

STATE OF CALIFORNIA
REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

STAFF SUMMARY REPORT

STAFF: Cleet Carlton

MEETING DATE: May 10, 2017

ITEM: 6

SUBJECT: **City of Santa Clara and Related Santa Clara, LLC, Santa Clara All-Purpose Landfill, Santa Clara, Santa Clara County - Updated Waste Discharge Requirements and Rescission of Order No. R2-2002-0008**

CHRONOLOGY: 1973 – Waste Discharge Requirements adopted
1994 – Waste Discharge Requirements adopted
2002 – Waste Discharge Requirements updated

DISCUSSION: The Revised Tentative Order (RTO) for the closed Santa Clara All-Purpose Landfill, Santa Clara (Appendix A) would update Waste Discharge Requirements to:

- Recognize the change in land use from a golf course to mixed commercial/residential uses, as approved by the City of Santa Clara and the Santa Clara County Department of Environmental Health (the Local Enforcement Agency or LEA);
- Establish new Prohibitions, Specifications, and Provisions to ensure that the approved change in land use can be implemented in a way that protects water quality and will not adversely impact waste containment features of the Landfill;
- Require the submittal of further technical reports that describe how the Dischargers will protect water quality and human and ecological health during and following landfill development; and
- Rescind the outdated WDRs.

We circulated a draft order to interested parties and received comments from the dischargers (City of Santa Clara and Related Santa Clara, LLC), Santa Clara Valley Water District, the Center for Public Environmental Oversight, and letters/emails of support for the TO from the LEA and Santa Clara Mayor Lisa Gillmor (Appendix B). In response, we made minor changes to the TO, primarily to and address inadvertent inconsistencies and omissions. Appendix C provides our responses to the comments received.

**RECOMMEN-
DATION:** Adoption of the Revised Tentative Order

APPENDICES:

A – Revised Tentative Order

B - Comments Received

C – Response to Comments

APPENDIX A

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

REVISED TENTATIVE ORDER

**UPDATED WASTE DISCHARGE REQUIREMENTS and
RESCISSION OF ORDER No. R2-2002-0008 for:**

**CITY OF SANTA CLARA and RELATED SANTA CLARA, LLC
SANTA CLARA ALL-PURPOSE LANDFILL
SANTA CLARA, SANTA CLARA COUNTY**

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

DISCHARGERS AND LOCATION

1. The Santa Clara All-Purpose Landfill (the Landfill or the Site) is a closed Class III landfill owned by the City of Santa Clara (the City). The Landfill was used for waste disposal between 1934 and 1993. The Landfill encompasses an area of approximately 210 acres located south of Highway 237 in the northern part of the City (Figure 1). Most of the Landfill has been used as a golf course since 1994. The northeast portion of the Landfill has been used as a BMX course.
2. Related Santa Clara, LLC (Related LLC) is working with the City to develop approximately 175 acres of the Landfill as a multi-use complex known as Santa Clara City Place that will include retail stores, restaurants and entertainment, office space, and residential units. Approximately 35 acres on the Landfill's Parcel 3/6 will be developed as park and open space. The City has indicated it will enter into a private agreement with Related LLC that defines which party is responsible for regulatory obligations related to development of the Landfill. The Regional Water Board recognizes that the parties are free to contract with each other concerning responsibility, and does not seek to interfere with that contractual agreement, but, due to substantial overlapping responsibility for the integrity of the Landfill's cap and leachate systems, the City and Related LLC are both named as Dischargers in this Order.
3. The City, as the current Landfill owner and former Landfill operator, has taken full responsibility for compliance with previous Regional Water Board orders. The City will continue to own the Landfill after development and will be solely responsible for compliance with all requirements of this Order relating to post-closure operation, maintenance, and monitoring of the Landfill, including but not limited to:
 - a) operation and maintenance of the Landfill's final cover;
 - b) operation, maintenance, and monitoring of the landfill gas extraction and collection system;
 - c) operation, maintenance, and monitoring of the leachate collection and removal system;
 - d) detection monitoring of groundwater and surface water;
 - e) management and monitoring of stormwater management in portions of the Site not subject to an airspace lease to Related LLC;

- f) corrective actions related to releases from the Landfill; and
 - g) financial assurances for future obligations related to post-closure activities, including any corrective actions that may be necessary.
4. Related LLC, as the project developer, will lease airspace above the Landfill from the City and, after development, will be the owner/operator of buildings and certain structures above the Landfill (supported by piles or columns emplaced into the Landfill). Those buildings and structures will contain various vapor mitigation and energy systems that will be owned and operated by Related LLC. The development requires modifications to the Landfill's existing final cover, gas collection system, and leachate collection system and will require penetrating through the Landfill's waste and the base of the Landfill into underlying native material. These physical changes to the Landfill have the potential to cause impacts to water quality, human health, or the environment. For this reason, Related LLC is appropriately named as Discharger in this Order. Once Related LLC undertakes these physical changes to the Landfill, Related LLC will have joint responsibility with the City for compliance with those requirements, obligations, and tasks contained in this Order assigned to the Dischargers. The City and Related have reached an agreement to allocate to Related LLC responsibilities that arise from Related LLC's future development, ownership, and operation of certain buildings, systems, and features of the development. This Order acknowledges the agreement between the parties as appropriate.

PURPOSE OF ORDER UPDATE

5. This Order updates the existing Waste Discharge Requirements (WDRs) that were adopted in 2002 and requires the City to update the Landfill's Self-Monitoring Program.
6. The City approved a change in land use for the Landfill on June 28, 2016. The Santa Clara County Department of Environmental Health (the Local Enforcement Agency or LEA) approved a Post-Closure Land Use Plan (PCLUP), which included mixed-use development, on December 22, 2016. Title 27 of the California Code of Regulations (CCR) section 21190 (c) designates authority to the LEA to review and approve proposed postclosure land uses if the project involves structures on top of waste. Additionally, the California Department of Resources Recycling and Recovery (CalRecycle) found the proposed PCLUP to be technically adequate in meeting requirements of CCR Title 27 section 21190 on December 9, 2016. Regional Water Board staff reviewed and accepted the PCLUP on December 9, 2016. The Regional Water Board does not have jurisdiction over local land use decisions, but this Order recognizes the jurisdictional agency's approval of the change in land use.
7. This Order includes requirements to ensure that the change in land use approved by the City and the LEA can be implemented in a way that protects water quality, will not adversely impact waste containment features of the Landfill, or results in adverse impacts on human health or the environment.
8. This Order requires the Dischargers to comply with the Prohibitions and Specifications and, pursuant to the Provisions, to submit technical reports containing information pertinent to protection of water quality and human and ecological health during and following landfill development.

OPERATIONAL HISTORY

9. The Landfill began operation as an open burn dump in 1934 in a low-lying area between the Guadalupe River and San Tomas Aquino Creek. Additional low-lying areas nearby (north of Highway 237 and west of Alviso) were also used for waste disposal. The burn dump was changed to a sanitary landfill after the Regional Water Board began regulating the site in December 1965. The Landfill was used primarily for the disposal of non-hazardous solid wastes such as municipal solid waste (MSW) and construction and demolition debris. It stopped receiving waste on October 1, 1993.
10. The Landfill was developed as four discrete parcels (in order of operation, Parcels 4, 2, 3/6, and 1/1NW) as shown on Figure 1. Each of the parcels accepted primarily non-hazardous waste and operated as a sanitary landfill. Parcel 4 includes 86.6 acres and accepted wastes from the 1960s until at least 1977. Parcel 2 includes 60.9 acres and accepted waste between 1977 and 1984. Parcel 3/6 includes 34.9 acres and accepted waste between 1986 until 1991. Parcel 1/1NW includes 49.6 acres and received waste from 1982 until 1986 and again from 1991 until 1993.
11. No waste has been disposed at the Landfill since September 1993. In 1994, the City conducted final closure procedures at the Landfill, including the placement of final cover. Since closure, the City has continued to own the Landfill and remains responsible for maintenance of the landfill cover and groundwater monitoring. Since closure, portions of the Landfill have been used as a golf course/tennis complex, a landfill gas-to-energy plant, and a BMX track.

REGULATORY HISTORY

12. The Regional Water Board issued five orders between 1965 and 1986 to regulate the All-Purpose Landfill. These orders included specifications on landfill construction, operation, and closure. The first of these orders, Resolution No. 713, allowed the City to operate a sanitary landfill in what is now known as Parcel 4.
13. The Regional Water Board adopted WDRs Order No. 73-77 on December 27, 1973, for operation of the remaining six disposal areas at the Landfill.
14. Following the California Integrated Waste Management Board's approval of the Closure and Post Closure Maintenance Plan for Parcel 3/6 and Parcel 1 (Closure Plan), the Regional Water Board adopted WDRs Order No. 94-050 on April 20, 1994, supplementing the Closure Plan with requirements for groundwater and surface water monitoring, final closure of Parcels 2 and 4, leachate collection, and closure construction scheduling. Order No. 94-050 also rescinded Order No. 73-77.
15. The Regional Water Board adopted Order No. R2-2002-0008 on January 23, 2002, to implement upgrades to leachate and recovery systems and bring the Landfill into compliance with CCR Title 27 (Title 27). Order No. R2-2002-0008 rescinded Order No. 94-050.
16. This Order rescinds Order No. R2-2002-0008 and sets forth new WDRs consistent with the approved change in land use. This Order imposes conditions and prohibitions that maintain the leachate and methane collection systems, protect groundwater, prevent the migration of contamination, and protect human health and the environment during and following

development at the Landfill. The burden, including costs, of the monitoring and technical reports required by this Order bears a reasonable relationship to the need for the reports and the benefits to be obtained from the reports. Specifically, the reports are necessary to fully evaluate potential impacts to human health and the environment associated with the proposed post closure land use change and to ensure all structures, all utilities, and any changes made to the Landfill will not result in any adverse impacts to or impair the beneficial uses of waters of the State.

GEOLOGICAL AND HYDROGEOLOGICAL SETTING

17. **Geology:** The Landfill is located in the northern part of the Santa Clara Valley, which is a seismically down-dropped basin that is filled with up to 1,500 feet of alluvial fan deposits composed of a heterogeneous mixture of gravel, sand, silt, and clay. Gravel and sand were deposited in meandering stream channels draining into the San Francisco Bay. These coarser deposits are the primary aquifers or water-producing zones in the San Jose area. Regionally, these channel deposits are grouped into upper and lower aquifer zones. In the vicinity of the Site, the upper water-bearing zone generally extends to depths of 150 feet, the lower part of which is an extensive clay aquitard. The lower aquifer zone generally occurs below a depth of 150 feet below ground surface. The upper aquifer zone along the Bay margin in the vicinity of the Site has been impacted to a varying extent by salt water intrusion. The Landfill was built on levee and overbank/flood basin deposits.

18. **Seismicity:** The Landfill is located between two major, active fault systems, the San Andreas Fault Zone and the Hayward Fault. The closest fault to the Landfill is the Silver Creek Fault, which is located 1.5 miles to the east. The San Andreas Fault Zone is located approximately 12 miles to the southwest and has an expected maximum Moment magnitude of 8.0 and has displayed significant movement as recently as October 17, 1989, during the Loma Prieta Earthquake (Moment magnitude = 6.9), the epicenter of which was located approximately 25 miles to the south-southwest of the Site. The Hayward Fault is located approximately 6 miles to the northeast and has an expected maximum Moment magnitude of 7.5. Both faults are considered historic faults and could potentially cause excessive damage to improperly engineered structures. Other Holocene faults (i.e., active during the past 10,000 years) located within 30 miles of the Landfill include the Calaveras Fault, Mission Fault, Monte Vista-Shannon Fault, Pilarcitos Fault, Butano Fault, San Gregorio Fault, Zayante-Vergeles Fault, Sargent Fault, Las Positas Fault, Greenville Fault, and Mount Diablo Thrust. The Silver Creek Fault, located within 2 miles of the site, is also suspected of Holocene activity based on two magnitude 6.1 earthquakes in 1903.

The 2014 Working Group on California Earthquake Probabilities at the U.S. Geological Survey predicted a 72 percent chance of a magnitude 6.7 or greater earthquake occurring in the San Francisco Bay Area in the next 30 years. If not mitigated, damage as a result of ground shaking and/or settlement due to an earthquake of at least this magnitude may cause impairment of landfill gas extraction and landfill gas mitigation systems, leachate collection systems, groundwater monitoring wells, and vapor barrier infrastructure. Consequences of this damage could include loss of leachate or landfill gas containment, resulting in groundwater impairment and/or intrusion of methane and other landfill vapors to indoor air.

19. **Hydrogeology:** The hydrogeologic units in the vicinity of the Landfill include the refuse and underlying alluvium consisting primarily of clay and silt with interfingering layers of sand. The clay that underlies the northern portion of the Landfill may be Bay Mud. Within Parcel 4, portions of the Landfill's wastes are saturated with groundwater at least part of the time and constitute an unconfined hydrostratigraphic unit. The Landfill site lies over the Santa Clara Subbasin. The subbasin includes a shallow aquifer zone, which generally refers to aquifers that occur within 150 feet of ground surface, and deeper principal aquifer zones, which generally occur at depths below 150 feet. An aquitard varying in thickness from 20 to 100 feet, and typically at depths between 100 to 200 feet below ground surface, exists across the subbasin.

20. **Groundwater Elevations and Flow Direction:** Groundwater flow direction in the general vicinity of the Landfill is primarily northwards towards San Francisco Bay, whereas the interpreted flow direction within the Landfill is primarily from southwest to northeast, towards the Guadalupe River. Groundwater elevations are generally several feet higher on the southern perimeter of the Landfill than along the northern perimeter. Since groundwater monitoring is limited to wells along the periphery of the Landfill parcels, these measurements may not reflect the groundwater elevations or flow directions that may occur within the Landfill parcels as a result of possible leachate mounding, particularly in Parcels 1, 2, and 4, which do not have a leachate collection system. Recent investigations performed to support development of the Landfill suggest that leachate/groundwater levels in portions of Parcel 4 may be higher than surrounding groundwater levels, which could induce downward migration and outward radial flow from the Landfill. Provision 4 of this Order requires an evaluation of leachate and possible mounding within the Landfill.

21. **Ambient Groundwater Quality:** Water quality in the shallow groundwater (up to a maximum depth of approximately 50 to 60 feet) monitored by the Landfill's groundwater monitoring system varies across the Site, with wells along the northern Landfill boundary of Parcels 1 and 3/6 having higher salinity than wells further to the south (Parcels 4 and 2, see Finding 17 and Figure 2). This observation is consistent with proximity to the Bay and salt water intrusion in the shallow aquifer zone. While total dissolved solids (TDS) concentrations in all wells fluctuate over time, shallow groundwater along the northern boundary is consistently more saline, with concentrations sometimes exceeding 14,000 milligrams per liter (mg/L). TDS concentrations in shallow groundwater along the southern perimeter of the Landfill are consistently below 3,000 mg/L. Over the past ten years, TDS concentrations in wells located in the central portion of the Landfill (between Parcels 4 and 3/6 and along Lafayette Street) have fluctuated between 1,200 and 3,500 mg/L. TDS concentrations appear to decrease slightly with depth within the shallow aquifer. The background quality of groundwater deeper in the shallow aquifer zone or principal aquifer zones has not been evaluated in the vicinity of the Landfill. The nearest well that has been used for drinking water is located 0.8 mile to the southeast of the Landfill.

22. **Surface Water:** Parcel 4 is bounded to the southwest by San Tomas Aquino Creek (Figure 2), which flows northward to San Francisco Bay and is tidally-influenced in the vicinity of the Site. Parcels 1 and 2 are bounded to the northeast by the Guadalupe River, which also flows northward to San Francisco Bay and is tidally-influenced in the vicinity of the Site. On the northeast side of Parcels 1 and 2 (between the Landfill and the Guadalupe River) is a small unlined drainage ditch, referred to in groundwater monitoring reports as the eastern perimeter drainage ditch. It has not been determined whether San Tomas Aquino Creek and the

Guadalupe River are hydraulically connected to the Landfill by leachate mixing with groundwater and through groundwater/surface water interaction. It also has not been determined whether groundwater/leachate discharges into the eastern perimeter drainage ditch.

LANDFILL DESCRIPTION AND HISTORY

23. **Landfill Construction:** The Landfill was constructed using waste disposal methods accepted at the time of its development, including digging and filling trenches. The first two parcels, Parcels 4 and 2, were constructed without any type of base liner or leachate collection system. In the northern part of Parcel 4, the base of buried waste lies below the current groundwater surface level, meaning that waste materials are in direct contact with groundwater. No bottom liner was installed beneath Parcels 1, 2, and 4, consistent with waste disposal practices at the time of filling; however, clay cut-off walls were installed surrounding Parcels 1 and 2. Parcel 1NW, located adjacent to Parcel 1, and Parcel 3/6 were developed with clay base liners and a dendritic leachate collection system.
24. **Waste Characterization:** The Landfill accepted primarily MSW and construction debris; however, it is possible that hazardous materials were disposed of in the Landfill. A 1986 Preliminary Assessment Summary (California Department of Health Services) mentions the disposal of drums containing solvents, organics, inorganics, heavy metals, acids and bases in the general area of the Landfill. Subsequent site investigations performed to support Landfill development have found no evidence of buried drums; however, chlorinated volatile organic compounds (CVOCs) are present in groundwater as described in Finding 31. Specification 10 requires the Dischargers to incorporate contingency procedures into all drilling or excavation plans in the event hazardous wastes (or drums suspected of containing hazardous wastes) are encountered during Landfill development activities.
25. **Landfill Final Cover:** The Landfill has a final cover composed of soil that varies in thickness from 3 to 35 feet. This cover soil is imported fill consisting of mixed sand, gravel, clay, and silt layers. This cover soil also contains a clay soil layer with varying amounts of sand and gravel content, likely used as the low-permeability layer of the previously constructed final cover, which varies in thickness up to 7 feet throughout the Site. The bottom of this low-permeability layer generally marks the top of the refuse layer. The lower one foot of the clay layer and upper one foot of the refuse layer were likely used as the foundation layer during original final cover construction. Data from the Draft Landfill Cover Investigation Report, dated February 2015, indicated that Parcels 1/1NW and 3/6 currently have a suitable soil cover that includes foundation, low-permeability, and erosion-resistant layers as prescribed by Title 27, §21090(a)(1-3). In some locations within Parcel 4, the low-permeability layer was not observed in borings. A final geotechnical investigation of Parcel 4 has been performed and identified locations where the low-permeability layer needs further delineation (particularly within the fairway areas of the existing golf course) and may need to be repaired or replaced during development. Provision 9 requires further evaluation of the Landfill cover.
26. **Stormwater Drainage:** The final cover surface of the Landfill was reconfigured in 1993 in conjunction with development of the golf course. The stormwater collection and drainage system was designed to prevent ponding and oversaturation of the surface, which can contribute to increased leachate. Parcels 3/6 and portions of Parcel 4 drain to a west ditch/channel and ultimately to the Eastside Retention Basin. Portions of Parcels 1 and 2 drain

to the Eastside Retention Basin via the Eastside Drainage Channel. Portions of Parcel 4 drain directly to San Tomas Aquino Creek via outfalls along the west side of the parcel. The Golf Course Pump Station also conveys runoff to San Tomas Aquino Creek from portions of Parcel 4. Portions of Parcel 4 currently drain to a lined pond within the parcel. The planned development of the Landfill will completely reconfigure site drainage, including removal of this pond and other components of the existing stormwater management system. Specification 17 requires the Dischargers to design the Site to promote lateral runoff and prevent ponding and infiltration of water after development is complete.

27. **Leachate:** Parcels 1, 2, and 4 do not have an engineered base liner. It is assumed that leachate produced in the waste mass in these parcels is in direct communication with underlying groundwater. In the northern portion of Parcel 4, this is known to be the case, as the bottom portion of the waste mass lies below the groundwater table and is saturated and mixed with groundwater. The existing leachate monitoring system (described in Finding 32) provides very little information regarding leachate conditions in these parcels. Provision 4 requires further evaluation of leachate conditions within the Landfill.
28. **Leachate Extraction System:** A leachate extraction system was installed in 1985 and 1990 to collect leachate from the northern portion of the Landfill (Parcels 3/6 and 1NW). It consists of a network of parallel leachate collection drains set at the bottom of the refuse with leachate collection sumps for leachate drainage. Historically, leachate production has been minimal, and leachate has been observed and collected from only one of the six leachate risers in Parcel 3/6 (LR-1). Leachate has never been observed in Parcel 1NW. An automated leachate pumping system was installed in LR-1 in 2009. Over the last five years, the annual total volume of leachate removed from the system has ranged from approximately 150,000 to 500,000 gallons. All leachate collected from LR-1 is discharged to the sanitary sewer.
29. **Landfill Gas Collection System:** The Landfill continues to produce a significant amount of landfill gas, which is produced through the decomposition of putrescible waste and consists primarily of carbon dioxide and methane, with trace concentrations of other volatile organic gases such as vinyl chloride and benzene. The City operates a vacuum system to collect the landfill gas and burns this gas to produce energy using existing process equipment housed outside the former equipment enclosure in a fenced area in Parcel 1. Currently, 72 landfill gas extraction wells operate on all parcels to control vertical and lateral landfill gas migration in accordance with regulatory requirements. The collected landfill gas is processed at a landfill gas-to-energy facility operated by Amaresco under contract with the City. The gas collection system burned approximately 60,950,000 standard cubic feet of landfill gas between June 2015 and May 2016. Development plans include a complete replacement of the existing landfill gas collection system with a new, more efficient system.

MONITORING PROGRAMS

30. **Groundwater Monitoring** – Groundwater quality at the Landfill is currently monitored by 22 monitoring wells, including 12 wells around the landfill perimeter, and 10 wells located in the areas between parcels, as shown in Figure 2. Of the 10 wells between parcels, 6 are located between Parcels 4 and 3/6. The uppermost water-bearing zone (up to 25 feet deep) is monitored by 19 wells (indicated by a “G” prefix in the well name), and the next water-bearing zone (around 40 to 55 feet deep) is monitored by 3 wells (indicated by an “H” prefix in the well

name). These 22 wells are used for the detection monitoring program. Provision 4(b) of this Order requires additional characterization of the deeper portions of the shallow aquifer and the addition of permanent monitoring wells to evaluate the impacts the proposed development may have on groundwater.

The Self-Monitoring Program (SMP) attached to this Order requires the Dischargers to monitor groundwater levels quarterly and Monitoring Parameters (MPs) at a frequency no less than semi-annually in the groundwater monitoring wells. MPs are considered reliable indicators of a release from the Landfill and include field parameters (pH, EC, groundwater elevation), inorganics (TDS, ammonia, nitrate, dissolved metals), volatile organic compounds (VOCs), and total petroleum hydrocarbons (TPH). Constituents of Concern (COCs) are monitored once every five years and include semi-volatile organic compound (SVOCs), organochlorine pesticides, polychlorinated biphenyls (PCBs), and other water quality parameters. The groundwater quality in monitoring wells has consistently shown no significant impacts from the Landfill, except for VOCs in wells between Parcel 4 and Parcel 3/6 and recently on the southern perimeter of Parcel 2.

31. **Water Quality Impacts** – Groundwater in the northern portion of Parcel 4 and the southern portion of Parcel 3/6 is contaminated with CVOCs, including trichloroethylene (TCE) and its breakdown products cis-1,2-dichloroethylene, trans-1,2-dichloroethylene (DCE), and vinyl chloride (VC). Total CVOC concentrations range from below laboratory reporting limits to over 500 micrograms per liter ($\mu\text{g/L}$). This area of impacted groundwater appears to coincide with the area where waste is present beneath the water table and in direct contact with groundwater. There is no evidence that this CVOC plume has migrated outside Site boundaries. Provision 4(b) of this Order requires an evaluation of the vertical extent of these CVOCs.

Since 2014, concentrations of CVOCs, particularly TCE and DCE, have also been rising in well G-2R at the southern border of Parcel 2. CVOCs at this well may be from an offsite source known to exist between Calle del Mundo and the Landfill, but this has not been confirmed. Provision 4(a) of this Order requires the submittal of a work plan and technical report to determine the reason CVOC concentrations have been rising in well G-2R.

32. **Leachate Monitoring** – The Landfill contains six leachate monitoring wells; one in Parcel 1, three in Parcel 2, and two in Parcel 4. Leachate samples have only been obtained from the leachate collection sump LR-1 (Parcel 3/6). No samples have been collected from the other leachate wells since before 2009, and some of the wells could not be located during a site inspection in 2017. The condition of the leachate wells is unknown. The SMP requires that the Dischargers measure leachate levels quarterly and analyze chemistry semi-annually in the leachate monitoring wells shown on Figure 2. Monitoring Parameters for leachate include field parameters (pH, EC, groundwater elevation) and inorganics (TDS, ammonia, nitrate). COCs include VOCs, SVOCs, organochlorine pesticides, TPH, and PCBs. The leachate monitoring program is included in the SMP. COCs have been detected in the leachate samples collected from LR-1, but the frequency of detection is low and the concentrations of the compounds do not exceed the Regional Water Board's Environmental Screening Levels and do not pose significant risk to either human health or the environment. However, this only applies to leachate collected and removed from Parcel 3/6. Leachate from the other parcels is not currently monitored. This issue is addressed in Specifications 1 and 3 of this Order, and

Provision 4 of this Order requires the Discharger to perform a leachate evaluation at Parcels 2 and 4.

33. **Surface Water Monitoring** – Surface water monitoring is required as part of the SMP and approved Industrial and Construction Stormwater Monitoring Plans. The SMP requires the collection of surface water samples from four designated points, SW-1 through SW-4, representing upstream and downstream samples in both the Guadalupe River on the east side of the Landfill and San Tomas Aquino Creek on the west side of the Landfill. As shown in Figure 2, current sampling locations for the Guadalupe River appear to be located in a drainage ditch adjacent to the Landfill and not in the river. This issue is addressed in the SMP.
34. **Facility Inspections:** The following portions of the Site are inspected by the Dischargers as required by the SMP:
 - a) Surface water monitoring points;
 - b) Monitoring wells (groundwater and leachate); and
 - c) Stormwater conveyance system.

RECENT INVESTIGATIONS PERFORMED TO SUPPORT LAND USE CHANGE

35. Since 2014, multiple phases of geotechnical, waste, soil, landfill gas, and groundwater investigations; risk assessments; feasibility studies; pilot tests; and remedial/mitigation system designs have been completed by Related LLC and the City at the Site at the request of the Regional Water Board. These investigations were performed to refine understanding of existing site conditions and to support the design of various elements of the proposed development of the Landfill. The Regional Water Board reviewed and provided comments on each report listed below, in some cases with conditions that must be met upon further evaluation or refinement of design documents:
 - a) Geotechnical Field Exploration Work Plan, submitted July 3, 2014
 - b) Building Pile / Foundation Evaluation Technical Memorandum for City of Santa Clara, submitted July 11, 2014
 - c) Work Plan for Targeted Site Characterization, submitted September 26, 2014
 - d) Feasibility Study of Groundwater Remedial Alternatives, submitted July 21, 2015
 - e) Memorandum, Potential Historical Drum Disposal at Parcel 4, submitted July 23, 2015
 - f) Revised Draft Post-Closure Land Use Plan, submitted September 2015
 - g) Revised Landfill Gas Pilot Test Work Plan, Parcel 4, submitted January 14, 2016
 - h) Revised Work Plan, Geotechnical Investigation, Parcel 4, submitted February 3, 2016
 - i) Final Site Investigation and Environmental Risk Assessment, submitted May 6, 2016
 - j) Revised Final Post-Closure Land Use Plan, submitted November 17, 2016.

POST-CLOSURE DEVELOPMENT

36. The Dischargers submitted a Post-Closure Land Use Plan (PCLUP) that describes the Landfill property and the proposed new land use. This plan was accepted as technically adequate by

CalRecycle on December 9, 2016; was reviewed and accepted by Regional Water Board staff on December 9, 2016; and approved by the LEA on December 22, 2016. The current use as a golf course/tennis complex and BMX track will be replaced by the development of a very large mixed-use complex including commercial office space, retail, entertainment, and residential units. Based on the developer's preferred scheme, the PCLUP envisions a total of over 9,200,000 square feet of commercial space (of which 625,000 square feet would be in Phase 1 on Parcel 5 outside the southern boundary of the Landfill) and 1,680 residential units (of which 200 units would be in Parcel 5 outside the boundaries of the Landfill). Development is expected to occur in seven phases, beginning with the construction of Phase 1 in an adjacent area known as Parcel 5. Phases 2, 3, and 4, which comprise the City Center portion of the development, would be built over the Landfill's Parcel 4 area. Most of the development in Phases 2 through 4 would be constructed on a platform of approximately 40 acres that will be built above Parcel 4's landfill surface. This platform is proposed to consist of a pile-supported structural concrete slab with a building protection system (see Finding 37(h) below). Landfill gas extraction wells installed through this platform are proposed to be constructed with telescoping (slip) casings to accommodate extension expected from the settlement of refuse below a fixed well head. Parcel 3/6 will be developed as a park and open space, while Parcels 1 and 2 will be developed for commercial/industrial uses.

37. The PCLUP is the master planning document describing the proposed new land use. The PCLUP is largely a compilation of information derived from site investigations and project design plans from previously submitted, stand-alone project planning documents that were reviewed by Regional Water Board staff, including:

- a) Waste characterization and evaluation of possible historic drum disposal;
- b) Evaluation of historical and current groundwater conditions and groundwater remediation alternatives;
- c) Soil and landfill gas investigations;
- d) Landfill cover assessment;
- e) Geotechnical and seismic conditions;
- f) Human health risk assessment;
- g) Landfill gas collection system pilot test and design concept plans;
- h) Building pile and foundation evaluation; and
- i) The Environmental Impact Report.

38. The PCLUP describes aspects of the project including:

- a) demolition of existing structures and preparation of site for construction;
- b) evaluation of future site settlement and seismic hazards;
- c) platform and building foundation construction methods;
- d) design for the new final landfill cover, including stormwater management, irrigation, and landscaping;
- e) waste and odor management during construction;

- f) preliminary plans for utilities (water, sewer, gas, electrical, etc.);
- g) the enhanced landfill gas collection system;
- h) the landfill gas mitigation systems beneath buildings including vapor barrier membrane, sub-slab venting system, and methane sensor network;
- i) the leachate collection and removal system;
- j) an emergency response plan; and
- k) an operation and maintenance plan.

These aspects of the development will be described more fully and in greater detail in future project design documents, as required by the Provisions of this Order, or as required to be submitted and approved by the LEA and the City's Building Department.

REQUIRED PROTECTIVE MEASURES FOR DEVELOPMENT

39. This Order sets forth numerous requirements to ensure that the proposed development sufficiently protects water quality, human health, and the environment. These requirements are contained in the Prohibitions, Specifications, and Provisions in this Order. The need for these requirements is discussed below.
40. **Landfill Cap Regrading and Exposure of Waste:** An initial step of the planned land use is the preparation of the Landfill's existing surface for development. Grading and re-contouring the existing ground surface to reduce topographic relief will include cutting into the existing final landfill cover and will likely include grading and relocation of buried waste in some locations. Care must be taken to protect water quality and human health when waste is exposed during construction activities. Prohibitions 1, 2 and 6 of this Order prohibit degradation of water quality during development.
41. **Penetrations of Landfill for Support Piles:** The proposed land use requires the construction of several hundreds and possibly thousands of structural piles that will penetrate both the landfill final cover and the landfill base and extend into the underlying geologic media that are saturated with groundwater. These penetrations have the potential to cause or allow migration of landfill leachate into unimpacted groundwater. Prohibitions 6, 7, and 13 of this Order prohibit migration of contaminants from the Landfill, and Specification 9 of this Order requires the Dischargers to address these concerns in project design. The PCLUP describes drilling and pile installation methods that will minimize the likelihood of leachate loss through the landfill base. Nonetheless, leachate migration associated with these penetrations remains a possibility. Provision 5 of this Order requires the Dischargers to perform a groundwater/landfill gas evaluation at recently-constructed pile test locations in Parcel 4. These pile tests, which are being performed to evaluate pile capacities and downdrag loads, provide an opportunity to assess leachate migration before full-scale development commences. Specification 1 and Provisions 4 and 7 require the Dischargers to perform detection monitoring to identify any water quality impacts that may be caused or enhanced by development activities, to control leachate migration, and to perform corrective actions if needed.
42. **Vapor Intrusion:** The Landfill continues to produce significant volumes of methane and other landfill gases that, if not managed properly, pose a potential threat to human health.

Development of occupied buildings above the Landfill requires that a landfill gas collection and landfill gas mitigation system (i.e., building protection system) be operated without interruption, except as required and permitted for maintenance and/or repairs, for as long as gas is produced. A protocol for addressing system interruption will be required in the Post-Closure Maintenance Plan, which must be approved by the Executive Officer. Migration of landfill gas or vapors through the clay cap, concrete platform structure, cracks in concrete or clay, seismic joints, non-airtight openings, or utilities could allow methane or other vapors to accumulate in occupied or confined areas. Additionally, penetrations through the cap could allow atmospheric oxygen to migrate downward into the Landfill. The PCLUP proposes significant enhancements to the existing landfill gas collection system to ensure capture and prevent buildup of gases beneath the developed area. Enhancements to the gas collection system include addition of new wells to optimize the radius of influence and overall collection efficiency and a plan to use expanding (telescoping) wells to counteract the effects of landfill settlement. Prohibitions 11 and 12; Specifications 11, 12, and 13; and Provision 5 of this Order address these vapor intrusion issues.

43. **Access to Critical Systems:** Decomposition and settlement of waste and seismic events may cause damage to the gas collection and mitigation systems, vapor barriers, and groundwater/leachate monitoring and extraction wells. Damage from earthquakes is an additional significant risk in this seismically active area. Access to the gas collection system to repair damage from settlement and seismic activity is essential to protect human health, particularly for landfill gas collection wells installed through the structural platform in Parcel 4. Access to the groundwater/leachate monitoring/remediation systems to detect impacts to groundwater quality is essential. Specification 14 of this Order requires the Dischargers to design and maintain the ability to access these wells and other appurtenances for inspection, maintenance, and repairs following a seismic event or any observed damage from settlement.

FINAL DESIGN REPORTS

44. This Order and the LEA's approval of the PCLUP require the Dischargers to submit various investigation and design reports to provide full details for each phase of development. These include landfill cover evaluations, geotechnical investigation reports, landfill gas collection system design reports, the soil structure interaction evaluations, and other final engineering design reports for each phase of development.

BASIN PLAN AND BENEFICIAL USES

45. 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 Regional Water Board (State Water Board), U.S. EPA, and the Office of Administrative Law where required.
46. Regional Water Board Resolution No. 89-39, "Sources of Drinking Water," defines potential sources of drinking water to include all groundwater in the region, with limited exceptions for areas containing high TDS, high background contaminant levels, or those areas with a low-yield. 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 $\mu\text{S}/\text{cm}$, or
 - b) There is contamination, either by natural processes or human activity, that cannot be 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.
47. There is no current use of groundwater in the immediate vicinity of the Landfill. As noted in Finding 21, shallow groundwater in wells located along the northern Landfill boundary of Parcels 1 and 3/6 contains elevated chloride and total organic carbon levels and generally exceeds 3,000 mg/L TDS. The Regional Water Board has insufficient data to determine the extent of salt water intrusion into the northern portion of the Site. TDS concentrations are generally below 3,000 mg/L in shallow groundwater beneath the other portions of the Landfill. There is limited groundwater monitoring data within the Landfill area, and there is concern that some elevated TDS and chloride concentrations may reflect impacts from landfill leachate on groundwater quality, particularly in the area contaminated with CVOCs (see Finding 31). The quality of groundwater deeper in the shallow aquifer zone or principal aquifer zones in the vicinity of the Landfill has not been evaluated. In accordance with the Basin Plan and State Water Board Resolution No. 88-63, groundwater beneath the Site is considered a potential source of drinking water.
48. The existing beneficial uses of surface waters near the Landfill (San Tomas Aquino Creek and Guadalupe River), as defined in the Basin Plan, Table 2-1, include:
- a) Groundwater recharge;
 - b) Cold freshwater habitat;
 - c) Fish migration;
 - d) Preservation of rare and endangered species;
 - e) Fish spawning;
 - f) Warm freshwater habitat;
 - g) Wildlife habitat;
 - h) Water contact recreation; and
 - i) Noncontact water recreation.

The existing beneficial uses of groundwater in the Santa Clara Valley groundwater basin as defined in the Basin Plan, Table 2-2, include:

- a) Municipal and domestic water supply;
- b) Industrial process water supply;
- c) Industrial service water supply; and

- d) Agricultural water supply.

ANTIDegradation Policy

- 49. Title 40 of the Code of Federal Regulations, part 131.12, requires that state water quality standards include an anti-degradation policy consistent with federal policy. The State Water Board established California's anti-degradation policy through State Water Board Resolution 68-16, which incorporates the federal anti-degradation policy where federal policy applies. Resolution 68-16 requires that existing water quality be maintained unless degradation is justified based on specific findings. This Order complies with the anti-degradation policy by prohibiting degradation of existing water quality in the vicinity of the Landfill and requiring monitoring to confirm that no degradation occurs.

Safe Drinking Water Policy

- 50. 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. This Order promotes that policy by requiring the Dischargers to contain all contamination and demonstrate that the Landfill is not negatively impacting beneficial uses (including potential sources of drinking water) or water resources.

California Environmental Quality Act

- 51. A final Environmental Impact Report (EIR) was prepared for the proposed City Place development. On June 28, 2016, the City Council adopted a resolution certifying that the final EIR was completed in accordance with the requirements of the California Environmental Quality Act (CEQA). The Regional Water Board is a responsible agency under CEQA and has jurisdiction over landfill cover, leachate collection systems, water quality, and beneficial uses. The Regional Water Board reviewed the EIR and considered the effects associated with the project on areas within its jurisdiction. The Regional Water Board finds that all environmental effects have been identified for project activities that it is required to approve and has adopted feasible mitigation measures in this Order. With respect to the environmental effects of the project for which the Regional Water Board has jurisdiction, the Regional Water Board finds that the project will not have significant adverse impacts on the environment, provided that the mitigation presented in the final EIR and any subsequent agency-approved plan is designed and implemented as conditioned in this Order.
- 52. The EIR determined that the project may be susceptible to unstable soils (including differential settlement and liquefaction) and strong seismic ground shaking (which may affect groundwater monitoring and leachate and landfill gas collection and mitigation systems). The Dischargers have proposed to address unstable soils (settlement) by measures that include using building and podium foundations supported by drilled displacement columns and/or auger cast-in-place piles. The effectiveness of these measures is being tested in Parcel 4, where piles were installed in September 2016. The effects of these piles on water quality protection standards are discussed in Finding 41. The EIR notes that problems associated with unstable soils will also be addressed through the submittal of additional geotechnical reports; this issue is discussed in Findings 25, 35, 36, and 44. Impacts to waters of the State associated with unstable soils shall be mitigated to less-than-significant levels by compliance with Specification 13 and Provisions 4, 5, and 9. The EIR states that the effects of strong seismic ground shaking are less-than-

significant based on construction in accordance with the current California Building Code. The Regional Water Board response to the EIR stated its continued concern about acute risks of methane and other gases, fire explosion, or asphyxiation hazards, especially as a result of a significant seismic event. These issues fall under the jurisdiction of the LEA.

53. The EIR also identified hazardous materials (including landfill gas, soil, and groundwater use) and disturbance of the existing leachate collection and removal systems as potentially significant impacts. The Dischargers have proposed to address hazardous materials by submittal of a revised closure plan and post-closure maintenance plan, replacement of the landfill gas collection and removal system, installation of landfill gas protection systems under structures, a landfill gas monitoring and control program, building restrictions (including a limit of residential units on Parcel 4 to over open-air podium level garages or at least one level of enclosed commercial space), and a landfill hazards disclosure to be provided to all ground leases and space leases over the Landfill. The Dischargers have proposed to address disturbance of the existing leachate collection and removal systems by finalizing and implementing the *Draft Technical Memorandum: Leachate Collection and Removal System*. This only addresses the system in Parcel 3 and does not address existing leachate monitoring wells L-1 through L-6 in Parcels 1, 2, and 4. Impacts to waters of the State associated with hazardous materials shall be mitigated to less-than-significant levels by compliance with Specification 13 and Provisions 4, 5, and 9. However, existing leachate monitoring wells and any other wells, including gas extraction and condensate collection wells, that are no longer used are addressed in Finding 32, Prohibition 13, Specification 2, and Provision 4.
54. The EIR also determined that soil erosion and water quality impacts, such as contamination of stormwater run-on and run-off, may also result from exposure of soil and refuse during construction. Impacts to waters of the State associated with construction stormwater runoff shall be mitigated to less-than-significant levels by compliance with Provision 10. Impacts to waters of the State associated with post-construction stormwater management shall be mitigated to less-than-significant levels by compliance with Provision 11.
55. The proposed development may require filling of wetlands or other waters of the State. As noted in Prohibition 3 and Provision 3, the Dischargers must complete a jurisdictional delineation of wetlands and other waters of the State before any development takes place. Before impacting any wetlands or other waters of the State, the Dischargers must obtain a Water Quality Certification pursuant to section 401 of the Clean Water Act and WDRs pursuant to the California Water Code, and the Dischargers must provide mitigation for those impacts, as described in Provision 3.

The Regional Water Board, as a responsible agency under CEQA, found that there are environmental effects (e.g., fill of wetlands or other waters) associated with the project that will require mitigation. Provision 3 of this Order contains requirements to mitigate the effects caused by the project to less-than-significant effects on water quality and the environment. Issuance of a Water Quality Certification/WDRs will require review of specific impacts and specific mitigation measures in conformance with the requirements of CEQA.

NOTIFICATIONS AND MEETING

56. The Regional Water Board has notified the Dischargers and interested agencies and persons of its intent to prepare WDRs and has provided them with an opportunity for a public hearing and an opportunity to submit their written views and recommendations.
57. The Regional Water Board, in a public meeting, heard and considered all comments pertaining to this WDR update.

IT IS HEREBY ORDERED pursuant to the authority in section 13263 of the California Water Code and CCR titles 23 and 27, the Dischargers, their agents, successors, and assigns shall meet the applicable provisions contained in the Water Code and CCR titles 23 and 27 and shall comply with the following:

A. PROHIBITIONS

1. Development of the Landfill shall not result in adverse impact to waters of the State. Wastes exposed temporarily during construction shall not be allowed to exist in any position where they can migrate from the Landfill to adjacent geologic materials or waters of the State.
2. The Dischargers 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, other than activities described within the approved PCLUP, without prior Executive Officer approval. Minor surface excavation or reconfiguration activities, such as for installation of signs or landscaping or for routine maintenance and repair, do not require prior concurrence.
3. No development may occur until the Dischargers have completed a jurisdictional delineation of wetlands and other waters of the State. The Dischargers must obtain a Water Quality Certification pursuant to section 401 of the Clean Water Act and WDRs pursuant to the California Water Code for impacts to wetlands and/or waters of the State.
4. This Order does not allow for the take, or incidental take, of any special status species. The Dischargers shall use the appropriate protocols, as approved by the California Department of Fish and Wildlife and the U.S. Fish and Wildlife Service, to ensure that project activities do not impact rare or endangered species.
5. The creation of any new waste management unit is prohibited.
6. Migration of leachate or groundwater containing leachate from the Landfill is prohibited.
7. Leachate or groundwater containing leachate or in contact with waste shall not be discharged to waters of the United States unless specifically authorized under an NPDES permit.
8. Buildup or mounding of leachate levels within the Landfill that could adversely impact waters of the State is prohibited.

9. Surface drainage water, irrigation water, stormwater, or other water supply shall not be allowed to pond on top of the cap/liner system, above the platform structure, or within the landfill gas collection system or any utility corridor, or well access vault.
10. Surface drainage water, irrigation water, or stormwater shall not be allowed to pond on the landfill surface and shall not be allowed to contact or percolate through wastes during the life of the Landfill.
11. Landfill gas or volatile organic compounds shall not accumulate under or within any developed area at concentrations that may result in a hazardous condition within or under the developed area.
12. Landfill gas or volatile organic compounds shall not be vented away from any developed area at concentrations that may result in a hazardous condition.
13. Piers, piles, or columns placed through the Landfill's waste material shall not cause adverse impacts to groundwater quality, serve as a conduit for the downward migration of landfill leachate or contaminants, or serve as a conduit for the upward migration of landfill gases that are not fully captured by the landfill gas migration system, which protects buildings and structures above the landfill cap. All wells and borings that are no longer being used at the Site shall not pose a threat of leachate or contaminant migration below the refuse or landfill gas migration above the cap.
14. The Dischargers, 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 of the waste management units:
 - 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. Degradation of groundwater quality.
15. These Prohibitions shall apply to the City upon adoption of this Order and will apply to Related LLC commencing from the time Related LLC initiates any physical work that alters the existing cap, cover, leachate collection system, gas collection system, or any other physical feature of the existing Landfill.

B. SPECIFICATIONS

1. The City 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), which is required pursuant to Title 27, section 20390. The SMP attached to this Order is intended to constitute the DMP for the Landfill.

The WQPS for the Landfill shall include the following:

- a. Constituents of Concern (COCs): Title 27, section 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 VOCs and metals (see Table B-1) or any future COC added by the Executive Officer.
- b. Monitoring Parameters (MPs): MPs, a subset of the COCs, are typically the most mobile and commonly-detected COCs in groundwater 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 are chemicals identified in leachate at the Landfill in significantly greater concentrations than those found in groundwater and surface water. 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 Executive Officer. The City 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 monitoring wells are typically established using the background data set. However, because of local variations in groundwater flow direction and possible radial flow outward from the Landfill, background concentrations are difficult to establish. For this reason, the use of an alternative method of establishing concentration limits is recommended, such as identification of trends in concentrations over time using intra-well statistical analyses. Should an increasing trend be identified, the City will notify the Regional Water Board, and the Executive Officer may require retesting.
- d. Monitoring Points: Title 27, section 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 parcel boundaries and at additional locations, are specified in the SMP attached to this Order or may be added in future amendments thereto, as approved in writing by the Executive Officer. 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.

The City shall conduct monitoring activities according to the SMP, and as specified in Provisions 4 and 5, to verify the effectiveness of the Landfill’s systems for monitoring,

- containment, collection, treatment, and removal of groundwater, surface water, leachate, and landfill gas (to prevent the impairment of beneficial uses of water due to gas migration).
2. 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. All wells and borings that are no longer being used at the Site, and are not anticipated to be used, shall be destroyed in accordance with applicable permits.
 3. The City shall install additional groundwater and leachate monitoring devices as required to fulfill the terms of any future SMP issued by the Executive Officer.
 4. All samples 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).
 5. The City 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.
 6. The Dischargers shall maintain the Landfill so as to prevent a measurably significant increase in water quality parameters at points of compliance.
 7. Whenever there is “measurably significant” geochemical evidence of an exceedance of concentration limits or significant physical evidence of a release, the City shall implement an Evaluation Monitoring Program (EMP), as described in Title 27, section 20425, at the direction of the Executive Officer. In such a case, the City 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.
 8. 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.
 9. Landfill piles or piers shall be designed and constructed so as not to impact water quality, serve as conduits for leachate or landfill gas/VOCs, and be able to withstand stresses caused by settlement and seismic activity. Monitoring ports shall be installed through the platform structure to observe and measure settlement around the piles or columns.
 10. The Dischargers shall incorporate a contingency plan into all work plans for drilling through the refuse, whether for investigation purposes or for installation of wells, structural piles, or any excavation that may encounter waste. This contingency plan shall establish a protocol to

- implement if hazardous wastes (whether in buried drums or not) are encountered during drilling.
11. The landfill gas collection system and gas mitigation systems above the Landfill are considered a critical remediation system and shall operate uninterrupted, except as required and permitted for maintenance and/or repairs, for as long as landfill gas or volatile organic compounds pose a threat to human health or the environment.
 12. The landfill cap may develop cracks around pile caps as the soil around the piles settles. The Dischargers shall prevent downward migration of water and upward migration of landfill gas through these cracks in the landfill cap that cannot be fully captured in the landfill gas mitigation systems.
 13. Project features above the waste and within the development that are critical to the protection of all occupants and/or water quality, such as vapor barriers, landfill gas collection systems, leachate collection systems, groundwater monitoring wells, foundation seals, well seals, leak detection systems, utility areas, sampling ports, alarm systems, shall be designed and constructed to withstand stresses caused by landfill settlement and seismic activity (see also Provision 9).
 14. The Dischargers shall ensure that access is available for inspection and repair of critical features within the development that are related to the protection of occupants, water quality and the structural features of the development. These features include but are not limited to: landfill gas and leachate/groundwater monitoring wells, utilities, structural piles/columns, landfill gas collection systems, landfill gas alarms, leachate collection systems, any required remediation system, and irrigation water and stormwater collection systems (see also Provision 9).
 15. Prior to construction of each phase of development on top of the Landfill's clay cap, the Dischargers shall certify that a continuous clay liner/cap at least one foot thick with permeability of less than 10^{-6} cm/sec exists above the Landfill in the parcel included in the area of phased construction, as specified in Provision 9.
 16. Podium structures constructed over or adjacent to refuse shall be designed and maintained to prevent infiltration of any fluids from migrating into the final cover of the Landfill.
 17. The Dischargers shall notify the Regional Water Board immediately of any failure occurring in the Landfill that threatens the integrity of containment or control features or structures at the Landfill. Such failure shall be promptly corrected after approval of the method and schedule by the Executive Officer.
 18. The Dischargers shall grade and construct final cover systems for waste management units to promote lateral runoff and prevent ponding and infiltration of water, including landscaping irrigation water. Ordinary maintenance shall be the responsibility of the City.

19. The Landfill 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.
20. The City shall review the SMP after each phase of site development, in accordance with Provision 7 of this Order, and shall propose for Executive Officer approval, any improvements, such as new monitoring wells, that may be necessary to identify water quality impacts from the Landfill that may be caused by development.
21. The City shall install new monitoring stations to replace any monitoring wells designated as monitoring stations that are destroyed or lost during landfill development or maintenance, so as to provide equivalent or better monitoring capability.
22. The Dischargers shall maintain all devices or designed features, installed in accordance with this Order, such that they continue to operate as intended without interruption, except as required and permitted for scheduled maintenance and/or repairs.
23. The City shall provide and maintain a sufficient number of permanent surveyed monuments near the Landfill from which the location and change in elevation of wastes, structures placed above the waste, waste containment features, and monitoring facilities can be evaluated for settlement throughout landfill redevelopment, landfill closure, and landfill post-closure maintenance period. These monuments shall be installed by a licensed land surveyor or registered civil engineer.
24. The Dischargers shall maintain and operate containment, collection, drainage, and monitoring systems for surface water, irrigation water, and stormwater, and the City shall maintain and operate such systems for groundwater and leachate. These systems shall be maintained and operated as long as waste or leachate is present and poses a threat to water quality.
25. Consistent with the requirements and authority granted to the certified local enforcement agencies, the Dischargers shall adequately monitor, vent, extract, and control landfill gases from the Landfill to prevent gas buildup in the Landfill or structures and minimize the danger of explosion, adverse health effects, nuisance conditions, or the impairment of beneficial uses of water.
26. The Dischargers shall construct and maintain the structures that control leachate, surface drainage, erosion, and landfill gases and assure that they are constructed and maintained to withstand conditions generated during the maximum probable earthquake (MPE) and accessible for inspection and repair of damage caused by a seismic event. MPE is terminology used in Title 27 for the design of landfill environmental control systems. The Design Earthquake (DE) is used in the 2016 California Building Code and applies to landfill environmental control systems as part of building infrastructure. Since the environmental control systems will be incorporated into building infrastructure, the more stringent requirements of the California Building Code must be used. The 2016 California Building Code requires seismic design parameters to be developed for the risk-targeted Maximum Considered Earthquake (MCE_R), and the DE is taken as two-thirds of the MCE_R . The MCE_R corresponds to the lesser of two percent probability of exceedance in 50 years (2,475

- year return period) or 84th percentile of the controlling deterministic event both considering the maximum direction as described in ASCE-7-10. The seismic design parameters associated with the DE are expected to be at least equal to the MPE values.
27. The Dischargers shall provide reasonable access to any property they own or lease at the Landfill to allow for installation, sampling, monitoring, inspection, etc., of all devices and equipment necessary for compliance with the requirements of this Order.
 28. When there are multiple landowners or lease holders involved, the Dischargers shall ensure continued reasonable access to any property they own or lease at the Landfill to allow for installation, sampling, monitoring, inspection, etc., of all devices and equipment necessary for compliance with the requirements of this Order.
 29. The Dischargers shall comply with all applicable provisions of Title 27 that are not specifically referenced in this Order.
 30. These Specifications shall apply to the City upon adoption of this Order and will apply to Related LLC: (i) for each parcel commencing from the time Related LLC initiates any physical work on that parcel that alters the existing cap, cover, leachate collection system, gas collection system, or any other physical feature of the existing Landfill; and (ii) for each other parcel that is impacted by Related LLC work on a parcel.

C. PROVISIONS

1. **DUTY TO COMPLY:** The Dischargers shall comply immediately, or as prescribed by the time schedule below, with all conditions, Prohibitions, Specifications, and Provisions of this Order. All required submittals must be acceptable to the Executive Officer. 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 pursuant to this Order are being requested pursuant to section 13267 of the California Water Code. Failure to submit reports in accordance with schedules established by this Order or failure to submit a report of sufficient technical quality to be acceptable to the Executive Officer may subject the Dischargers to enforcement action pursuant to section 13268 of the California Water Code.
3. **WETLAND DELINEATION AND 401 CERTIFICATION:** The Dischargers must complete a jurisdictional delineation of wetlands and other waters of the State that may be impacted by project implementation before any development takes place. The Dischargers must obtain a Water Quality Certification pursuant to section 401 of the Clean Water Act and WDRs pursuant to the California Water Code prior to impacting wetlands or other waters of the State. Issuance of Water Quality Certification/WDRs will require review of specific impacts and specific mitigation measures in conformance with the requirements of CEQA.

If mitigation that is acceptable to the Executive Officer consists of Discharger-responsible mitigation (e.g., creation, restoration, and/or enhancement of wetlands or other waters), the

mitigation plan must include a monitoring and maintenance plan (MMP) sufficient to confirm the success of wetland mitigation projects and/or other water mitigation projects in providing the required acres of wetlands that exhibit wetland hydrology, soils, and vegetation and/or to confirm that the required quantity of stable and appropriately vegetated other waters have been established. An adequate MMP should, at least, contain the following minimum components: a summary of maintenance activities, including irrigation, weeding, and replanting of dead or missing vegetation; a schedule for implementing maintenance activities; the plant palette selected for replanting, including pounds per acre of seeds, quantities of sedges, shrubs, and trees, and sources of all plant material; metrics to be used in assessing successful establishment of vegetation; annual performance criteria, including percent cover of vegetation, percent survival of plants, and final success criteria; and contingency measures to be implemented in the event that annual performance criteria or final success criteria are not attained, or if wetlands and/or other waters are not geomorphically stable at the end of the initial monitoring period. The MMP should describe the features (e.g., bank slumping, bank undercutting, knickpoints, headcuts, excessive sediment deposition) that will be used to assess the geomorphic stability of wetlands and/or other waters.

Maintenance and monitoring should be conducted for a minimum period of five years. Mitigation wetlands and/or other waters mitigation sites shall be preserved in perpetuity by placing a conservation easement, deed restriction, or other form of restrictive covenant over the mitigation site.

COMPLIANCE DATE: Application for Water Quality Certification/WDRs due 180 days prior to commencement of development activities on any portion of the property above the Landfill identified as potential water of the State.

No later than 60 days prior to impacting waters of the State at the Site, the Dischargers shall submit to the Executive Officer a cost estimate for funding of the mitigation program described in this provision, including implementation of the MMP, as well as a description of the funding mechanism that will be used to ensure the successful implementation of mitigation for impacts to waters of the State. Waters of the State shall not be impacted at the Site until the Executive Officer has approved the cost estimate and the funding mechanism.

4. **SUPPLEMENTAL LEACHATE/GROUNDWATER EVALUATION:** The City shall submit a Work Plan and Technical Report acceptable to the Executive Officer evaluating remaining data gaps for leachate and groundwater.
 - a. The leachate evaluation shall determine if leachate mounding exists within the refuse in Parcels 2 and 4; the leachate flow directions beneath Parcels 2, and 4; and, if leachate is present, the chemical characteristics of leachate within these parcels. The Work Plan shall include a summary of historical data and construction details for existing landfill leachate wells L-1 through L-6, as well as a plan to locate, establish current conditions for, and either rehabilitate or properly destroy each well as appropriate. The Work Plan shall also identify data gaps and propose the installation of additional leachate monitoring wells to address any data gaps. Wells installed to address Provision 5 may be included in this evaluation. The Work Plan and Technical Report shall also evaluate whether landfill leachate is a source of CVOCs that have been recently detected along the boundary of Parcel 2 (in the vicinity of well G-2R). All leachate monitoring wells

installed for these purposes shall be monitored for SMP constituents quarterly for at least 18 months. The Report shall document the installation, development, and initial leachate and groundwater monitoring results. Subsequent monitoring results shall be included in the SMP reporting requirements. If ongoing leachate monitoring indicates a buildup of leachate or a release of CVOCs or other monitoring parameters that exceeds WQPS or may negatively impact beneficial uses of groundwater, the Executive Officer may require the City to submit a Corrective Action Plan, consistent with Title 27 and acceptable to the Executive Officer. The Report shall propose corrective actions to reduce or control leachate buildup (such as leachate collection, extraction, and disposal), and groundwater remediation as appropriate to achieve water quality objectives.

- b. The groundwater evaluation shall provide subsurface information sufficient to select suitable locations for additional monitoring wells to improve the vertical coverage of the existing groundwater monitoring program. These wells must provide the ability to detect releases of COCs from the landfill that may result from development activities, particularly the installation of structural piles. These wells must be screened in potential transmissive zones (i.e., permeable layers) at depths beneath the deepest existing wells (i.e., >60 feet), and preferably deeper than the anticipated depth of pile penetrations, provided the wells do not fully penetrate into the regional aquifer (i.e. below a depth of 150 feet). The wells must be completed before development begins over the Landfill, so that baseline (pre-development) water quality conditions can be established. These wells will be permanent additions to the SMP for the Landfill and must be monitored quarterly for at least the first two years following commencement of development over the Landfill.

WORK PLAN DUE DATE: July 12, 2017

REPORT DUE DATE: Well installation and initial round of testing due 90 days following approval of Work Plan. Subsequent test reports due 30 days following each quarterly test date after well installation.

5. **LANDFILL PENETRATION EVALUATION:** The Dischargers shall monitor groundwater and landfill gas at locations where test piles have already been constructed in Parcel 4, and possibly other locations where test piles are installed prior to the commencement of development, in order to evaluate the potential for the migration of landfill leachate into underlying groundwater, migration of landfill gases upward through the cap, and migration of atmospheric oxygen downward through the cap into the refuse. The City shall submit a Work Plan, acceptable to the Executive Officer, proposing the methodology to be used in the evaluation and a Technical Report that summarizes the results of the evaluation. The Work Plan shall include a proposal for the installation of groundwater monitoring wells at a minimum of three locations around test pile locations to establish local groundwater flow direction. Each location shall, at a minimum, include groundwater monitoring wells screened within the saturated portion of the refuse, where leachate is expected to be mixed with groundwater, and additionally across the first encountered water-bearing zone below the base of refuse. Depending upon initial results, additional deeper wells may be required by the Executive Officer to determine the vertical extent of impacts. The Work Plan shall include a proposal for the installation of soil gas monitoring wells at each test pile location. Each location shall, at a minimum, include a soil vapor monitoring well screened within the refuse and a soil vapor monitoring well screened

immediately above the landfill cap. All monitoring wells installed for these purposes shall be monitored for the SMP constituents (groundwater) and existing monitoring requirements (landfill gas) quarterly for at least 18 months. The report shall document the installation, development, and initial monitoring results. Subsequent monitoring results shall be included in the SMP reporting requirements.

WORK PLAN DUE DATE: July 12, 2017

REPORT DUE DATE: 90 days following Executive Officer approval of Work Plan

6. **POST-CLOSURE MAINTENANCE PLAN:** The City shall submit a technical report, acceptable to the Executive Officer and the LEA, that fulfills the requirement for a Post-closure Maintenance Plan (PCMP), in accordance with Title 27 section 21769. In addition to plan elements required under Title 27, the PCMP must (a) include a protocol for addressing interruptions of the landfill gas collection and mitigation systems; (b) include a plan to prevent water releases from within and/or above the podium and other building foundations from penetrating the landfill cover or disrupting the functions of any landfill gas collection or mitigation system; and (c) provide assurance that an effective vapor barrier and landfill gas extraction system, as designed, will function as intended (particularly following a major seismic event or significant settlement) and can be promptly accessed when repairs or maintenance are needed.

COMPLIANCE DATE: 120 days prior to any construction

7. **DETECTION MONITORING PROGRAM REVIEW:** Before each phase of development over the Landfill commences, the City shall evaluate and determine if changes are needed to ensure the adequacy of the Landfill's DMP to promptly detect any releases to groundwater or surface water from the Landfill or any changes in water quality that may have been caused by post-closure development activities. Based on the results of the evaluation, the City shall propose to the Executive Officer any improvements, such as new monitoring wells, that may be needed to identify water quality impacts from the Landfill and demonstrate compliance with the WQPS and Prohibition 1 of this Order.

COMPLIANCE DATES: Initial DMP review to be completed at least 90 days prior to initial phase of construction over the Landfill. Subsequent DMP reviews to be completed at least 60 days prior to each subsequent phase of construction.

8. **WELL INSTALLATION OR DESTRUCTION REPORT:** The City 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 or other provisions of this Order.

REPORT DUE DATE: 60 days following well installation or destruction

9. **PHASE INVESTIGATIONS AND DESIGNS:** Prior to any phase of development over the Landfill, the Dischargers shall submit technical documents, acceptable to the Executive Officer, that include:
 - a. Landfill Cap Certification – Prior to the construction of each phase of development above the clay cap of the Landfill, the Dischargers shall submit a report that certifies that a continuous one foot thick or thicker clay liner/cap with a permeability of less than 10^{-6}

cm/sec exists above the Landfill in the parcel included in the area of phased construction.

- b. Geotechnical Investigation Report – Prior to the construction of each phase of development over Parcels 1 and 2, the Dischargers shall submit a geotechnical report and soil structure interaction evaluation that evaluates the geotechnical conditions of those parcels to support development of design criteria for the project that are protective of human health and the environment.
- c. Design details showing critical project features including podium structures, foundation pile and column penetrations and connections, landfill gas well and system details, seismic joints and details on sealing from gas/vapors, settlement monitoring ports, and vapor barriers to ensure the proposed project will be protective of human health and the environment. These design documents must demonstrate that the landfill gas extraction and building protection systems will be constructed and maintained to function as intended and can be accessed for repairs and maintenance to promptly address any damage related to settlement and seismic events.
- d. Certification that all other required agency permits and approvals have been obtained, as necessary, prior to development.
- e. Certification that the proposed development is consistent with the April 2016 final EIR for the project and the November 17, 2016, final PCLUP.

These plans shall describe the project, identify key design components that may impact existing containment or monitoring structures, and specify components of the design necessary to maintain integrity of those structures and prevent water quality impacts.

COMPLIANCE DATE: At least 60 days prior to each phase of construction

10. **CONSTRUCTION-RELATED STORMWATER PERMIT:** Prior to proposed grading or development greater than one acre in size, the Dischargers shall submit a Notice of Intent to the State Water Board, submit a Stormwater Pollution Prevention Plan 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 Stormwater Discharges Associated with Construction Activities (Order No. 2010-0014-DWQ, NPDES Permit No. CAS000002). This includes the following requirements:
 - a. Prior to the start of the rainy season, the Dischargers shall ensure that disturbed areas of waters of the State and disturbed areas that drain to waters of the State are protected with correctly installed erosion control measures (e.g., jute, straw, coconut fiber erosion control fabric, coir logs), and/or revegetated with propagules (seeds, cuttings, divisions) of locally collected native plants. Erosion control textiles that include plastic monofilament netting are prohibited from use at the project site or at any mitigation site;
 - b. Where areas of bare soil are exposed during the rainy season, appropriate sediment and silt control measures shall be used where silt and/or earthen fill threaten to enter waters of the State. Silt control structures shall be monitored for effectiveness and shall be repaired or replaced as needed. Buildup of soil behind silt fences shall be removed promptly and any breaches or undermined areas repaired at once.

COMPLIANCE DATE: 60 days prior to each phase of construction

11. **POST-CONSTRUCTION STORMWATER TREATMENT:** The Dischargers shall submit treatment plans for runoff generated from impervious surfaces to the Executive Officer for review; these treatment plans shall include the operation and maintenance manual for the treatment measures, identify the responsible party for implementing operation and maintenance of the treatment measures, and identify the funding source for operation and maintenance of the treatment measures. Treatment measures for stormwater runoff associated with impervious surfaces created at the Site must be designed in accordance with the design standards in Provision C.3 of the NPDES Municipal Regional Permit for municipal stormwater runoff (Order No. R2-2015-0049; NPDES Permit No. CAS612008; adopted November 11, 2015). Construction of new impervious surfaces at the Site shall not commence until the Executive Officer has approved the designs of the stormwater treatment measures proposed for those surfaces. Stormwater treatment measures must be functional in the first rainy season following construction of new impervious surfaces that will drain to the treatment measures.

COMPLIANCE DATE: At least 60 days prior to the construction of any improvements at the Project site that will create impervious surfaces

12. **ACCESS AND INSPECTION:** The Dischargers shall submit technical reports acceptable to the Executive Officer that describe design features and methods to access, inspect, and repair critical features above the landfill clay cap and within the development that are related to the protection of occupants, water quality, and the structural integrity of the development features. These features include but are not limited to: landfill gas, groundwater, and leachate monitoring wells; structural pile caps; structural slabs; vapor barriers; utilities; landfill gas collection systems; landfill gas alarms; leachate collection systems; and irrigation water collection systems. These reports shall be submitted prior to each phase of development.

REPORT DUE DATE: 60 days prior to each phase of development

13. **LANDFILL GAS/VAPOR SYSTEM:** The landfill gas and vapor collection system is considered a critical remediation system that must be operated uninterrupted, except as required and permitted for maintenance and/or repairs, as long as landfill gas or volatile organic compounds pose a threat to human health or the environment. The City shall submit semi-annually a summary report that certifies that the landfill gas vapor system has operated uninterrupted during the reporting period and remains protective of human health and the environment. The report shall describe any system issues related to exceedances, repairs, maintenance, or significant operational changes.

COMPLIANCE DATE: January 31 and July 31 of each year

14. **ANNUAL MAINTENANCE REPORT:** The City shall submit a technical report to the Regional Water Board, acceptable to the Executive Officer, detailing the repair and maintenance activities that need to be completed prior to the commencement of the next rainy season. This letter report shall also include a schedule for repair and maintenance activities, and a cost analysis detailing the anticipated expense for all repairs, maintenance,

and monitoring during the next 12 months. Repair and maintenance estimates shall be based on rainy season inspections conducted throughout the winter as required in the SMP.

COMPLIANCE DATE: July 31 of each year

15. **EMERGENCY RESPONSE CONTINGENCY PLAN:** The Dischargers shall submit an Emergency Response Contingency Plan, acceptable to the Executive Officer, outlining measures necessary in order to stop and contain the migration of pollutants to receiving waters as the result of any earthquake generating ground shaking, excessive rainfall, damaging tidal action, or other significant events. The Contingency Plan shall describe the containment features and groundwater monitoring and leachate monitoring facilities potentially impacted by such events. The Contingency Plan shall provide for reporting results of the post-event inspection to the Regional Water Board within 72 hours of the occurrence.

In the event that a buildup or loss of containment of landfill gases (methane or VOCs) or other hazardous conditions pose a risk to the health and safety of occupants, visitors, or workers at the Site, an evacuation plan, approved in advance by the LEA and the City, shall be implemented.

COMPLIANCE DATE: 120 days prior to any construction

16. **EARTHQUAKE INSPECTION REPORT:** The City shall submit a detailed Post-Earthquake Inspection Report, acceptable to the Executive Officer, in the event of any earthquake generating ground shaking of Moment Magnitude 5.5 or greater, at or within 30 miles of the Landfill, or any other earthquake that results in potentially damaging effects. The report shall describe the containment features, groundwater monitoring, and control facilities potentially impacted by seismic deformations of the Landfill. Any physical damage to the Landfill that affects the ability of the unit to contain waste, leachate, and/or landfill gases or that may impact waters of the State or human health must be reported to the Executive Officer.

COMPLIANCE DATE: Notification due immediately; written report due within 2 weeks of earthquake

17. **CORRECTIVE ACTION PLAN (CAP):** Upon discovery of water quality impacts or damage to the landfill cap or to structures that contain waste or control leachate, surface drainage, and landfill gases, the Dischargers shall submit a CAP, acceptable to the Executive Officer. This CAP shall describe any corrective actions necessary to remediate water quality impacts or to repair damage that could potentially cause impacts to water quality or human health.

WORK PLAN DUE DATE: within 30 days following discovery of impacts or damage

18. **FINANCIAL ASSURANCE for POST-CLOSURE MAINTENANCE:** The City shall provide financial assurance for post-closure maintenance that complies with the requirements of Title 27. The City shall provide evidence to the Executive Officer that the City's financial assurance mechanism is acceptable to CalRecycle.

COMPLIANCE DATE: 120 days prior to any construction

19. **FINANCIAL ASSURANCE FOR CORRECTIVE ACTIONS:** The City shall provide financial assurance for corrective action that complies with the applicable requirements of Title 27. The City shall provide evidence to the Executive Officer that the City's financial assurance mechanism is acceptable to CalRecycle.

COMPLIANCE DATE: June 1 of each year

20. **CHANGE IN LANDFILL CONDITIONS:** The Dischargers shall immediately notify the Regional Water Board of any flooding, ponding, settlement, equipment failure (including the structural slab, vapor barriers, wells and other parts of the vapor collection and mitigation systems, settlement monitoring ports, etc.) or other change in landfill conditions that could impair the integrity of the landfill cap, building protection system, waste or leachate containment facilities, and/or drainage control structures and shall immediately make repairs. Within 30 days, the Dischargers shall prepare and submit a technical report, acceptable to the Executive Officer, documenting the corrective measures taken.

NOTIFICATION DUE DATE: Within 24 hours of discovery

REPORTING DUE DATE: 30 days after initial notification

21. **LONG-TERM FLOOD PROTECTION REPORT:** The City shall submit a report, acceptable to the Executive Officer, for long-term flood protection of the Landfill. The report shall include a consideration of feasible options for achieving protection of the Landfill from a 100-year flood in the face of rising sea levels and increasing flood frequency and intensity. The report shall consider methods developed by the San Francisco Bay Conservation and Development Commission to predict and protect against future flooding. The report shall be updated every five years throughout the post-closure maintenance period of the Landfill, utilizing the most recently available and credible information at the time of the update.

REPORT DUE DATE: August 31, 2018, and update every five years thereafter

22. **Availability:** A copy of these WDRs shall be maintained by the Dischargers and shall be made available by the Dischargers to all employees or contractors performing work (maintenance, monitoring, repair, construction, etc.) at the Landfill.
23. **Change in Ownership/Operation:** The Dischargers must notify the Executive Officer, in writing, at least 30 days in advance of any proposed transfer of this Order's responsibility and coverage to a new discharger. The notice must include a written agreement between the Dischargers and the new dischargers containing a specific date for the transfer of this Order's responsibility and coverage between the Dischargers and the new discharger. This agreement shall include an acknowledgment of which dischargers are liable for violations up to the transfer date and which dischargers are liable from the transfer date on. The Regional Water Board must amend this Order to add additional parties or remove named Dischargers in the event of a change of ownership.
24. **Report of Waste Discharge:** 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.

25. **Revision:** This Order is subject to review and revision by the Regional Water Board.
26. **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 Dischargers from liability under federal, State, or local laws, nor do they create a vested right for the Dischargers to continue the waste discharge.
27. **Severability:** Provisions of this Order are severable. If any provision of this Order is determined, upon review by the State Water Board or a reviewing court, to be invalid, the remainder of these requirements shall not be affected.
28. **Operation and Maintenance:** The Dischargers 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 Dischargers 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.
29. **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 Dischargers shall, upon discovery, 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.
30. **Entry and Inspection:** The Dischargers 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.

31. **Analytical Methods:** Unless otherwise permitted by the Executive Officer, all analyses shall be conducted at a laboratory-certified for such analyses by the California 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 "Guidelines Establishing Test Procedures for Analysis of Pollutants" promulgated by U.S. EPA.
32. **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 and discharges subject to a general NPDES permit) must file an NPDES permit application with the Regional Water Board.
33. **Endangerment of Health or the Environment:** The Dischargers 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, or an authorized representative, within 24 hours from the time a 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 the steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance. The Executive Officer, or an authorized representative, may waive the written report on a case-by-case basis if the oral report has been received within 24 hours.
34. **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
 - b. Santa Clara County Department of Environmental Health (Local Enforcement Agency)
 - c. CalRecycle
 - d. Santa Clara Valley Water District
 - e. City of Santa Clara, Water and Utilities

The Executive Officer may modify this distribution list as needed.

35. **Reporting Requirements:**
 - a. Hard copies:
 - i. Technical reports/plans submitted by the Dischargers 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 that clarifies the reasons for non-compliance and that 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 SMP, an evaluation of the current groundwater, surface water, and leachate monitoring systems 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 principal 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 Dischargers are responsible for submitting the following via the internet:
 - a) Groundwater, surface water, and leachate 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 24a. 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 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 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 and leachate 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 and Order adopted by the California Regional Water Quality Control Regional Water Board, San Francisco Bay Region on _____.

Bruce H. Wolfe
Executive Officer

Attachments:

Figure 1, Landfill Location
Figure 2, Landfill Parcels and Monitoring Points
Self-Monitoring Program

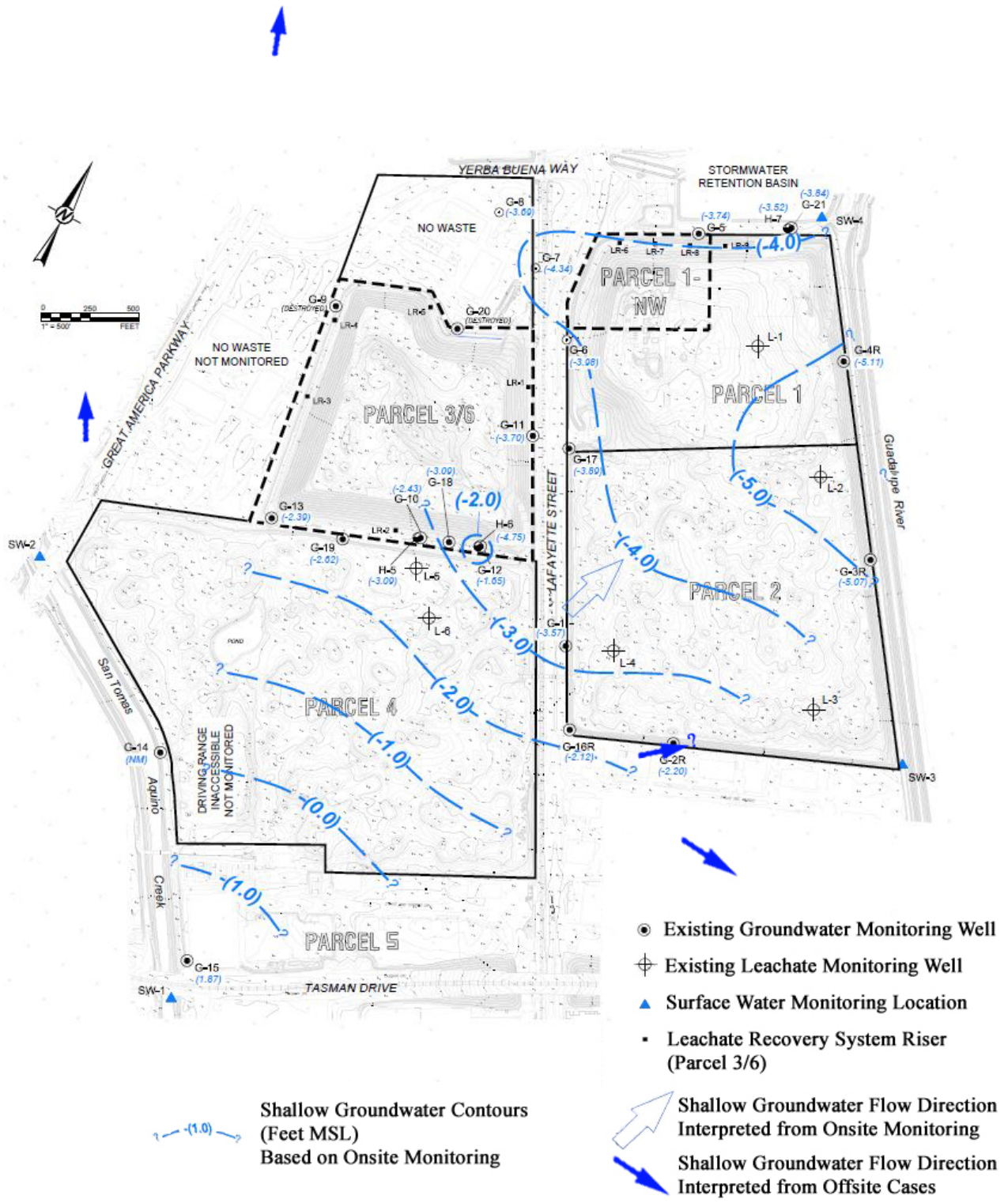
Figure 1, Landfill Location



Base map from Google Earth;
Photography date: January 31, 2016.



Figure 2, Landfill Parcels and Monitoring Points



[Note the surface water locations SW-3 and SW-4 locations as shown do not appear to be compliant with the requirements of the SMP for monitoring the Guadalupe River and must be adjusted.]

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

SELF-MONITORING PROGRAM

FOR

**SANTA CLARA ALL-PURPOSE LANDFILL
SANTA CLARA, SANTA CLARA COUNTY**

REVISED TENTATIVE ORDER

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 commercial facilities constructed on a Landfill (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 the California Code of Regulations, Title 27, sections 20380 through 20435 (Title 27). The principal purposes of an SMP are: (1) to document compliance with waste discharge requirements (WDRs) and prohibitions established by the Regional Water Board; (2) to facilitate self-policing by waste dischargers 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 dischargers in complying with the requirements of Title 27.

B. MONITORING REQUIREMENTS

Monitoring refers to the observation, inspection, measurement, and/or sampling of environmental media, landfill containment and control facilities, and waste disposed in the Landfill. 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, 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 Landfill.

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 approved by Regional Water Board staff. Analytical testing of environmental media required by this SMP shall be performed by a 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” refers to any surface water that actually or potentially receives surface or groundwater that passes over, through, or under waste materials or impacted soils. In this case, the groundwater beneath and adjacent to the Landfill and the surface runoff from the Landfill are considered “receiving waters.”

Standard Observations

“Standard observations” refers to observations within the limits of the Landfill, at the Landfill perimeter, and of the receiving waters. Standard observations to be performed and recorded include:

1. Landfill:
 - a. Evidence of ponded water on the Landfill, including a map of approximate locations, and an estimate of the size of the area affected and the volume of water;
 - b. Evidence of odors, including presence or absence, characterization, source, and distance of travel from source;
 - c. Evidence of erosion and/or daylighted waste, including a map of the approximate location and an assessment of the likelihood that soil or waste was discharged to the waters of the State; and
 - d. Measurement of groundwater and leachate elevations.

2. Perimeter of Landfill:
 - a. Evidence of liquid leaving or entering the Landfill, estimated size of affected area and flow rate (show affected area on map);
 - b. Evidence of odors, including presence or absence, characterization, source, and distance of travel from source;
 - c. Evidence of erosion and/or daylighted waste;
 - d. Vegetation coverage; and
 - e. Measurement of groundwater elevations.

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, including presence or absence, characterization, source, and distance of travel from source;
 - d. Evidence of beneficial use, such as presence of water associated with wildlife, and evidence of any stressed vegetation;
 - e. Estimated flow rate, if possible, and for tidally-influenced water bodies, flow direction; and
 - f. Weather conditions, such as estimated wind direction and velocity, total precipitation.

Facilities Inspections

“Facilities inspections” refers to the inspection of all containment and control structures and devices associated with the Landfill and overlying development. Containment and control facilities may include the following:

1. Final cover;
2. Stormwater management system elements such as perimeter drainage and diversion channels, ditches and down-chutes, and detention and sedimentation ponds or collection tanks;
3. Landfill gas collection system; and
4. Leachate extraction system elements such as leachate storage tanks, pumps and control equipment.
5. Groundwater monitoring well network.

Quality Assurance/Quality Control Sample Monitoring

The City 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 semiannual monitoring event;
3. Equipment blank – one sample per 10 monitoring stations; and
4. Trip blank – one sample per cooler.

C. REPORTING REQUIREMENTS

Discharger reporting responsibilities are specified in the Water Code sections 13260, 13267 subdivision (b), and 13383 and this Regional Water Board's Resolution No. 73-16 and Order No. 93-113. At a minimum, each 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 City'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, waste management units, containment and control structures, treatment facilities, surface water bodies, and Landfill/property boundaries;
 - b. Groundwater level/piezometric surface/leachate contour maps for each groundwater-bearing zone of interest showing inferred groundwater gradients and flow directions under/around the Landfill 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 and leachate depths;
 - e. Groundwater and leachate 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 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 signature of the laboratory director or his/her designee indicating that he/she has supervised all analytical work in his/her laboratory; and
- c. A discussion of the field and laboratory results that includes the following information:
 - i. Data interpretations;
 - ii. Conclusions;
 - iii. Recommendations;
 - iv. Newly implemented or planned investigations and remedial measures;
 - v. Data anomalies;
 - vi. Variations from protocols;
 - vii. Condition of wells; and
 - viii. Effectiveness of leachate monitoring and control facilities.

5. Appendices: The following information shall be provided as appendices in electronic format unless the information is already contained in a monitoring report approved by Regional Water Board staff and referenced in the SMR:

- a. New boring and well logs;
- b. Method and time of water level measurements;
- c. Purging methods and results, including:
 - i. The type of pump used, pump placement in the well, and pumping rate;
 - ii. The equipment and methods used to monitor field pH, temperature, and electrical conductivity;
 - iii. The calibration of the field equipment used to measure pH; temperature, conductivity, and turbidity; and
 - iv. The 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 (DLs) and reporting limits (RLs), and Quality Assurance/Quality Control (QA/QC) procedures for the required sampling.

D. CONTINGENCY REPORTING

- 1. The City shall report to the Regional Water Board by telephone (510-622-2369) any measurably significant discharge from the Landfill immediately after it is discovered. The City shall submit a written report with the Regional Water Board within five days of discovery of any discharge. The written report shall contain 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 City 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) has been exceeded. If appropriate, within 30 days the City shall resample at the compliance point(s) where this difference occurred.
 3. If re-sampling and analysis confirms the earlier finding of a statistically significant difference between SMP results and WQPS(s), the City shall, upon determination by the Executive Officer, submit to the Regional Water Board an amended Report of Waste Discharge (ROWD) for establishment of an Evaluation Monitoring Program (EMP) meeting the requirements of Title 27, section 20425.

E. REPORTING REQUIREMENTS

The City shall submit SMRs to Regional Water Board staff in accordance with the schedule indicated in Table B-1. 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.

F. MAINTENANCE OF WRITTEN RECORDS

The City 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 Table B-1 of this SMP and as indicated below. Monitoring locations are shown in Figure 2.

1. Environmental Media

- a. Groundwater: Groundwater shall be monitored at the locations specified in Table B-1 and shown on Figure 2. 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 2. Monitoring frequencies, parameters, and analytes shall be in accordance with Table B-1.
- c. Stormwater: As outlined in the Post-Closure Maintenance Plan.
- d. Surface Water: Surface water shall be monitored at the locations specified in Table B-1. Figure 2 shows the existing sampling locations. However, the sampling locations for the Guadalupe River appear to be located along a drainage ditch at the eastern edge of Parcel 1 and 2. These need to be relocated to properly monitor upstream and downstream within the Guadalupe River unless it is confirmed that groundwater/leachate discharges into the drainage ditch, in which case the drainage ditch would be an appropriate surface water monitoring location. Monitoring frequencies, parameters, and analytes shall be in accordance with Table B-1. Surface water samples shall be collected during tidal outflow periods.
- e. Any additional monitoring as required by the provisions of this Order.

2. Standard Observations

Standard observations (described in Part A) shall be made within the Landfill, along the perimeter of the Landfill, and of the water courses and receiving waters beyond their limits. Standard observations shall be conducted at the frequency specified in Table B-1.

3. Facilities Inspections

The Dischargers shall inspect all containment and control structures and devices associated with the Landfill to ensure proper and safe operation.

4. Quality Assurance/Quality Control Samples

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

B. REPORTING SCHEDULE

The City shall submit SMRs to Regional Water Board staff in accordance with the schedule indicated in Table B-1. 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.

Table B-1: Self-Monitoring Program

Groundwater (POC) Wells: G-1, G-2R, G-3R, G-4R, G-5, G-6, G-7, G-8,
G-10, G-11, G-12, G-13, G-14, G-15, G-16R,
G-17, G-18, G-19, G-21, H-5, H-6, H-7

Leachate Piezometers: L-1, L-2, L-3, L-4, L-5, L-6, LR-1

Surface Water: SW-1, through SW-4 (Guadalupe River and San Tomas Aquino Creek)

| Monitoring Event | Frequency | Parameters |
|--|--|---|
| <p>Monitoring Parameters (MPs)</p> <p>(POC Wells and LP-1)</p> | <p>Semi-Annually</p> <p><u>1st Semi-Annual Sampling event/ 2nd Quarter</u> REPORT DUE: July 31 (may be combined with subsequent event;</p> <p><u>2nd Semi-Annual Sampling event/ 4th Quarter</u> REPORT DUE: January 31</p> | <p>Bicarbonate Alkalinity</p> <p>Total Kjeldahl Nitrogen</p> <p>Total Organic Carbon</p> <p>Total Petroleum Hydrocarbons as Gasoline and Diesel (without silica gel cleanup)</p> <p>Volatile Organic Compounds (Subtitle D Appendix I + 1,4 Dioxane)</p> <p>Dissolved Metals (Subtitle D Appendix I)</p> <p>Field Parameters – pH, electrical conductivity, temperature, turbidity, and dissolved oxygen</p> |
| <p>Groundwater and Leachate Levels</p> | <p>Semi-Annually</p> | <p>As detailed in Part A</p> |
| <p>Standard Observations</p> | <p>Quarterly</p> | <p>As detailed in Part A</p> |
| <p>Constituents of Concern</p> <p>(POC Wells and LP-1)</p> | <p>Once every five years</p> <p>Beginning 2017 (Report due with 2nd Semi-Annual report for 2017)</p> | <p>Monitoring Parameters and Volatile Organic Compounds (Subtitle D Appendix II)</p> |

APPENDIX B



City of Santa Clara

The Center of What's Possible

City Manager's Office

Bruce Wolfe, Executive Officer
Regional Water Quality Control Board
San Francisco Bay Region
1515 Clay Street, Suite 1400
Oakland, CA 94612

April 17, 2017

Re: Comments on Tentative Order: Updated Waste Discharge Requirements and
Recession of Order No. R2-2002-2008 for Santa Clara All Purpose Landfill

Dear Mr. Wolfe:

Thank you for the opportunity to comment on the Tentative Order for updated Waste Discharge Requirements (WDRs) for the City of Santa Clara and Related Santa Clara, LLC at the Santa Clara All Purpose Landfill. Santa Clara appreciates all of the hard work that has gone into reviewing the City Place development and addressing the complexities associated with the WDRs. Approval of updated WDRs will culminate a lengthy and cooperative process between our agencies, allowing the City and its chosen developer, Related, to bring to fruition the City Place project, conceived and designed to create a strong sense of place in Santa Clara and to benefit the community in terms of services, jobs, recreational amenities, fiscal benefits, aesthetics and multiple other public benefits. We urge that, subject to making relatively minor revisions to the WDRs in accordance with the comments below, the staff recommend and the Board approve the WDRs.

Please accept the City's comments to the WDRs as follows:

1. Specification 26, Page 21 – Specification 26 correctly states that landfill environmental control systems (drainage, leachate, landfill gas, etc.) are to be constructed and maintained to withstand the Maximum Probable Earthquake (MPE). The MPE is defined in Title 27 (section 20164) and is a long-established criterion for Class III landfill seismic design. However, as drafted, Specification 26 goes on to state that the MPE is no longer used to define the Design Earthquake. "Design Earthquake" is not a defined term in Title 27. The MPE, as defined in section 20164, continues to be the basis for seismic design for Class III landfills.

Landfill environmental control systems designed to withstand the MPE have performed well during California's major earthquakes and have not experienced damage affecting the integrity of the environmental control systems.

The California Building Code is not applicable to landfill environmental control systems. Title 27 already specifies the seismic design criteria for landfills and landfill environmental control systems. The Title 27 requirements should be the applicable design requirements.

Lastly, if the seismic design parameters associated with the DE are expected to be at least equal to the MPE values, as stated in Specification 26, why not continue to use the MPE, as defined in Title 27.

Based on the above comments, the City proposes Specification 26 be changed to:

The Dischargers shall construct and maintain the structures that control leachate, surface drainage, erosion, and landfill gases and assure that they are constructed and maintained to withstand the conditions generated during the maximum probable earthquake (MPE), as defined in Title 27, and accessible for inspection and repair of damage caused by a seismic event. MPE is terminology used in Title 27 but is no longer used to define the Design Earthquake (DE). The 2016 California Building Code requires seismic design parameters to be developed for the risk-targeted Maximum Considered Earthquake (MCE_g) and the DE is taken as two-thirds of the MCE_g . The MCE_g corresponds to the lesser of two percent probability of exceedance in 50 years (2,475 year return period) or 84th percentile of the controlling deterministic event both considering the maximum direction as described in ASCE 7-10. The seismic design parameters associated with the DE are expected to be at least equal to MPE values.

2. Provision 6, Page 25 – As required by Title 27, the City currently provides financial assurance for post-closure maintenance and will continue to do so in the future. It is anticipated that, with the Santa Clara City Place development, the amount of financial assurance the City will be required to provide in the future will increase. Because of this, the City proposes that Provision 6 be revised to require submittal of a Post-closure Maintenance Plan prior to each phase of development incorporating the modifications to the plan resulting from a specific phase of development. This would allow the City to plan for and increase the post-closure maintenance financial assurance incrementally rather than in a single increase. This approach would also allow the Post-closure Maintenance Plan to more accurately incorporate each phase of development.

The City understands from Related that, based on informal discussions with Board staff, that Compliance Dates contained in the tentative WDRs were intended to be the submittal date for draft reports, not final reports.

Based on the above, the City requests the following proposed revisions to Provision 6:

Prior to the construction of any phase, the City shall submit a technical report, acceptable to the Executive Officer and the LEA, that fulfills the requirements for a Post-closure Maintenance Plan (PCMP), in accordance with Title 27 section 21769. In addition to plan elements required under Title 27, the PCMP must include (a) a protocol for addressing interruptions of the landfill gas collection system and mitigation system; (b) a plan to prevent water releases from within and/or above the podium and other building foundations from penetrating the landfill cover or disrupting the functions of any landfill gas

collection or mitigation system; and (c) must provide assurance that an effective vapor barrier and landfill gas extraction system, as designed, will function as intended (particularly following a major seismic event or significant settlement) and can be promptly accessed when repairs or maintenance are needed.

COMPLIANCE DATE: Draft PCMP 120 days prior to any construction of any phase.

3. Provision 16, Page 28 – The Compliance Date of “Notification due immediately” is a standard that cannot be achieved, particularly following a significant earthquake event. We suggest that the notification be due within 48 hours after the earthquake event.
4. Provisions 18, Page 28 – Title 27 requires the City to update its post-closure maintenance cost estimate and provide evidence of financial assurance to CalRecycle annually. The updated cost estimate and evidence of financial assurance are due to CalRecycle on or about June 1 each year.

Provision 6 requires submittal of a Post-closure Maintenance Plan 120 days prior to the start of any construction. The City is proposing to modify Provision 6 to require submittal of a draft Post-closure Maintenance Plan 120 days from the start of construction of any phase. Per Title 27, the Board and CalRecycle/EA have greater than 120 days to review and approve a Post-closure Maintenance Plan. Therefore, the City will be unable to provide evidence of financial assurance, based on the Post-closure Maintenance Plan required by Provision 6, 120 days before the start of construction as specified in Provision 18.

Since the time to review Post-closure Maintenance Plans will vary by agency. It would seem the most straightforward approach would be to submit evidence of financial assurance on June 1 of each year, similar to the evidence of financial assurance for corrective action. Additionally, submittal of updated evidence of financial assurance could be required within 30 days of the approval of the Post-closure Maintenance Plan required by Provision 6. Accordingly, the City requests modifying Provisions 18 as follows:

COMPLIANCE DATE: June 1 of each year and within 30 days of the approval of the Post-closure Maintenance Plan required by Provision 6

Bruce Wolf
April 17, 2017
Page 4

If you have any questions about the City's comments, please contact Dave Staub, Deputy Director of Public Works at (408) 615-3080. We look forward to continuing our work with you and your staff to secure final and timely approval of the WDRs, and on their successful implementation.

Best regards,

A handwritten signature in cursive script that reads "Rajeev Batra".

Rajeev Batra
City Manager

cc: Dave Staub, City of Santa Clara
Ruth Shikada, City of Santa Clara
Richard Haughey, Golder Associates
Scott Borland, Related
Steve Eimer, Related
Jeff Ludlow, Langan Associates



April 17, 2017

By Electronic and Overnight Mail

Mr. Terry Seward, Division Chief
Mr. Keith Roberson, Senior Engineering Geologist
Cleet Carlton, Engineering Geologist
California Regional Water Quality Control Board
San Francisco Bay, Region 2
1414 Clay Street, Suite 1400
Oakland, California 94612

Re: Comments on March 17, 2017 Tentative Order for Updated Waste Discharge Requirements/Rescission of Order No. R2-2002-008
Santa Clara All-Purpose Landfill, Santa Clara County

Dear Messrs. Seward, Roberson and Carlton:

These comments are submitted by Related Santa Clara LLC (Related) on the March 17, 2017 Tentative Order for Updated Waste Discharge Requirements/Rescission of Order No. R2-2002-008 (Tentative Order) as proposed for public comment by the staff of the California Regional Water Quality Control Board, San Francisco Bay Region (Board).

I. General Comments

The 175-acre Santa Clara City Place development will be constructed on an airspace parcel leased by Related over a closed municipal landfill – the Santa Clara All-Purpose Landfill (Landfill). This development is an intelligent and forward-thinking repurposing of underutilized land that is all too scarce in the Bay Area. By converting the current golf course and BMX racing tract into a multi-use “live, work and play” complex, it will bring economic vitality to the center of the City, providing jobs, significant municipal revenue, and housing.

Of course, any development above a landfill prudently requires very careful design, engineering and construction. There have been no less than nine successful commercial developments on top of closed landfills in the Bay Area over the past 20 or so years, as reported by the Board staff at the March 2014 Board workshop on this project. What differentiates City Place from the other projects is its housing component. We understand from Board staff that this would be the first development allowed by a Regional Water Quality Control Board over a Title 27 regulated closed landfill that would contain housing units. To be precise, up to 1680 housing

units (all on or above podium structures) are anticipated to be constructed above the closed Landfill. Regardless of whether a development over a landfill is solely commercial, or instead (as is the case here) both commercial and residential, it must be structurally sound and capable of withstanding the various environmental and geologic conditions it may face, while providing necessary protection of public health and the environment.

The Tentative Order submitted for public comment is the culmination of nearly four years of working closely with Board staff to craft specifications and safeguards appropriate for this development. What emerged from that process is the most detailed, extensive, and complex set of draft Waste Discharge Requirements applied to a landfill development in California. Appropriately, the Board staff would not propose the Tentative Order until Related conducted extensive early investigations of the Landfill's leachate, groundwater, cover, landfill gas and geotechnical conditions, as well as further soil and waste characterizations and an early evaluation of the impact of pilings/piers. At the Board staff direction, Related also prepared a Groundwater Feasibility Study and (separately) a Human Health Risk Assessment and submitted it to the designated Board staff risk assessment expert.

These evaluations are listed in Finding 37. Each of them was conducted under Board oversight pursuant to work plans or scopes of work approved by the Board staff. Each was commented upon by the Board staff, expanded or revised as per Board staff direction, and then concurred in or approved by staff, many with specified conditions. The Board staff has also been very involved in reviewing and commenting on and requiring changes to the conceptual design details of the engineered structures for the development. Similarly, the Board staff has reviewed and commented on, and directed changes to, the Landfill's Post Closure Land Use Plan, a document approved by the Local Enforcement Agency (Santa Clara County) and CalRecycle as the master planning document required by Title 27 for the post-closure use of the Landfill.

The Tentative Order requires continued investigation and evaluation as the project moves into the more detailed engineering and design phases necessary to commence construction. Without attempting to list all such requirements, before development, the Dischargers must conduct both a leachate/groundwater supplemental evaluation (Provision 4) and a "Landfill Penetration Evaluation" (Provision 5). Also prior to construction of each phase, the Dischargers must conduct a further geotechnical evaluation (Provision 9(b)), certify the continuity and thickness of affected areas of the landfill cap/cover (Provision 9(a)), and demonstrate to the satisfaction of the Executive Officer that the design details of the critical project features and safeguards and the landfill gas collection and mitigation systems -- both in the Landfill and above -- will be sufficiently protective of human health and the environment and can be accessed for maintenance and repairs (Provision 9(c)).

The City and Related assembled an extraordinary subject matter expert team to address the concerns of the Board staff, as well as to gain the trust, respect, and ultimately approval of the

development from CalRecycle and the Santa Clara County Environmental Health Division. That team includes:

- Related's lead environmental and engineering consultant Langan Engineering; Langan has designed and constructed over a dozen commercial developments on landfills;
- Related's peer review and supplemental environmental and engineering consultant Geosyntec Consultants, which is among the world's leading environmental experts on landfills;
- The City's team of third party drinking water experts (including Dr. Richard Luthy, P.E. of Stanford University's School of Civil and Environmental Engineering, water engineering expert; Dr. Charlotte Smith of UC Berkeley's School of Public Health, expert in public health; and Robert Van Heuit, P.E., a private waste management consultant specializing in landfills) who collectively addressed the safety of the drinking water main across the Landfill to the satisfaction of the State Board's Division of Drinking Water;
- The City's third party seismic expert, Dr. Shah Vahdani, a nationally recognized expert in seismic design who provided input and attended key meetings with all of the regulatory agencies to address seismic safety and design issues at the Landfill;
- The City's consultant who oversees the operation of the Landfill, Richard Haughey of Golder Associates, who has over 20 years of experience with the Landfill's operation; and
- While not part of either the City or Related team, Santa Clara County's (LEA) third party landfill experts – Robert Van Heuit, P.E. and Barry Milstone, P.E. of Geotech -- provided key input into the design features of the development.

We are confident that the state-of-the-art Landfill and building protection systems, and related safeguards designed by these experts and required by the Tentative Order will satisfy the Board that public health and the environment will be protected.

We note that the proposed development by Related on the City's airspace parcels above the Landfill has always contemplated that the City would continue to be the sole owner and operator of the Landfill proper. In fact, the Disposition and Development Agreement approved unanimously by the Santa Clara City Council in 2016 expressly provides for that. For this reason, the traditional landfill owner/operator tasks in the Tentative Order (e.g. Landfill operation, maintenance, monitoring and financial assurance requirements) are, in large part, assigned in the Tentative Order solely to the City, while those requirements that arise from the proposed development of the airspace parcels are assigned jointly to both Dischargers. As explained to us by Executive Officer Bruce Wolfe during a meeting last year, this assures that a single Discharger (i.e. the City) will be responsible jointly and severally for all tasks. The City's ownership interest in and responsibility for the Landfill will remain uninterrupted without sale or assignment throughout

its post-closure period, eliminating any doubt about the entity responsible for financial assurance. Related is named as an additional Discharger for many of the tasks (i.e. those arising uniquely from the airspace parcel development), and thus provides additional assurances and responsibility for development-type tasks.

The process of working through the various issues with the Board staff admittedly took longer than we had anticipated or hoped, but what emerged is a very robust set of regulatory specifications that we believe should satisfy all concerned. We thank the Board staff for their focus, their time, and their insightful comments, which will result in an even more protective design for this vital development.

II. Specific Comments

It is not uncommon for a Tentative Order issued for public comment, especially one this complex and detailed, to have some lingering drafting issues that get clarified before the final order is issued. In this section, we include comments on some remaining drafting issues, and suggest specific clarifying revisions. These revisions would not materially change the requirements of the Tentative Order.

A. Consistency with Development or with Other Provisions

1. Prohibition 15: This comment addresses when the Prohibitions will apply to Related. The current Tentative Order provides:

These Prohibitions shall apply to the City upon adoption of this Order and will apply to Related LLC commencing from the time Related LLC initiates any physical work that alters the existing cap, cover, leachate collection system, gas collection system, or any other physical feature of the existing Landfill.

The Board staff, Related and the City have had extensive discussions about how and when Related will commence the development of the airspace parcels above the Landfill. That development will include constructing, on behalf of the City, a new and more robust landfill gas collection system in the Landfill itself (as well as gas mitigation systems above the Landfill), and a new clay cap over portions of the Landfill that construction disturbs. Related's construction altering the Landfill's components will not commence immediately after issuance of the Tentative Order. Moreover, it will proceed in discreet geographic phases paralleling the phases of development; there may be many years between the end of one phase of development on a particular parcel and the commencement of the next phase of construction on another parcel. Consequently, even when Related's work commences, the City's operation of the Landfill will continue as before in those Landfill parcels that are unaffected by the phased construction

undertaken by Related. It would be unjustified and inappropriate to hold Related responsible for the actions on any Landfill parcel prior to the time that Related's construction alters or affects a Landfill component on that parcel.

Recognizing that, the Board staff agreed to apply the Specifications to Related at the appropriate time. Specification 30 in the Tentative Order provides:

These Specifications shall apply to the City upon adoption of this Order and will apply to Related LLC: (i) for each parcel commencing from the time Related LLC initiates any physical work that alters the existing cap, cover, leachate collection system, gas collection system, or any other physical feature of the existing Landfill; and (ii) for each other parcel that is impacted by Related LLC work on a parcel.

We understand that the inconsistency between Specification 30 and Prohibition 15 may have been an oversight; there is no rational basis for them to differ. Regardless, for the reasons above, we request that Prohibition 15 be modified to reflect the language of Specification 30 regarding the timing of the applicability to Related.

2. Specification 15: This comment addresses when the Dischargers must certify that the clay cap beneath a phase of development meets the permeability standard. On a parcel-by- parcel basis, Related will be altering and enhancing some of the Landfill components prior to development of the airspace parcels above it. The concept discussed with the Board staff is that after completion of the alteration of the Landfill components in a parcel – but before construction of the development on top of that parcel – the Dischargers must certify that a continuous clay liner/cap exists beneath the parcel. Indeed, Provision 9(a) captures that concept precisely, providing:

Prior to the construction of each phase of development above the clay cap of the Landfill, the Dischargers shall submit a report that certifies that a continuous one foot thick or thicker clay liner/cap with a permeability of less than 10^{-6} cm/sec exists above the area of phased construction.

However, Specification 15 in the Tentative Order is inconsistent with that concept and Provision 9(a), requiring instead a certification that the specified cap exists *over the entire Landfill* prior to construction of any phase of construction:

Prior to construction of each phase of development on top of the Landfill's clay cap, the Dischargers shall certify that a continuous clay liner/cap at least one foot thick with permeability of less than 10^{-6} cm/sec exists over the Landfill, as specified in Provision 9.

We understand that the inconsistent language may be an oversight. We request either that Specification 15 be modified to read identical to Provision 9(a), or that it be deleted because it is entirely redundant of Provision 9(a).

3. Specification 22: In the Tentative Order, Specification 22 provides:

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

We have two comments on this Specification. First, the provision seems redundant of numerous other provisions, which we believe collectively require the proper maintenance of all devices/designed features compelled by the Tentative Order to be installed in the Landfill or in the development of the airspace above it. Among those provisions are: Specification 6 requires the “maintenance of the Landfill” to prevent an increase in water quality parameters; Specification 11 requires the continuous operation of the Landfill gas collection system and Landfill gas mitigation systems; Specification 16 requires the maintenance of podium structures to prevent fluids from migrating into the Landfill; Specification 24 requires the maintenance of all surface water, irrigation water, stormwater, groundwater and leachate collection and monitoring systems; and Specification 26 requires the maintenance of structures that control leachate, surface drainage, erosion and landfill gases, to withstand a maximum probable earthquake and otherwise. We do not see what purpose is served by the inclusion of Specification 22, and on that basis request its deletion.

Second, if Specification 22 is not deleted, we request one change. The phrase “without interruption” should be modified by adding the clause “except as required and permitted for maintenance and/or repairs”. Related and the City have explained to the Board staff that various systems will need to be taken out of service temporarily for maintenance and repair. That concept was accepted by the Board staff, and accordingly that qualifier to “without interruption” appears in other provisions. Specifically, Specification 11 and Provision 13 both provide that the Landfill gas and vapor collection system must be operated uninterrupted except as required and permitted for maintenance and/or repairs. We request that the same phrase be added to Specification 22.

B. Allocation of Tasks Between “City” and “Dischargers”

As reported above, after much discussion with the Board staff over the past 12 months, the Tentative Order largely (but not entirely) assigns sole responsibility to the City for those Specifications and Provisions that relate to “traditional” landfill operation, maintenance, monitoring and financial assurance requirements that are required of all landfill owners and operators, while imposing jointly on both Dischargers those requirements that arise from the proposed development of the airspace parcels. There remain several deviations from that concept

in the Tentative Order that we believe should be modified to reflect the City's continued sole responsibility for operation of the Landfill and related traditional Landfill operator tasks.

1. Specification 6: This Specification provides:

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

We request that the term "Dischargers" in this Specification be replaced with "City". Before, during, and after development, the City will remain the sole entity maintaining the Landfill, just as the City has been solely responsible for maintaining it during its entire operation and post-closure period to date. Related is without dispute named as a "Discharger" responsible for most of the Specifications and Provisions – those that arise because of the anticipated development – but Related should not be included in this Specification.

2. Specification 25: This Specification essentially requires the Dischargers to control Landfill gases to prevent their build-up *in the Landfill*, and also *in structures*. Again, the City has sole control and responsibility for all Landfill systems and components in the Landfill itself, and this Specification should reflect that. Accordingly, we request the following changes in this Specification:

Consistent with the requirements and authority granted to the certified local enforcement agencies, the ~~Dischargers~~ City shall adequately monitor, vent, extract, and control landfill gases from the Landfill to prevent gas build-up in the Landfill, and the ~~Dischargers~~ shall adequately conduct such actions to prevent gas build-up in ~~or~~ structures above the clay cap, and minimize the danger of explosion, adverse health effects, nuisance conditions or the impairment of beneficial uses of water.

3. Specification 29: This Specification is a catch-all provision, currently imposing on both Dischargers any Title 27 regulatory requirements not specifically referenced in the extensive requirements set out in the Tentative Order. This requirement is not properly imposed on Related. The panoply of Title 27 requirements apply to landfill (or landfill unit) owners and operators and to defined "Dischargers" (defined as those discharging waste that could affect water quality or who are responsible for landfill unit operation). *See* definitions at 27 CCR Section 20164. Under the development plans between the City and Related, the City will remain the only owner and operator not only of the Landfill, but also of any real property that is not an airspace parcel. Related will not be a Landfill owner or operator, nor will Related be discharging waste. We request that the term "Dischargers" in this Specification be replaced by "City."

4. Provision 11: This provision – titled "Post-Construction Stormwater Treatment" – requires treatment plans for stormwater runoff, as follows:

The Dischargers shall submit treatment plans for runoff generated from impervious surfaces to the Executive Officer for review; these treatment plans shall include the operation and maintenance manual for the treatment measures, identify the responsible party for implementing operation and maintenance of the treatment measures, and identify the funding source for operation and maintenance of the treatment measures. Treatment measures for stormwater runoff associated with impervious surfaces created at the Site must be designed in accordance with the design standards in Provision C.3 of the NPDES Municipal Regional Permit for municipal stormwater runoff (Order No. R2-2015-0049; NPDES Permit No. CAS612008; November 11, 2015). Construction of new impervious surfaces at the Site shall not commence until the Executive Officer has approved the designs of the stormwater treatment measures proposed for those surfaces. Stormwater treatment measures must be functional in the first rainy season following construction of new impervious surfaces that will drain to the treatment measures.

The treatment of collected stormwater runoff, to the extent required by NPDES municipal regional permit, is to be undertaken by the City alone. The fact that this requirement should be imposed solely on the City is underscored by the structure of the NPDES Municipal Regional Permit cited in this Provision, i.e. the requirement is imposed on *municipalities*, not on dischargers into municipal stormwater systems. In fact, the City has imposed mitigation measures as part of the CEQA process to ensure that stormwater runoff at the project is addressed in compliance with its municipal stormwater permit. By contrast, the requirement in Provision 10 for compliance with construction-related stormwater permit requirements *is* properly imposed jointly on both Dischargers. We request that the word “Dischargers” in the first sentence be changed to “City”.

5. Appendix A. Specification 1 provides that the City (not Dischargers) must implement a Discharge Monitoring Program (DMP), and that the Self-Monitoring Plan (SMP) attached as Attachment A to the Tentative Order constitutes the DMP for the Landfill. In the SMP attached as Attachment A, while nearly all references in Part B are to the City, there remains one reference to “Dischargers”. There are also numerous references to “Dischargers” in Part A. We believe these references to “Dischargers” are simply a clerical oversight, given the agreement that the DMP and SMP are the City’s responsibility. The references which should be changed to “City” are in Part A (first sentence of “Quality Assurance/Quality Control Sample Monitoring”; the first sentence of “Reporting Requirements”; the last sentence of “Transmittal Letter”; the first two sentences in B.1 and several references in B.2 and B.3 of the “Contingency Reporting”; and the first sentences of both “Reporting Requirements” and “Maintenance of Written Records”) and in one place in Part B (in “Facilities Inspections”).

C. Requested Clarification of Submittal Dates

There are three provisions in the Tentative Order which specify deadline dates as “Compliance Dates”; the time frame for all other provisions is specified as “Report Due” dates. We understand from informal discussions with Board staff that the term “Compliance Date” was intended to mean the deadline for submission of a *draft* report (not a final report approved by the Executive Officer). Given that interpretation, the time frames specified for submission of a draft report are workable (they would not be workable otherwise).

We request simply that the Provisions be slightly modified in those three items to confirm that the “Compliance Date” means submission of a *draft* report or *draft* deliverable to the Board staff. Those three items are:

1. Provision 6: This Provision regarding Post-Closure Maintenance Plan currently provides that:

*“The City shall submit a technical report, acceptable to the Executive Officer and the LEA that fulfills the requirement for a Post-Closure Maintenance Plan (PCMP), in accordance with Title 27 Section 21769... **COMPLIANCE DATE:** 120 days prior to any construction.”*

We request that this be modified to read: “COMPLIANCE DATE: Draft PCMP 120 days prior to any construction.”

2. Provision 9: This Provision regarding Phase Investigations and Design currently provides that:

*“Prior to any phase of development over the Landfill, the Dischargers shall submit technical documents, acceptable to the Executive Officer,... **COMPLIANCE DATE:** At least 60 days prior to each phase of development.”*

We request that the compliance date section be revised to: “COMPLIANCE DATE: Draft reports 60 days prior to each phase of development.”

3. Provision 15: This Provision regarding Emergency Response Contingency Plan provides that:

*“The Dischargers shall submit an Emergency Response Contingency Plan, acceptable to the Executive Officer, outlining measures necessary... **COMPLIANCE DATE:** 120 days prior to any construction.”*

We request that the compliance date section be revised to: “COMPLIANCE DATE: Draft reports 120 days prior to each phase of development.”

D. Potential Source of Drinking Water

Related had previously submitted requested changes to Findings 21 and 47 regarding the extent to which groundwater beneath the Landfill is properly classified as a potential source of drinking water under applicable State Board policies. Related and its expert consultants do not believe that any of the shallow groundwater beneath the Landfill but above the regional aquitard referenced in Finding 21 qualify as a potential source of drinking water. Related’s position in that regard was set forth in the March 7, 2013 letter submitted by Geosyntec Consultants to Board staff on behalf of Related. We incorporate that letter by reference here.

The Tentative Order contemplates that additional shallow groundwater samples will be collected and characterized. The source of drinking water issue can be reexamined at that time in light of the additional groundwater samples. Given that, and assuming that the Tentative Order is not modified in any material respect after the public comment period (other than to incorporate changes requested by the City or Related) or appealed by any entity, Related will refrain from requesting any changes to Findings 21 and 47 at this time.

* * * * *

Related looks forward to working cooperatively with the Board staff during implementation of the tasks specified in the Tentative Order.

Sincerely yours,



Steven Eimer
Executive Vice President
Related Santa Clara LLC

April 17, 2017

Mr. Cleet Carlton
San Francisco Bay Regional Water Quality Control Board
1515 Clay Street, Suite 1400
Oakland, CA 94612

Subject: Comments on the Tentative Order, Updated Waste Discharge Requirements and
Recission of Order No. R2-2002-0008 for Santa Clara All-Purpose Landfill
Related to Santa Clara City Place

Dear Mr. Carlton:

The Santa Clara Valley District (District) appreciates the opportunity to comment on the Tentative Order for Updated Waste Discharge Requirements (Order) for City of Santa Clara and Related Santa Clara, LLC for the Santa Clara All-Purpose Landfill.

The District serves the nearly 2 million residents of Santa Clara County and our mission is to provide Silicon Valley safe, clean water for a healthy life, environment, and economy. As the local groundwater management agency, the District is charged with protecting groundwater resources, which provide nearly half of the water used in Santa Clara County each year. In our watershed stewardship role, we also implement projects to preserve and improve surface water quality for beneficial uses. As such, the District supports the San Francisco Bay Regional Water Quality Control Board (Water Board) Order, and recommends consideration of additional issues as outlined below.

The landfill is located between San Tomas Aquino Creek and the Guadalupe River, north of West Tasman Drive and south of Highway 237, in Santa Clara. The landfill is complex, with some portions lacking a clay liner, and waste in direct contact with groundwater in some areas. Potential historical disposal of drums containing solvents or other hazardous materials further highlights the need to approach related development with caution and to verify water resources are protected through adequate monitoring. Accordingly, the District supports the Order's prohibitions, specifications, and provisions to protect groundwater and surface water quality from potential impacts related to development atop the landfill.

Our primary concern relates to advancing hundreds of (or perhaps over a thousand) pilings through the landfill waste fill into the underlying shallow aquifer. The District concurs with the requirements for additional study, monitoring, and contingency plans related to the piles. The depth of the proposed pilings is not specified in the Order, so it is unclear if they will penetrate the regional aquitard. If they will, the District asks that the Water Board include the District in evaluation of the methods that will be used to prevent creation of vertical conduits between the shallow and principal aquifers.




Mr. Cleet Carlton
Page 2
April 17, 2017

The District concurs with the Water Board's requirements for increased monitoring to improve groundwater quality characterization in the deeper portions of the shallow aquifer and ensure no migration of landfill waste occurs. The lateral spacing of the existing shallow aquifer wells is large, with more than 1,000 feet between monitoring wells in some places. The District believes that the current monitoring network is not adequate to detect migration of contaminants from the landfill to shallow groundwater and possibly to nearby creeks. Accordingly, we recommend that the Water Board consider requiring additional monitoring to detect contaminant migration (particularly downgradient of the landfill) and to account for channelized zones of higher permeability. For example, cross-sections for the west and east levees of the lower Guadalupe River adjacent to the landfill show presence of sand lenses on the west side, and absence of sand lenses on the east side, 400 feet away.

Item 47 of the Order notes that "the upper portion of the shallow aquifer zone in the northern portion of the Site meets one of the exemption criteria of the State Water Board's Sources of Drinking Water Policy and is not considered a potential source of drinking water." This area is on the fringe of the saline intrusion zone caused by tidal incursion in creeks, which resulted from historical land subsidence. While the shallow aquifer at the northern end of the landfill has elevated salinity, the principal aquifer contains high quality water that meets Basin Plan Water Quality Objectives. The District recommends that the Order be revised to map or further define the proposed exempted area. Because there has been historical interconnection between the shallow and principal aquifers, continuing to protect beneficial uses is appropriate for the shallow aquifer. Groundwater maps attached to the Order show flow toward the Guadalupe River, suggesting discharge to surface water. The District recommends that the Water Board evaluate whether exempting the northern portion of the landfill from drinking water beneficial use requirements is adequately protective of deeper, high quality groundwater and of surface water beneficial uses, including aquatic habitat and recreation.

Thank you for the opportunity to comment on the Order. If you have any questions or need further information, please contact me at (408) 630-2788.

Sincerely,



Vanessa De La Piedra, Manager
Groundwater Monitoring and Analysis Unit

cc: G. Hall, T. Mohr, M. Duffy, J. Castillo



CENTER FOR PUBLIC ENVIRONMENTAL OVERSIGHT

A project of the Pacific Studies Center
P.O. Box 998, Mountain View, CA 94042

Voice/Fax: 650-961-8918

LSiegel@cpeo.org

<http://www.cpeo.org>

April 17, 2017

Cleet Carlton
Bay Area Regional Water Quality Control Board
By e-mail at: Cleet.Carlton@waterboards.ca.gov

Dear Sir:

Thank you for the opportunity to comment on the Santa Clara City Place Tentative Order. As you are aware, building such a large development on a landfill that is still decomposing is unusual if not unprecedented. The potential for trichloroethylene (TCE) vapor intrusion makes the task even more challenging.

In the Tentative Order, the Water Board directs Related and the City of Santa Clara to implement the project safely, but that requirement falls far short of ensuring a safe outcome. I suggest that Waterboard develop a clearer set of interim milestones for the development, and that it require appropriate performance monitoring and compliance at each milestone before subsequent work is carried out.

In addition, I suggest that the developer be required to create a contingency plan, backed by financial guarantees, to address the possibility that the development might be halted before the new environmental response is completed. I recognize that Related seems willing to spend whatever it takes to comply with Water Board requirements, but a project of this magnitude is always fraught with uncertainty.

I also suggest that the monitoring framework be expanded to include indoor air sampling, once buildings are nearly ready for occupancy, and continuing for the life of the potential exposure to landfill gases. Sampling should be continuous or at least near-real-time. This is essential because short-term exposure to TCE (for a pregnant woman) may cause cardiac birth defects and spikes in methane releases may trigger explosion.

Finally, the people who will occupy buildings on this property—be they residents or permanent employees—have a right to know that this property is contaminated. Related, Santa Clara, and all of their lessees should be required to notify everyone who expects to work or live on the property that this is an environmental response site, and to let them know how they can obtain more information. If future occupants are made aware of the site's history and potential problems, they can act as partners in the long-term management of site contamination.

Sincerely,

A handwritten signature in black ink that reads "Lenny Siegel". The signature is written in a cursive, flowing style.

Lenny Siegel
Executive Director, CPEO

From: [Tavares, Paul](#)
To: [Carlton, Cleet@Waterboards](mailto:Carlton.Cleet@Waterboards)
Cc: [Seward, Terry@Waterboards](mailto:Seward.Terry@Waterboards); [Roberson, Keith@Waterboards](mailto:Roberson.Keith@Waterboards); [Wochnick, Michael@CalRecycle](mailto:Wochnick.Michael@CalRecycle); [Worcester, Alfred@CalRecycle](mailto:Worcester.Alfred@CalRecycle); [John Marvin](mailto:John.Marvin); [Balliet, Michael](mailto:Balliet.Michael); [Chau, Stan](mailto:Chau.Stan); [Meregillano, Roel](mailto:Meregillano.Roel); RShikada@SantaClaraCA.gov; [Jeffrey Ludlow](mailto:Jeffrey.Ludlow); [Yahoo!; "barry@milstonegeo.com"](mailto:barry@milstonegeo.com)
Subject: Tentative Order
Date: Thursday, April 13, 2017 1:56:07 PM

Hi Cleet,

The Santa Clara County Local Enforcement Agency (LEA) has reviewed the California Regional Water Quality Control Board, San Francisco Bay Region, Tentative Order: Update Waste Discharge Requirements and Rescission of Order No. R2-2002-0008 for: City of Santa Clara and Related Santa Clara, LLC, Santa Clara All-Purpose Landfill, Santa Clara, Santa Clara County and feel it addresses the Health & Safety concerns related to the LEA responsibilities.

If you have any further questions or concerns, please contact Stan Chau, (408) 918-1961 or myself.

Paul B. Tavares, REHS
[Environmental Health Program Manager](#)
[Solid & Medical Waste \(LEA & TEA\) Programs](#)
[Santa Clara County CEPA](#)
[Department of Environmental Health](#)
[1550 Berger Drive](#)
[San Jose, CA 95112](#)
[Office M-F: \(408\) 918-1990](#)
[Cell M-F: \(408\) 402-1618](#)
paul.tavares@cep.sccgov.org

NOTICE: This email message and/or its attachments may contain information that is confidential or restricted. It is intended only for the individuals named as recipients in the message. If you are NOT an authorized recipient, you are prohibited from using, delivering, distributing, printing, copying, or disclosing the message or content to others and must delete the message from your computer. If you have received this message in error, please notify the sender by return email.



**City of
Santa Clara**
The Center of What's Possible

Mayor

Lisa M. Gillmor

Council Members

Dominic J. Caserta
Debi Davis
Patrick Kolstad
Patricia M. Mahan
Teresa O'Neill
Kathy Watanabe

April 13, 2017

Mr. Cleet Carlton
San Francisco Regional Water Quality Control Board
1515 Clay Street, Suite 1400
Oakland, CA 94612

RE: Tentative Order for Updated Waste Discharge Requirements and Rescission of Order No. 2002-0008, Santa Clara All-Purpose Landfill, Santa Clara, Santa Clara County

Dear Mr. Carlton,

As Mayor of the City of Santa Clara, I strongly support the adoption of the above-referenced Tentative Order, which would allow for a change in post-closure use of the closed Santa Clara All-Purpose Landfill from an underutilized golf course to a vibrant 9.1 million square-foot mixed-use development called City Place Santa Clara.

The City has already certified the EIR and fully entitled the project for a high-end retail entertainment, food and beverage district taking advantage of its proximity to the new 49ers Stadium, Great America and the Convention Center, as well as at least two hotels, as many as 1680 multi-family residential units, 5 million square feet of office and a new 35-acre City park. This is the largest mixed-use development ever approved in the Silicon Valley. This project is a public/private partnership between the City of Santa Clara and Related Santa Clara, with the City of Santa Clara retaining ownership of the landfill, and leasing the air space above the landfill to Related.

The City Place project is critical to the economic future of Santa Clara, which like many cities, was hard-hit by the dissolution of redevelopment agencies. At completion, the project is expected to result in net annual revenue to local jurisdictions of over \$110 Million. It will produce an average of 700 union construction jobs over a 15 year period, averaging 1400 during the 3-year peak of construction. The project has broad support in the community – it was approved by a unanimous vote of the Santa Clara City Council after successful outreach to environmental groups, labor and neighbors.

The City and Related have worked closely with the Regional Board staff for almost 4 years to conduct numerous studies and investigations to ensure that the City Place project can be safely placed over the landfill. Related retained nationally recognized environmental and engineering firms with specific expertise in landfills to conduct the investigations and peer review the work. The engineering firm the City has retained for several decades to manage compliance with the landfill post-closure requirements also reviewed all these studies, and the City also retained a nationally-recognized seismic safety expert to comprehensively review seismic safety issues with the project.

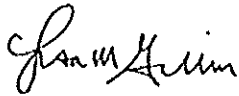
In addition to the Regional Board staff's exhaustive review of all aspects of the project over the last four years, three other expert agencies have thoroughly reviewed the project:

- The Santa Clara County Department of Environmental Health, retained two landfill experts to review the investigations and designs, and concurred that the post-closure land use plan for Related Santa Clara meets all regulatory requirements.
- Cal Recycle's landfill experts have also reviewed the post-closure land use plan and concurred with its conclusions.
- The State Water Resources Control Board's Division of Drinking Water accepted the recommendation of a panel of independent experts who determined that the project design features were adequate to protect the drinking water system.

The City has been a responsible steward of the landfill in the two decades since it closed, and before that while it was in operation. The City has strictly complied with all of the post-closure landfill requirements, and has managed the golf course and the landfill control systems without receiving a single notice of violation. I am confident the City will continue this stellar record as the post-closure use of the landfill changes to accommodate the City Place project.

For all of these reasons, I respectfully urge the members of the San Francisco Bay Regional Water Quality Control Board to approve the Tentative Order.

Sincerely,



Lisa M. Gillmor
Mayor
City of Santa Clara

Cc: Rajeev Batra, City Manager
Brian Doyle, Interim City Attorney

APPENDIX C

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

RESPONSE TO WRITTEN COMMENTS FOR ITEM 6

May 10, 2017, Board Meeting

Update of Waste Discharge Requirements for the Santa Clara All-Purpose Landfill, Santa Clara, Santa Clara County

Comments on the tentative order (TO) were received from the following parties:

- 1) City of Santa Clara (City Manager)
- 2) Related Santa Clara, LLC
- 3) Santa Clara Valley Water District
- 4) Center for Public Environmental Oversight

In additions, letters of support for the TO were received from the following parties:

- 1) Santa Clara Mayor Lisa Gillmor
- 2) Santa Clara County Department of Environmental Health (LEA)

The responses to these comments summarizes each comment in *italics* (often quoted and sometimes paraphrased for brevity) followed by the Regional Water Board staff response. For the full context and content of each comment, refer to the original comment letters in Appendix B.

1) City of Santa Clara (City Manager) Comments – April 17, 2017

Comment 1:

Specification 26 states the Maximum Probable Earthquake is terminology used in Title 27 but is no longer used to define the Design Earthquake. The California Building Code is not applicable to landfill environmental control systems. The Title 27 requirements should be the applicable design requirements.

Response to Comment 1

The Design Earthquake based on the California Building Code was used in response to interim comments from Related's consultant, Langan. Regional Water Board staff agreed with the change based on the expectation that the landfill's environmental control systems, particularly landfill gas collection, will be integrally incorporated into the building design. Hence the requirements of the California Building Code are appropriate and applicable. As stated in the specification, we expect that the seismic design parameters will be at least equal to the MPE values, and therefore the design will be at least as robust as a result. However, to clarify, we have replaced the statement "MPE is terminology used in Title 27 but is no longer used to define the Design Earthquake (DE)." to state "MPE is terminology used in Title 27 for the design of landfill environmental control systems. The Design Earthquake (DE) is used in the 2016 California Building Code, and applies to landfill environmental control systems as part of the building infrastructure. Since the environmental control systems will be incorporated into the building infrastructure, the more stringent requirements of the

California Building Code must be used.” No changes were made to the TO in response to this comment.

Comment 2:

Provision 6 should be revised to require submittal of a post-closure maintenance plan prior to each phase of development incorporating the modifications to the plan resulting from a specific phase of development. This would allow the City to plan for and increase the post-closure maintenance financial assurance incrementally rather than in a single increase and allow the post-closure maintenance plan to more accurately incorporate each phase of development.

The compliance dates in the TO were intended to be the submittal date for draft reports, not final reports.

Response to Comment 2

According to Michael Wochnick (CalRecycle), a complete stand-alone post-closure maintenance plan that addresses the entire site is preferred. Revised plans may be submitted prior to each phase of development. However, both revised closure and post-closure maintenance plans would have to be submitted if there will be changes to the closure of the landfill (e.g., modification of final cover, drainage system, etc.). CalRecycle has mentioned to the project proponent previously, the revisions (at least for post-closure maintenance plans) should be incorporated into a complete post-closure maintenance plan for the entire site and not be piecemeal addendums.

The Provisions require submittal of technical reports that are “acceptable to the Executive Officer,” in other words, the Dischargers’ final work product. Accordingly, the compliance dates in the TO for work plans/technical reports are for final submittals. In general, the Regional Water Board does not require draft submittals, and a draft submittal would not fully comply with the provision. However, the Dischargers (and their consultants) may submit draft work plans/technical reports in advance of the compliance date for preliminary review, provided that Regional Water Board staff has time to take on the additional work load associated with reviewing draft as well as final reports. No changes were made to the TO in response to this comment.

Comment 3:

The Compliance Date of “Notification due immediately” is a standard that cannot be achieved, particularly following a significant earthquake event. We suggest notification be due within 48 hours after the earthquake event.

Response to Comment 3

The Regional Water Board cannot anticipate all potential circumstances involving the nature and extent of damage or a release due to a significant earthquake. Hence we would not propose a specific time limit, particularly in the event a notification that may affect human safety or the environment, and/or our ability to regulate the site could be made sooner. By “immediately”, it is expected that notification of damage or a release will be made to the Regional Water Board at the first practical opportunity following the observation. No changes were made to the TO in response to this comment.

Comment 4:

Title 27 requires the City to update its post-closure maintenance cost estimate and provide evidence of financial assurance to CalRecycle annually, due on or about June 1. Per Title 27, the Board and CalRecycle/EA have greater than 120 days to review and approve a post-closure maintenance plan. Therefore, the City will be unable to provide evidence of financial assurance, based on the PCMP required by Provision 6, 120 days before the start of construction as specified in Provision 18. Suggest submittal of evidence of financial assurance on June 1 of each year, similar to the evidence of financial assurance for corrective action. Additionally, submittal of updated evidence of financial assurance could be required within 30 days of the approval of the PCMP required by Provision 6.

Response to Comment 4

According to Michael Wochnick (CalRecycle), the City's proposal is contrary to State regulations. Also, the June 1 date is for the annual inflation adjustment to cost estimates to reflect the inflation index CalRecycle's Financial Assurance Unit uses. The cost estimates submitted as part of post-closure maintenance plan revision due to new construction is a different issue. Per Title 27 regulations, if the new post-closure maintenance estimate is higher than the previously approved estimate (likely when new construction is being proposed), then the higher financial assurance is due upon submittal of the revised post-closure maintenance plan. In addition, should the regulatory agencies find deficiencies and the estimate needs to be increased even more, then the operator has to address that cost immediately. Title 27 regulations do not allow for the operator to delay the increase in financial assurance until after plan approval.

2) Related Santa Clara, LLC Comments – April 17, 2017**General Comments:**

The general comments emphasize the extensive interactions with the Regional Water Board and other agencies and individuals to support the statement that the Landfill and building protection systems, and related safeguards required by the Tentative Order will protect public health and the environment. Related also made a number of general comments concerning the division of responsibilities between Related and the City of Santa Clara.

Response to General Comments

While many of the specific concerns that the Regional Water Board staff had at the beginning of our involvement have been addressed through extensive dialogue with the development team, we still remain concerned about the accessibility and effectiveness of the final design features, as reflected by the requirements for submittal of additional investigation reports and design documents within of the Provisions of this Order.

With respect to Related's general and specific comments concerning the appropriate division of responsibilities, Related is an "Operator" under Title 27. Related has significant responsibilities related to the contact with and movement of waste, drilling through the landfill cap, ensuring the landfill cap meets certain requirements, and additional responsibilities for extensive construction on top of the landfill, as well as long-term lease arrangements to continue operations over the landfill for the foreseeable future (Cal. Code Regs., Title 27, § 20164). Related is also a "Discharger" under the Water Code due to their responsibilities related to drilling piles into the

landfill (creating the threat of vertical migration of contamination, including vapor); reconstructing portions of the cap over the landfill (which has attendant responsibilities related to sheet flow and potential percolation down into the landfill); and construction of the podium structures, which will convey stormwater (Water Code § 13260). These activities may potentially affect the water quality of waters of the State and United States. Given these circumstances, staff has engaged in extensive discussions with Related to determine the scope of its activities, carefully evaluated each of the Order's requirements, and included State Water Board Office of Chief Counsel management in the legal review to ensure that the responsibilities in the Order are appropriately assigned to ensure that important responsibilities pertaining to protection of human health and the environment are addressed and appropriately allocated. These are addressed more specifically below in Specific Comments B1-B4.

Specific Comment A1:

Prohibition 15 should be edited to be consistent with Specification 30 with respect to application of the prohibitions to Related LLC (i) for each parcel commencing from the time Related LLC initiates any physical work on that parcel that alters the existing cap, cover, leachate collection system, gas collection system, or any other physical feature of the existing Landfill; and (ii) for each other parcel that is impacted by Related LLC work on a parcel.

Response to Specific Comment A1

Regional Water Board staff disagrees. Unlike the specifications, which involve requirements for actions specific to the active development of parcels, the prohibitions are generally applied across the site, and should commence upon initial involvement of the Dischargers. No changes were made to the TO in response to this comment.

Specific Comment A2:

Specification 15 should be edited to be consistent with Provision 9(a) with respect to certifying that a continuous clay liner/cap exists over the area of phased construction.

Response to Specific Comment A2

Specification 15 includes the phrase "as specified in Provision 9." Therefore, by referencing Provision 9, it refers to the area above the landfill in the parcel included in the area of phased construction. For clarity, Specification 15 has been revised to state "...above the Landfill in the parcel included in the area of phased construction."

Specific Comment A3:

Specification 22, "The Dischargers shall maintain all devices or designed features, installed in accordance with this Order, such that they continue to operate as intended without interruption." should be deleted due to redundancy. Or if not deleted, amend it to state "...without interruption, except as required and permitted for maintenance and/or repairs."

Response to Specific Comment A3

This specification is meant to apply as a general requirement for any and all devices and features, known and unknown. However, Specification 22 has been revised to state "...as intended without interruption, except as required and permitted for scheduled maintenance and/or repairs." This should not be construed as an allowance for interruption of critical systems, such as landfill gas extraction systems, as a result of an earthquake. It is our expectation that critical systems will have back-up and redundant systems to ensure the protection of human health during repairs to parts of the system. The details of these redundant and back-up systems will be developed in the Phase Investigations and Designs (Provision 9).

Specific Comment B1:

Specification 6, "The Dischargers shall maintain the Landfill so as to prevent a measurably significant increase in water quality parameters at points of compliance." should be amended to replace "The Dischargers" with "The City".

Response to Specific Comment B1

Regional Water Board staff disagrees. Related, as the developer responsible for the installation of the piles through the landfill, has the potential, through its actions, to cause water quality impacts. Therefore Related is also required to comply with this specification. No changes were made to the TO in response to this comment.

Specific Comment B2:

Specification 25, "...the Dischargers shall adequately monitor, vent, extract, and control landfill gases from the Landfill to prevent gas build-up in the Landfill or structures..." should be amended to state "...the City shall adequately monitor, vent, extract, and control landfill gases from the Landfill to prevent gas build-up in the Landfill, and the Dischargers shall adequately conduct such actions to prevent gas build-up in structures above the clay cap..."

Response to Specific Comment B2

Regional Water Board staff disagrees. Related is responsible for the construction of the landfill gas collection system. Identifying both Related and the City of Santa Clara is appropriate because an unforeseen failure of that system could be due to construction defect or maintenance issues. Naming both in this Specification ensures that both parties will focus on the immediate repair of this critical system, and eliminates the potential for debate over responsibility and encourages the parties to jointly address any repairs as quickly as possible. In addition, as the developer responsible for the installation of the piles through the landfill, Related is also required to comply with this specification as it applies to construction of piles in and through the landfill, ensuring that the piles do not serve as an uncontrolled conduit for landfill gas. No changes were made to the TO in response to this comment.

Specific Comment B3:

Specification 29, "The Dischargers shall comply with all applicable provisions of Title 27 that are not specifically referenced in this Order." should be amended to replace "The Dischargers" with "The City".

Response to Specific Comment B3

Like Specification 22, this is intended to apply as a general requirement so that this Order need not cite every portion of Title 27 that may apply to this project. Note the use of the word “applicable” in the Specification. Some provisions of Title 27 may apply to the City and not to Related. However, some may also apply equally to Related. No changes were made to the TO in response to this comment.

Specific Comment B4:

Provision 11 (Post-Construction Stormwater Treatment), “The Dischargers shall submit treatment plans for runoff generated from impervious surfaces to the Executive Officer for review...” should be amended to replace “The Dischargers” with “The City”.

Response to Specific Comment B4

Regional Water Board staff disagrees. As discussed above, Related is an “Operator” under Title 27 and a “Discharger” under the Water Code. Related has significant responsibilities related to the design of the podium structure and landfill cap. Related also will design and install stormwater runoff conveyances, and must take into account sheet flow in its design of the landfill cap (where exposed) and podium structure. The construction of these elements is directly related to treatment of runoff. No changes were made to the TO in response to this comment.

Specific Comment B5:

All references in the Self-Monitoring Program to the “Dischargers” should be amended to the “City”.

Response to Specific Comment B5

Regional Water Board staff agrees, with one exception. In Part B, A.3. of the Self-Monitoring Program, facility inspections of the containment and control structures and devices should be the joint responsibility of the Dischargers to the extent each has access to portions of these systems. This is consistent with Finding 34. The text has been amended to reflect these changes.

Specific Comment C1:

The compliance date of 120 days prior to any construction for submittal of a Post-Closure Maintenance Plan (PCMP) (Provision 6) should be amended to be for a draft PCMP.

Response to Specific Comment C1

Regional Water Board staff disagrees. See response to City of Santa Clara (City Manager) comment No. 2 regarding submittal of draft reports. No changes were made to the TO in response to this comment.

Specific Comment C2:

The compliance date of at least 60 days prior to each phase of development for Phase Investigations and Design plans (Provision 9) should be amended to be for draft plans.

Response to Specific Comment C2

Regional Water Board staff disagrees. See response to City of Santa Clara (City Manager) comment No. 2 regarding submittal of draft reports. No changes were made to the TO in response to this comment.

Specific Comment C3:

The compliance date of 120 days prior to any construction for submittal of an Emergency Response Contingency Plan (Provision 15) should be amended to be for a draft Emergency Response Contingency Plan.

Response to Specific Comment C3

Regional Water Board staff disagrees. See response to City of Santa Clara (City Manager) comment No. 2 regarding submittal of draft reports. No changes were made to the TO in response to this comment.

Specific Comment D:

Related previously requested changes to Findings 21 and 47 regarding the extent to which groundwater beneath the Landfill is properly classified as potential drinking water under applicable State Board policies. Since additional groundwater samples will be collected and the issue can be re-examined at that time, Related will refrain from requesting these changes at this time. Related incorporates by reference a March 7, 2017, letter submitted by Geosyntec Consultants. Related proposes to re-examine the sources of drinking water issue at a later date after additional sampling has been collected and characterized.

Response to Specific Comment D

Regional Water Board staff have extensively reviewed and considered this issue. Our consideration has included discussions with Santa Clara Valley Water District and review of their Groundwater Management Plan, the Regional Water Board's Basin Plan, and review of historical data from the site and nearby sites regulated by the Regional Water Board. Staff has concluded that, based on the data available to us at this time, groundwater beneath the Site must be considered a potential source of drinking water. (See Response to Santa Clara Valley Water District Comment 3 below.)

3) Santa Clara Valley Water District Comments – April 17, 2017

Comment 1:

Since the depth of the proposed pilings is not specified in the Order, it is not clear if they will penetrate the regional aquitard. If they will, the Water District should be included in the evaluation of the methods that will be used to prevent the creation of vertical conduits between the shallow and principal aquifers.

Response to Comment 1

Regional Water Board staff agrees. It is our understanding that the proposed piles are not intended to fully penetrate the regional aquitard and extend down into the confined aquifer. The developer must take great care to avoid such penetrations. Provision 34 requires all documents pertaining to compliance with this Order to be distributed to the Santa Clara Valley Water District. Regional

Water Board staff encourages the Water District to provide their input on these evaluations. No changes were made to the TO in response to this comment.

Comment 2:

The current groundwater monitoring network is not adequate to detect migration of contaminants from the landfill to shallow groundwater and possibly nearby creeks. The Water District recommends additional monitoring to detect contaminant migration and account for channelized zones of higher permeability.

Response to Comment 2

Regional Water Board staff agrees. Provisions 4, 5, and 7 are designed to address this issue and the Water District is encouraged to review and provide input on submittals pursuant to these provisions. No changes were made to the TO in response to this comment.

Comment 3:

The Order should be revised to further map or define the northern area of shallow groundwater not considered a potential source of drinking water. The Water District recommends an evaluation of whether exempting the northern portion from drinking water beneficial use requirements is adequately protective of deeper, high quality groundwater and of surface water beneficial uses, including aquatic habitat and recreation.

Response to Comment 3

Regional Water Board staff agrees with the need for better delineation between areas that are, and are not, potential sources of drinking water. We do not have the detailed information available at this time to allow us to make such delineation in this Order. We note that defining a boundary in the northern portion of shallow groundwater that meets the exception criterion for drinking water beneficial use is not as critical as determining: 1) the general extent of groundwater within the upper aquifer that meets the total dissolved solids (TDS) exception criterion, 2) whether the TDS is a result of ambient or landfill sources, and 3) the extent of contamination, both before and after installation of the piles. Furthermore, a defined boundary may not be practical, as it would be likely to fluctuate with time. Provisions 4.a., 4.b., and 5 in the TO requires the collection of additional data to address the issues noted above. Finding 48 of the Order explicitly includes the surface water beneficial uses as defined in our Region's Basin Plan, irrespective of drinking water beneficial use designation. Any groundwater cleanup goal must be protective of these beneficial uses, and in particular, the drinking water beneficial use in the deeper principal aquifer zone. Also refer to our response to Related Santa Clara, LLC Specific Comment D.

In response to the District's concerns, we propose editing Finding 47 as follows:

There is no current use of groundwater in the immediate vicinity of the Landfill. As noted in Finding 21, shallow groundwater in wells located along the northern Landfill boundary of Parcels 1 and 3/6~~beneath the northern portion of the Site~~ contains elevated chloride and total organic carbon levels and generally exceeds 3,000 mg/L TDS. The Regional Water Board has insufficient data to determine the extent of salt water intrusion into the northern portion of the Site~~Therefore, the upper portion of the shallow aquifer zone in the northern portion of the Site meets one of the exemption criteria of the State Water Board's Sources of Drinking Water Policy and is not considered a potential source of drinking water.~~ TDS

concentrations are generally below 3,000 mg/L in shallow groundwater beneath the ~~southern~~ other portions of the Landfill. There is limited groundwater monitoring data within the Landfill area, and there is concern that some elevated TDS and chloride concentrations may reflect impacts from landfill leachate on groundwater quality, particularly in the area contaminated with CVOCs (see Finding 31). The quality of groundwater deeper in the shallow aquifer zone or principal aquifer zones in the vicinity of the Landfill has not been evaluated. In accordance with the Basin Plan and State Water Board Resolution No. 88-63, ~~with the exception of shallow groundwater in the northern portion of the Site,~~ groundwater beneath the Site is considered a potential source of drinking water.

4) Center for Public Environmental Oversight. Comments – April 17, 2017

Comment 1:

To implement the project safely, the Water Board should develop a clearer set of interim milestones for the development, and require appropriate performance monitoring and compliance at each milestone before subsequent work is carried out.

Response to Comment 1

Regional Water Board staff disagrees that, to the extent that the comment refers to tasks that are regulated by the WDRs, there are insufficient interim milestones. Provisions 3 through 7, 9 through 12, and 15 are all examples of requirements prior to development, and each phase of development as appropriate. Provisions 13, 14, and the Self-Monitoring Program are examples of performance monitoring and compliance. Additional requirements associated with the development construction are the responsibility of the LEA. No changes were made to the TO in response to this comment.

Comment 2:

The developer should be required to create a contingency plan, backed by financial guarantees, to address the possibility that the development might be halted before the new environmental response is completed.

Response to Comment 2

The Tentative Order includes requirements for contingency plans as warranted for issues under the Regional Water Board jurisdiction. These include a contingency plan for all work plans for drilling through the refuse (Specification 10), contingency measures to be implemented in the monitoring and maintenance plan for the Water Quality Certification (Provision 3), an emergency response contingency plan (Provision 15), and contingency reporting of any measurably significant discharge from the Landfill immediately after it is discovered (Self-Monitoring Program, Part A, Section D). Regional Water Board staff anticipate that additional contingency plans will be required by the LEA. Financial assurances are requirements under Title 27, and included in the TO in Provisions 18 and 19. No changes were made to the TO in response to this comment.

Comment 3:

Since short-term exposure to TCE (for a pregnant woman) may cause cardiac birth defects, and spikes in methane releases may trigger explosion, the monitoring framework should be expanded to include indoor air sampling, once buildings are nearly ready for occupancy, and continuing for the life of the potential exposure to landfill gases. Sampling should be continuous or at least near-real-time.

Response to Comment 3

Current post-closure land use regulations require continuous monitoring for methane in enclosed structures. Trace gases, including TCE, may be part of a monitoring program per the LEA discretion in accordance with Title 27 20921(a)(3). The TO prohibits the accumulation under or within any developed area, or venting of landfill gas or volatile organic compounds (which include TCE) at concentrations that may result in a hazardous condition. The TO also requires that gas mitigation systems above the Landfill shall operate uninterrupted, except as required and permitted for maintenance and/or repairs, for as long as landfill gas or volatile organic compounds pose a threat to human health or the environment. Provision 9.c. requires the Dischargers to submit technical documents, acceptable to the Executive Officer, that includes design details that must demonstrate building protection systems will be constructed and maintained to function as intended and can be accessed for repairs and maintenance. Provision 13 requires the City to submit semi-annual reports that certify that the landfill gas vapor system has operated uninterrupted during the reporting period and remains protective of human health and the environment. No changes were made to the TO in response to this comment.

Comment 4:

Related, Santa Clara, and all of their lessees should be required to notify everyone who expects to work or live on the property that this is an environmental response site, and to let them know how they can obtain more information.

Response to Comment 4

It is Regional Water Board staff's understanding that notification of occupants over a landfill would be a real estate disclosure requirement, overseen by the City of Santa Clara or the LEA. No changes were made to the TO in response to this comment.