrero Hills (Figure 2). Surface runoff within the site boundary is routed around the southern margin of the disposal area and exits the landfill area in the southwest corner of the Potrero Hills.

25) The Potrero Hills stand as much as 400 feet above the surrounding Suisun Marsh, the surface of which is approximately 10 to 20 feet above mean seal level (MSL). The highest elevation along the ridge on the north side of the facility is 255 feet. The natural topography of the valley floor (the primary disposal area) slopes moderately from east to west. The base of the valley at the western site boundary is at an elevation of about 50 feet above MSL, whereas the eastern boundary of the expansion area lies at approximately 120 feet. In 2009, the highest waste surface elevation of the landfill was about 200 feet above MSL. The approved expansion plan prohibits vertical expansion above 220 feet unless the Discharger can demonstrate that higher landfill elevations will not be visible from selected viewpoints within the Suisun Marsh.

26) The mean annual precipitation for the site is about 21 inches. The 100-year, 24-hour storm event is estimated to be 3.69 inches and the 1,000-year, 24-hour storm is estimated to be 7.64 inches. The mean annual evaporation is estimated to be 72.5 inches.

Geology

27) The Landfill is located in the central valley of the Potrero Hills, which were formed by a large east-west trending geologic fold referred to as the Potrero Hills Anticline. The westward-draining valley is formed in the core of this anticline. The valley is underlain by approximately 700 feet of low permeability shale and claystone of the Capay Formation and other unnamed fine-grained units, whereas the ridges on the north and south sides of the valley are formed by more resistant, but more permeable, strata of the Domengine Sandstone and the Nortonville Shale.

28) The Landfill is located within the seismically active Coast Ranges region. The entire region experiences periodic seismic activity as the result of strike-slip movement along the regional

San Andreas Fault System. The closest active fault is the Green Valley Fault, which is located 10 miles west of the Landfill. Other active faults capable of causing significant seismic shaking in the area include the Hayward-Rodgers Creek Fault (26 miles west) and the main trace of the San Andreas Fault (about 43 miles west). Geologic mapping of the landfill floor indicates the presence of an unnamed fault that crosses the center of the landfill area. However, there is no evidence of Holocene movement along the fault, and the fault is not believed to be active.

Hydrogeology

29) Groundwater beneath the landfill area occurs in four different water-bearing units: the Capay Shale, the Domengine Sandstone, the Nortonville Shale, and in unconsolidated, surficial alluvial soils. Alluvial soil deposits consist of sandy clay to clayey gravel, and reach a maximum thickness of 15 feet along the southern flank of the valley. Groundwater beneath the Landfill primarily moves toward the valley from the north and south ridges, and from east to west along the axis of the valley before draining into the Suisun Marsh. The piezometric surface generally reflects the ground surface topography that existed prior to landfill construction. Groundwater is encountered at depths ranging from 5 to 65 feet below ground surface (bgs). Groundwater within the Capay Shale generally occurs within fractures under confined conditions, whereas groundwater in the Domengine Sandstone, the Nortonville Shale, and in the alluvium occurs under unconfined to semi-confined conditions.

30) Most of the Landfill is constructed over a thick section of low-permeability shale, claystone, and siltstone of the Capay Shale and unnamed underlying fine-grained units. These fine-grained formations are classified by the USGS as "non-water bearing." Groundwater resources within these bedrock units are characterized by low well yields and poor water quality. This limited groundwater resource is typically used for non-potable agricultural applications such as stock watering and irrigation. The Capay Shale and underlying fine-grained rock formations have very low *in situ* permeabilities of 1×10^{-6} to 1×10^{-9} centimeters per second (cm/sec). The underlying geology thus provides a natural impediment to downward percolation and migration of precipitation and landfill leachate. Natural recharge to bedrock in the valley has been shown to be insignificant because of the low hydraulic conductivity and low storage potential of the underlying fine-grained formations.

31) A small portion of the Landfill, located against the north ridge, is underlain by the Domengine Sandstone and the Nortonville Shale member of the Kreyenhagen Formation. These units have moderate permeabilities on the order of 1×10^{-4} to 1×10^{-5} cm/sec.

32) The natural (ambient) quality of groundwater in the Potrero Hills, and especially in the valley underlying the Landfill, is relatively poor due to elevated concentrations of chloride [>400 parts per million (ppm)] and other dissolved solids. This is believed to be due to the slow passage of groundwater and its long residence time in contact with sediments of marine origin. Groundwater within the Domengine Sandstone and the Nortonville Shale in the north ridge have significantly lower total dissolved solids (TDS) concentrations and better overall ambient water quality.

LANDFILL DESIGN AND CONSTRUCTION HISTORY

Base Excavation and Groundwater Separation

33) To provide a stable foundation for disposal cells, cell floors are typically excavated to remove fractured, unconsolidated, unstable, or highly permeable geologic materials. Base excavation also provides the design floor slope to facilitate proper drainage.

34) Prior to disposal cell construction, groundwater existed at shallow depths (less than five feet bgs) in some portions of the Landfill. Therefore, some disposal cells lacked the required minimum of five feet of separation between the water table and the base of waste. Consequently these cells have been constructed with a blanket gravel and piping underdrain system to facilitate the drainage of groundwater from beneath the composite liner.

35) Groundwater seeps at PHL are most commonly encountered near the base of excavated sideslopes where perched groundwater lenses are intercepted. Seep drainage is collected with french drains that run perpendicular to the slope and connect to the underdrain system beneath the floor of the cell. The drains consist of trenches containing perforated piping wrapped in a geotextile filter fabric. A 30-mil high-density polyethylene (HDPE) geomembrane layer is installed as the basal component of the sideslope liner system to prevent hydration and subsequent failure of the overlying geosynthetic clay liner (GCL).

36) Specification B. 21 of this Order requires that a blanket underdrain system be constructed beneath all future disposal cells, unless five feet of separation between groundwater and waste can be achieved, or unless an equally protective engineered alternative is approved. Additionally, Prohibition A. 8 of this Order prohibits over-excavation into bedrock to any depth greater than is required to ensure a stable foundation for the disposal cell.

37) The Landfill has been, and will continue to be, constructed as discrete disposal cells as interim fill capacity is reached in previously constructed units. This expansion methodology will generally be followed until the final build-out of the entire landfill configuration is reached.

38) "Pre-Subtitle D Landfill" Construction: Cells 1 through 9 in the western portion of Phase I (Figure 2) were constructed prior to passage of Subtitle D regulations in 1993. Collectively, these cells are referred to as the "pre-Subtitle D" landfill. These cells were generally constructed by excavation of unconsolidated soil and alluvium down to competent, low-permeability bedrock. Portions of cell floors composed of unfractured clay are unlined. However, portions of cell floors composed of sandstone or fractured claystone were excavated to a specified depth below grade (five feet below grade for sandstone and two feet below grade for fractured claystone), and backfilled to grade with compacted clay with a hydraulic conductivity of 1×10^{-6} cm/sec or less.

39) Landfill construction began in 1985. The first nine disposal cells were constructed in the following sequence:

a) Cell 1 was excavated in 1985 along the western boundary of the Landfill. Cell 1 construction included installation of the western perimeter leachate drain. Waste disposal began in 1986;

b) Cell 2 was excavated to the south of Cell 1 in 1987 (Figure 2). The western perimeter leachate drain was extended southward, and the initial east-west leachate drain was also installed;

c) Cell 3 was excavated east of Cell 1 in September 1987;

d) Cell 4 was excavated in 1988 to the south of Cell 3 and east of Cell 2. The east-west leachate drain was extended eastward beneath Cell 4, and a second east-west drain was constructed along the southern edge of this cell in 1989. A second north-south leachate drain was built along the eastern edge of Cell 4 in 1991;

e) Cell 5 was installed in two phases with the initial phase (Cell 5A) completed to the south of Cell 2 in 1989 (Figure 2). The western perimeter leachate drain was extended southward along the western edge of Cell 5A. Cell 5 was extended eastward with the completion of Cell 5B in January 1990;

f) Cell 6 was installed to the south of Cell 5, with construction occurring in two phases. The northern portion (Cell 6N) was completed in 1990. The southern portion (Cell 6S) was added in 1993, after filling of cells 7, 8, and 9. Cell 6S is the southernmost extent of the Phase I landfill (Figure 3);

g) Cell 7 was excavated to the east of Cell 4 in late 1990 to 1991. The cell was extended to the south and east during 1992 – 1993;

h) Excavation of Cell 8 began in 1991 and was completed in 1992. Cell 8 is located to the north of cells 1, 3, and 7, and at the time was the northernmost portion of the Landfill (Figure 2); and

i) Cell 9 was excavated to the north of Cell 8 in 1993. Cell 9 required excavation of approximately 450,000 cubic yards of native material along the northern margin of the valley.

40) "Subtitle D Landfill" Construction: Cells built since October 1993, beginning with Cell 10, have been constructed with composite liner systems that comply with Subtitle D requirements. Cells constructed in the future must be built to these specifications. In general, two basic liner designs have been approved by the Regional Water Board and employed in cell construction.

a) Floor liner design: The composite containment system on the floors of these cells (i.e., cells 10, 11, 12, 13, 14, 15, and the floor portions of cells 16, 17, and 19) consists of the following layers (from top to bottom):

- 18-inch thick operations layer;
- Non-woven geotextile filter;
- 12-inch thick Leachate Recovery and Collection System (LCRS) granular drainage layer;
- 80-mil thick HDPE geomembrane liner;
- 24-inch thick compacted clay liner (CCL) with a hydraulic conductivity of 1×10^{-7} cm/sec or less;

- 12-inch thick foundation / bridging layer (where needed);
- Non-woven geotextile separator; and
- Minimum 12-inch thick groundwater subdrain layer (where seeps were encountered).

b) Sideslope liner design: Excavated sideslopes of cells constructed along the northern side of the Landfill (i.e., cells 16, 17, and 19) have been constructed with an engineered alternative to the prescriptive liner design. Sideslope liners contain the following layers (from top to bottom):

- 24-inch thick operations layer;
- 80-mil thick HDPE geomembrane liner;
- GCL with an underlying 30-mil thick HDPE geomembrane; and
- Groundwater subdrains, where seeps are encountered.

41) Disposal cells comprising the composite-lined portion of the Landfill have been constructed in the following sequence:

a) Cell 10 was excavated to the east of cells 7 and 9 during the summer of 1994. The Cell 10 composite liner, which was emplaced along the entire cell floor, consists of 2 feet of low-permeability clay soil overlain by an 80-mil HDPE geomembrane. Cell 10 began receiving waste in July 1995.

b) Excavation of Cell 11, located south of cells 7 and 10, was completed in 1995. The composite base liner was constructed in 1996 and the cell was placed in operation that year.

c) Cell 12 was excavated to the east of cells 10 and 11 in 1998. The base liner was installed in two phases, with the Cell 12N base liner constructed in 1998 and the Cell 12S base liner installed in 1999. A subdrain system was installed beneath the Cell 12S liner because seepage was observed in this area during post-excavation geologic mapping. Excavations for Cell 13 were begun in 1998.

d) Cell 13 is underlain entirely by Capay Shale, thus no groundwater subdrain system was constructed beneath the composite liner. The cell was placed in operation in October 2001.

e) Portions of cells 14, 32, and 33 were excavated, constructed, and placed in operation in 2003. Landfill development plans call for extension of these cells to the south as part of the Phase II expansion.

f) A disposal area consisting of Cell 15 and portions of cells 19 and 32 was excavated and constructed in the northeast portion of the Phase I landfill in 2005. A groundwater subdrain was built along the base of the hill to remove groundwater from seepage encountered during excavation into the lower hillside. This disposal cell was placed in service in 2005, although rain delays postponed opening a portion of the cell until July 2006.

g) Cell 16, located along the hillside north of Cell 15, was excavated, constructed, and began receiving waste in 2006. The base liner on the sidewall slope substitutes a GCL for the 2-foot thick CCL.

h) The western portion of Cell 19 was constructed in 2007 to the east and north of Cell 16 and Cell 15, respectively. As in Cell 16, the base liner on the sideslope includes a GCL in place

of the CCL used in constructing the floor liner. This 8-acre portion of Cell 19 began receiving waste in 2007. The remainder of Cell 19 will be built eastward as Phase II is developed.

i) The first part of Cell 17 (17A) was constructed in 2008 to the north of Cell 10 and west of Cell 16. The remainder of Cell 17 will be expanded to the northwest in the future to create 17B.

EXPANSION PLANS

42) Portions of the Phase I area have not been constructed. Phase I has a remaining permitted refuse capacity of 6,922,000 cubic yards as of December 31, 2009. Phase II will provide an additional 61.6 million cubic yards of disposal capacity and will add an anticipated 35 years of operations to the life of the facility. The timing of future development and the sequence of disposal cell construction and filling will depend on obtaining the necessary agency approvals for the Phase II expansion, as well as the Discharger's logistic needs and considerations. Construction in the Phase II area may precede construction of the remaining portions of Phase I.

43) According to the JTD, the Phase II area includes planned cells 21 through 30, along with the undeveloped portions of cells 13, 14, 19, 20, 31, 32, and 33 (Figure 2). Cell 18, in the northwest portion of the Phase I landfill, will likely be the last portion of the Landfill to be filled. The actual dimensions and boundaries of each cell may be adjusted to accommodate construction sequencing.

44) Future cells will be designed and constructed so that they can receive Class III wastes and designated wastes that require special handling. The containment system design and construction requirements for future disposal units at PHL are detailed in Specification B. 21 of this Order.

LANDFILL CLOSURE

45) The Landfill will be sequentially closed as disposal units are filled to reduce the impacts of the Landfill on human health and the environment and to ensure the long-term containment and stability of the facility following closure. However, because the Phase II expansion may include a vertical component of expansion, additional waste may be placed over many of the existing cells prior to final closure.

46) Approximately 20 acres of the pre-Subtitle D landfill have reached final elevation and have been closed under final cover. This area, located in the southwest corner of the Landfill, consists of portions of cells 1, 2, 5 and 6.

47) Monolithic Cover System: Between 1997 and 2004, the Discharger conducted a demonstration study over a 0.25-acre portion of the pre-Subtitle D landfill to evaluate the performance of an alternative all-soil cover system as a potential alternative to the prescriptive standard for final cover systems. The "monolithic" soil cover consisted of 4 feet of compacted soil overlying a 1-foot foundation layer placed directly over the waste fill. Moisture probes

were installed within the soil column during construction so that changes in soil moisture could be monitored at various depths over time. The surface of the soil cover was hydroseeded to establish vegetation. In addition to moisture content, other aspects of the demonstration (such as desiccation cracking, vegetation growth, and erosion) were monitored for seven consecutive wet/dry seasons. An evaluation of the performance of the monolithic cover system was included in the JTD. On the basis of this demonstration, PHL has proposed that a monolithic soil cover system be constructed over the Subtitle D portions of the Landfill rather than the composite cover system prescribed in Subtitle D.

48) CCR Title 27, Section 21090 (a) allows the Regional Water Board to approve alternatives to the prescriptive standard for final cover systems, provided that the selected alternative cover design would continue to isolate landfill wastes from precipitation and irrigation waters at least as well as the prescriptive cover design. Accordingly, Provision C. 9 of this Order authorizes the Discharger to submit a technical report proposing an Alternative Final Cover Design. This report must include a detailed comparative analysis between the prescriptive cover design and the alternative, monolithic design. The Discharger must demonstrate that the prescriptive standard is infeasible because it would cost substantially more than an alternative design that provides equal performance in isolating wastes from infiltrating water. An Alternative Final Cover Design must be approved by the Executive Officer prior to the construction of an alternative final cover system over any part of the Landfill.

49) Financial Assurance for Post-Closure Monitoring and Maintenance: The Discharger has submitted evidence to CalRecycle documenting the existence of a financial assurance mechanism (Certificate of Liability Insurance) to ensure monitoring and maintenance of the Landfill during the post-closure period. CalRecycle approved PHL's financial assurance mechanism on January 26, 2011. Provision C. 10 requires that the estimate for post-closure monitoring and maintenance costs be updated to reflect the larger landfill area resulting from the Phase II expansion.

50) Financial Assurance for Corrective Action: The Discharger has submitted evidence to the Regional Water Board documenting the existence of a financial assurance mechanism to ensure corrective actions that may be necessary as a result of current or future foreseeable releases from the Landfill. This letter was submitted on March 10, 2011. Regional Water Board concurrence with this estimate is pending. Provision C. 11 requires that the estimated costs for corrective actions for unforeseen releases must be updated to reflect the larger landfill area resulting from the Phase II expansion.

MONITORING, COLLECTION, AND CONTROL PROGRAMS

Groundwater Monitoring

51) The current PHL groundwater monitoring network consists of 18 monitoring wells. Monitoring well locations are shown in Figure 3. The groundwater monitoring wells include:

- Downgradient wells GW-3, GW-4, GW-7, GW-8, GW-10, GW-16, GW-17, and GW-18
- Upgradient wells GW-5, GW-6, GW-9, GW-11, GW-12, GW-13, GW-14, GW-15,

GW-19, and GW-20.

The eight downgradient wells listed above are currently monitored on a semi-annual (i.e., twice-per-year) schedule, with samples collected approximately six months apart during wet and dry seasons. Five of the upgradient wells (GW-5, GW-6, GW-9, GW-19 and GW-20) are also included in the routine groundwater monitoring program and are currently sampled semi-annually. The remaining upgradient wells (GW-11, GW-12, GW-13, GW-14, and GW-15) have been used for background water quality characterization purposes and are not routinely sampled. Wells GW-5 and GW-7 are used for corrective action monitoring because of past detections of chemicals, as discussed in Findings 77 and 78.

52) Site groundwater samples have been analyzed for the following parameters:
- pH
- turbidity
- alkalinity (bicarbonate and hydroxide)
- chloride
- electrical conductivity
- TDS
- total organic carbon (TOC)
- total Kjeldahl nitrogen
- chemical oxygen demand
- total phenols
- volatile organic compounds (VOCs)
- dissolved metals

53) Every five years, site groundwater is also analyzed for the following constituents of concern (COCs):

- semivolatile organic compounds (SVOCs)
- organochlorine pesticides
- polychlorinated biphenyls (PCBs)
- chlorinated herbicides

54) The Self Monitoring Program (SMP) attached to this Order revises the groundwater sampling schedule and establishes a new list of parameters for chemical analysis. The revised sampling and analytical schedule is provided in Table B-1 of the SMP.

55) As PHL expands eastward, four of the upgradient monitoring wells located within the Phase II expansion area (GW-9, GW-12, GW-13, and GW-14) will have to be properly abandoned to prevent these wells from functioning as vertical conduits for leachate migration. New monitoring wells will need to be installed around the Phase II perimeter to replace monitoring wells destroyed during expansion and to provide adequate detection monitoring for the Phase II area.

Groundwater Subdrain System

56) Order No. 93-072 required that a groundwater subdrain system (GSS) be installed below the base liner to collect near-surface groundwater and drain it to a collection point. The GSS constructed at PHL has been accepted by the Regional Water Board as an engineered alternative to the 5-foot separation between groundwater and the landfill base liner that is required in Title 27. The GSS is designed to intercept and remove groundwater that otherwise would rise to a potentiometric elevation higher than the level of the base liner and potentially cause the liner to fail.

57) For portions of the Landfill that are underlain by sandstone, the GSS consists of a 1-foot thick granular drainage blanket with hydraulic conductivity of at least 1×10^{-2} cm/sec. The granular blanket layer is underlain and overlain by a non-woven geotextile fabric to prevent infiltration and clogging by fine particles. A network of perforated collection piping is installed within the granular material to facilitate groundwater drainage through the GSS.

58) Portions of the Landfill underlain by shale have a french drain GSS consisting of trenches situated to drain localized areas of groundwater seepage. The trenches contain perforated pipe surrounded by gravel and wrapped in geotextile fabric.

59) The lower portions of landfill sideslopes that are excavated into bedrock (along the north slope of the Landfill) have a GSS consisting of strip drains. Strip drains are flat perforated pipes (1-inch thick by 12-inches wide) installed in 3-foot deep trenches that run downslope from the first bench to the floor. The strip drains convey groundwater seepage downward to a perforated collection pipe installed in a trench that runs along the base of the slope. The locations and spacing of strip drains are determined by the location of seeps as they are encountered.

60) Groundwater collected by the GSS flows by gravity through the granular blanket and collection pipe system to a specified removal location, currently located at the northwest corner of Cell 17A (Figure 3). This removal location will advance westward as cells 17B and 18 are constructed.

61) A sidewall seepage barrier wall and french drain were installed along the southern and western margins of Cell 6S in the summer of 1993 to capture groundwater perched in the alluvium that overlies the Capay Shale south and west of the pre-Subtitle D landfill. Groundwater levels within the french drain can be monitored by wells MW-1, MW-2, and MW-3, and in intermediate sumps IS-1 and IS-2. Groundwater that accumulates in the french drain is extracted from the french drain final sump. The water quality of the perched alluvial groundwater is monitored in piezometers P-1 and P-2.

Leachate Collection and Monitoring

62) PHL has been constructed with a leachate collection and recovery system (LCRS). The LCRS includes two leachate extraction sumps located along the landfill perimeter and seven intermediate sumps located in the landfill interior. Leachate generated in the pre-Subtitle D portion of the Landfill (cells 1 through 9) drains by gravity through a network of collector

drains installed in a dendritic grid pattern on the landfill floor to the southwestern corner of the Landfill. Leachate from the pre-Subtitle D landfill is extracted from the "Final Sump" in Cell 6S and discharged into a 10,500-gallon leachate storage tank at Station 1 (Figure 3).

63) The LCRS in the Subtitle D portion of the Landfill is designed and constructed with the following components:

- A 12-inch thick gravel blanket layer immediately overlying the HDPE geomembrane;
- Leachate collection trenches consisting of perforated pipe encased in gravel;
- Sumps located at designated low points along the base liner; and
- Pumps to remove collected fluids from the collection sumps.

The gravel blanket is a high-transmissivity layer constructed along the top of the low-permeability base liner to intercept and prevent downward migration of leachate into the underlying geologic materials. Leachate that collects within the gravel blanket layer drains downslope along the top of the base liner until it is intercepted by collection trenches. The collection trenches direct leachate toward a 6,000-gallon collection/extraction sump at Station 5, which is currently located in Cell 17A at the northwest corner of the landfill (Figure 3). Site development plans call for relocating the sump in Cell 17A to a permanent location in Cell 18 in the northwestern corner of the Phase 1 landfill when Cell 18 is constructed.

64) The seven intermediate sumps were installed along leachate drain lines and have been used only for monitoring leachate levels and to verify that leachate is not accumulating on the liner. However, none of these monitoring sumps were accessible in 2009. The vertical access pipes have been damaged by waste settlement, prohibiting the measurement of leachate levels in the landfill interior. Provision C. 8 of this Order requires the Discharger to submit an Updated Leachate Management Plan. This report must include a plan to re-establish the ability to measure leachate levels in the landfill interior so that the proper function of the LCRS can be evaluated in compliance with Specification B. 9 of this Order.

65) The amount of leachate extracted from the Landfill has been recorded since 1996. In 2009, an estimated 1,351,000 gallons of leachate were extracted from the Subtitle D portion of the Landfill and reinjected into the composite-lined cells 16 and 17A. An estimated 931,400 gallons of leachate were extracted in 2009 from the pre-Subtitle D landfill and reinjected into the composite-lined cells 11 and 12. Extracted leachate has also been used for dust control within Subtitle D-compliant cells during dry weather conditions. Provision C. 8 requires submission of an updated Leachate Management Plan that describes how leachate will be managed on site.

66) Leachate has been sampled annually at the two extraction sump locations. Chemical analysis of the 2009 leachate sample from Station 1 (the pre-Subtitle D area) showed detections of certain VOCs including naphthalene, toluene, 1,4-dichlorobenzene, 4-isopropyltoluene, and xylenes, and the SVOCs aniline and diethylphthalate. All detected compounds were present at concentrations slightly above the laboratory reporting limits. One compound (1,4-dichlorobenzene) was detected at a concentration (17 ug/L) that exceeded its drinking water standard (5 ug/L). The 2009 sample from Station 5 (the Subtitle D area) showed detections of

two VOCs [methyl-tertiary-butyl ether (MTBE) and 1,2-dichloroethane]. The concentration of 1,2-dichloroethane (19 ug/L) exceeded its drinking water standard (0.5 ug/L).

67) The SMP attached to this Order updates the schedule and list of analytical parameters for leachate sampling (Table B-1). Henceforth, a representative sample of leachate from each extraction sump must be collected and analyzed for VOCs during each quarter that leachate will be used for dust control. Leachate that is shown to meet drinking water standards for VOCs (i.e., concentrations are below Minimum Contaminant Levels or MCLs) can be applied for dust control within the landfill boundary. Leachate that contains VOCs at concentrations exceeding MCLs must be re-injected into Subtitle D-compliant disposal cells in accordance with Specifications B. 11 and 12 of this Order.

Stormwater Management and Monitoring

68) Surface runoff within the Potrero Hills watershed flows westward through a natural drainage called Spring Branch Creek. The lower portion of this watershed is significantly impacted by landfill operations, and the natural drainage has been routed around the south side of the Landfill (Figure 3). Additional fill will be placed in this watershed during Phase II operations, further disrupting the normal drainage of Spring Branch Creek. Runoff will be diverted through a pipeline to be installed along the southern edge of the Landfill. These actions require the Discharger to obtain the following permits prior to Phase II development:

- A Section 404 Clean Water Act Permit from the U.S. Army Corps of Engineers for discharge of fill materials into waters of the U.S.; and

- A Streambed Alteration Agreement from Fish and Game.

69) Construction of the Landfill has created a raised mound within the Spring Branch Creek drainage. Surface drainage is directed radially off the mound toward drainage channels along the landfill perimeter. Runoff is increased by sloping intermediate and finished landfill surfaces and by covering surfaces with compacted, low-permeability, clay-rich soils. By promoting stormwater runoff, infiltration into the waste pile is reduced and leachate production is minimized.

70) Temporary runoff collection basins located within and around active disposal areas collect stormwater runoff, which is then pumped or diverted as needed to route water to permanent sedimentation basins located along the landfill perimeter. PHL currently has three permanent sedimentation ponds, referred to as basins 1, 2, and 3. Basin 1 is located near the northwestern corner of PHL; basins 2 and 3 are located near the southwestern corner of PHL (Figure 3). Basin 2 is situated at the lowest elevation and receives overflow from basins 1 and 3. These ponds collect stormwater runoff during the winter and allow suspended solids to settle before the water is discharged or reused. The ponds are also used to store water for dust control and other non-potable uses within the facility during the dry season. After allowing sediment to settle out, excess water from Basin 2 is discharged into Spring Branch Creek downstream from the Landfill (Figure 3).

71) Parts 122, 123, and 124 of Chapter 40 of the CFR require specific categories of industrial activities, including landfills, to obtain a National Pollutant Discharge Elimination System (NPDES) permit for storm water discharges. The State Water Board issued the General Permit for Storm Water Discharges Associated with Industrial Activities ("Industrial General Permit") (NPDES Permit No. CAS00000l). The Discharger has been enrolled under the Industrial General Permit since April 7, 1992.

72) To comply with the Industrial General Permit, stormwater is sampled at two designated locations, basins 1 and 2, during discharge occurrences. In addition, surface water samples are collected from Spring Branch Creek at two locations: an upstream location where the creek enters the landfill site and a downstream location where the creek exits the landfill property (Figure 3). Surface water and stormwater samples are collected and analyzed in accordance with Tables B-1 and B-4 in the SMP.

73) The State Water Board issued the General Permit for Storm Water Discharges Associated with Construction Activities ("Construction General Permit") (NPDES Permit No. CAS000002). The Discharger is required to comply with the Construction General Permit and, as such, is required to (1) submit a Notice of Intent (NOI) for coverage under the Construction General Permit; (2) prepare and implement a monitoring program; and (3) submit an annual report.

Landfill Gas

74) The Gas Collection and Control System (GCCS) is regulated by BAAQMD. CalRecycle and the Solano County LEA provide regulatory oversight of subsurface migration of landfill gas (such as gas monitoring wells) to ensure that the GCCS is working properly. The system consists of collection wells located in the Landfill that are connected to a header pipeline network to transmit landfill gas under vacuum pressure to the landfill gas flare system. Currently, the landfill gas flare burns the collected gas to reduce potential pollutant emissions.

75) The landfill gas monitoring system at PHL currently consists of 15 perimeter gas migration monitoring probes and 10 continuous gas detection monitors located in onsite buildings. The landfill gas monitoring network will be expanded as landfill expansion occurs.

76) Landfill gas condensate (LGC) often contains elevated concentrations of VOCs and other chemicals. LGC is collected at low points in the gas collection system and re-injected into the lined (Subtitle D) portions of the Landfill along with the leachate from Station 1. Henceforth, LGC shall be managed with leachate in accordance with Specifications B. 11 and 12 of this Order.

WATER QUALITY IMPACTS

77) Groundwater monitoring results show minimal groundwater impacts from PHL. In 1998, increased alkalinity and low concentrations of VOCs (primarily methylene chloride and MTBE) were detected in groundwater samples collected from downgradient monitoring well GW-7. The VOC concentrations in well GW-7 did not exceed drinking water standards. In 1999, the Discharger initiated an evaluation monitoring program to investigate if a potential release from the Landfill caused the VOC detections. The evaluation included the installation

of three new monitoring wells, GW-16, GW-17, and GW-18 outside the permitted waste boundary just downgradient from well GW-7 (Figure 3) to determine if VOC impacts extended beyond the immediate vicinity of well GW-7. The source of the VOCs was determined to be a release of landfill gas to groundwater in the alluvial french drain along the southwestern edge of the Landfill. Corrective actions, in the form of increased landfill gas extraction and groundwater pumping in the french drain, were implemented in mid-1999. Corrective action monitoring in well GW-7 has shown that VOC concentrations have dropped since the corrective actions were performed in 1999. Downgradient wells GW-16, GW-17, and GW-18 have not shown the presence of VOCs, indicating that VOCs did not migrate from the immediate vicinity of well GW-7.

78) Since 2001, well GW-5, which is located in the northwest part of the Landfill upgradient from any disposal areas, has shown the presence of the VOCs tetrachloroethene (PCE) and trichloroethene (TCE). Evaluation monitoring in well GW-5 has shown that concentrations of VOCs have not exceeded drinking water standards and have not increased since initial detection in 2001. The source of VOCs in this well has not been determined, although landfill gas migration is being evaluated. Nearby wells GW-19 and GW-20 have not shown the presence of VOCs.

CLEAN WATER ACT SECTION 401 WATER QUALITY CERTIFICATION

79) The Phase II expansion, or "the Project", will necessitate the filling and relocation of the Spring Branch Creek drainage. The Regional Water Board has determined that the Discharger has taken appropriate steps to avoid, minimize, and mitigate impacts on affected water bodies, as required by the San Francisco Bay Region Water Quality Control Plan (Basin Plan) and that the Project, as proposed, will not violate State water quality standards. Accordingly, this Order also issues conditional federal Clean Water Act Section 401 water quality certification (certification) for the Project (Figure 5).

80) Complete Application: The Regional Water Board received a complete application for certification for the Project on March 4, 2011(Application).

81) Waters of the United States: There are approximately 1.864 acres of jurisdictional waters of the U.S. in the Project area (Figure 6). The site's waters of the U.S. are comprised of:

a) 0.09 acre of seasonal wetlands;

b) 1.33 acres of seasonal wetland seeps;

c) 0.44 acre and 3,970 linear feet (lf) of drainages in the headwaters of Spring Branch Creek; and

d) 0.004 acre of other waters (Pond A).

82) Waters of the State: Waters of the State in the Project area include the jurisdictional waters of the U.S described in Finding 81, plus approximately 0.84 acre of non-jurisdictional waters comprised of two stock ponds, Pond No. 1 and Pond No. 5, which occupy 0.39 acre and 0.45 acre, respectively.

83) Rare and Endangered Species: Waters in the Project area serve or likely serve as habitat for the following rare, threatened, or endangered species:

a) California tiger salamander (*Ambystoma californiense*): federally-listed and state-listed threatened;

b) Conservancy fairy shrimp *(Branchinecta conservatio*): federally-listed endangered;

c) Vernal pool tadpole shrimp *(Lepidurus packardi)*: federally-listed endangered;

d) Vernal pool fairy shrimp *(Branchinecta lynchi*): federally-listed threatened; and

e) Contra Costa goldfields (*Lasthenia conjugens*): federally-listed endangered and California Native Plant Society List 1B (Plants Rare, Threatened, or Endangered in California and Elsewhere).

84) Project Impacts: The Project will result in the direct fill of all 1.864 acres of jurisdictional waters of the U. S. including 3,970 lf of drainages in the headwaters of Spring Branch Creek, and 0.39 acre of non-federal jurisdictional waters of the State (Figure 6). These impacts include the following:

a) Permanent loss of 1.42 acres of seasonal wetlands and seasonal wetland seeps, 0.44 acre (3,970 lf) of drainages in the headwaters of Spring Branch Creek, and 0.004 acre of other waters (Pond A); and

b) Permanent loss of 0.39 acre of nonjurisdictional waters of the State (Pond No. 1).

85) Mitigation for Project Impacts: To compensate for permanent impacts to waters of the U.S. and the State, and for impacts to special status species and their critical habitats, the Discharger will complete the mitigation proposed in the Mitigation and Monitoring Plan (MMP), as revised on March 4, 2011, prepared by LSA Associates, Inc., and Environmental Stewardship & Planning, Inc. Mitigation will occur on 963.28 acres within the Secondary Management Area of the Suisun Marsh on land owned by the Discharger (Figure 7). The mitigation for impacts to wetlands and other waters consists of the following components:

a) Creation of 4.49 acres of seasonal wetlands;

b) Creation of 1.80 acres (5,600 lf) of swale/channel;

c) Creation of 1.78 acres of pond habitat (breeding habitat for the California tiger salamander);

d) Preservation and enhancement of 65.12 acres of seasonal wetlands;

e) Preservation and enhancement of 1.49 acres (11,980 lf) of channel;

f) Preservation of 4.73 acres of pond habitat (breeding habitat for the California tiger salamander);

g) Preservation of 863.13 acres of California tiger salamander upland habitat; and

h) Preservation of 20.74 acres of upland grassland habitat.

86) The mitigation described above will be provided at the following six sites, as summarized in Table 1:

a) **Southern Hills Site:** The 428.7-acre parcel Southern Hills Site is within the Spring Branch Creek, Montezuma Slough, and Nurse Slough watersheds. This site is located directly south of the Phase II expansion area in the southern hills of the Potrero Hills and extends east toward the eastern end of the hills (Figure 8). Mitigation activities at the site will create 1.05 acres of California tiger salamander pond habitat, and preserve 2.92 acres of seasonal wetlands, 0.62 acre (4,230 lf) of swale/channel, 3.78 acres of California tiger salamander pond habitat, and 420.33 acres of upland habitat. These ecosystems will provide habitat for the vernal pool fairy shrimp, vernal pool tadpole shrimp, conservancy fairy shrimp (vernal pool crustaceans), and the California tiger salamander. The Southern Hills parcel will be preserved and managed as plant and wildlife habitat and used for cattle grazing.

b) **Pond 5 Buffer Area:** The 41.23-acre Pond 5 Buffer Area is within the Spring Branch Creek Watershed and located in the eastern extension of the Phase II expansion parcel along the southern edge of the of the Potrero Hills Valley (Figure 8). Mitigation activities at the site will preserve 40.78 acres of California tiger salamander upland habitat and 0.45 acre of pond habitat. These ecosystems will provide habitat for the California tiger salamander. The Pond 5 Buffer Area will be preserved and managed as plant and wildlife habitat and used for cattle grazing.

c) **Eastern Valley Site:** The 160-acre Eastern Valley Site is within the Spring Branch Creek and Nurse Slough watersheds and located adjacent and directly east of the Phase II Expansion parcel (Figure 8). Mitigation activities at this site will preserve 0.20 acre of seasonal wetlands, 0.14 acre (1,540 lf) of swale/channel, 0.50 acre of California tiger salamander pond habitat, and 159.16 acres of upland habitat. These ecosystems will provide habitat for vernal pool crustaceans and the California tiger salamander. The Eastern Valley Site will be preserved and managed as plant and wildlife habitat and used for cattle grazing.

d) **Eastern Hills Site:** The 137.39-acre Eastern Hills Site is within the Spring Branch Creek, Luco Slough, and Nurse Slough watersheds and located adjacent and directly east of the Eastern Valley Site. It also encompasses the northeastern slopes of the Potrero Hills outside the valley (Figure 8). Mitigation activities at the site will preserve 0.004 acre of seasonal wetlands, 0.51 acre (5,175 lf) of swale/channel, and 136.87 acres of California tiger salamander upland habitat. These ecosystems will provide habitat for vernal pool crustaceans and the California tiger salamander. The Eastern Hills Site will be preserved and managed as plant and wildlife habitat and used for cattle grazing.

e) **Griffith Ranch Site**: The 112.16-acre Griffith Ranch Site is within the Hill Slough Watershed and located adjacent and directly north of the Phase II Expansion parcel (Figure 8). Mitigation activities at the site will establish 4.07 acres of seasonal wetlands, 1.03 acres (3,702 lf) of swale/channel, and 0.73 acre of California tiger salamander pond habitat, and preserve 0.34 acre of seasonal wetlands and 105.99 acres of California tiger salamander upland habitat. These ecosystems will provide habitat for vernal pool crustaceans, the California tiger salamander, and Contra Costa goldfields. The Griffith Ranch Site will be preserved and managed as plant and wildlife habitat and used for cattle grazing.

f) **Director's Guild Site:** The 83.80-acre Director's Guild Site is within the Hill Slough Watershed, located directly north of the Potrero Hills and just south of State Highway 12 (Figure 8). Mitigation activities at the site will establish 0.42 acre of seasonal wetlands and 0.77 acre (1,898 lf) of swale/channel, and preserve 61.66 acres of seasonal wetlands, 0.21 acre (1,035 lf) of swale/channel, and 20.74 acres of grassland habitat. These ecosystems will provide habitat for vernal pool fairy shrimp crustaceans, Contra Costa goldfields, and the California tiger salamander. The Director's Guild Site will be preserved and managed as plant and wildlife habitat and used for cattle grazing.

Table 1: Summary of the Acres and Linear Feet of Mitigation at Each Site

MITIGATION AREA	HABITAT TYPE								
	CTS Upland Habitat	Grassland **	CTS Pond Habitat		Seasonal Wetlands		Swale/ Channel		TOTAL (acres)
	Preserve (acres)	*Preserve (acres)*	*Preserve (acres)*	*Create (acres)*	*Preserve (acres)*	*Create (acres)*	*Preserve (acres)*	*Create (acres)*	
Southern Hills	420.33		3.78	1.05	2.92		0.62 (4,230 ft)		**428.70**
Pond 5 Buffer Area	40.78		0.45						**41.23**
Eastern Valley†	159.16		0.50		0.20		0.14 (1,540 ft)		**160.00**
Eastern Hills†	136.87				0.004		0.51 (5,175 ft)		**137.39**
Griffith Ranch	105.99			0.73	0.34	4.07		1.03 (3,702 ft)	**112.16**
Director's Guild		20.74			61.66	0.42	0.21 (1,035 ft)	0.77 (1,898 ft)	**83.80**
TOTAL (acres)	**863.13**	**20.74**	**4.73**	**1.78**	**65.12**	**4.49**	**1.48 (11,980 ft)**	**1.80 (5,600 ft)**	**963.28**
Mitigation Ratio*	**5.2:1**	**N/A**	**7.7:1**	**2.9:1**	**45.9:1**	**3.2:1**	**3.4:1 (3.0:1)**	**4.1:1 (1.4:1)**	**5.7:1**

* Preserved/created:impacted
** Grassland on Director's Guild site is not occupied by CTS and not counted toward CTS mitigation. N/A not applicable †Eastern Valley parcel and Eastern Hills parcel were previously reported together as the Eastern Valley Area Total Impact Area = 167.63 ac, Wetland Impact area = 1.86 (Seasonal Wetland = 1.42 ac, Waters = 0.44 ac. (Channel Length = 3,970 ft)) Pond Impact Area = 0.61 ac (Ponds 1 and 4), Upland Impact Area =165.16 ac

87) Grassland Management Plan: The Discharger has submitted a "Potrero Hills Grassland Management Plan for Mitigation Areas" (GMP), dated September 9, 2009, prepared by LSA Associates and Environmental Stewardship & Planning, Inc. The GMP addresses the 963.28-acre mitigation area (Figure 9). This Order requires the Discharger to submit, prior to the start

of Project construction, but no later than December 31, 2013, a final GMP acceptable to the Executive Officer that will describe how the lands are to be managed for grazing.

88) Long-Term Management: The long-term management of the mitigation sites will be transferred to an appropriate land management group or agency, subject to the approval of the Executive Officer. This Order requires the Discharger to submit, prior to the start of Project construction, but no later than December 31, 2013, Property Analysis Record (PAR) analyses estimating the endowment amount necessary for the appropriate management, in perpetuity, of the mitigation areas. This Order requires the Discharger, subject to the approval of the Executive Officer, to work with a third party land manager to finalize the determination of what amount of money is necessary for an endowment fund to adequately finance the monitoring, perpetual management and maintenance of the mitigation areas.

89) Legal Authorities: Pursuant to CWC Section 13263 and 23 CCR Section 3857, the Regional Water Board is issuing WDRs to regulate the proposed discharge of fill materials into waters of the State in addition to issuing Water Quality Certification pursuant to 23 CCR Section 3859. The Regional Water Board considers WDRs necessary to adequately address impacts to and mitigation of beneficial uses of waters of the State from this Project, to meet the objectives of the California Wetlands Conservation Policy (Executive Order W-59-93), and to accommodate and require appropriate changes over the life of the Project and its construction.

BASIN PLAN AND RESOLUTIONS

90) The Basin Plan is the Regional Water Board's master water quality control planning document. It designates beneficial uses and water quality objectives for waters of the State, including surface waters and groundwater. It also includes programs of implementation to achieve water quality objectives. The Basin Plan was duly adopted by the Board and approved by the State Water Board, the Office of Administrative Law, and the U.S. EPA where required.

91) The Basin Plan provides that all groundwater is considered suitable, or potentially suitable, for municipal or domestic water supply (MUN) and that, in making any exceptions, the Regional Water Board will consider the criteria referenced in Regional Water Board Resolution No. 89-39, “Sources of Drinking Water,” where:

a) TDS exceeds 3,000 mg/liter or electrical conductivity exceeds 5,000 µS/cm, or

b) There is contamination, either by natural processes or human activity (unrelated to the specific pollution incident), that cannot reasonably be treated for domestic use using best management practices or best economically achievable treatment practices, or

c) The water source does not provide sufficient water to supply a single well capable of producing an average, sustained yield of 200 gallons per day.

BENEFICIAL USES OF SURFACE WATER AND GROUNDWATER

Groundwater

92) PHL resides within the Suisun-Fairfield Valley Groundwater Basin, as defined in the Basin Plan. The existing and potential beneficial uses identified for groundwater in this basin, according to the Basin Plan, include:

a) Municipal and Domestic Supply (MUN)
b) Industrial Process Supply (PROC)
c) Industrial Service Supply (IND)
d) Agricultural Supply (AGR)

93) Based on the hydrogeologic characterization and water quality data for the landfill site, groundwater underlying the site qualifies as a potential source of drinking water in accordance with Regional Water Board Resolution No. 89-39. Therefore, all of the above current and potential beneficial uses apply to groundwater beneath the site. However, as groundwater at the site occurs within thin, low-yield alluvial sediments and low-permeability, fractured bedrock, the site is considered an unlikely location for future water supply wells.

Surface Water

94) Existing or potential beneficial uses identified for surface water bodies, including creeks, sloughs, ponds, and marshes in the Suisun Basin, according to the Basin Plan, include:

a) Freshwater Replenishment (FRSH)
b) Warm Freshwater Habitat (WARM)
c) Wildlife Habitat (WILD)
d) Fish Spawning (SPWN)
e) Fish Migration (MIGR)
f) Preservation of Rare and Endangered Species (RARE)
g) Water Contact Recreation (REC1)
h) Non-Water Contact Recreation (REC2)
i) Navigation (NAV)

95) Spring Branch Creek is located with the Suisun Basin. Regional Water Board Resolution No. R2-2010-0100 identifies the following presumptive[1] beneficial uses for Spring Branch Creek:

a) Warm Freshwater Habitat (WARM)
b) Wildlife Habitat (WILD)
c) Non-contact Water Recreation (REC-2)
d) Water Contact Recreation (REC-1)

In addition, Section 2.2.3 of the Basin Plan recognizes the multiple beneficial uses provided by wetlands, and Table 2-3 of the Basin Plan lists beneficial uses associated with wetland types. Existing and potential beneficial uses for wetlands at the Project site were established

[1] These presumptive beneficial uses have not yet been approved by U.S. EPA.

as indicated in Section 4.23 of the Basin Plan by 1) referencing information in the Application to identify wetland types at the Project site, 2) using Table 2-3 of the Basin Plan to identify examples of beneficial uses associated with these wetland types, and 3) referencing site-specific information provided in the EIR and Application to refine the example beneficial uses listed in Table 2-3 of the Basin Plan into a list of existing and potential beneficial uses for wetlands at the Project site. Wetland types at the Project site are palustrine[2]. The beneficial uses associated with wetlands at the Project site include AGR, FRESH, GWR, WARM, WILD, and RARE.

96) Basin Plan Wetland Fill Policy: The Basin Plan Wetland Fill Policy (Wetland Fill Policy) establishes that there is to be no net loss of wetland acreage and no net loss of wetland value when a project and any proposed mitigation are evaluated together, and that mitigation for wetland fill projects is to be located in the same area of the region, whenever possible, as the project. The Wetland Fill Policy further establishes that wetland disturbance should be avoided whenever possible, and if not possible, should be minimized, and only after avoidance and minimization of impacts should mitigation for lost wetlands be considered. The Discharger has submitted a Clean Water Act section 404(b)(1) Alternatives Analysis and supplemental information to show that appropriate effort was made to avoid and then to minimize wetland and stream impacts as required by the Basin Plan. Requirements of this Order implement the Basin Plan.

97) California Wetlands Conservation Policy: The goals of the California Wetlands Conservation Policy (Executive Order W-59-93, signed August 23, 1993) include ensuring "no overall loss" and achieving a "…long-term net gain in the quantity, quality, and permanence of wetland acreage and values…." The California Wetlands Conservation Policy also calls for "development of means to provide flexibility in the regulatory process … for allowing public agencies, water districts, and landowners to establish wetlands on their property consistent with the primary purpose of the property." Requirements of this Order implement the California Wetlands Conservation Policy.

98) Senate Concurrent Resolution No. 28: Senate Concurrent Resolution No. 28 states that "[i]t is the intent of the legislature to preserve, protect, restore, and enhance California's wetlands and the multiple resources which depend on them for benefit of the people of the State."

Pursuant to Title 23, CCR sections 3857 and 3859, the Regional Water Board is issuing Waste Discharge Requirements and Water Quality Certification for the proposed Project.

99) Water Rights: The Water Rights Permitting Reform Act requires registration of water impoundments used for livestock watering to be registered (Sections 1228-1229.1 of the CWC). These livestock watering ponds cannot exceed direct diversion of 4500 gallons per day or storage of 10 acre-feet per year, and include impoundments for incidental aesthetic, recreational, or fish and wildlife purposes. Mitigation for the Project includes modifications

[2] A palustrine wetland is a wetland within a system that 1) is dominated by trees, shrubs, persistent emergent vascular plants, emergent mosses or lichens, and 2) has less than 0.5 ppt of ocean derived salts. It also includes wetlands lacking vegetation that 1) are less than 20 acres, 2) lack of an active wave-formed or bedrock shoreline, and 3) have water depths less than 2 meters in the deepest part of basin at low water (Cowardin and others 1979).

to livestock watering ponds that are not currently registered with the State Water Board's Division of Water Rights. As required, the Discharger notified Fish and Game of its intent to register these livestock ponds on March 3, 2011. Once comments are received from Fish and Game, the Discharger will file for registration with the State Water Board. This Order includes a provision requiring the Discharger to register livestock ponds prior to implementing any mitigation activities within the confines of these ponds.

100) California Wetlands Portal: It has been determined through regional, State, and national studies that tracking of mitigation/restoration projects must be improved to better assess the performance of these projects, following monitoring periods that last several years. In addition, to effectively carry out the California's Wetlands Conservation Policy, the State needs to closely track both wetland losses and mitigation/restoration project success. Therefore, the Discharger is required to use the California Wetlands Form to provide Project information related to impacts and mitigation/restoration measures. An electronic copy of the form and instructions can be downloaded at: http://www.waterboards.ca.gov/sanfranciscobay/certs.shtml. Project information concerning impacts and mitigation/restoration will be made available at the web link: http://www.californiawetlands.net.

101) U.S. Army Corps of Engineers (Corps)**:** On July 20, 2007, the Corps issued a Public Notice for a proposed Individual Permit for the Project (Corps File No. 26024N), pursuant to Section 404 of the federal Clean Water Act, but has not issued a permit for the Project at this time.

102) Endangered Species Act: This Order does not authorize any act that results in the taking of a threatened or endangered species or any act that is now prohibited, or becomes prohibited in the future, under either the California Endangered Species Act (Fish and Game Code sections 2050 to 2097) or the Federal Endangered Species Act (16 U.S.C.A. sections 1531 to 1544). The Discharger is responsible for meeting all requirements of the applicable Endangered Species Acts. The United States Fish and Wildlife Service (USFWS) issued a Biological Opinion (BO) for the Project (USFWS File No. 81420-2007-F-1362-2) on November 9, 2010.

CALIFORNIA ENVIRONMENTAL QUALITY ACT

103) Phase I development of PHL has occurred under a final EIR certified by the County of Solano on May 16, 1996. The Final EIR for the Phase II expansion was first certified by the County on September 13, 2005, and was revised and certified on June 9, 2009, in accordance with CEQA Public Resources Code Section 21000 et seq. BCDC affirmed the certification of the Revised Final EIR on October 21, 2010. In the Final EIR, it was determined that the Landfill and proposed landfill activities approved by the County could potentially cause significant adverse impacts on water quality, unless appropriate mitigation measures are taken. The Final EIR stated that potential impacts to water quality could occur as a result of:

a) Earthquake damage or failure of the landfill containment system;

b) Slope instability or failure as a result of water saturation of embankments;

c) Potential degradation of surface water quality as a result of increased sediment load and/or erosion;

d) Potential groundwater contamination due to contact with landfill leachate;

e) Potential downstream impacts to aquatic biota from accidental discharge of contaminated water;

f) Alteration of existing surface and groundwater flow; and

g) Impacts to wetlands and other aquatic habitat, including habitat for special status species, fisheries and water quality due to landfill expansion and operation.

104) The Final EIR identified the following feasible mitigation measures to mitigate these impacts to less than significant levels:

a) A series of design measures implementing prescriptive and performance standards established for the Landfill to control erosion and assure containment of waste and leachate through the use of composite base liners;

b) An LCRS;

c) Groundwater control measures;

d) Limits on the physical dimensions and content of the fill;

e) Requiring buffers around avoided wetlands;

f) Compensating for permanent impacts to wetlands, streams, and special-status species habitat by restoring and establishing wetland, stream, and special-status species habitat at a ratio needed to achieve no net loss in habitat areas, functions, and services;

g) Placement of a conservation easement over mitigation parcels, preservation of mitigation sites in perpetuity, and establishment of a funding mechanism for the maintenance of the mitigated areas; and

h) Development and implementation of a habitat management plan for the mitigation sites, which allows for grazing activities, and a long term funding mechanism for their maintenance.

The Regional Water Board, as a responsible agency under CEQA, has considered the Final EIR and finds that all environmental effects have been identified for Project activities that it is required to approve, and the environmental effects identified for those activities will be less-than-significant with implementation of the mitigation measures set forth in the Final EIR and identified above in this Finding. This Order requires all the above mitigation measures to be implemented and reported on.

NOTIFICATION AND PUBLIC MEETING

105) The Regional Water Board has notified the Discharger and interested agencies and persons of its intent to update these WDRs and issue water quality certification and has provided these parties with an opportunity to submit their written views and recommendations.

106) The Regional Water Board in a public meeting heard and considered all comments pertaining to the proposed WDRs for the site.

IT IS HEREBY ORDERED pursuant to the authority in Division 7, Section 13263 of the CWC, Title 27, Division 2, Subdivision 1 of the CCR (Title 27), and State Water Board Resolution No. 93-62 that the Discharger, its agents, successors, and assigns shall meet the applicable provisions contained in Title 27, Division 7 CWC, and State Water Board Resolution No. 93-62, and shall comply with the following:

A. PROHIBITIONS

1) Waste shall not be exposed at the surface of any waste unit, except at the working landfill face during disposal operations.

2) Wastes shall not be disposed of in any position where they can be carried from the disposal site and discharged into waters of the State or of the United States.

3) The discharge or storage of hazardous and infectious wastes, as defined in sections 2521 and 2522 of Title 23 and in Chapter 11, Division 4 of Title 22, is prohibited.

4) The discharge of wastes which have the potential to reduce or impair the integrity of the containment structures or which, if commingled with other wastes in the unit could produce chemical reactions that create heat, pressure, fire, explosion, toxic by-products, or reaction products, is prohibited.

5) The discharge of liquids and semi-solid wastes (wastes containing free liquids or less than 50% solids by weight), other than dewatered sewage or water treatment sludge as described in §20220(c) of Title 27, is prohibited. Exceptions may be made if the Discharger demonstrates that such discharge will not exceed the moisture-holding capacity of the Landfill.

6) The relocation of wastes is prohibited without prior Regional Water Board staff concurrence.

7) The relocation of wastes to or from any waste management unit (WMU) shall not create a condition of pollution or nuisance as defined in CWC Section 13050(l) and (m). Any relocated waste shall not be placed in or allowed to contact ponded water from any source whatsoever. Wastes shall not be relocated to any location where they can be discharged into waters of the State or of the United States.

8) Excavation within, or reconfiguration of, any existing WMU is prohibited without prior concurrence of Regional Water Board staff. Minor excavation or reconfiguration activities such as for installation of signs or landscaping, or for routine maintenance and repair, do not require prior staff concurrence.

9) Excavation for the purpose of increasing disposal space, or excavation into bedrock to a depth greater than is required to ensure a stable foundation for the disposal cell, is prohibited.

10) Wastes shall not be placed in any area of a new WMU without Executive Officer approval based on receipt of an adequate Construction Quality Assurance report(s) certified by a California-registered civil engineer or California-certified engineering geologist.

11) Groundwater quality shall not be degraded as a result of the waste disposal operation.

12) Filling of wetlands or waters of the State at the Landfill, other than those specified in Finding 84, without certification of water quality by the Regional Water Board or Executive Officer pursuant to Section 401 of the Clean Water Act is prohibited.

13) 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.

14) Buildup or mounding of leachate levels within the Landfill is prohibited and shall be prevented by operation of an LCRS. For lined disposal cells, the depth of leachate shall not be greater than 12 inches above the bottom liner (excluding in collection sumps).

15) Leachate, or stormwater or groundwater containing leachate or in contact with waste, shall not be discharged to waters of the State or of the United States unless specifically authorized under an NPDES permit.

16) The treatment, storage, or discharge of groundwater, stormwater, leachate, or sludges shall not create a condition of pollution or nuisance as defined in CWC Section 13050(m), nor degrade the quality of waters of the State or of the United States.

17) The Discharger shall not cause the following conditions to exist in waters of the State or of the United States at any place outside the landfill boundary:

a) Surface Waters:
Floating, suspended, or deposited macroscopic particulate matter or foam;
Bottom deposits or aquatic growth;
Adverse changes in temperature, turbidity, or apparent color beyond natural background levels;
Visible, floating, suspended, or deposited oil or other products of petroleum origin; or
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:
Degradation of groundwater quality; or
Substantial worsening of existing groundwater impacts.

18) Migration of pollutants through subsurface transport to waters of the State is prohibited.

19) The discharge of wastes, including debris, rubbish, refuse, or other solid wastes into surface waters or at any place where they would contact or where they would be eventually transported to surface waters, including flood plains, is prohibited.

20) The discharge of floating oil or other floating materials from any activity in quantities sufficient to cause deleterious bottom deposits, turbidity, or discoloration in surface waters is prohibited.

21) The discharge of silt, sand, clay, or other earthen materials from any activity in quantities sufficient to cause deleterious bottom deposits, turbidity, or discoloration in surface waters is prohibited.

22) The wetland fill activities subject to these requirements shall not cause a nuisance as defined in CWC Section 13050(m).

23) The groundwater in the vicinity of the Project shall not be degraded as a result of the Project activities or placement of fill for the Project.

24) The discharge of materials, which are not otherwise regulated by a separate NPDES permit or allowed by this Order, to waters of the U.S. or the State is prohibited.

B. SPECIFICATIONS

1) The Discharger shall conduct monitoring activities according to the Self Monitoring Program (SMP) attached to this Order, and as may be amended by the Executive Officer, to verify the effectiveness of the Landfill's systems for monitoring, containment, collection, treatment, and removal of groundwater, surface water, leachate, and landfill gas.

2) At any time, the Discharger may file a written request (including supporting documentation) with the Executive Officer, proposing modifications to the SMP. If the proposed modifications are acceptable, the Executive Officer may issue a letter of approval that incorporates the proposed revisions into the SMP.

3) The Discharger shall install any reasonable additional monitoring devices for groundwater, surface water, leachate, and landfill gas that are required to fulfill the terms of any future SMP issued by the Executive Officer for the Landfill.

4) The Discharger shall maintain, inspect, repair, and replace all devices installed in accordance with this Order, so that they continue to operate as intended without interruption.

5) Precipitation and drainage control facilities shall be designed with a minimum capacity to accommodate a 100-year, 24-hour storm event. Disposal units intended to accept designated waste shall be designed and constructed with a minimum capacity to accommodate a 1000-year, 24-hour storm event.

6) The site shall be protected from any washout or erosion of wastes from inundation, which could occur as a result of a 100-year, 24-hour storm event, or as the result of flooding with a return frequency of 100 years.

7) The Discharger shall assure that the foundation of the site, the solid waste fill, and the structures that control leachate, surface drainage, erosion and landfill gas for this site are

constructed and maintained to withstand conditions generated during the maximum probable earthquake as defined by Title 27.

8) Containment, collection, drainage, and monitoring systems for groundwater, surface water, leachate, and LGC shall be maintained and operated as long as waste or leachate is present and poses a threat to water quality.

9) The LCRS shall be maintained and operated to minimize undue buildup of hydraulic head on the bottom of the Landfill and ensure that accumulated fluid is being adequately removed from the Landfill and appropriately contained and discharged.

10) Methane and other landfill gases shall be adequately vented, removed from the Landfill, or otherwise controlled to minimize the danger of explosion, adverse health effects, nuisance conditions and the impairment of beneficial uses of water due to gas migration.

11) Discharge of leachate and/or LGC is limited to areas of the Landfill that are equipped with a Subtitle D-compliant composite liner and LCRS. Leachate that is shown through laboratory analysis to meet drinking water standards (i.e., is below MCLs) for VOCs may be applied for dust control within the landfill boundaries.

12) Recirculation of leachate and/or LGC to a disposal cell other than where it was generated or extracted is allowed, provided that 1) the receiving cell or unit is equipped with a composite liner and LCRS designed to meet federal (Subtitle D) and state Class II standards; 2) leachate accumulation above the composite liner is monitored and does not exceed a thickness of 12 inches (not including LCRS sumps); 3) recirculation may not occur under pressures exceeding gravity drainage; and 4) during the wet season, recirculation is performed in a manner that does not cause surface runoff of water that has come in contact with leachate or LGC.

13) Final and interim covers for the Landfill shall be graded and maintained to promote lateral runoff of precipitation and prevent ponding or infiltration of water on or within the Landfill. As portions of the Landfill are closed, the exterior surfaces shall be graded to a minimum slope of three percent in order to promote lateral runoff of precipitation. In addition, all completed disposal areas shall be covered with a cover meeting the requirements of CCR Title 27.

14) The Discharger shall implement a Detection Monitoring Program (DMP), pursuant to Title 27, Section 20420. The DMP shall be designed to identify any water quality impacts from the Landfill and demonstrate compliance with the Water Quality Protection Standard (WQPS), required pursuant to Title 27, Section 20390. DMP sampling is included within the SMP attached to this Order.

15) The WQPS for the Landfill shall include the following:

    a) Constituents of Concern: Section 20395 of Title 27 defines COCs as "all waste constituents, reaction products, and hazardous constituents that are reasonably expected to be in or derived from waste contained in the Unit." COCs for PHL include the monitoring parameters identified in the SMP attached to this Order, or any future amendment thereof, and all Appendix II parameters in federal Subtitle D regulations.

b) Monitoring Parameters: Monitoring parameters (MPs), a subset of the COCs, are typically the most mobile and commonly detected COCs in groundwater at the site and are measured on a more frequent basis than the entire list of COCs. The MPs for PHL shall include, at a minimum, all constituents identified as such in the SMP attached to this Order, or any future amendments thereof. The Discharger may propose modification to the MPs as additional data become available concerning site-specific source characteristics and natural background water quality. However, modifications shall only be made upon written concurrence from the Executive Officer.

c) Concentration Limits: Concentration limits for all COCs detected at the specified points of compliance shall be established using the background data set pursuant to Section 20400 of Title 27. An upper prediction limit (UPL) or control limit (CL) shall be calculated from the background data set using statistical methods as appropriate. Per Title 27, Section 20400(a), CLs are equal to background values for individual constituents in individual wells and are re-determined periodically in accordance with the approved statistical procedure. Therefore, CLs are updated with each monitoring report submitted to the Regional Water Board. For non-naturally occurring chemicals such as VOCs, the CL may not exceed the MCL for each chemical.

d) Point of Compliance: Title 27 defines the Point of Compliance (POC) as the "vertical surface located at the hydraulically downgradient limit of the Unit that extends through the uppermost aquifer underlying the Unit." The POC shall be the hydraulically downgradient perimeter of the waste fill area.

e) Monitoring Points: Title 27 defines Monitoring Points as “a well, device, or location specified in the waste discharge requirements at which monitoring is conducted and at which the water quality protection standard applies.” Monitoring points for the Landfill, which are located along the POC and at additional locations, are specified in the SMP attached to this Order, or any future amendments thereof.

16) Whenever there is “measurably significant” geochemical evidence of an exceedance of concentration limits (as defined in Section 20164 of Title 27) or significant physical evidence of a release, the Discharger shall be prepared to implement an Evaluation Monitoring Program (EMP) pursuant to Section 20425 of Title 27, at the direction of the Regional Water Board. In such a case, the Discharger shall continue implementing the DMP as prescribed in the SMP. If required, the EMP shall be implemented to determine the nature and extent of any release detected by the DMP.

17) Non-hazardous, inert wastes and non-friable asbestos may be disposed of at the Landfill provided that disposal is performed in compliance with all regulations and provisions of CalRecycle, DTSC, BAAQMD, the LEA, and local health agencies.

18) Designated wastes requiring special handling (i.e., industrial ash, treated auto shredder waste, petroleum contaminated soils, sewage and wastewater sludges, industrial sludges, industrial filters, drilling muds, treated wood, and other nonhazardous waste) shall only be discharged into composite-lined disposal cells equipped with an LCRS meeting Subtitle D regulations and State Class II siting, construction, and design requirements specified in CCR Title 27, Section 20250.

19) The Discharger is authorized to use certain waste materials for various beneficial applications within the permitted waste boundary, including use as alternative daily cover (ADC) and operations layer material; for construction of access and bench roads, tipping area decks, intermediate pads, and stormwater berms; for backfilling trenching projects and leachate seeps; repairing eroded areas; and filling settlement areas. Waste materials cannot be used for beneficial applications outside the designated waste boundary.

20) Sludges, other than dewatered sewage or water treatment sludge, must contain no free liquids and must contain at least 50 percent solids by weight at the time of discharge into a disposal cell or use as ADC. Dewatered sewage sludge may be discharged if it contains at least 20 percent solids by weight. Water treatment sludge must contain at least 15 percent solids by weight for disposal. High-moisture sludges may be mixed onsite with waste and/or other dry materials to achieve a suitable liquid content in accordance with an approved Sludge Management Plan (see Provision C. 7). Sludges must be managed so they do not present nuisance concerns on neighboring properties.

21) Future landfill containment systems at PHL shall be constructed consistent with the design and components specified below, from top to bottom. Alternative containment system designs and/or components proposed by the Discharger must be approved in advance of construction by the Executive Officer. Containment system designs consistent with the following specifications will likely streamline the Regional Water Board staff review and approval process.

Cell Floors	**Cell Side-Slopes & Benches**
15-inch thick (minimum) soil operations layer	24-inch thick (minimum) soil operations layer
Geotextile filter	
12-inch (minimum) granular LCRS with 6-inch (minimum) perforated pipe	
80-mil HDPE geomembrane	80-mil HDPE geomembrane
2-foot thick (minimum) CCL, with a hydraulic conductivity of 1 x 10^{-7} cm/s or less	GCL, encapsulated if necessary to prevent hydration
Geotextile separator	
12-inch thick (minimum) granular underdrain with 4-inch (minimum) perforated pipe	Underdrains as needed to prevent seepage contact with GCL
Prepared subgrade	Prepared subgrade

22) A blanket underdrain system is required beneath all future disposal cells, unless five feet of separation between groundwater and waste can be achieved, or unless an equally protective engineered alternative is approved in advance by the Executive Officer.

23) The Discharger shall provide and maintain a minimum of two permanent, surveyed monuments near the Landfill from which the location and elevation of wastes, containment

structures, and monitoring facilities can be determined throughout the operation, closure, and post-closure maintenance periods. These monuments shall be installed by a licensed land surveyor or registered civil engineer.

24) The Discharger shall install new monitoring stations to replace any monitoring wells designated as monitoring stations that are destroyed during landfill development or expansion.

25) The Discharger shall notify the Regional Water Board immediately of any failure occurring in the Landfill. Any failure that threatens the integrity of containment or control features or structures at the Landfill shall be promptly corrected after approval of the method and schedule by the Executive Officer.

26) When issues arise involving multiple landowners or lease holders, the Discharger shall provide reasonable access to any property they own or lease at the site to allow for installation, sampling, monitoring, etc., of all devices and equipment necessary for compliance with the requirements of this Order.

27) A geologic map of the base of the excavation shall be updated as disposal cell excavation proceeds. Mapping shall include, but is not limited to, fracture and shear zones, and areas where there is not a five-foot separation between groundwater and the waste. An updated geologic map shall be submitted to the Regional Water Board upon completion of excavation of each new disposal cell.

28) All reports submitted pursuant to this Order shall be prepared under the supervision of and signed by appropriately licensed professionals, such as a California-registered civil engineer, professional geologist, or certified engineering geologist.

29) All design aspects related to closure activities, e.g., closure design and final cover construction, shall be under the direct supervision of a registered civil engineer.

30) The Discharger shall notify the Regional Water Board at least 180 calendar days prior to beginning any final closure activities. This notice shall include a statement that all activities will conform to the most recently approved closure plan and that the plan provides for site closure in compliance with all applicable regulations.

C. PROVISIONS

1) Compliance: The Discharger shall comply immediately, or as prescribed by the time schedule below, 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 WDRs, and Water Quality Certification, including the SMP. Violations may result in enforcement actions, including Regional Water Board orders or court orders requiring corrective action or imposing civil monetary liability, or in modification or revocation of these WDRs by the Regional Water Board. [CWC sections 13261, 13263, 13265, 13267, 13268, 13300, 13301, 13304, 13340, and 13350].

2) Authority: All technical and monitoring reports required pursuant to this Order are being requested pursuant to CWC Section 13267. Failure to submit reports in accordance with schedules established by this Order or failure to submit a report of sufficient technical quality acceptable to the Executive Officer may subject the Discharger to enforcement action pursuant to CWC Section 13268.

3) Self Monitoring Program: The Discharger shall implement and comply with the SMP attached to this Order and any revisions issued by the Executive Officer. The SMP is intended to constitute a DMP pursuant to Title 27, §20420 and is designed to identify significant water quality impacts from the Landfill and demonstrate compliance with the WQPS established pursuant to Title 27, §20390. The SMP may also include EMP and Corrective Action Monitoring Program requirements, as required.

   COMPLIANCE DATE: Immediately upon adoption of Order.

4) Base Liner Design Reports: Prior to the excavation and construction of any new disposal cell, the Discharger must submit a technical report, acceptable to the Executive Officer, describing the details of the cell design. The report must include detailed plans for each phase of cell construction, including base excavation and grading, and construction of groundwater subdrains, composite base and sideslope liners, LCRS, and operations layer.

   COMPLIANCE DATE: At least 30 days prior to beginning cell construction.

5) Construction Quality Assurance Reports: Prior to the placement of waste in any newly constructed disposal cell, the Discharger must submit a technical report demonstrating that cell and base liner construction was performed in accordance with the previously approved Base Liner Design Report for that cell.

   COMPLIANCE DATE: At least 30 days prior to waste disposal.

6) Joint Technical Document: The Discharger shall submit a technical report, acceptable to the Executive Officer, describing any proposed material change in the character, location, or volume of a discharge, or in the event of a proposed change in use or development of the Landfill [CWC Section 13260(c)]. Formerly known as the ROWD, this document shall be submitted to the Regional Water Board in the form of a JTD to support the development or revision of WDRs for that WMU. For the purpose of this Order, this includes any proposed change in the boundaries of the area of wetland/waters of the State to be filled and mitigated. The JTD must include all applicable information necessary to support the development (or modification, as appropriate) and issuance of any State or local agency permits, other than the conditional use permit, that are required to operate the WMU (including but not limited to the lateral expansion of any WMU). The JTD shall describe the project, identify key changes to the design that may impact any portion of the Landfill, and specify components of the design necessary to maintain integrity of the landfill cover and prevent water quality impacts. No material changes to any portion of the Landfill shall be made without approval by the Executive Officer.

   COMPLIANCE DATE: 120 days prior to any proposed material change

7) Updated Sludge Management Plan: The Discharger shall submit a technical report, acceptable to the Executive Officer, describing how muds and sludges, including water treatment and wastewater treatment sludges, and biosolids shall be managed onsite. The Sludge Management Plan must describe in detail the following:

   - PHL's criteria for accepting sludges and biosolids onto the landfill property, including the schedule for receiving laboratory analysis of sludges from sludge generators;
   - the methods PHL will use to determine the moisture content of sludges and sludge/waste/soil mixtures; and
   - PHL's procedures for managing high-moisture content wastes within the landfill property, including the storage, mixing, blending, and drying of sludges prior to discharge into a disposal cell or use as ADC.

   The Sludge Management Plan must demonstrate that the potential for water quality impacts, excess leachate production, and nuisance concerns associated with sludges are adequately addressed and mitigated prior to discharge or beneficial usage. The updated Sludge Management Plan must also be included in the JTD, or submitted as an amendment to an approved JTD.

   COMPLIANCE DATE: within 60 days after issuance of this Order.

8) Updated Leachate Management Plan: The Discharger shall submit a technical report, acceptable to the Executive Officer, describing how leachate and LGC will be managed onsite. This report must include a detailed plan to re-establish the ability to measure leachate levels in the landfill interior so that the proper function of the LCRS can be evaluated. This report must also require collection and analysis of representative samples of leachate from each extraction sump during each quarter that leachate will be used for dust control. Leachate that is shown to meet drinking water standards for VOCs (i.e., concentrations are below MCLs) can be applied for dust control within the landfill boundary. Leachate and/or LGC that contains VOCs at concentrations exceeding MCLs must be re-injected into Subtitle D-compliant disposal cells or properly disposed of offsite. The updated Leachate Management Plan must also be included in the JTD, or submitted as an amendment to an approved JTD.

   COMPLIANCE DATE: Within 60 days after issuance of this Order.

9) Alternative Final Cover Design Report: Prior to the construction of any additional final cover system at PHL, the Discharger must submit a technical report, acceptable to the Executive Officer, proposing an Alternative Final Cover Design. This report must include a detailed comparative analysis between the prescriptive cover design and the alternative design. The report must demonstrate that the selected alternative cover design will continue to isolate landfill wastes from precipitation and irrigation waters at least as well as the prescriptive cover design. The report must also show that the prescriptive standard is economically infeasible because it would cost substantially more than an alternative design that provides equal performance in isolating wastes from infiltrating water.

   COMPLIANCE DATE: 120 days prior to construction of a final cover system over any portion of the Landfill not already under final cover.

10) Financial Assurance for Landfill Closure and Post Closure Monitoring and Maintenance: The Discharger shall submit evidence of an Irrevocable Fund, acceptable to the Executive Officer, to ensure funding is available to close the Landfill, and for monitoring and maintenance of the Landfill during the post-closure period. The updated estimate must reflect the larger landfill area resulting from the Phase II expansion. Every five years, for the duration of the post-closure monitoring period, the Discharger shall submit a report that includes an outline of the financial assurance mechanism and verification that the fund has been created. The fund value must be supported by calculations, to be included with the submittal, providing cost estimates for all post-closure monitoring, maintenance, repair and replacement of landfill containment, cover, and monitoring systems. The fund value should be based on the sum of these estimates. The cost estimates and funding must be updated to reflect change to monitoring systems as they occur. The post-closure maintenance period shall extend as long as landfill wastes pose a threat to water quality; however for purposes of calculating cost estimates, a period of no less than 30 years may be used.

    COMPLIANCE DATE: Upon expansion into Phase II, then every five years thereafter.

11) Financial Assurance for Corrective Action Reasonably Foreseeable Releases: The Discharger shall submit updated evidence of an Irrevocable Fund cost estimate, acceptable to the Executive Officer, to ensure any corrective action and remediation actions that may be necessary as a result of current or future unforeseen releases from the Landfill. The updated cost estimate must reflect the larger landfill area resulting from the Phase II expansion. Every five years, for the duration of the post-closure monitoring period, the Discharger shall submit a report that includes an outline of the financial assurance mechanism and verification that the fund has been created. The fund value shall be supported by calculations, to be included with this submittal, providing cost estimates for all corrective action measures and remediation that may be required at the Landfill. The fund value shall be based on the sum of these estimates. The post-closure maintenance period shall extend as long as landfill wastes pose a threat to water quality, however for purposes of calculating cost estimates, a period of no less than 30 years may be used.

    COMPLIANCE DATE: Upon expansion into Phase II, then every five years thereafter.

12) Industrial Activities-Related Stormwater Controls: the Discharger shall comply with the State Water Board's General Permit for Storm Water Discharges Associated with Industrial Activities (Industrial General Permit, NPDES Permit No. CAS000001).

13) Construction-Related Stormwater Controls: For each proposed grading or development project, the Discharger shall submit a Notice of Intent to the State Water Board, submit a Storm Water Pollution Prevention Plan (SWPPP) acceptable to the Executive Officer, and implement Best Management Practices (BMPs) for the control of stormwater, in accordance with requirements specified in the State Water Board's General Permit for Storm Water Discharges Associated with Construction Activities (Construction General Permit, NPDES Permit No. CAS000002).

COMPLIANCE DATE: 30 days prior to commencement of each grading or development project construction.

14) Well Installation or Destruction Report: The Discharger shall submit a technical report acceptable to the Executive Officer that provides well construction details, geologic boring logs, and well development logs for all new wells installed or destroyed as part of the SMP.

COMPLIANCE DATE: 60 days following well installation or destruction.

15) Post-Earthquake Inspection: The Discharger shall submit a Post-Earthquake Inspection Report acceptable to the Executive Officer in the event of any earthquake generating Moment Magnitude of 6.0 or greater at or within 30 miles of the Landfill. The report shall describe the general site conditions along with physical condition of waste containment features, leachate conveyance and storage facilities, landfill gas flare, gas collection piping, levees, and stormwater control features.

COMPLIANCE DATE: Written report must be submitted within 72 hours of a triggering seismic event. Any damage that may cause negative impacts to waters of the State must be reported immediately upon discovery to the Spill Hotline at 1-800-852-7550 and by sending an email to Rb2SpillReports@waterboards.ca.gov.

16) Availability: A copy of these WDRs shall be maintained by the Discharger and shall be made available by the Discharger to all employees or contractors performing work (maintenance, monitoring, repair, construction, etc.) at the Landfill.

17) Revision: These WDRs are subject to review and revision by the Regional Water Board [CCR Section 13263].

18) JTD Reporting: When the Discharger becomes aware that it failed to submit any relevant facts in a JTD or submitted incorrect information in a JTD or in any report to the Regional Water Board, it shall promptly submit such facts or information [CWC Sections 13260 and 13267].

19) Vested Rights: 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 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)].

20) Severability: Provisions of this Order are severable. If any provisions of these WDRs are found invalid, the remainder of these requirements shall not be affected [CWC Section 9213].

21) Operation and Maintenance: The Discharger shall, at all times, properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) that 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)].

22) Reporting of Hazardous Substance Release: If any hazardous substance is 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, the Discharger shall immediately report such discharge to the Regional Water Board by calling the Spill Hotline at 1-800-852-7550 and by sending an email to Rb2SpillReports@waterboards.ca.gov. A written report shall be mailed or submitted electronically to the Regional Water Board within five business days. The report shall describe the following: the nature of the hazardous substance released, estimated quantity involved, duration of incident, cause of release, estimated size of affected area, nature of effect, corrective actions taken or planned, schedule of corrective actions planned, and persons/agencies notified.

23) Entry and Inspection: The Discharger shall allow the Regional Water Board, or an authorized representative upon the presentation of credentials and other documents as may be required by law, to:

a) Enter upon the Discharger's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this Order;

b) Have access to and copy, at reasonable times, any records that must be kept under the conditions of this Order;

c) Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Order; and

d) Sample or monitor at reasonable times, for the purposes of assuring compliance with this Order or as otherwise authorized by the California Water Code, any substances or parameters at any location [CWC Section 13267].

24) Discharges to Navigable Waters: Any person discharging or proposing to discharge to navigable waters from a point source (except for discharge of dredged or fill material subject to Section 404 of the Clean Water Act or discharge subject to a general NPDES permit) shall file an NPDES permit application with the Regional Water Board [CCR Title 2 Section 223571].

25) Endangerment of Human Health or the Environment: The Discharger shall report any event of noncompliance that may endanger human health or the environment to the Regional Water Board by calling the Spill Hotline at 1-800-852-7550 and by sending an email to Rb2SpillReports@waterboards.ca.gov. A written submission to the Regional Water Board 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 initial notification was received within 24 hours of discovery of the incident.

26) Document Distribution: Copies of all correspondence, technical reports, and other documents pertaining to compliance with this Order shall be provided to the following agencies:

a) California Regional Water Quality Control Board, San Francisco Bay Region
b) Solano County Department of Resource Management (LEA)

The Executive Officer may modify this distribution list as needed.

27) Reporting Requirements:

a) Hardcopies:

i) Technical reports/plans, submitted by the Discharger, in compliance with the Prohibitions, Specifications, and Provisions of this Order, shall be submitted to the Regional Water Board on the schedule specified herein. Hard copies of these reports/plans shall consist of a letter report that includes the following:

a. Identification of any obstacles that may threaten compliance with the schedule;

b. In the event of non-compliance with any Prohibition, Specification or Provision of this Order, written notification which clarifies the reasons for non-compliance and which proposes specific measures and a schedule to achieve compliance. This written notification shall identify work not completed that was projected for completion, and shall identify the impact of non-compliance on achieving compliance with the remaining requirements of this Order;

c. In the self-monitoring reports, an evaluation of the current groundwater monitoring system and a proposal for modifications as appropriate; and

d. A signed transmittal letter and professional certification by a California licensed civil engineer or a professional geologist.

ii) All application reports or information to be submitted to the Executive Officer shall be signed and certified as follows:

a. For a corporation – by a principle executive officer or the level of vice-president or an appropriate delegate.

b. For a partnership or sole proprietorship – by a general partner or the proprietor, respectively.

c. For a municipality, State, federal, or other public agency – by either a principal executive officer or ranking elected official.

b) Electronic Submittals:

i) The State Water Board has adopted regulations requiring electronic report and data submittal to Geotracker [http://www.geotracker.swrcb.ca.gov/].

ii) The Discharger is responsible for submitting the following via the internet:

a. Groundwater analytical data;

b. Surveyed locations of monitoring wells;

c. Boring logs describing monitoring well construction;

d. Portable data format (PDF) copies of all reports identified in 1 and 2 above (the document, in its entirety [signature pages, text, figures, tables, etc.] must be saved to a single PDF file); and

e. Copies of all correspondence, reports, and documents pertaining to compliance with the Prohibitions, Specifications, and Provisions of this Order related to stormwater and compliance with the State Water Board' General Permit No. CAS000001 for the Discharge of Storm Water Associated with Industrial Activities.

iii) Upon request, monitoring results shall also be provided electronically in Microsoft Excel® to allow for ease of review of site data, and to facilitate data computations and/or plotting that Water Board staff may undertake during the review process. Data tables submitted in electronic spreadsheet format will not be included in the case of file review and should therefore be submitted on CD and included with the hard copy of the report. Electronic tables shall include the following information:

a. Well designations;

b. Well location coordinates (latitude and longitude);

c. Well construction (including top of well casing elevation, total well depth, screen interval depth below ground surface, screen interval elevation, and a characterization of geology of subsurface the well is located in);

d. Groundwater depths and elevations (water levels);

e. Current analytical results by constituent of concern (including detection limits for each constituent);

f. Historical analytical results (including the past five years, unless otherwise requested); and

g. Measurement dates.

Habitat Mitigation and Monitoring Requirements

28) To mitigate for permanent fill impacts to wetlands, creek, and pond habitat, the Discharger shall 1) create 4.49 acres of seasonal wetlands, 1.80 acres (5,600 lf) of swale/channel habitat, and 1.78 acres of pond breeding habitat for California tiger salamander, and 2) preserve and enhance 65.12 acres of seasonal wetlands and 1.49 acres (11,980 lf) of channel at the Southern Hills, Griffith Ranch, and Director's Guild mitigation sites. In addition, the Discharger shall preserve 4.73 acres of pond habitat and 863.13 acres of upland habitat suitable for California tiger salamander, and preserve 20.74 acres of upland grassland habitat at the Southern Hills, Pond 5 Buffer, Eastern Valley, Eastern Hills, Griffith Ranch, and Director's Guild mitigation sites. The mitigation shall be completed as described in the "Mitigation and Monitoring Plan: Potrero Hills Landfill Phase II Expansion Project" (MMP), as revised on March 4, 2011. In addition, monitoring shall be performed for 1) a minimum of ten years for wetland, swale/channel, and pond sites, and 2) until the sites have met the success/performance criteria

specified in the MMP and the Executive Officer has approved a notice of mitigation completion. Plant monitoring shall also be performed independently for seasonal wetlands and channel habitat, and for each mitigation site (i.e., data from each mitigation site and plant community shall not be pooled with data from any other mitigation site or plant community).

Any revisions to the MMP, including changes to the success/performance criteria or timelines, must be submitted to the Executive Officer for review and approval before the changes are implemented.

Reporting Requirements

29) The Discharger shall submit Project information, including proposed impacts to wetlands and other waters, and restoration measures, using the California Wetlands Form within 14 days from the date of adoption of this Order. An electronic copy of the form can be downloaded at: http://www.waterboards.ca.gov/sanfranciscobay/certs.shtml. The completed California Wetlands Form shall be submitted electronically to habitatdata@waterboards.ca.gov.

30) Prior to the commencement of any construction authorized herein, but no later than December 31, 2013, the Discharger shall submit, acceptable to the Executive Officer, documentation that a final conservation easement for all mitigation areas (963.28 acres) has been executed in favor of a nonprofit or governmental agency qualified to hold conservation easements under California Civil Code section 815.3.

31) Prior to the commencement of any construction authorized herein, but no later than December 31, 2013, the Discharger shall submit, acceptable to the Executive Officer, proof of establishment of financial assurance adequate to ensure the success of the proposed wetland, swale/channel, and pond mitigation projects. This may consist of a bond, certificate of deposit, or other instrument callable by the Regional Water Board in the event of wetland, channel/swale, or pond mitigation failure. Along with the proof of financial assurance, the Discharger shall submit a report, acceptable to the Executive Officer, with supporting information necessary to demonstrate that the amount in the financial assurance instrument includes sufficient funds necessary to implement the MMP.

32) Prior to the commencement of any construction authorized herein, but no later than December 31, 2013, the Discharger shall submit, acceptable to the Executive Officer, proof that an endowment has been established adequate to ensure long-term management of the mitigation sites. This may consist of a bond, certificate of deposit, or other appropriate instrument. Along with the proof of financial assurance, the Discharger shall submit a Property Analysis Record or equivalent analysis, acceptable to the Executive Officer, that provides the information necessary to demonstrate that the amount in the endowment is sufficient to effectively manage the mitigation sites in perpetuity.

33) As described in the MMP, monitoring reports for wetland, swale/channel, and pond mitigation sites shall be submitted to the Regional Water Board by December 31 for the first five monitoring years, and years 7, 9 and 10, and until the sites have met their performance standards and final success criteria and the Executive Officer has approved a notice of mitigation completion for each site. Monitoring reports shall evaluate the probable cause(s) of

any problems and propose appropriate corrective measures acceptable to the Executive Officer. Proposed changes to the success criteria or timelines must be approved in writing by the Executive Officer. Monitoring reports shall be submitted by uploading them to the California Wetlands Portal website at http://www.californiawetlands.net/tracker/ba/list, and shall be prepared as described in the MMP, including photographs, special-status species monitoring, and all other information, as appropriate.

34) As-built plans and reports for the mitigation sites shall be prepared as described in the MMP, and submitted to the Regional Water Board within six weeks of the completion of site preparation and seeding. The Discharger shall submit as-built plans and reports to the Regional Water Board by uploading it to the California Wetlands Portal website at http://www.californiawetlands.net/tracker/ba/list.

35) When the Discharger has determined that a mitigation site (i.e., Southern Hills, Pond 5 Buffer, Eastern Valley, Eastern Hills, Griffith Ranch, and Director's Guild) has achieved the performance standards and final success criteria specified in the MMP, it shall submit a notice of mitigation completion to the Executive Officer for approval. The notice of mitigation completion shall include a description of the mitigation component that has been determined to be successful in terms of the approved success criteria. After approval of the notice of mitigation completion in writing by the Executive Officer, the Discharger's submittal of mitigation monitoring reports for that mitigation component is no longer required.

36) Not later than 60 days prior to the beginning of construction, but no later than December 31, 2013, the Discharger shall submit, acceptable to the Executive Officer, a final Grassland Management Plan that addresses grazing at the mitigation sites. The Plan shall include a copy of the finalized fencing plan, provision of upland watering sources, livestock crossings, details about forage production, appropriate stocking rate, grazing regime and non-grazing management activities for the upland parcels, and related information, as appropriate. The final Grassland Management Plan shall also include an adaptive management plan with criteria that will be evaluated to determine when adjustments to grassland management are warranted to increase native vegetation in all mitigation areas and on the final landfill cover.

37) Within 180 days of adoption of this Order, and prior to the commencement of any construction authorized herein, the Discharger shall submit, acceptable to the Executive Officer, a Long-term Adaptive Management Plan that includes all appropriate details that are not presently included in the MMP and the Grassland Management Plan, but are necessary to manage the mitigation sites after the final success criteria have been met. The Long-term Adaptive Management Plan shall be developed using the multi-agency mitigation banking template for long-term management plans[3] and shall include goals and objectives for each habitat type, monitoring methods for assessing whether these goals and objectives are being achieved,

[3] The mitigation banking template for long-term management plans was developed through statewide multi-agency effort, involving the California Resources Agency, Fish and Game, Corps, USFWS, US Environmental Protection Agency, US Department of Agriculture - Natural Resources Conservation Service, and National Oceanic and Atmospheric Association - National Marine Fisheries Service. The mitigation banking template was released via Corps Public Notice on May 9, 2008, and is available on-line at http://www.dfg.ca.gov/habcon/conplan/mitbank/.

management actions to achieve these goals, and schedules for activities. Activities addressed in the Long-term Adaptive Management Plan shall include, but not be limited to, invasive plant management, infrastructure management, erosion and sedimentation control, and grazing management. The Long-term Adaptive Management Plan must be of sufficient detail to facilitate an effective Property Analysis Record or equivalent analysis that will be used to derive the mitigation financial assurance amount.

38) The Discharger shall submit proof of livestock watering pond registration prior to implementation of any mitigation activities within the confines of livestock ponds located at any of the Mitigation Areas.

Other Requirements

39) To mitigate the significant impacts identified in the EIR over which the Regional Water Board has authority, the Discharger shall implement those mitigation measures specified in the EIR that are listed in Finding 104 of this Order and shall report on their implementation by December 31 of each year following initiation of construction and shall continue to report until one year after completion of construction.

40) The Discharger shall at all times fully comply with the approved engineering plans, specifications, and technical reports submitted with its application for water quality certification.

41) The Discharger is considered to have full responsibility for correcting any and all problems that arise in the event of a failure that results in, or threatens to result in, an unauthorized release of waste or wastewater, or otherwise result in a condition of nuisance.

42) This Order combines WDRs and Water Quality Certification provisions. The annual fee shall reflect this, and consist of the following:

The fee amount for the WDRs portion shall be in accordance with the current fee schedule, per California Code of Regulations, Division 3, Chapter 9, Article 1, section 2200(a)(1), based on the discharge's Threat to Water Quality and Complexity rating of the Discharge to Land or Surface Waters, plus applicable surcharge(s). The Threat and Complexity rating shall initially be rated as 1B. After mitigation construction has been completed, the Executive Officer may revise the Threat and Complexity rating. The fee payment shall indicate the Order number, WDID number, and the applicable season.

43) This certification action is subject to modification or revocation upon administrative or judicial review, including review and amendment pursuant to Section 13330 of the CWC and 23 CCR Section 3867.

44) This certification action is not intended and shall not be construed to apply to any discharge from any activity involving a hydroelectric facility requiring a Federal Energy Regulatory Commission (FERC) license or an amendment to a FERC license unless the pertinent certification application was filed pursuant to 23 CCR Subsection 3855(b) and that application specifically identified that a FERC license or amendment to a FERC license for a hydroelectric facility was being sought.

45) This Order supersedes and rescinds Order No. 93-072.

I, Bruce H. Wolfe, 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 May 11, 2011.

_____
Bruce H. Wolfe
Executive Officer

Attachment A: Figure 1 – Site Location Map
Figure 2 – Site Plan
Figure 3 – Monitoring Locations
Figure 4 – Construction and Fill Sequence
Figure 5 – Project Setting Within Suisun Marsh Protection Area
Figure 6 – Waters of the U.S. on the Phase II Expansion site
Figure 7 – Project Site and Mitigation Areas
Figure 8 – Special-Status Species Locations
Figure 9 – Grassland Management Areas

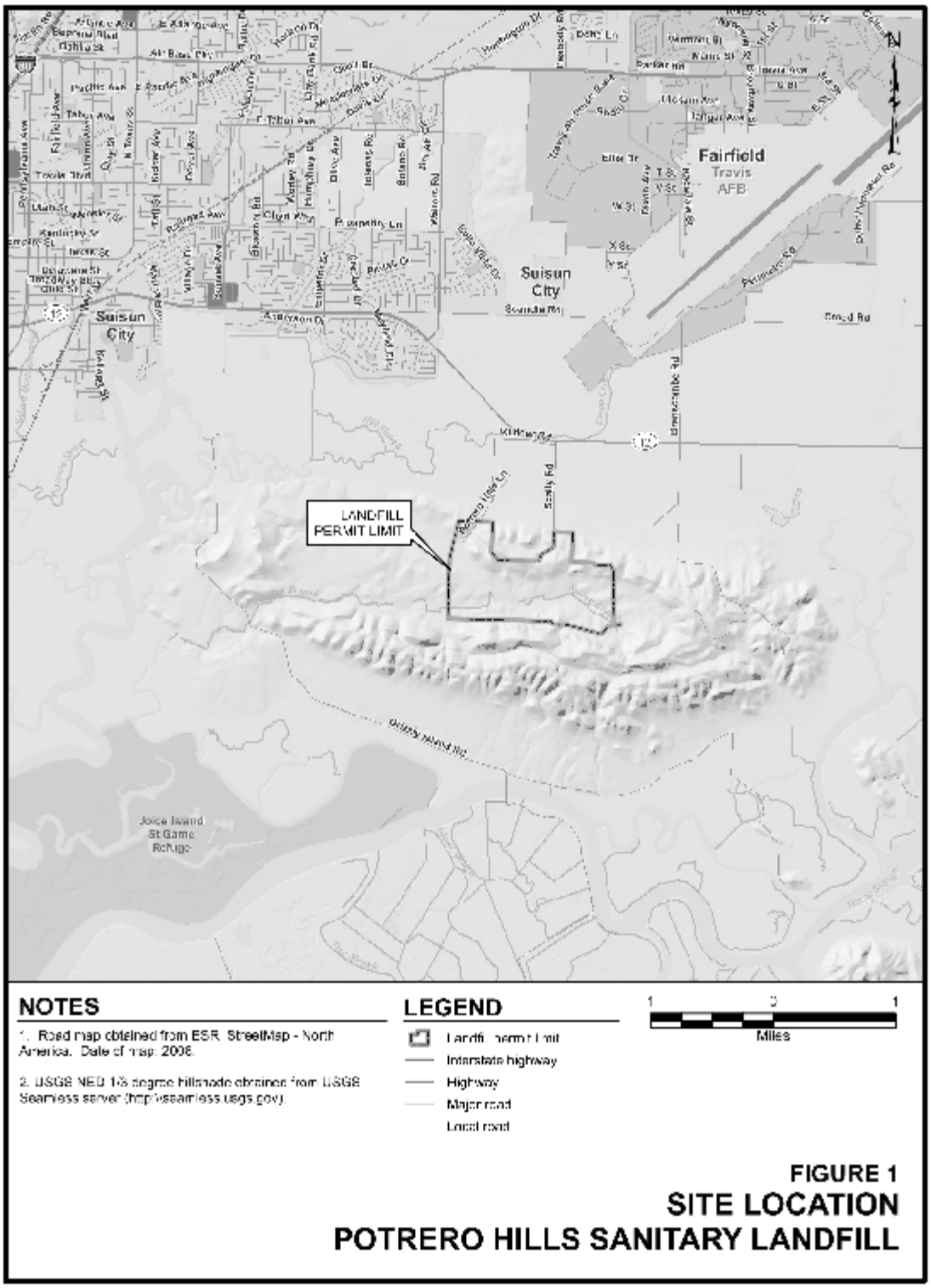
Attachment B: Self Monitoring Program (Part A and Part B)

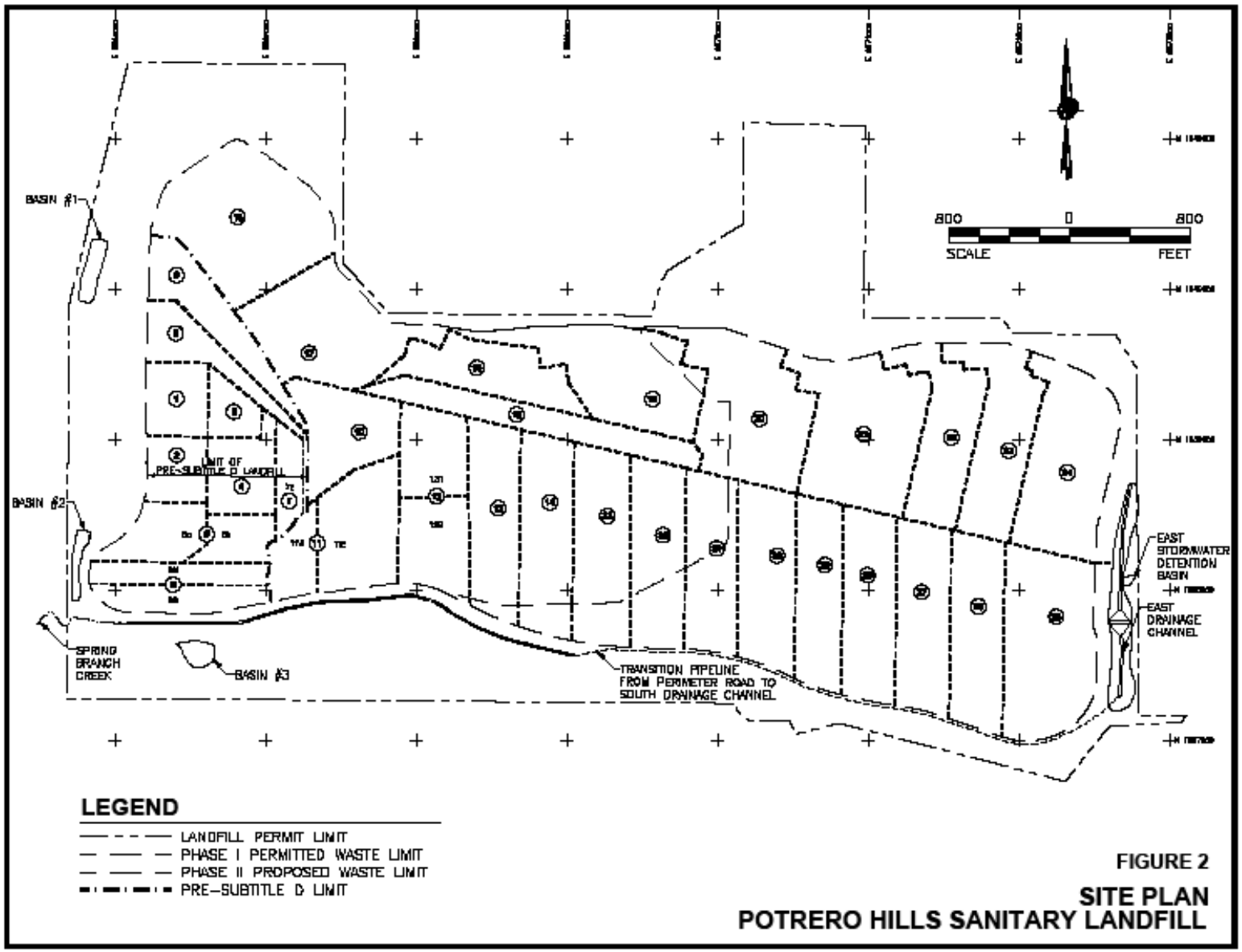
Attachment C: Mitigation and Monitoring Plan

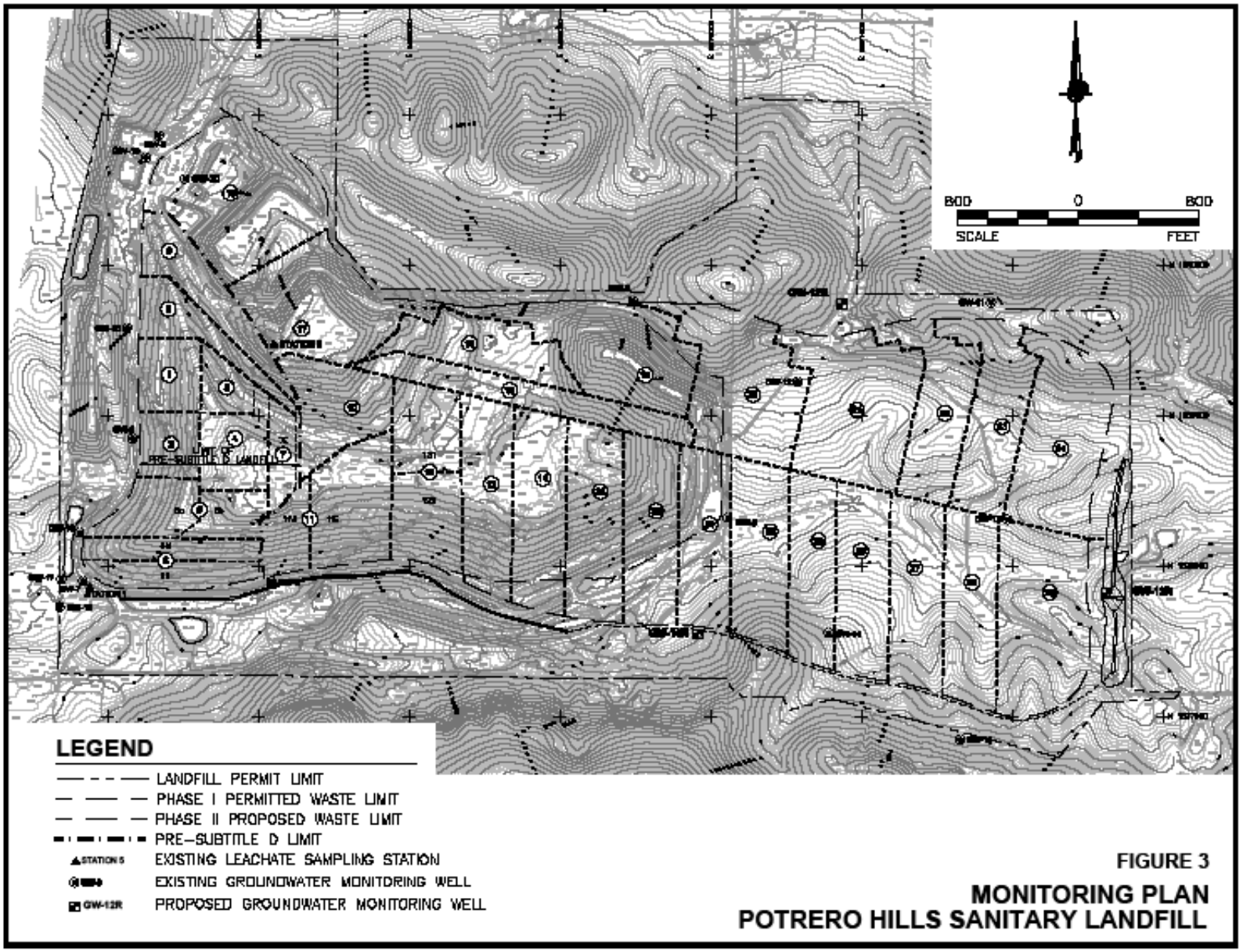
Attachment D: Grassland Management Plan

Attachment A

Figure 1 – Site Location Map
Figure 2 – Site Plan
Figure 3 – Monitoring Locations
Figure 4 – Construction and Fill Sequence
Figure 5 – Project Setting Within Suisun Marsh Protection Area
Figure 6 – Waters of the U.S. on the Phase II Expansion Site
Figure 7 – Project Site and Mitigation Areas
Figure 8 – Special-Status Species Locations
Figure 9 – Grassland Management Areas


Fairfield
Travis
AFB
Suisun
City
Suisun
City
LANDFILL
PERMIT LIMIT
Suisun Slough
Joice Island
St Game
Refuge
N
NOTES
1. Road map obtained from ESR StreetMap - North America. Date of map: 2008.
2. USGS NED 1/3 degree hillshade obtained from USGS Seamless server (http://seamless.usgs.gov).
LEGEND
Landfill permit Limit
Interstate highway
Highway
Major road
Local road
1 0 1
Miles
FIGURE 1
SITE LOCATION
POTRERO HILLS SANITARY LANDFILL


BASIN #1
BASIN #2
BASIN #3
800
0
800
SCALE
FEET
UNIT OF PRE-SUBTITLE D LANDFILL
EAST STORMWATER DETENTION BASIN
EAST DRAINAGE CHANNEL
SPRING BRANCH CREEK
TRANSITION PIPELINE FROM PERIMETER ROAD TO SOUTH DRAINAGE CHANNEL
LEGEND
LANDFILL PERMIT LIMIT
PHASE I PERMITTED WASTE LIMIT
PHASE II PROPOSED WASTE LIMIT
PRE-SUBTITLE D LIMIT
FIGURE 2
SITE PLAN
POTRERO HILLS SANITARY LANDFILL


800
0
800
SCALE
FEET
LEGEND
LANDFILL PERMIT LIMIT
PHASE I PERMITTED WASTE LIMIT
PHASE II PROPOSED WASTE LIMIT
PRE-SUBTITLE D LIMIT
STATION 5
EXISTING LEACHATE SAMPLING STATION
EXISTING GROUNDWATER MONITORING WELL
GW-12R
PROPOSED GROUNDWATER MONITORING WELL
FIGURE 3
MONITORING PLAN
POTRERO HILLS SANITARY LANDFILL

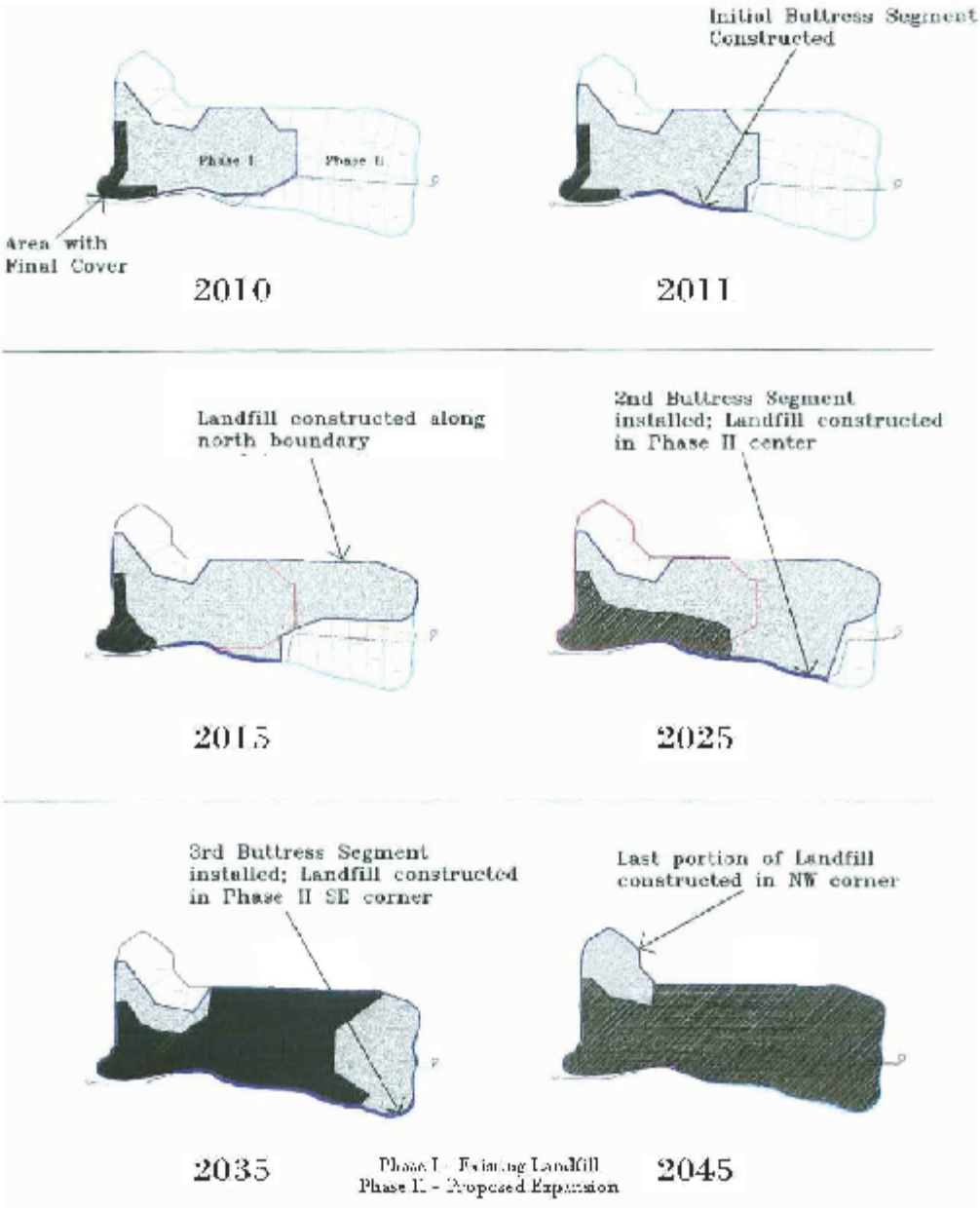
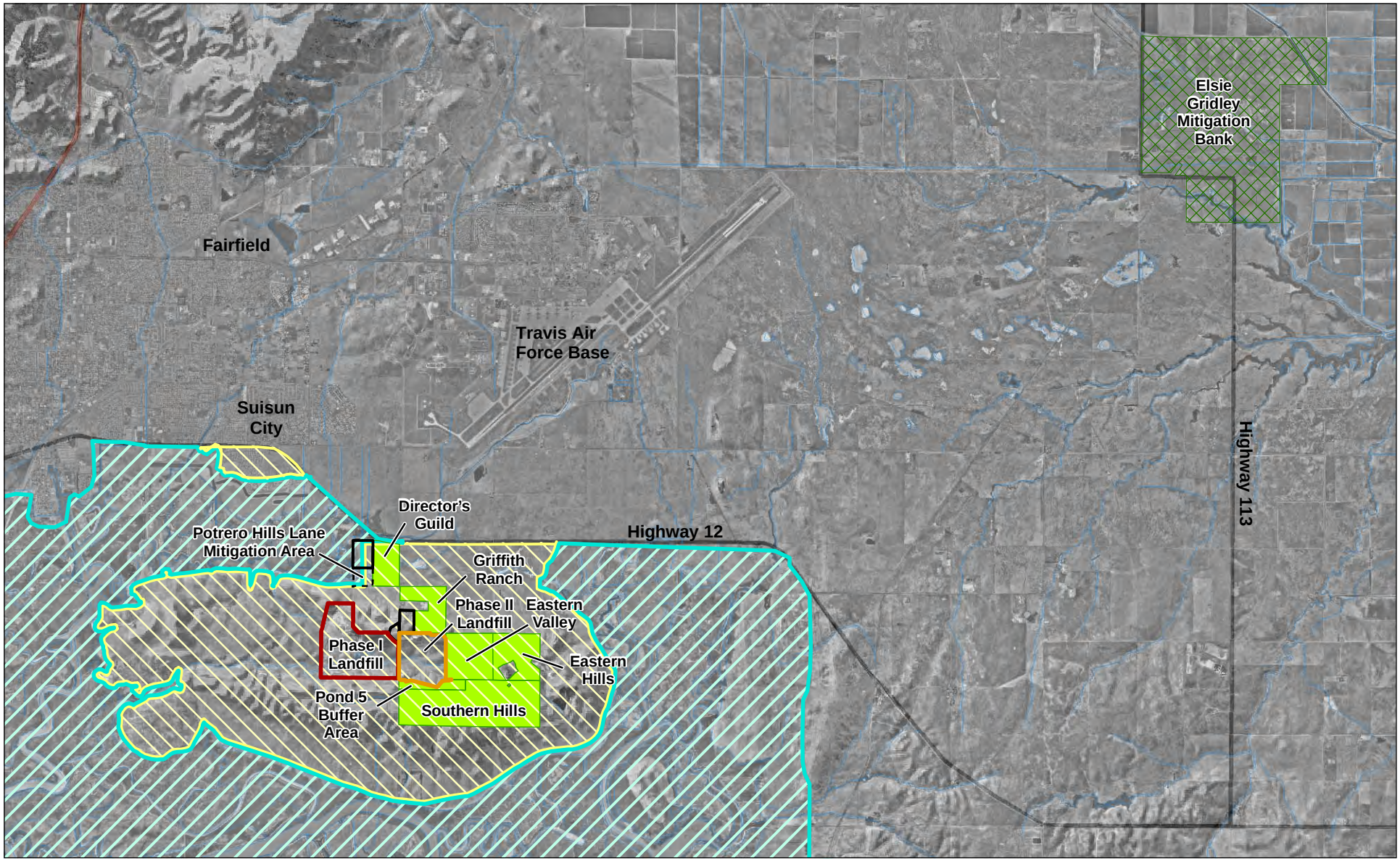


FIGURE 4
CLOSURE SCHEDULE
POTRERO HILLS SANITARY LANDFILL

Figure 5 Project Setting Within Suisun Marsh Protection Area



0 0.75 1.5
MILES

- On-site Mitigation
- Phase I Landfill
- Phase II Landfill
- Other Lands Owned or Leased by Landfill
- Potrero Hills Lane Mitigation Area
- Elsie Gridley Mitigation Bank (Purchase of Mitigation Credits)

Suisun Marsh Protection Plan

- Primary Management Area
- Secondary Management Area

Potrero Hills Landfill Phase II Expansion Mitigation and Monitoring Plan

Location of Mitigation Parcels

I:\ESP930\GIS\Maps\Mitigation & Monitoring Plan\Figure09_Location of Mitigation Parcels.mxd (7/2/2010)

Figure 6 Waters of the U.S. on the Phase II Expansion Site

MAP SYMBOLS

- STUDY SITE BOUNDARY
- SP-1 WETLAND SAMPLE POINT
- SP-2 NON-WETLAND SAMPLE POINT
- CONTOUR LINES AND FOOT INTERVAL

NON-JURISDICTIONAL FEATURES

- NON-JURISDICTIONAL STOCK POND

JURISDICTIONAL FEATURES

- STREAM, SWALE, OR DITCH SEGMENT
  - W-1' WIDTH
  - L-10' LENGTH
- OTHER WATER
- SEASONAL WETLAND
- SEASONAL WETLAND SEEP

N

0 400

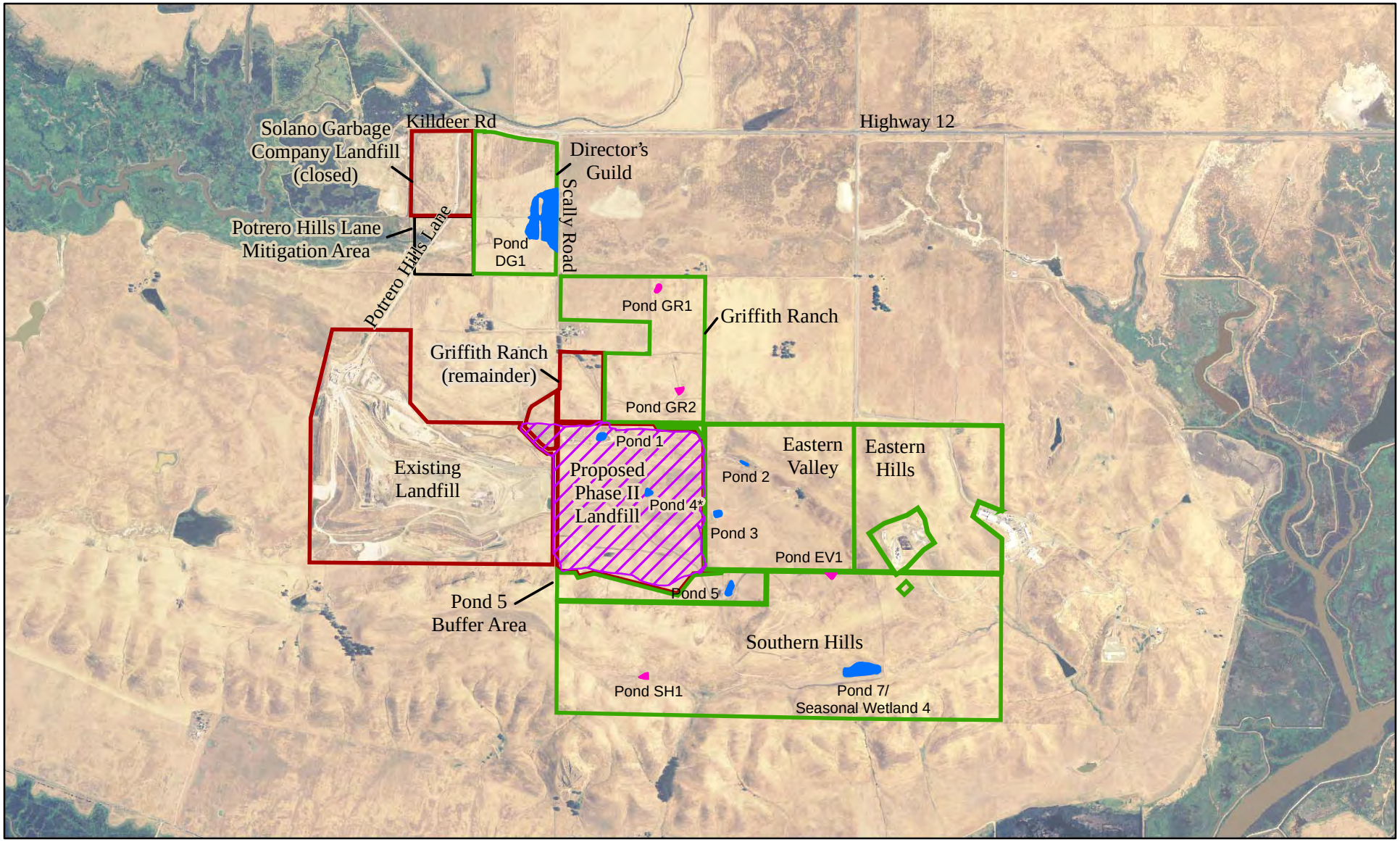
FEET

Potrero Hills Landfill
Phase II Expansion

Waters of the United States on the Phase II Expansion Site

P:\ESP930\g\Figure5_USwaters-PhIIExpansionSite.dwg (07/08/2010)

Figure 7 Project Site and Mitigation Areas



N

0 1,500 3,000
FEET

- Proposed Phase II Impact Area
- Mitigation Area
- Other Land Owned or Leased by Landfill
- Potrero Hills Lane Mitigation Area
- Onsite Pond
- Proposed Mitigation Pond

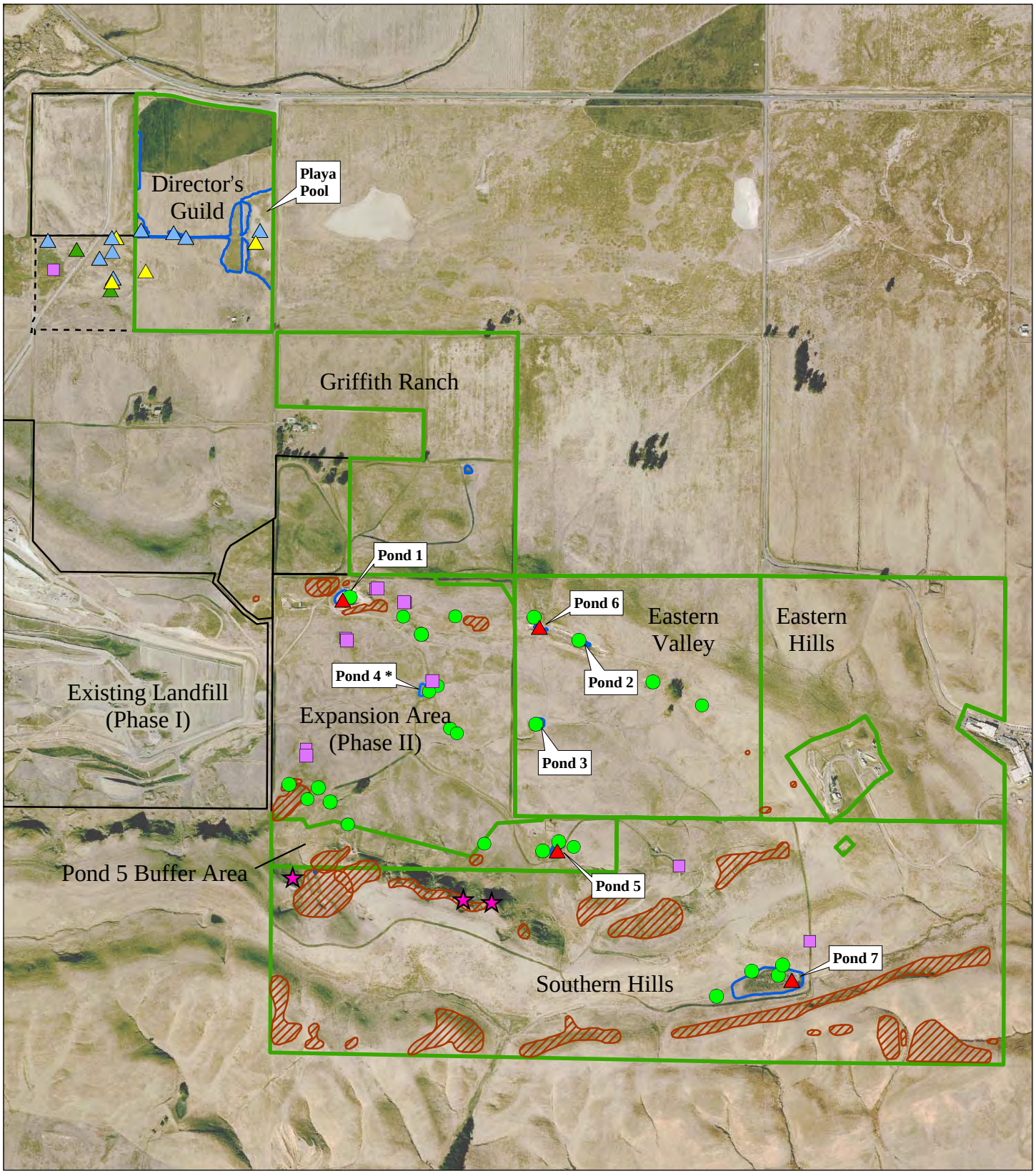
* Pond 4: Berm removed in 2000. Pond no longer exists.

Potrero Hills Landfill Phase II Expansion Mitigation and Monitoring Plan

Proposed Project Site and Mitigation Areas

I:\ESP930\GIS\Maps\Mitigation & Monitoring Plan\Figure02_Project Site & Mitigation Areas.mxd (7/6/2010)

Figure 8 Special-Status Species Locations



- California Fairy Shrimp
- Conservancy Fairy Shrimp
- Vernal Pool Fairy Shrimp
- Vernal Pool Tadpole Shrimp
- California Tiger Salamander
- Pools
- * Pond 4 no longer exists.
- Burrowing Owl
- Elderberry Shrub (host plant)
- *Viola pedunculata* (host plant)
- Mitigation Area
- Other Land Owned or Leased by Landfill
- Potrero Hills Lane Mitigation Area

N

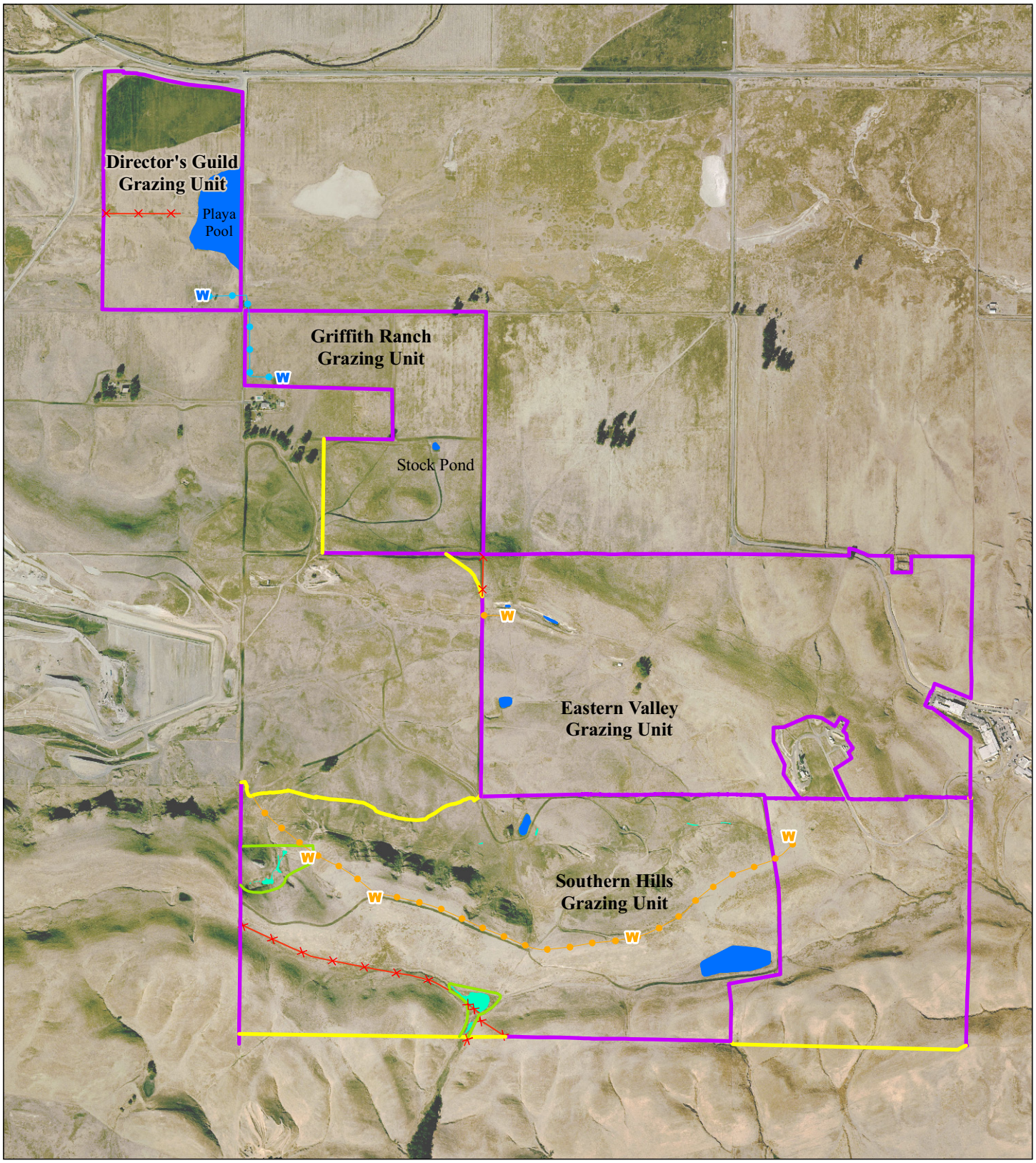
0 750 1,500
FEET

Potrero Hills Landfill
Phase II Expansion
Mitigation and Monitoring Plan

Special-status Animal Locations

I:\ESP930\GIS\Maps\Mitigation & Monitoring Plan\Figure07_Special-status Animal Locations.mxd (7/6/2010)

Figure 9 Grassland Management Areas



Fences

- Maintain Existing (50,225 ft)
- New (Proposed) (10,500 ft)
- Wetland Pasture Fence (3,775 ft)
- Remove (4,406 ft)

- W Existing Water Trough (2)
- W Proposed New Water Trough (5)
- Existing Water Pipeline (1,651 ft)
- Proposed Water Pipeline (7,005 ft)
- Seasonal Water Source
- Wetlands

N

0 750 1,500
FEET

Potrero Hills Mitigation Site
Grassland Management Plan

Range Improvements

I:\ESP930\GIS\Maps\Grassland Management\Figure4_Range Improvements (09/09/2009)

Attachment B

Self Monitoring Program (Part A and Part B)

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

SELF MONITORING PROGRAM

FOR

POTRERO HILLS LANDFILL, INC. and
WASTE CONNECTIONS, INC.

POTRERO HILLS LANDFILL
CLASS III SOLID WASTE DISPOSAL FACILITY
SUISUN CITY, SOLANO COUNTY

ORDER No. R2-2011-0032

CONSISTS OF

PART A

AND

PART B

PART A

This Self Monitoring Program (SMP) specifies monitoring and reporting requirements, including:

(a) General monitoring requirements for landfills and waste management units (Part A)
(b) Self monitoring report content and format (Part A)
(c) Self monitoring report submittal frequency and schedule (Part B)
(d) Monitoring locations and frequency (Part B); and
(e) Monitoring parameters and analytes (Part B).

A. AUTHORITY AND PURPOSE

For discharges of waste to land, water quality monitoring is required pursuant to CCR, Division 2, Title 27, Subdivision 1, Chapter 3, Subchapter 3, sections 20380 through 20435. The principal purposes of an SMP are: (1) to document compliance with WDRs and prohibitions established by the Regional Water Board, (2) to facilitate self-policing by the Discharger in the prevention and abatement of pollution arising from the waste discharge, (3) to develop or assist in the development of effluent standards of performance and toxicity standards, and (4) to assist the Discharger in complying with the requirements of Title 27.

B. MONITORING REQUIREMENTS

Monitoring refers to the observation, inspection, measurement, and/or sampling of environmental media, waste management units (WMUs), containment and control facilities, and waste disposed in each WMU. The following defines the types of monitoring that may be required.

Monitoring of Environmental Media

The Regional Water Board may require monitoring of groundwater, surface water, vadose zone, stormwater, leachate, landfill gas and any other environmental media that may pose a threat to water quality or provide an indication of a water quality threat at the site.

Sample collection, storage, and analyses shall be performed according to the most recent version of U.S. EPA-approved methods or in accordance with a sampling and analysis plan (SAP) approved by Regional Water Board staff. Analytical testing of environmental media required by this SMP shall be performed by a California State-approved laboratory for the required analyses. The director of the laboratory whose name appears on the certification shall be responsible for supervising all analytical work in his/her laboratory and shall have signing authority for all reports or may designate signing of all such work submitted to the Regional Water Board.

All monitoring instruments and devices used to conduct monitoring in accordance with this SMP shall be maintained and calibrated as necessary to ensure their continued accuracy. All flow measurement devices shall be calibrated at least once every two years.

Receiving waters refer to any surface water which actually or potentially receives surface or groundwater that pass over, through, or under waste materials or impacted soils. In this case, the groundwater beneath and adjacent to the landfill areas and the surface runoff from the site are considered receiving waters.

Standard Observations

Standard observations refer to observations within the limits of each WMU, at their perimeter, and of the receiving waters beyond their limits. Standard observations include:

1. WMUs:

    a. Evidence of ponded water at any point on the WMU;
    b. Evidence of odors, including their presence or absence, characterization, source, and distance of travel from source; and
    c. Evidence of erosion and/or daylighted waste.

2. Perimeter of WMUs:

    a. Evidence of liquid leaving or entering the WMU, estimated size of affected area and flow rate (show affected area on map);
    b. Evidence of odors, including their presence or absence, characterization, source, and distance of travel from source; and
    c. Evidence of erosion and/or daylighted waste.

3. Receiving Waters:

    a. Floating and suspended materials of waste origin, including their presence or absence, source, and size of affected area;
    b. Discoloration and turbidity: description of color, source, and size of affected area;
    c. Evidence of odors, presence or absence, characterization, source, and distance of travel form source;
    d. Evidence of beneficial use, such as presence of water associated with wildlife;
    e. Estimated flow rate; and
    f. Weather conditions, such as estimated wind direction and velocity, total precipitation.

Facilities Inspections

Facilities inspections refer to the inspection of all containment and control structures and devices associated with the Landfill. Containment and control facilities may include the following:

1. Intermediate and final covers;
2. Stormwater management system (SWMS) elements such as perimeter drainage and diversion channels, ditches and downchutes, and detention and sedimentation ponds or collection tanks;
3. Landfill gas system; and
4. Leachate collection and recovery system (LCRS) elements such as leachate storage tanks, pumps and control equipment.

Quality Assurance/Quality Control (QA/QC) Sample Monitoring

The Discharger shall collect duplicate, field blank, equipment blank (if appropriate) and trip blank samples for each semiannual monitoring event at the following frequencies:

1. Duplicate sample – one sample per 20 regular samples;
2. Field blank – one per day during each semiannual monitoring event;
3. Equipment blank – one sample per 10 monitoring stations; and
4. Trip blank – one sample per each semiannual monitoring event.

Waste Monitoring

Waste monitoring shall consist of recording on a monthly basis the following:

1. The weight of waste disposed at the site during the month (i.e., municipal solid waste (MSW), construction and demolition waste, and industrial waste, including (i) asbestos, (ii) ash, (iii) treated auto shredder waste, (iv) petroleum contaminated soils, (v) lead-contaminated soils, (vi) sewage and wastewater treatment sludges with metal content, (vii) industrial sludges, and (viii) industrial filters);
2. Remaining landfill capacity/waste volume in place; and
3. Locations and dimensions of the fill areas on a map.

Leachate Monitoring

Landfill leachate shall be removed daily from the leachate collection sumps to the lowest practical level by dedicated automated leachate pumps. The LCRS shall be inspected daily.

Leachate removed from the LCRS shall be re-injected in a Subtitle D-compliant disposal unit or applied for dust control provided discharge limits are met. The Discharger shall record on a weekly basis the estimated volume of removed leachate and report the method of leachate disposal.

Landfill Gas Condensate Monitoring

Landfill gas condensate removed from the landfill gas collection system shall be re-injected to a Subtitle D-compliant disposal unit, flared off, or properly disposed offsite. The Discharger shall record on a weekly basis the estimated volume of removed landfill gas condensate and report the method of condensate disposal.

C. REPORTING REQUIREMENTS

Reporting responsibilities of waste dischargers are specified in CCR sections 13225(a), 13267(b), 13383, and 13387(b) and this Regional Water Board's Resolution No.73-16 and Order No. 93-113. At a minimum, each Self Monitoring Report (SMR) shall include the following information:

1. Transmittal Letter: A cover letter transmitting the essential points of the monitoring report shall be included with each monitoring report. The transmittal letter shall discuss any violations during the reporting period and actions taken or planned to correct the problem. The letter shall also certify the completion of all monitoring requirements. The letter shall be signed by the Discharger's principal executive officer or his/her duly authorized representative, and shall include a statement by the official, under penalty of perjury, that the report is true and correct to the best of the official's knowledge.

2. Graphic Presentation: The following maps, figures, and graphs (if applicable) shall be included in each SMR to visually present data collected pursuant to this SMP:
   a. Plan-view maps showing all monitoring and sampling locations, WMUs, containment and control structures, treatment facilities, surface water bodies, and site/property boundaries;
   b. Groundwater level/piezometric surface contour maps for each groundwater-bearing zone of interest showing inferred groundwater gradients and flow directions under/around each WMU, based upon the past and present water level elevations and pertinent visual observations; and
   c. Any other maps, figures, photographs, cross-sections, graphs, and charts necessary to visually demonstrate the appropriateness and effectiveness of sampling, monitoring, characterization, investigation, or remediation activities relative to the goals of this SMP.

3. Tabular Presentation: The following data (if applicable) shall be presented in tabular form and included in each SMR to show a chronological history and allow quick and easy reference:
   a. Well designation;
   b. Well location coordinates (latitude and longitude);
   c. Well construction (including top of well casing elevation, total well depth, screen interval depth below ground surface, and screen interval elevation);
   d. Groundwater depths;
   e. Groundwater elevations;
   f. Current analytical results (including analytical method and detection limits for each constituent);
   g. Historical analytical results (including at least the past five years in the annual report unless otherwise requested); and
   h. Measurement dates.

4. Compliance Evaluation Summary and Discussion:
   a. A summary and certification of completion of all environmental media monitoring, standard observations, and facilities inspections;
   b. The quantity and types of wastes disposed of during the reporting period, and the locations of the disposal operations, if applicable;
   c. A description of the waste stream including the percentage of each waste type (e.g., residential, commercial, industrial, construction/demolition, etc.), if applicable;
   d. The signature of the laboratory director or his/her designee indicating that he/she has supervised all analytical work in his/her laboratory; and
   e. Provide a discussion of the field and laboratory results that includes the following information:
      (1) Data interpretations;
      (2) Conclusions;
      (3) Recommendations;
      (4) Newly implemented or planned investigations and remedial measures;
      (5) Data anomalies;
      (6) Variations from protocols;
      (7) Condition of wells; and
      (8) Effectiveness of leachate monitoring and control facilities.

5. Appendices: The following information shall be provided as appendices in electronic format only unless requested otherwise by Regional Water Board staff and unless the information is already contained in a SAP approved by Regional Water Board staff:

   a. New boring and well logs;
   b. Method and time of water level measurements;
   c. Purging methods and results including the type of pump used, pump placement in the well, pumping rate, equipment and methods used to monitor field pH, temperature, and electrical conductivity, calibration of the field equipment, pH temperature, conductivity, and turbidity measurements, and method of disposing of the purge water;
   d. Sampling procedures, field, equipment, and travel blanks, number and description of duplicate samples, type of sample containers and preservatives used, the date and time of sampling, the name of the person actually taking the samples, and any other relevant observations; and
   e. Documentation of laboratory results, analytical methods, detection limits and reporting limits, and Quality Assurance/Quality Control (QA/QC) procedures for the required sampling.

D. CONTINGENCY REPORTING

1. Consistent with Provisions C. 22 and 25 of Order No. R2-2011-XXXX, The Discharger shall report any significant discharge from the disposal area immediately after it is discovered to the Regional Water Board by calling the Spill Hotline at 1-800-852-7550 and by sending an email to Rb2SpillReports@waterboards.ca.gov. The Discharger shall submit a written report with the Regional Water Board within five days of discovery of any discharge. The written report shall contain, at a minimum, the following information:

   a. A map showing the location(s) of discharge;
   b. Approximate flow rate;
   c. Nature of effects (e.g., all pertinent observations and analyses); and
   d. Corrective measures underway or proposed.

2. The Discharger shall submit a written report to the Regional Water Board within seven days of determining that a statistically significant difference occurred between a SMP sample set and an approved Water Quality Protection Standard (WQPS). The written report shall indicate which WQPS(s) have been exceeded. If appropriate, the Discharger shall resample at the compliance point(s) where this difference has been found within 30 days.

3. If re-sampling and analysis confirms the earlier finding of a statistically significant difference between SMP results and WQPS(s), the Discharger shall, upon determination by the Executive Officer, submit to the Regional Water Board an amended Report of Waste Discharge as specified in Section 20420 of Title 27 for establishment of an Evaluation Monitoring Program meeting the requirements of Section 20425 of Title 27.

E. REPORTING REQUIREMENTS

The Discharger shall submit SMRs to Regional Water Board staff in accordance with the schedule indicated in Table B-4. Reports due at the same time maybe combined into one report for convenience, as long as monitoring activities and results pertaining to each monitoring period are

clearly distinguishable. Reports shall be submitted in accordance with Provision C. 3 in these WDRs.

F. MAINTENANCE OF WRITTEN RECORDS

The Discharger shall maintain information required pursuant to this SMP for at least five years. The five-year period of retention shall be extended during the course of any unresolved litigation regarding a discharge or when requested by the Regional Water Board.

PART B

A. MONITORING LOCATIONS AND FREQUENCY

Monitoring locations, frequencies, parameters, and analytes are specified in Tables B-1, B-2, and B-3 of this SMP and as indicated below. Monitoring locations are shown in Figure B-1.

1. Environmental Media

a. Groundwater:

Groundwater shall be monitored at the locations specified in Table B-1 and shown on Figure B-1. Monitoring frequencies, parameters, and analytes shall be in accordance with Table B-1.

b. Leachate:

Leachate shall be monitored at the locations specified in Table B-1 and shown on Figure B-1. Monitoring frequencies, parameters, and analytes shall be in accordance with Table B-1.

c. Stormwater and Surface Water:

Stormwater shall be monitored at the locations specified in Table B-1 and shown on Figure B-1. Monitoring parameters and analytes shall be in accordance with Table B-1.

Designated surface water stations upgradient and downgradient from the Landfill shall be sampled monthly during landfill working hours if water is present from October 15 through April 15. Samples are to be collected within two hours of the beginning of the first storm or as soon as sufficient water is available for sampling. Between April 16 and October 14, stations shall be sampled quarterly if surface water is flowing during landfill working hours.

2. Standard Observations

Standard observations shall be made within each WMU, along the perimeter of each WMU, and of the water courses and receiving waters beyond their limits. Standard observations shall be conducted at the frequency specified in Table B-2 and at the following locations:

a. "V" stations – located on the waste disposal area as delineated by an approximately 500-foot grid network; and
b. "P" stations – located at equidistant intervals not exceeding 1,000 ft around the perimeter of the waste area.

A map, showing visual (V) and perimeter (P) compliance points, shall be included in the SMRs.

3. **Facilities Inspections**

The Discharger shall inspect all containment and control structures and devices associated with the landfill to ensure proper and safe operation. Facility inspections shall be conducted at the locations and frequencies specified in Table B-3.

4. **QA/QC Samples**

The QA/QC samples shall be analyzed for VOCs (field blank, equipment blank and trip blank) or for same tests as a regular sample (duplicate sample).

B. REPORTING SCHEDULE

The Discharger shall submit SMRs to the Regional Water Board in accordance with the schedule indicated in Table B-4. Reports due at the same time may be combined into one report for convenience, as long as monitoring activities and results pertaining to each monitoring period are clearly distinguishable.

Attachments: SMP Figure B-1
SMP Table B-1 Water Quality Monitoring Requirements
SMP Table B-2 Standard Observations
SMP Table B-3 Facility Inspections
SMP Table B-4 Reporting Requirements

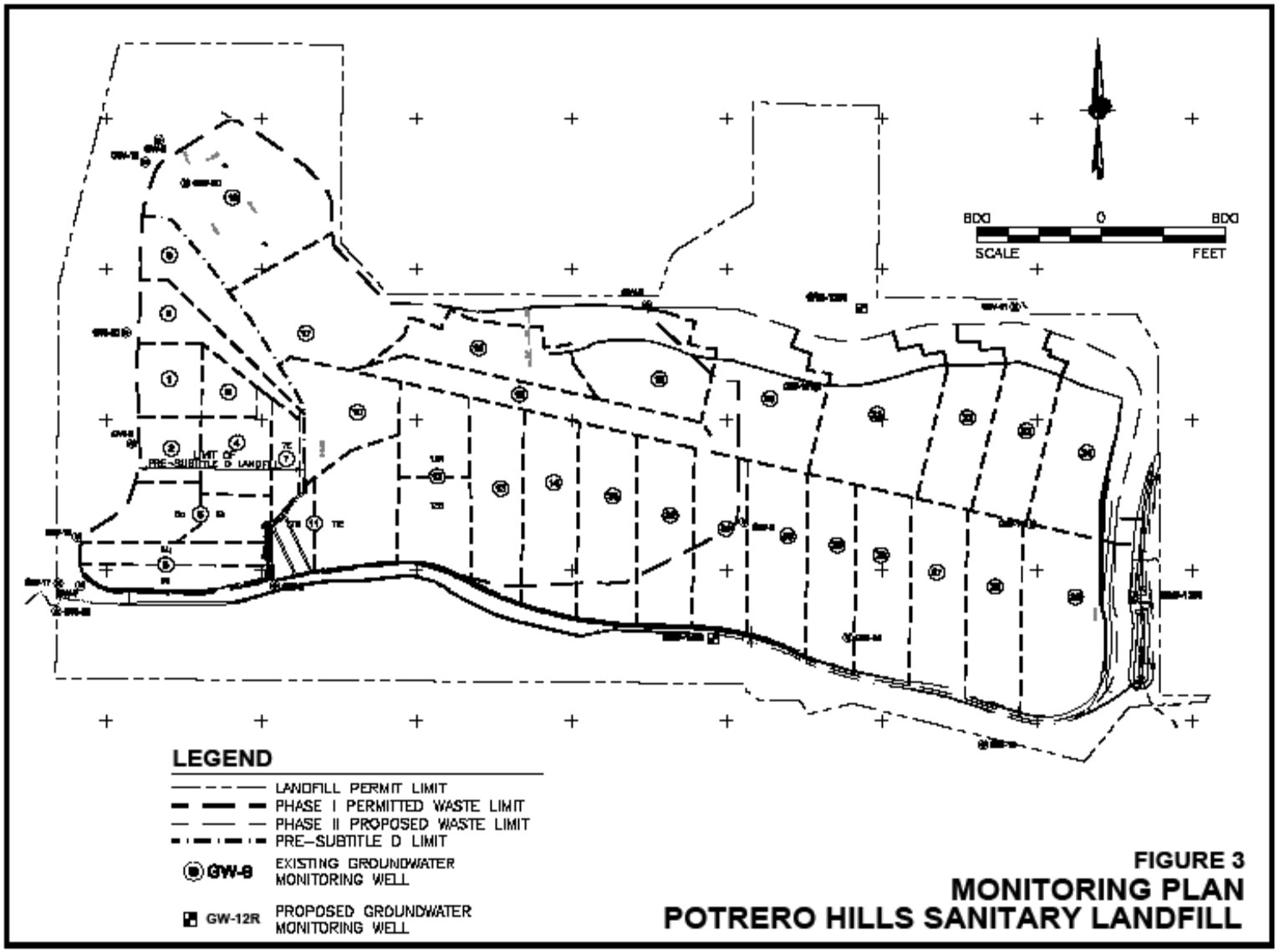

800
0
800
SCALE
FEET
LEGEND
LANDFILL PERMIT LIMIT
PHASE I PERMITTED WASTE LIMIT
PHASE II PROPOSED WASTE LIMIT
PRE-SUBTITLE D LIMIT
GW-9
EXISTING GROUNDWATER MONITORING WELL
GW-12R
PROPOSED GROUNDWATER MONITORING WELL
FIGURE 3
MONITORING PLAN
POTRERO HILLS SANITARY LANDFILL

TABLE B-1
Water Quality Monitoring Requirements
Self Monitoring Program – Order No. R2-2011-0032
Potrero Hills Landfill

Parameter or Constituent	Analytical Method (1)	Upgradient GW Wells (2)	Downgradient GW Wells (3,4)	Underdrain Sumps (5)	Leachate Sumps (6)	Surface Water Stations (7)	Storm Water Stations (8)
Field Measurements							
Depth to water		SA	SA	W	W		
pH	Field	A	SA	Q	A	WS	WS
Temperature	Field	A	SA	Q	A	WS	WS
Turbidity	Field	A	SA	Q	A	WS	WS
Electrical Conductance	Field	A	SA	Q	A	WS	WS
Oxidation/Reduction Potential (ORP)	Field	A	SA	Q	A	WS	WS
Laboratory Tests							
Alkalinity	310.2	A	SA	Q	A	WS	WS
Chloride	300.0	A	SA	Q	A	WS	
Sulfate	300.0	A	SA	Q	A	WS	
Nitrate plus Nitrite as Nitrogen	300.0	A	SA	Q	A	WS	
Total Dissolved Solids (TDS)	160.1	A	SA	Q	A	WS	
Volatile Organic Compounds (VOCs) + oxygenates	8260	A	SA	Q	Q/A (9)	WS	WS
Total Suspended Solids (TSS)	160.2					WS	WS
Chemical Oxygen Demand	410.1					WS	
Total Oil and Grease	1664					WS	WS
Total Iron	6010					WS	WS
Constituents of Concern (10)							
Semi-Volatile Organic Compounds (SVOCs)	8270	5 YR (9)	5 YR	Q	A		
Organochlorine Pesticides	8081	5 YR	5 YR	5 YR	5 YR		
Chlorinated Herbicides	8151	5 YR	5 YR	5 YR	5 YR		
Polychlorinated Biphenyls	8082	5 YR	5 YR	5 YR	5 YR		
Metals (11)	6010/6020	5 YR	5 YR	5 YR	5 YR		
Cyanide	335.3	5 YR	5 YR	5 YR	5 YR		
Sulfide	376.1	5 YR	5 YR	5 YR	5 YR		

Notes for Table B-1:

Monitoring Frequency: W = weekly, Q = quarterly, SA = semi-annually, WS = when sampled, 5 YR = once every five years.
1 – Suggested U.S. EPA methods
2 – Includes wells GW-6, GW-9, GW-19, GW-20, and any additional wells installed upgradient from disposal areas. Well GW-19 and GW-20 analyzed for VOCs only.
3 – Includes wells GW-3, GW-4, GW-7, GW-8, GW-10, GW-16, GW-17, GW-18, and any additional wells installed downgradient from disposal areas. Well GW-18 analyzed for VOCs only.
4) Well GW-5 is upgradient of disposal areas but is included because it has shown chemical impacts. Because of past impacts, wells GW-5 and GW-7 are in corrective action monitoring.
5 – Samples to be collected from alluvial subdrain sump FDFS, and any additional underdrain sumps installed during landfill expansion.
6 – Includes leachate sumps at Station 1 and Station 5 and any additional leachate sumps installed during landfill expansion.
7 – Includes the Upgradient and Downgradient monitoring stations on Spring Branch Creek.
8 – Currently includes Sedimentation Basins 1 and 2. Samples to be collected within 2 hours of the beginning of the first storm or as soon as sufficient water is available for sampling. Between April 16 and October 14, stations shall be sampled quarterly if surface water is flowing during landfill working hours.
9 – Leachate sampling for VOCs must be quarterly if leachate is to be used for dust control; annually if leachate is reinjected into lined cells.
10 – Constituents of Concern (COC) analyzed every five years. Last analyzed in February 2009; next COC sampling event will be February 2014.
11 - Subtitle D Appendix 2 metals.

Table B-2
Standard Observations

V-Station (Landfill Interior)	Weekly
P-Station (Landfill Perimeter)	Weekly
Receiving Waters	Weekly

Table B-3
Facility Observations

Leachate Collection and Removal System	Daily
Landfill Gas Condensate System	Daily
Storm Water Management System	Weekly (when water is present)
Underdrain System	Weekly

Table B-4
Reporting Requirements

Groundwater and Surface Water Monitoring	Semiannual/Annual Reports Due April 30 and October 31, respectively
Leachate and Underdrain Monitoring	Semiannual Reports Due April 30 and October 31
Waste Monitoring, Standard Observations, and Facility Inspections	Semiannual Reports Due April 30 and October 31

ATTACHMENT C

Mitigation and Monitoring Plan (July 15, 2010)

Revisions to the Mitigation and Monitoring Plan (March 4, 2011)

Note: These documents are available for viewing and downloading electronically at: http://www.waterboards.ca.gov/sanfranciscobay/board_info/agendas/2011/May/05-11-11_Board_Meeting_Agenda.pdf

ATTACHMENT D

Grassland Management Plan for Mitigation Areas (September 9, 2009)

Note: This document is available for viewing and downloading electronically at: http://www.waterboards.ca.gov/sanfranciscobay/board_info/agendas/2011/May/05-11-11_Board_Meeting_Agenda.pdf