CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ORDER NO. R2-2018-XXXX

UPDATED WASTE DISCHARGE REQUIREMENTS AND RECISSION OF ORDER NO. 87-032 FOR:

ZANKER ROAD RESOURCE MANAGEMENT, LTD.
ZANKER ROAD RESOURCE RECOVERY OPERATION AND LANDFILL

705 LOS ESTEROS ROAD
SAN JOSE, SANTA CLARA COUNTY

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

DISCHARGER AND LOCATION

1. Zanker Road Resource Management, Ltd. (hereinafter called ZRRML or the Discharger) owns and operates the Zanker Road Resource Recovery Operation and Landfill (ZRRROL), located at the northern terminus of Zanker Road (705 Los Esteros Road) in San Jose. ZRRML is a limited partnership consisting of Zanker Road Resource Recovery Inc. and H.L. Sweatt Inc. The ZRRROL provides waste recycling and disposal services to San Jose, unincorporated Santa Clara County, and various communities throughout the Bay Area. ZRRML is responsible for compliance with this Order.
2. **Site Description:** The ZRRROL is a 46-acre waste management unit (WMU) located within a 70-acre parcel, which includes approximately 41 acres of closed landfill and an unfilled 5-acre processing area that is currently used for resource recovery (wood waste processing, demolition debris processing and concrete recycling). Resource recovery operations are conducted over the entire 46-acre WMU. The northern 24 acres of the 70-acre site have been developed as a designated wetland habitat, with easement granted to the City of San Jose. The 70-acre site is bounded on the north by the San Francisco Bay (formerly owned and operated by the Cargill Salt Corporation) and on the east, south and west by lands owned by the San Jose/Santa Clara Water Pollution Control Plant (WPCP) (Figure 1).
3. **Site History:** The 41-acre landfill area at the ZRRROL began accepting waste in the 1930s and was operated and regulated as a Class III waste disposal site until disposal operations ceased in 2015. The 70-acre property owned by ZRRML is part of the former 166-acre Nine-Par Disposal Site, as discussed further in paragraphs 6-8, below. The landfill is currently undergoing multi-phased landfill closure construction and is expected to be formally closed by 2020.

PURPOSE OF ORDER UPDATE

4. The primary objectives of this Order are to:
   a. Update the Waste Discharge Requirements (WDRs) to reflect the current closed status of the 41-acre landfill area;
   b. Require an operations and maintenance plan for the ZRRROL and associated post-closure activities during the post-closure period; and

c. Update the ZRRROL's Self-Monitoring Program for the post-closure period.

REGULATORY HISTORY

5. The Board has regulated the ZRRROL under the following orders:
    a. In 1975, the Board adopted WDR Order No. 75-18 for the former Nine-Par Disposal Company.
    b. In November 1985 the Board adopted Order No. 85-132, NPDES No. CA 0028762, permitting the discharger to fill 6 acres of seasonal wetlands in the 30-acre parcel to the north of the landfill.
    c. In April 1987, the Board adopted WDR Order No. 87-032 and rescinded Order No. 75-18.
    d. In September 1993, the Board adopted Order No. 93-113, a general amendment WDR order regulating all municipal solid waste landfills in the region to comply with the federal Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act (42 USC § 6901 et seq.).
    e. This Order rescinds and supersedes WDR Order No. 87-032.

ZRRROL HISTORY, HISTORICAL DEVELOPMENT, AND DESCRIPTION

6. Site History: In the 1930s, the Nine-Par Company began operating a 166-acre municipal waste disposal site under a permit issued by the adjacent City of Alviso. Waste disposal operations were conducted for many decades in accordance with accepted practices of the time. These practices included burning combustible waste. It was not required or customary to record any construction details for a landfill until the late 1970s. Since operations at the site began in the 1930s, post-excavation records (grading/excavation plans, topographic maps, etc.) of the 166-acre Nine-Par Disposal Site, and hence the 70-acre ZRRROL, were not developed and do not exist. Based on review of historical aerial photographs, records of historical landfilling methods in the San Francisco Bay Area, and information gathered from historical borings at the site, it has been surmised that the Nine-Par Disposal Site was constructed by the trench-and-fill method toward the south, and by the area-fill method toward the north (which includes the location of the ZRRROL). It is known that the entire 41-acre landfill area at the ZRRROL was constructed without an engineered base liner.

7. In 1968, the City of Alviso was annexed into the City of San Jose. The City of San Jose required that new permits be obtained under its jurisdiction for continued waste disposal operations at the site. As the owner and operator of the site, the Nine-Par Company applied for a conditional use permit to the City of San Jose in 1975, which would have allowed waste disposal operations to continue. Permitting complications led the Nine-Par Company to abandon its efforts to obtain a conditional use permit from the City of San Jose and the site ceased receiving municipal solid waste in September 1977. Even though waste disposal activities were discontinued, the Nine-Par Company did not formally close the site. Between 1977 and 1982, the Nine-Par Disposal Site was unoccupied and had no operations occurring.

   In 1982, ZRRML purchased the 70-acre portion located at the northeastern corner of the 166-acre site from the Nine-Par Company, with the intent of operating that portion of the site for landfilling. ZRRML reopened the landfill to the public in January 1985. As a condition of obtaining the necessary operating permits from the City of San Jose, ZRRML agreed to (1) limit the WMU to just the southern 46 acres (with the northern 24 acres dedicated as wetlands), and (2) incorporate

waste recycling efforts and processes into site operations. The 96 acres of the former Nine-Par Disposal Site not acquired by ZRRML are now occupied by the San Jose/Santa Clara Water Pollution Control Plant (WPCP). In 1988, ZRRML granted the operating rights of the ZRRROL to the Zanker Road Resources Management Company (ZRRMC/Norcal), a wholly-owned subsidiary of Norcal Waste Systems, Inc. (Norcal). In June 1992 the operating rights were relinquished to ZRRML, which has been operating the ZRRROL since.

8. By 1977 fill levels over much of the original 166-acre Nine-Par Disposal Site (including the ZRRROL portion) had reached up to 35 feet mean sea level (MSL). The 96 acres of the former Nine Par Disposal Site now owned by the WPCP still has extensive areas that are also covered with refuse from historic landfill operations conducted by the Nine-Par Company.

   In accordance with local use permits, the 41-acre area of the ZRRROL has been filled to maximum elevations of up to approximately 80 feet above MSL.

9. **Waste Acceptance**: As a permitted Class III site, the ZRRROL was permitted to receive nonhazardous solid waste, excluding putrescible waste, liquid wastes, hazardous wastes, and infectious wastes. However, since ZRRML assumed ownership of the site in 1985, the ZRRROL has primarily received construction and demolition debris, mixed debris, concrete, wood waste, yard waste, soil, and to a lesser degree, other miscellaneous materials such as white goods, brown goods, and tires. The ZRRROL also receives commercial and nonhazardous industrial wastes that meet the site's permit requirements. These wastes are brought to the site by commercial contractors or by the general public. Additionally, a portion of the waste stream brought to the ZRRROL during this time included recyclable materials and yard wastes collected from nearby community curbside programs. Unlike most Class III waste disposal facilities, the ZRRROL's primary function is resource recovery, with the landfilling of residual waste being a secondary and minor function. Therefore, all of the materials that enter the facility are either recovered, processed as necessary, and shipped offsite to secondary markets, or separated as waste and shipped to an approved off-site facility for disposal. As a resource recovery facility, the site is also permitted to operate a materials/soils yard which includes the acceptance of landscape materials for resale purposes. Continued resource recovery operations are the planned and permitted post-closure end use for the site.

   The portion of the site landfilled by ZRRML since 1985 is underlain by municipal solid waste placed by the Nine-Par Company prior to 1977. The pre-1977 wastes that were placed by the Nine-Par Company contain the only putrescible wastes known to have been disposed of at the ZRRROL.

10. **Landfill Closure and Final Cover Construction**: In September 2013, prior to the discontinuance of waste disposal operations at the site, the Final Closure and Post-closure Maintenance Plan (FCPMP) was developed for the ZRRROL. This FCPMP was reviewed, amended (May 2014 and September 2014) and ultimately approved by the Regional Water Board, California Department of Resources Recycling and Recovery (CalRecycle) and the City of San Jose Department of Planning, Building and Code Enforcement, which has been designated by CalRecycle as the Local Enforcement Agency (LEA) for the Landfill. The FCPMP identified and described the actions needed to close the ZRRROL in a manner that would protect public health and safety, as well as the environment and complies with the requirements of title 27 CCR Subchapter 4, *Development of Closure and Post-closure Maintenance Plans*. The FCPMP identified all of the requirements for the phased closure of the landfill area at the ZRRROL.

Consistent with the approved FCPMP, the landfill area at the ZRRROL will be capped with a final cover that will be constructed in multiple phases and designed to minimize moisture infiltration and post-closure maintenance. The cover will provide a suitable foundation for continued resource recovery operations at the site.

The minimum prescriptive final cover (27 CCR §21090) includes:

- A minimum of two feet of compacted foundation material (although a lesser thickness may be allowed if the structural integrity of the final cover is not affected).
- A minimum of one foot of compacted low-permeability soil ($k < 1 \times 10^{-6}$ centimeters per second (cm/sec]; however, an engineered alternative low-permeability geosynthetic product may be substituted for this low-permeability soil layer.
- A minimum of one foot of vegetative cover or erosion control layer.

Current regulations (27 CCR §21090) allow alternative final cover designs that are determined by the Water Board to meet applicable prescriptive standards. Because ZRRML will continue resource recovery operations at the site after landfill closure, the approved FCPMP establishes:

- The use of a prescriptive final cover overlain by a minimum three-foot thick erosion control layer consisting of concrete rubble and base rock to create a minimum 6-foot thick final cover system for the relatively flat top deck area.
- The use of an alternative evapotranspiration (ET) final cover system for the steeper sideslopes. In accordance with the approved FCPMP, the ET cover system consists of a minimum 4.4-foot thick engineered ET soil layer that will be installed on the east, south, west and north side slopes of the landfill. The northwest corner of the site also incorporates a stabilizing buttress wall constructed at the base of the landfill side slopes.

Any other alternative final cover designs proposed for the site must be determined by the Water Board to meet applicable prescriptive standards and approved by RWQCB staff before implementation.

11. **Stormwater Drainage:** The ZRRROL is located near the southern margin of the San Francisco Bay, where there is minimal topographic relief and ground elevations are very close to sea level. The ZRRROL, along with the other nearby landfills, is therefore a prominent feature in the local topography and implementation of surface drainage controls is, and will continue to be, an integral part of its operation. The drainage controls for the final landfill configuration, as described in the approved FCPMP, include drainage diversion berms, drainage ditches, and retention/sediment reduction basins. These drainage control features for the closed landfill have been designed to carry stormwater from a l00-year storm at low velocities that should minimize ditch erosion. Side-slope benches and the perimeter access road will also be equipped with drainage ditches for erosion and runoff control. The ZRRROL drainage control features have been designed to limit ponding, infiltration, inundation, erosion, slope failure, washout, and overtopping to the extent possible.

    As described in the approved FCPMP, the final drainage system at the ZRRROL will collect runoff and convey it through site drainage, temporary storage and sediment reduction basins before it is directed into sloughs that abut the site and eventually discharged into the San Francisco Bay. Access road drainage ditches will be asphalt-lined. All other drainage control ditches will be grass-lined culverts designed to carry the peak discharge beneath the access road.

The final perimeter slopes on the landfill will be vegetated to minimize slope erosion by surface water runoff. All drainage ditches constructed over refuse fill areas, either temporary or permanent, will be underlain with a 3-foot minimum thickness of earthfill. Lining of permanent ditch sections with asphalt or a dense grass cover is an additional measure that may be used to minimize soil erosion.

GEOLOGICAL AND HYDROGEOLOGICAL SETTING

12. **Geology:** The ZRRROL is situated near the southern end of the San Francisco Bay near the mapped southern limit of Holocene-age Bay Mud, which is a fine-grained estuarine and tidal marsh deposit (ZRRML, 2005).

    Regionally, Bay Mud is predominantly clay and silty clay with a few lenses of fine alluvial sand and silt. In the vicinity of the site, the Bay Mud generally interfingers with and grades into fine-grained alluvial deposits of the same age. The Bay Mud and alluvium are both unconsolidated. The Bay Mud is characterized by low permeability whereas the fine-grained alluvium has low to medium permeability.

    No known Holocene faults underlie the ZRRROL.

13. **Hydrogeology:** The primary water-bearing units of the northern Santa Clara Valley are saturated stream channel deposits that occur within a thick sequence of Pleistocene and Holocene alluvium and Bay Mud. Regionally, the buried channel deposits are grouped into "upper" and "lower" aquifer zones. Near the Bay (and in the vicinity of the Site), these aquifer zones are separated from each other by a 100-foot-thick clay deposit that comprises an extensive aquitard between the two zones (Iwamura, 1980).

    The upper aquifer zone, which has been impacted extensively by saltwater intrusion, consists primarily of saturated tabular sand bodies that occur within the upper l00 feet of Bay Mud and alluvium. These sand units are discontinuous and there is little or no hydraulic connection over any significant distance. Regionally, the upper aquifer zone occurs under both unconfined and confined conditions.

14. **Site Hydrology and Surface Water Quality:** The ZRRROL lies at the southernmost end of the San Francisco Bay in the floodplain between the Guadalupe River and Coyote Creek. The site is surrounded by salt ponds, marshes, and sloughs that are in contact with South San Francisco Bay and affected by tidal processes. A typical diurnal high tide elevation for the Bay is approximately 0.25 ft to 7.95 ft relative to mean tide level. Average rainfall is less than 14 inches, occurring primarily between November and April.

    An extensive network of salt evaporator ponds is located immediately north of the Site (ZRRML, 2005). This area is dominated by fine-grained estuarine and alluvial deposits interbedded with granular deposits probably related to historical lateral migration and periodic flooding of the Guadalupe River and Coyote Creek

15. **Surface Water Hydrology and Tidal Protection**:

    ZRRROL lies within a potential tidal floodplain of approximately 4,160 acres. The landfill lies midway between Alviso Slough and Coyote Creek, which are the primary conveyances of tidal water from the San Francisco Bay into the floodplain.

The low topographic relief of the area surrounding the ZRRROL typically produces non-erosive flow velocities in the tidal channels. Channelization of the primary waterways in the region and the presence of extensive flood control and tidal levees maintain the base flow within the channel reaches. Because the ZRRROL is approximately 1.5 to 2 miles away from the primary floodway channels, potential high-flow velocities from a base flood should therefore have no impact on the ZRRROL's containment structures. In addition, the other existing facilities within the vicinity of the ZRRROL (the WPCP and salt ponds) help protect the landfill by deflecting floodwaters from the site. The perimeter levees surrounding the ZRRROL are constructed of concrete debris and compacted earthfill that would provide adequate protection against washout

Provision 8 of this Order requires the Discharger to assess the Site's vulnerability to long-term sea level rise, and to update the landfill's flood protection plan every five years, beginning in October 2020.

MONITORING PROGRAMS

16. **Stormwater Monitoring**: The ZRRROL implements a stormwater monitoring program, as required by the State Water Resources Control Board. This program has four objectives:

    - Monitor the quality of storm water discharges;
    - Evaluate changing conditions and practices at the site to control pollutants in Storm Water discharges;
    - Aid in the implementation of the Storm Water Pollution Prevention Plan and the Storm Water Monitoring Plan;
    - Measure the effectiveness of the best management practices mandated by the state, in removing pollutants in storm water discharge.

    The Storm Water Control Plan for the ZRRROL is included as an Appendix in the approved FCPMP. The current stormwater monitoring program will be updated in the future to reflect changing drainage patterns and potentially changing regulations.

    In addition, surface water runoff monitoring is conducted in accordance with the site's Stormwater Pollution Protection Plan (SWPPP). No routine monitoring of permanent surface water bodies bordering the Site is performed. If a seep from the Landfill is observed coming into contact with any bordering surface water body, the Discharger is to immediately notify the Regional Water Board, and sampling of upstream and downstream locations on that surface water body may be required on a schedule to be determined by Regional Water Board staff.

17. **Groundwater and Facility Monitoring**: The Self-Monitoring Program (SMP) attached to this Order revises the groundwater monitoring program that had been defined by previous WDR Order Nos. 87-032. The groundwater monitoring program currently consists of a network of seven monitoring wells, which are listed in Table B.1 of the SMP. The Discharger inspects the groundwater monitoring well network and the stormwater conveyance system on a quarterly frequency.

BASIN PLAN

18. The Water Quality Control Plan for the San Francisco Bay Basin (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 Regional Water Board and approved by the State Water Resources Control Board (State Water Board), U.S. EPA, and the Office of Administrative Law, where required.

FINANCIAL ASSURANCE

19. The Discharger is required to submit to CalRecycle, pursuant to CCR title 27, an Irrevocable Closure and Post-Closure Trust Fund (or other acceptable financial mechanism). On May 7, 2004, Regional Water Board staff approved the Corrective Action Cost Estimate for all Known or Reasonably Foreseen Releases. In September 2013, the Discharger submitted the Specific Non-Water Release Corrective Action Plan and Cost Estimate to the Local Enforcement Agency (LEA) and CalRecycle in accordance with title 27 requirements. The plan was approved by CalRecycle on September 26, 2013, and by the LEA on March 7, 2016.

SAFE DRINKING WATER ACT AND HUMAN RIGHT TO WATER

20. It is the policy of the State of California that every human being has the right to safe, clean, affordable, and accessible water adequate for human consumption, cooking, and sanitary purposes. (Water Code §106.3) The Safe Drinking Water Act provides that all Californians have a right to pure and safe drinking water (Health & Safety Code §116270.) This Order promotes these rights by requiring the Discharger to monitor and control discharges from the closed landfill and to ensure that leachate, or stormwater or groundwater that have come in contact with leachate or waste, are not unlawfully discharged to waters of the state or United States.

ANTIDEGRADATION POLICY

21. State Water Board Resolution No. 68-16, "Statement of Policy with Respect to Maintaining High Quality of Waters in California" (Antidegradation Policy), states that discharges to existing high quality waters will be required to meet WDRs that will result in the best practicable treatment or control of the discharge necessary to assure that (a) a condition of pollution or nuisance will not occur, and (b) the highest water quality consistent with maximum benefit to the people of the State will be maintained. These WDRs are consistent with Resolution No. 68-16 because implementation of the monitoring and reporting provisions is expected to identify and control any water quality impacts from the closed landfill.

BENEFICIAL USES OF SURFACE WATER AND GROUNDWATER

22. The Water Quality Control Plan for the San Francisco Bay Basin (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 implementation plans to achieve water quality objectives. The Basin Plan was duly adopted by the Regional Water Board and approved by the State Water Resources Control Board (State Water Board), the Office of Administrative Law, and U.S. EPA, where required.

23. The Basin Plan considers all groundwater to be 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, "In corporation of 'Sources of Drinking Water' Policy' Into the Basin Plan," where:

    (a) The total dissolved solids (TDS) exceed 3,000 mg/l (5,000 µS/cm, electrical conductivity), and it is not reasonably expected by the Regional Water Board that the groundwater could supply a public water system, 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.

24. Salt water has intruded into groundwater beneath the Zanker site in all identified water-bearing zones. This groundwater has TDS/electrical conductivity that is significantly higher than the 3,000 mg/liter levels considered as maximums for suitability for MUN. It is not reasonable to expect that the groundwater could supply a public water system because significant pumping of the aquifer is likely to result in saltwater intrusion that would further degrade water quality. Therefore, the groundwater beneath the site meets the Resolution No. 89-39 criteria cited in Finding 22.

25. The existing beneficial uses of the receiving surface waters (South San Francisco Bay wetlands and salt water marshes) are as follows:

    i. Estuarine habitat
    ii. Fish spawning
    iii. Fish migration
    iv. Wildlife habitat
    v. Preservation of rare and endangered species
    vi. Commercial and sport fishing
    vii. Water contact recreation
    viii. Non-contact water recreation.

CALIFORNIA ENVIRONMENTAL QUALITY ACT

26. Adoption of this Order is categorically exempt from the California Environmental Quality Act (CEQA). Under CEQA Guidelines section15301 as an existing facility. This Order requires the Discharger to continue site monitoring and maintenance activities, does not authorize expansion of use of the site, and allows the resource recovery activities taking place at the site to continue. these will not result in any additional actions that may have an effect on the environment beyond the existing baseline conditions.

NOTIFICATIONS AND MEETING

27. The Regional Water Board has notified the Discharger and interested agencies and persons of its intent to amend the Landfill's WDRs and has provided them with an opportunity for a public hearing and an opportunity to submit their written views and recommendations.

28. The Regional Water Board, in a public meeting, heard and considered all comments pertaining to this revision of WDRs.

IT IS HEREBY ORDERED, pursuant to the authority in California Water Code (CWC) sections 13263 and 13267, and CCR, title 27, Division 2, Subdivision 1, that the Discharger shall meet the applicable provisions contained in CCR Title 27 and shall comply with the following:

A. PROHIBITIONS

1. Untreated or inadequately treated groundwater or leachate shall not create a condition of pollution or nuisance, nor degrade the quality of waters of the State or of the United States.

2. No additional waste shall be deposited at the ZRRROL, and the creation of any new waste management unit is prohibited.

3. Wastes shall not be exposed or relocated to any position where they can migrate from the landfill area to adjacent geologic materials, waters of the State, or of the United States during the post-closure maintenance period.

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

5. The Discharger shall not perform any intrusive activities on the landfill surface that have the potential to negatively affect the integrity and proper function of the Landfill cap, such as digging or trenching, without prior Regional Water Board staff approval.

6. The Discharger shall not remove or damage the integrity of the landfill cap. Alternate methods of controlling vegetative growth that do not affect the integrity of the landfill cap shall be utilized.

7. Excavation within or reconfiguration of any existing waste 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.

8. Surface drainage from tributary areas and internal site drainage from surface sources shall be intercepted and controlled so as to not contact or percolate through wastes during the landfill post-closure period.

9. Leachate, 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.

10. Buildup or mounding of leachate levels within the landfill, which adversely impacts waters of the State, is prohibited and shall be prevented as approved by the Regional Water Board staff.

11. The Discharger, or any future owner or operator of the Landfill, shall not cause the following conditions to exist in waters of the State or of the United States at any place outside existing landfill:

a. Surface Waters:

   i. Floating, suspended, or deposited macroscopic particulate matter or foam;
   ii. Bottom deposits or aquatic growth;
   iii. Adverse changes in temperature, turbidity, or apparent color beyond natural background levels;
   iv. Visible, floating, suspended, or deposited oil, or other products of petroleum origin; or
   v. Toxic or other deleterious substances to exist in concentrations or quantities that may cause deleterious effects on aquatic biota, wildlife, or waterfowl, or that 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:

   i. Degradation of groundwater quality; or
   ii. Significant migration of pollutants through subsurface transport.

B. SPECIFICATIONS

1. The Discharger shall continue to implement a Detection Monitoring Program (DMP), pursuant to CCR title 27 §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), which is required pursuant to CCR title 27 §20390. The SMP attached to this Order is intended to constitute the DMP for the Landfill.

2. The WQPS for the Landfill shall include the following:

   a. Constituents of Concern (COCs): CCR title 27 §20395 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." Site-specific COCs were developed for this Landfill based on the chemicals identified in leachate. They are the monitoring parameters identified in the SMP attached to this Order, as well as volatile organic compounds (VOCs) and metals (see Table B-1) or any future COCs added by the Regional Water Board.

   b. Monitoring Parameters (MPs): MPs, a subset of the COCs, are typically the most mobile and commonly-detected COCs in leachate at the Landfill and are measured on a more frequent basis than the COCs. Their purpose is to indicate whether a potential leak from the Landfill has occurred. The MPs shall include, at a minimum, all constituents identified as MPs in the SMP attached to this Order or any future MPs added by the Regional Water Board.

      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.

      The MPs shown on the attached SMP are based on prior studies by the Discharger that examined the contrast between constituent concentrations in leachate versus those in Site

groundwater. Generally, these MPs are naturally occurring, and the poor natural water quality has on occasion produced monitoring results for these MPs above calculated Concentration Limits for the DMP. The Discharger has documented instances where monitoring results exceeding statistically derived background Concentration Limits appear to be a result of naturally poor groundwater quality conditions rather than a release from the Landfill. Pursuant to CCR title 27 §20420(k)(7), the Discharger has performed "Optional Demonstrations" (that the unit is not at cause) for the naturally occurring MPs or otherwise has periodically performed verification resampling pursuant to CCR title 27 §20415(e)(7) to demonstrate false-positive monitoring results. These efforts underscore the difficult nature of establishing background Concentration Limits for the naturally occurring MPs in a naturally organic-rich saline environment.

c. Concentration Limits: Concentration Limits for all COCs detected at the specified monitoring wells are typically established using the background data set. However, use of background data is inappropriate at the Landfill because, as noted above, background water quality conditions are difficult to measure. Further, the flat hydraulic gradient at the Site, combined with tidal influences on groundwater, creates a setting such that there is no true up-gradient or side-gradient, and background concentration limits would not function as intended by CCR title 27.

   An effective monitoring alternative to background-based statistical Concentration Limits is the identification of trends in concentrations over time using intra-well statistical analyses. Therefore, Sen's Slope Test will be conducted for the current MPs in the attached SMP: Bicarbonate Alkalinity, Total Organic Carbon, and Total Kjelhdahl Nitrogen. It should be noted that these MPs are naturally occurring in groundwater and their concentrations are naturally highly variable, necessitating a reduction in the sensitivity of the trend test (to minimize false positives) as well as the trigger for retesting. Therefore, the Sen's Slope Test at 99% confidence will be performed on the MPs Bicarbonate Alkalinity, Total Organic Carbon, and Total Kjelhdahl Nitrogen semi-annually in groundwater, using a five-year moving window. Should an increasing trend be identified in a DMP well in two out of three consecutive events, the Discharger will notify the Regional Water Board and retesting may be required.

   While 95% confidence is more typical to detect small increasing trends and to enhance the power of the statistical test, 99% should be sufficient at the Landfill. The primary constituent of concern with the potential to impair beneficial uses is ammonia (as represented by Total Kjeldahl Nitrogen); however, the deleterious effects of ammonia are relatively minor (i.e., in comparison to more typical leachate constituents such as VOCs), and the adjacent marshes have some ability to assimilate ammonia. Therefore, a focus on larger trends is prudent. In addition, despite the 99% confidence limit applied, the statistical power of the Sen's Slope Test should be sufficient given the small number of tests required (power decreases with the number of tests, in this case eight wells for three constituents).

d. Point of Compliance: Point of Compliance (POC) are 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 and therefore circumscribes the Landfill.

e. Monitoring Points: CCR title 27 §20164 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 may be added in future amendments thereto. The Monitoring Points for this Landfill include all groundwater monitoring wells specified in Table B-1 of the SMP and any future additions or replacements.

3. The Discharger shall conduct monitoring activities according to the SMP, 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 leachate and landfill gas (to minimize the impairment of beneficial uses of water due to gas migration).

4. All monitoring wells shall be constructed in a manner that maintains the integrity of the drill hole, prevents cross-contamination of saturated zones, and produces representative groundwater samples from discrete zones within the aquifer unit each well is intended to monitor.

5. The Discharger shall install any reasonable additional groundwater and leachate monitoring devices required to fulfill the terms of any future SMP issued by the Executive Officer.

6. All samples collected from the site shall be analyzed by State-certified laboratories, or laboratories accepted by the Regional Water Board, using approved U.S. EPA methods for the type of analysis to be performed. All laboratories shall maintain quality assurance/quality control records for Regional Water Board review. This specification does not apply to analyses that can only be reasonably performed onsite (e.g., pH).

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

8. The Discharger shall maintain the Landfill so as to prevent a measurably significant increase in water quality parameters at points of compliance.

9. Whenever there is "measurably significant" geochemical evidence of an exceedance of concentration limits or significant physical evidence of a release, the Discharger shall be prepared to implement an Evaluation Monitoring Program (EMP) 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.

10. 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, registered geologist, and/or certified engineering geologist, and acceptable to the Executive Officer.

11. 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.

12. Final cover systems for waste management units shall be graded and maintained to promote lateral runoff and prevent ponding and infiltration of water.

13. The Landfill shall be protected from any washout or erosion of wastes from inundation, which could occur as a result of a l00-year, 24-hour storm event, or as the result of flooding with a return frequency of 100 years.

14. The Discharger shall install new monitoring stations to replace any monitoring wells designated as monitoring stations that are damaged, destroyed, or rendered non-functional during the Landfill's post-closure maintenance period.

15. The Discharger shall maintain all devices or designed features, installed in accordance with this Order, such that they continue to operate as intended without interruption.

16. 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 operation, closure, and post-closure maintenance periods. These monuments shall be installed by a licensed land surveyor or registered civil engineer.

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

18. 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.

19. The Discharger shall assure that the structures that control leachate, surface drainage, erosion, and landfill gas are constructed and maintained to withstand conditions generated during the maximum probable earthquake.

20. The Discharger shall provide reasonable access to any property it owns or leases at the Landfill to allow for installation, sampling, monitoring, etc., of all devices and equipment necessary for compliance with the requirements of this Order.

21. When there are multiple landowners or lease holders involved, the Discharger shall provide reasonable access to any property it owns or leases at the Landfill to allow for installation, sampling, monitoring, etc., of all devices and equipment necessary for compliance with the requirements of this Order. The Discharger shall comply with all applicable provisions of CCR Title 27 that are not specifically referred to in this Order.

C. PROVISIONS

1. **Duty to Comply**: 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 waste discharge requirements. 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.

2. **Authority**: All technical and monitoring reports required by this Order are required pursuant to CWC §13267. Failure to submit reports in accordance with schedules established by this Order or failure to submit a report of sufficient technical quality to be acceptable to the Executive Officer may subject the Discharger to enforcement action pursuant to CWC §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 attached SMP is intended to constitute a DMP designed to identify significant water quality impacts from the Landfill and demonstrate compliance with the WQPS. The Discharger shall submit semi-annual monitoring reports, acceptable to the Executive Officer, no later than **April 30 and October 31** of each year in accordance with the SMP. The April 30 report shall include an annual summary as described in the SMP. The report shall include a section detailing repair and maintenance activities needed and performed prior to each rainy season and a section detailing compliance with maintaining an inward gradient.

   COMPLIANCE DATE: Immediately upon adoption of this Order
   REPORT DUE DATE: April 30 and October 31 of each year

4. **Change In Post-Closure Land Use Reporting**: The Discharger shall submit a technical report, acceptable to the Executive Officer, describing any proposed change in the approved post-closure land use or development of the Landfill. The technical report 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 the integrity of the Landfill cover and prevent water quality impacts. No material changes to the approved post closure land use or development shall be made without prior approval by the Executive Officer.

   COMPLIANCE DATE: 120 days prior to any proposed material change

5. **Construction-Related Stormwater Permit**: For any proposed grading or development project greater than one acre in size that is not addressed in the approved FCPMP, the Discharger shall submit a Notice of Intent to the State Water Board, submit a SWPPP acceptable to the

Executive Officer, and implement Best Management Practices 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 (NPDES Permit No. CAS000001). The Discharger will be deemed in compliance with this Provision if another party constructing improvements on property owned by the Discharger, pursuant to an easement granted by the Discharger, has obtained coverage under the General Permit.

COMPLIANCE DATE: 30 days prior to construction

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

REPORT DUE DATE: 60 days following well installation or destruction

7. **Operations and Maintenance Plan**: The Discharger shall submit an Operations and Maintenance Plan, acceptable to the Executive Officer, including:

   a. Specifications for wet season preparations; including for stormwater drainage infrastructure inspection, construction, and maintenance;

   b. The periodic assessment of stormwater, including monitoring, or demonstration that monitoring stormwater at the site is not necessary;

   c. The periodic inspection of the Landfill cover, including subsidence or other disturbance that might increase infiltration of stormwater;

   d. The periodic assessment of rodent population control and any impacts that might threaten the Landfill cover;

   e. The periodic assessment of the vegetative cover;

   f. The periodic inspection of perimeter levees for failures that may cause erosion or any other condition that could threaten water quality, or expose debris or waste; and

   g. The periodic inspection and maintenance of the monitoring system and the leachate extraction system.

REPORT DUE DATE: June 30, 2020, and update every five years thereafter

8. **Long-Term Flood Protection Report**: The Discharger shall submit a report consistent with State of California Sea-Level Rise Guidance and BCDC's Bay Plan, acceptable to the Executive Officer, which proposes strategies for long-term flood protection of the site from flooding and inundation due to sea level rise (SLR) and extreme climate/weather events. The report shall be prepared by a qualified engineer and be based on providing protection from the 100-year total water level (TWL) on top of 0.6 to 1.1 feet (low risk) or 1.9 feet (medium to high risk) of SLR by 2050. The 100-year TWL shall take into account astronomical tides and storm surge as well as Pacific swell, wind waves and wave run-up. The report shall propose an

adaptive management strategy that provides for protection from 2.4 to 3.4 feet (low risk) or 5.7 to 6.9 feet (medium to high risk) of SLR by 2100, or the most recent 0.5% probability scenario as determined by the official state of California sea level rise guidance. The report shall provide technical justification for the selection of both the 2050 and 2100 protective strategies. The report shall be updated and submitted every 5 years throughout the post-closure maintenance period of the Landfill with the most recently available and credible information and climate change adaptation guidance at the time of the update.

REPORT DUE DATE: March 31, 2019, and update every five years thereafter

9. **Earthquake Inspection**: The Discharger shall submit a detailed Post-Earthquake Inspection Report, acceptable to the Executive Officer, in the event of any earthquake generating ground shaking of Richter Magnitude 7 or greater at or within 30 miles of the Landfill. The report shall describe the containment features, groundwater monitoring, and control facilities potentially impacted by seismic deformations of the Landfill. Damage to any waste containment facility that may impact waters of the State must be reported immediately to the Executive Officer.

COMPLIANCE DATE: Within 6 weeks of earthquake

10. **Change in Site Conditions:** The Discharger shall immediately notify the Regional Water Board of any flooding, ponding, settlement, equipment failure, change in gradient away from the trench, slope failure, exposure of waste, liner leakage, or other change in site conditions that could impair the integrity of the Landfill's cap, waste or leachate containment facilities, and/or drainage control structures and shall immediately make repairs. Within 30 days, the Discharger shall prepare and submit a technical report, acceptable to the Executive Officer, documenting the corrective measures taken. In the event monitoring reveals evidence of a gradient away from (not toward) the trench, the Discharger shall evaluate the potential cause(s) of the reversed gradient and implement measures to remediate the problem and provide a consistent inward gradient for the landfill.

NOTIFICATION DUE DATE: Immediately upon occurrence
REPORT DUE DATE: 30 days after initial notification

11. **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.

12. **Change in Ownership**: The Discharger must notify the Executive Officer, in writing, at least 30 days in advance of any proposed transfer of ownership of the Landfill.

13. **Information Correction**: When a Discharger becomes aware that it failed to submit any relevant facts in a Report of Waste Discharge (ROWD) or submitted incorrect information in a ROWD or in any report to the Regional Water Board, it shall promptly submit such facts or information.

14. **Revision**: This Order is subject to review and revision by the Regional Water Board.

15. **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.

16. **Severability**: Provisions of this Order are severable. If any provision of these WDRs is invalid, the remainder of these requirements shall not be affected.

17. **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.

18. **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 report such discharge to the Regional Water Board by calling (510) 622-2369. A written report shall be mailed or submitted electronically to the Regional Water Board within five business days. The report shall describe: the nature of the hazardous substance, 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.

19. **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 a 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.

20. **Analytical Methods**: Unless otherwise permitted by the Regional Water Board Executive Officer, all analyses shall be conducted at a laboratory certified for such analyses by the State Department of Public Health. The Executive Officer may allow use of an uncertified laboratory

under exceptional circumstances, such as when the closest laboratory to the monitoring location is outside the State boundaries and therefore not subject to certification. All analyses shall be required to be conducted in accordance with the latest edition of U.S. EPA SW-846 or other equivalent U.S. EPA Method.

21. **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 §404 of the Clean Water Act and discharges subject to a general NPDES permit) must file an NPDES permit application with the Regional Water Board.

22. **Endangerment of Health or the Environment**: The Discharger shall report any event of noncompliance that may endanger human health or the environment. Any such information shall be provided orally to the Executive Officer within 24 hours from the time the Discharger becomes aware of the circumstances by calling (510) 622-2369. A written submission to the Regional Water Board shall also be provided within five days of the time a 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 may waive the written report on a case-by-case basis if the oral report has been received within 24 hours.

23. **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. Regional Water Board and
    b. Santa Clara County Department of Environmental Health (Local Enforcement Agency).

    The Executive Officer may modify this distribution list as needed.

24. **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; or
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/]. The text of the regulations can be found at the following link:

http://www.waterboards.ca.gov/ust/electronic_submittal/

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 Provision C.24.a. above (the document, in its entirety [signature pages, text, figures, tables, etc.] must be saved to a single PDF file); and
e) Any additional submittal to GeoTracker the Executive Officer requires.

iii. Upon request, monitoring results shall also be provided electronically in Microsoft Excel® to allow for ease of review of Landfill data and to facilitate data computations and/or plotting that Regional 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.

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 December 12, 2018.

_____
Bruce H. Wolfe
Executive Officer

Attachments:

Figure 1 – Fill Area 1 Landfill Location Map

Figure 2 - Site Plan

Self-Monitoring Program