investigation and found that the site complied with this measure, and no violations were issued or noted by the LEA following their inspection of the portable lighting.

A-6

Wherever feasible, temporary earthen or landscape berms, or other structures or measures, shall be utilized to provide visual screening of operations at the working face and to reduce potential glare impacts on surrounding residences from nighttime activities at the working face of El Sobrante. Any measures implemented for this purpose shall be subject to annual review by the Citizen Oversight Committee. (Responsible Agencies: LEA)

Status:

During RCDWR and ARC review of the initial Annual Report submittal in March 2015 the following comment was raised: The EIR stated that operations would occur behind a 40ft berm, out of the line of sight from communities west of I-15. This doesn't appear to be the case. Please explain. Also, need to explain why it is not feasible to screen operations.

The 40-foot earthen berm is separate from the requirements in MM A-6 and a comprehensive explanation below will clarify that distinction. The feasibility of screening operations will be thoroughly explained as well.

1. 40-Foot Berm; EIR Discussion

The July 1998 Update to the Final EIR for the El Sobrante Landfill Expansion included a discussion regarding aesthetics. The discussion mentioned the construction of a 40-foot earthen berm along the western edge of the landfill footprint.

The 40-foot earthen berm discussed in the EIR Update was a pre-planned one-time measure, which was implemented.

- The discussion on p. 2-25 of the EIR Update describes the 40-foot earthen berm in the singular. The phrases used are "construction of **a** berm" and "[a]fter **the** berm is constructed". (emphasis added)

- This berm was pre-planned as part of the landfill expansion and constructed by USA Waste along the western edge of the landfill footprint, and was called the "Phase 8 Berm".

- The location of the Phase 8 berm was depicted in the Draft EIR along the western edge of the landfill footprint (Figure 3.3), and the top of the berm was to be the perimeter access road. The elevation of the perimeter access road was indicated. The Phase 8 berm was built to approximately the same elevation, and the top of the Phase 8 berm serves as the perimeter access road. See attached Figure 1 for a cross-section of the Phase 8 berm.

- There is nothing in the Update to suggest that a series of 40-foot earthen berms were required as filling continued over the course of years, or at any locations other then the western edge of the landfill footprint. Moreover, the typical landfill cross section shown in Figure 3.8 and section A-A' on Figure 3.10 in the Draft EIR were not changed in the Update to reflect the addition of a series of earthen berms.

- Requiring successive 40-foot earthen berms on the outside slope of the fill area would have resulted in a major change to the Project Plan, including the Site Plan in Figure 3.3 of the Draft EIR, the Excavation and Materials Requirements shown in Table 3.2 of the Draft EIR, the landfill gas collection system in Figure 3.8, and the estimated life of site provided in the Draft EIR, triggering a new analysis of environmental impacts. The fact that the Update provided no new impacts analysis related to the 40-foot earthen berm indicates that the one-time Phase 8 berm was part of the project depicted in the Site Plan all along, for which impacts were analyzed.

- The discussion on p. 2-25 of the EIR Update clearly references a permanent structure. It uses the phrases “after the berm is constructed” and “what a viewer would see”. This is also apparent from Figure 2.6. Moreover, the Phase 8 Berm serves as a stability berm, making it a permanent installation.

- In contrast, MM A-6 describes “**temporary** earthen or landscape berms”. (emphasis added)

- The 40-foot berm was never a requirement of MM A-6, and they should be viewed separately. MM A-6 does not serve as a basis for requiring construction of the 40-foot berm, or any sequence of such permanent berms over time.

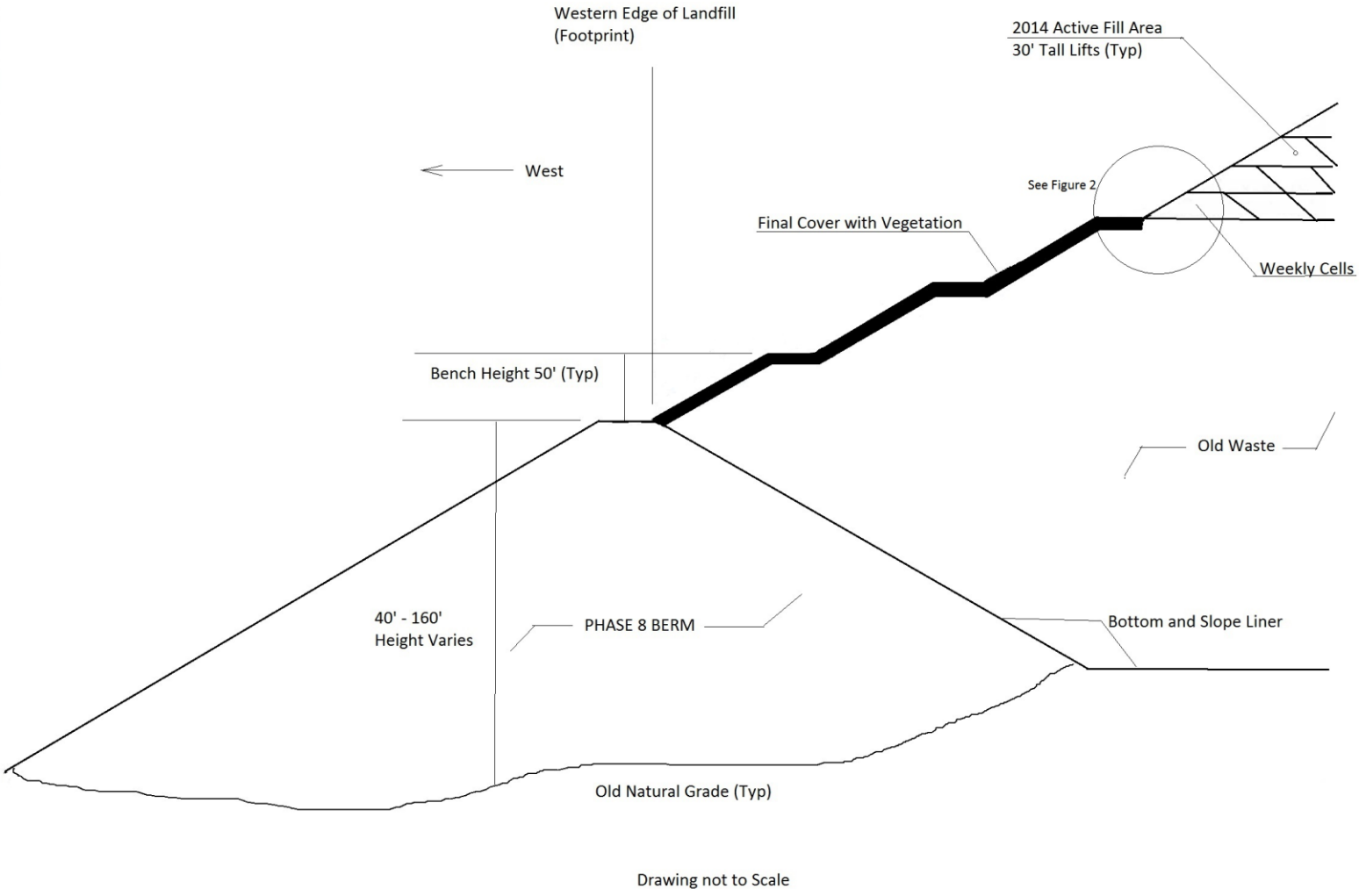

FIGURE 1

2. Temporary Screening Measures

Following detailed discussion between USA Waste and RCDWR, it was concluded that it would not be feasible to provide complete shielding of filling operations, in 2014 or in the future. However, a series of measures could be taken in the future to provide partial shielding, including a reduced height of waste cells, placement of cover soil at locations to block visibility, or the use of modified litter fencing. USA Waste and RCDWR will coordinate to provide appropriate measures for future partial shielding.

Under CEQA and CEQA Guidelines, “feasible” means capable of being accomplished in a successful manner within a reasonable period, taking into account economic, environmental, legal, social and technological factors.

A. Earthen Berm

Use of an earthen berm to completely shield 2014 filling operations was not feasible.

1. Technological Factors

- Height of Landfill. Based on the Project Plan, the western portion of the landfill was constructed such that landfilling activity occurs partially below surrounding grade and partially above surrounding grade. During periods of 2014, active filling in this area occurred at an elevation above the surrounding grades making it visible to areas west of the I-15. The height of any individual waste cell is approximately 30 feet and the height of the tipping equipment fully extended (allowing waste to come out of the truck) is approximately 50 feet, thus requiring one or more 30-foot to 80-foot tall earthen berms, depending on how much activity would be shielded.

- Filling operations in 2014 occurred inside the western edge of the landfill footprint, and to the east of an area that is already at final grade and slopes, with final cover placed and the area revegetated to provide HCP habitat.

- As a result, the only option would have been to construct a temporary earthen berm along the western boundary of filling operations, at a sufficient height to completely shield anticipated filling operations. A hypothetical plan for installation of temporary earthen berms is attached as Figure 2.

- As filling operations approached the outside final slopes of the landfill, a temporary earthen berm installed between the working face and what the viewer would see west of the I-15 would have to have been removed in order to place waste out to the extent of the final landfill contours, thus exposing the working face to the viewer and hence re-triggering A-6. As a result, the temporary earthen berms in this location would have limited utility.

- The only way to avoid re-triggering MM A-6 would have been to leave the temporary earthen berms in place, making them permanent berms. This was not anticipated as part of the Project Plan, and is inconsistent with MM A-6, which specifies a temporary earthen berm.

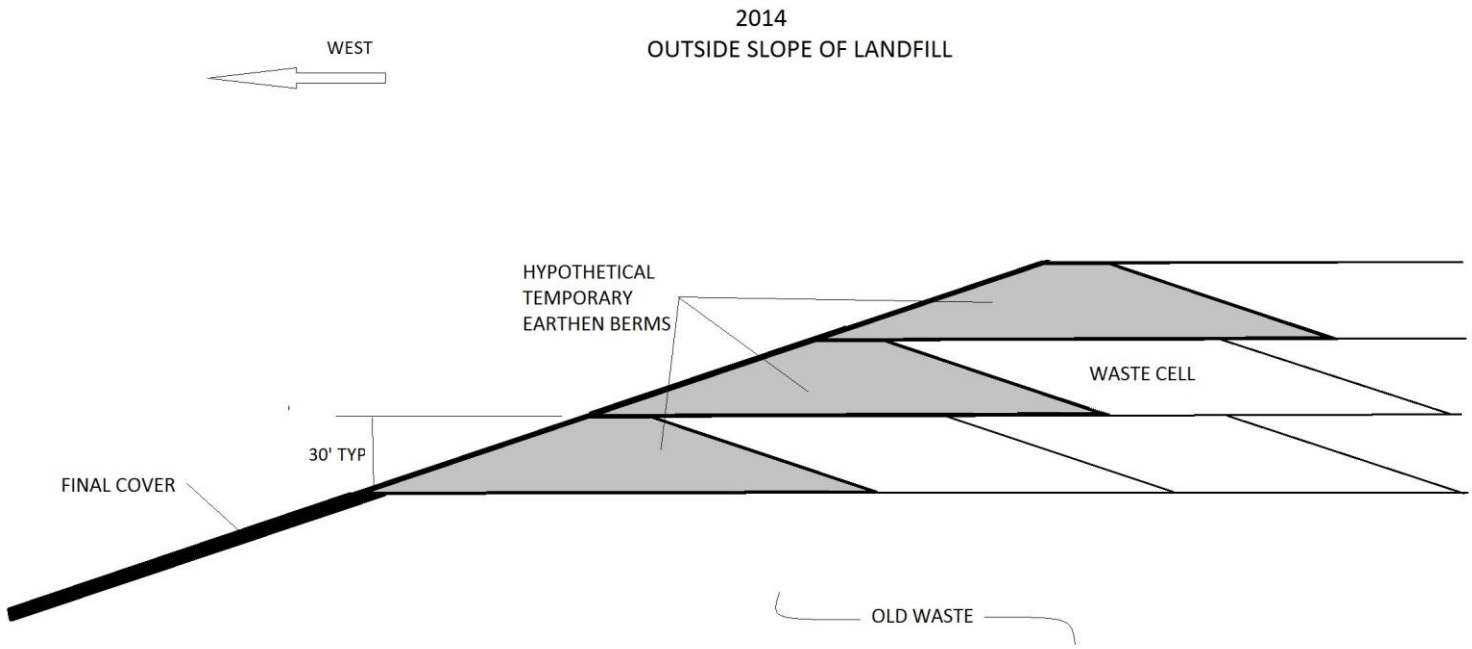
2014
OUTSIDE SLOPE OF LANDFILL
WEST
HYPOTHETICAL
TEMPORARY
EARTHEN BERMS
WASTE CELL
30' TYP
FINAL COVER
OLD WASTE

FIGURE 2

2. Environmental Factors

- Temporary earthen berms at the western boundary for 2014 filling operations would have been on top of previous MSW placement and its associated landfill gas collection system. The weight of the earthen berm, which is greater then the weight of MSW, would press down on the gas collection system equipment and could cause significant if not irreparable damage. This could lead to increased emissions of landfill gas in violation of air quality requirements.

3. Economic Factors

- Soil to install the earthen berms would need to be imported, at a cost of approximately $6-10 MM. Construction cost for installation would be approximately $2-3 MM, and removal cost would be approximately $1-2 MM for. The total cost would be approximately $9-15 MM for the berms.

- However, as noted above, in order to provide complete shielding, it would have been necessary to leave the temporary earthen berms in place, making them permanent berms. However, that would have multiplied the soil cost since the soil from one berm from a completed cell could not have been reused. More importantly, it would have resulted in a loss of permitted disposal capacity. This alternative would have entailed an even greater cost, to both USA Waste and the County. The revenue loss to USA Waste would be approximately $18.5 MM for the berms, the loss in County Import Charges would be approximately $1.5 MM for the berms, and the loss of revenue to RCDWR would be approximately $5 MM for the berms.

4. Legal Factors

- Activities that would have disturbed the landfill gas collection system and resulted in greater landfill gas emissions could be considered a violation of the landfill's air quality permit.

- Activities that deviated from the approved Site Plan could be considered a violation of the landfill's Solid Waste Facility Permit.

B. Landscape Berm

Use of a landscape berm to completely shield 2014 filling operations was not feasible.

The first consideration is to define exactly what is meant by "landscape berm". "Berm" is defined in the Oxford English Dictionary as including "a path or grass strip beside a road" or "an artificial ridge or embankment, e.g., as a defense against tanks." There is no support for the concept that an earthen berm includes only the planting of trees or shrubs. Based on this definition, this discussion considers a landscape berm to be an earthen berm on which vegetation is planted. Given the requirements of the HCP, in this case the temporary landscape berm would have been vegetated with native Riversidian sage scrub.

Given the strong similarity between a temporary earthen berm and a temporary landscape berm, the discussion of feasibility set forth above applies equally here. Some other factors that

are unique to a landscape berm are discussed below.

1. Economic Factors

- In addition to the cost of installing the underlying earthen berm, there would be an additional cost for installation of Riversidian sage scrub.

2. Legal Factors

- To the extent the landscape berm is temporary and would be removed (however unlikely), removal of HCP habitat could be considered a violation of the landfill's ESA permit.

C. Screening

Use of screening to completely shield 2014 filling operations was not feasible.

A. Technological Factors

- Height of Landfill. Based on the Project Plan, the western portion of the landfill was constructed such that landfilling activity occurs partially below surrounding grade and partially above surrounding grade. During periods of 2014, active filling in this area occurred at an elevation above the surrounding grades making it visible to areas west of the I-15. The height of any individual waste cell is approximately 30 feet and the height of the tipping equipment fully extended (allowing waste to come out of the truck) is approximately 50 feet, thus requiring one or more 30-foot to 80-foot tall screens~~,~~ depending on how much activity would be shielded.

- A tall screen would have needed to be fabricated using a tightly-woven material in order to shield the view, which would have made it highly susceptible to being blown over or sustaining wind damage. The only way to successfully install a screen of that height would have been to use very substantial supports, likely telephone poles that are either driven into the ground or set in large concrete foundations.

- In order to have completely shielded the locations of filling operations in 2014, the required drilling or foundations, would have needed to be placed just to the west of the filling area in the final cover/slope area. Drilling foundations into MSW would not have provided the required stability, since the MSW cannot be compacted as tightly as soil and is subject to decomposition and settlement. The only potentially suitable area would have been to the west of filling operations in an area that is already at final grade and slopes, final cover placed, and the area revegetated to provide HCP habitat. This area can be seen by reference to attached Figure 1. Drilling or placement of foundations would have impacted the integrity of the final cover, and its ability to minimize infiltration of water into the waste mass and control landfill gas emissions. Construction activities at this location would have disturbed the habitat created under the El Sobrante Habitat Conservation Plan (HCP).

B. Environmental Factors

- The screen(s) would itself have an adverse aesthetic impact, as it would not have been

compatible with the surrounding landscape.

- Drilling or construction of foundations would have compromised the integrity of the final cover and its ability to minimize infiltration of water into the waste mass and landfill gas emissions.

- Construction activities at this location would also have disturbed the revegetated HCP habitat.

C. Economic Factors

- El Sobrante Landfill receives a significant amount of waste on a weekly basis. The working face advances at a rate of approximately 150 feet per week. This would have required both installing and removing a 30 to 80-foot, 150-foot long screen and screen supports on a regular basis, which would have been technically infeasible, would have had environmental impacts due to penetration of the final cover, would have provided ongoing impacts to the HCP habitat, and would have been exceptionally costly. The alternative would have been the installation of one very long 200-foot tall screen, which would have been technically infeasible due to impacts to the final cover and HCP habitat, would have been very costly, and would have had greater aesthetic impacts due to the larger size of the screen. And, since the mitigation measure provides solely for temporary measures, the screen(s) would have needed to be removed and reinstalled over a period of years whenever landfill operations would become visible.

D. Legal Factors

- Violation of Regulations and Permits. Activities that would have affected the integrity of the final cover could be considered a violation of the landfill's Solid Waste Facility Permit, Waste Discharge Requirements, and air quality permit. Any disturbance of the HCP habitat could be considered a violation of the landfill's ESA permit.

A-7

A plan that assures the removal of litter associated with the proposed project shall be approved by the CIWMB prior to the issuance of a SWFP.

USA Waste or its successor-in-interest shall be responsible for the control and cleanup of litter and debris from the landfill and/or waste-hauling vehicles along the landfill access road to its intersection with Temescal Canyon Road, and along Temescal Canyon Road from the intersection with Interstate 15 (I-15) to the intersection with Weirick Road. At a minimum, USA Waste or its successor-in-interest shall inspect and remove litter and debris from these roadways on a weekly basis and within 48 hours upon receipt of notice of complaint. (Responsible Agencies: LEA, CIWMB)

Status:

Litter control and removal is addressed in the Joint Technical Document (JTD), approved by the CIWMB. Consequently, it is closely monitored by the LEA. In 2014, USA Waste performed litter control, cleanup and inspection on these road segments in accordance with the schedule provided in the mitigation measure.

No violations were recorded during 2014 by the LEA for the landfill or for the landfill access road. Temescal Canyon Road, like many roads in Riverside County, has been the subject of illegal disposal activity. During negotiations with the BOS regarding the First Amendment to the Second Agreement, the landfill operator agreed to increase the scope of its off-site litter removal activities to better meet the needs of the community. Condition 23.a. of the approved Conditions of Approval (Exhibit "F" of the Second Amendment) was revised to read as follows:

> 23.a. USA Waste or its successor-in-interest shall be responsible for the control and cleanup of litter and debris from the landfill and/or waste-hauling vehicles along the landfill access road to its intersection with Temescal Canyon Road, and along Temescal Canyon Road from the intersection with Interstate 15 (I-15) to the intersection with Weirick Road.

Litter control and removal is an on-going task, and during 2014, El Sobrante Landfill continued to allot a minimum of 16 person-hours per week to the clean-up of litter and debris.

In addition, the First Amendment to the Second El Sobrante Landfill Agreement, approved on July 1, 2003, requires the following:

> In order to provide more focused assistance with the problem of illegal dumping on private property, USA WASTE or its successor-in-interest will provide one roll-off bin per quarter in the Spanish Hills area and one roll-off bin per quarter in the Dawson Canyon area for private property owners in those areas. Costs associated with transportation and disposal of waste deposited in the bins will be borne by USA WASTE, with the understanding that the private property owners will bear the responsibility of depositing waste in the bins.

During 2014, the landfill operator continued to exceed the Spanish Hills and Dawson Canyon roll-off bin schedule and transported and disposed of trash contained within the two roll-off bins on a monthly basis.

USA Waste sponsors three sections along I-15 through the Caltrans Adopt-a- Highway program. El Sobrante will continue to clean the adopted sections of I-15 utilizing company resources.

Air Quality (AQ) Mitigation Measures

AQ-1

The following activities shall occur based on SCAQMD Rule 1150.1 - Control of Gaseous Emissions from Active Landfills:

- **Landfill gas collection and thermal destruction systems shall be provided and operated.**
- **Landfill gas destruction system shall be constructed using best available control technology (BACT). Improved combustion technology (e.g., boiler) shall be installed at the time that the continued use of current technology flares would exceed SCAQMD standards for stationary sources. (Final EIR).**
- **A network of landfill gas monitoring probes shall be installed to identify potential areas of subsurface landfill gas migrations.**
- **The project includes a landfill gas barrier layer (i.e., 10- to 20-mil high-density polyethylene [HDPE] or polyvinyl chloride [PVC] sheeting) as part of the intermediate cover and final cover system. This gas barrier layer is not required by Subtitle D and would minimize excess air infiltration and fugitive**

landfill gas emissions, and would increase landfill gas collection efficiency.

- **Monitoring of landfill gas concentrations at perimeter probes, gas collection system headers, landfill surface, and in ambient air downwind of the landfill shall be conducted in accordance with applicable regulations.**
- **Annual emissions testing of inlet and exhaust gases from the landfill gas destruction system shall be conducted to evaluate gas destruction efficiency.**
- **The gas collection system shall be adjusted and improved based on quarterly monitoring and annual stack testing results. (Responsible Agencies: LEA, SCAQMD)**

Status:

The purpose of mitigation measure AQ-1 is to minimize fugitive landfill gas (LFG) emissions from the landfill, because methane produced in the landfill comprises approximately 50 percent of LFG and is a significant contributor to greenhouse gas (GHG). To minimize excess air infiltration and fugitive LFG emissions and to achieve greater gas collection efficiencies than were required by regulations in place at the time the Draft EIR (1994) and Final EIR (1996) were under review for the Expansion Project (specifically, Code of Federal Regulation [CFR], Title 40, Part 258, "Subtitle D" and SCAQMD Rule 1150.1, April 5, 1985 version), the mitigation measure was written to include a provision for a landfill gas barrier layer in the intermediate cover and final cover system, which was considered the best available control technology to reduce infiltration and emissions.

Since 1996, more stringent regulations governing the installation of LFG collection and control systems and LFG monitoring have been enacted (specifically, CFR, Title 40, Part 60, Subpart WWW(www.ecfr.gov);California Code of Regulations [CCR],Title17, "AB 32" (www.leginfo.ca.gov); CCR, Title 27; and SCAQMD Rule 1150.1, as revised 1998, 2000, and 2011 (www.aqmd.gov), and better extraction technologies have been implemented (i.e., better flares, better understanding of collection efficiencies, enhanced monitoring systems, and development of economically-feasible LFG-to-energy facilities). Quarterly monitoring and reporting to the SCAQMD indicates that El Sobrante complies with these requirements and standards and the goal of AQ-1 without placing a landfill gas barrier in the intermediate cover and final cover system.

As allowed by Condition of Approval 5 of BOS-approved Conditions of Approval (Exhibit "F" of Second Agreement), the landfill operator may substitute specified materials, design, system or action as may be required by the project providing that such material, design, system or action complies with all applicable Federal, State, and local regulations and is approved by any Federal, State or local regulatory agency having jurisdiction and the General Manager of the Riverside County Department of Waste Resources (RCDWR). A third party technical report was prepared (included in appendix) that confirms the landfill's current LFG collection and control system is preferred over the installation of a LFG barrier.

AQ-2

The following activities shall occur based on SCAQMD Rule 403 - Fugitive Dust:

- **Emission controls necessary to assure that dust emissions are not visible beyond the landfill property boundary shall be implemented.**
- **New cell construction and cell closure activities shall not occur simultaneously.**
- **The Rule 403 Fugitive Dust Emissions Control Plan for the landfill, approved by SCAQMD in May 1993, shall be adhered to. The plan itemized various control strategies for dust emissions from earthmoving, unpaved road**

travel, storage piles, vehicle track-out, and disturbed surface areas, including watering, chemical stabilizers, revegetation, and operational controls or shutdown for implementation during both normal and high wind conditions.

- **Rule 403 Fugitive Dust Emissions Control Plan shall be revised on an annual basis. (Responsible Agencies: LEA, SCAQMD)**

Status:

Dust control measures are being implemented in accordance with this mitigation measure and the landfill's SCAQMD-approved Rule 403 Fugitive Dust Control Plan. It should be noted, however, that subsequent to approval of the Expansion EIR, Rule 403 requirements changed, and the landfill operator is no longer required to revise the plan on an annual basis (www.aqmd.gov). As allowed by Condition of Approval 5 of BOS-approved Conditions of Approval (Exhibit "F" of Second Agreement), the Fugitive Dust Plan is updated or revised only as required by the SCAQMD.

AQ-3

The following mitigation measures exceed current regulatory requirements and shall be incorporated by design, construction, and operation:

- **PM_{10} monitoring stations and an onsite meteorological station shall be installed and operated, as agreed in consultation with the SCAQMD.**
- **Where feasible, landfill roads shall be paved.**
- **Portions of paved roads abutting unpaved haul truck traffic areas shall be routinely swept and/or washed.**
- **Onsite vehicles shall be routinely maintained. (Responsible Agencies: LEA, SCAQMD)**

Status:

This mitigation measure is implemented on an ongoing basis. The site has installed a meteorological station and conducted PM_{10} monitoring as part of construction activities. All paved surfaces are scheduled to be swept a minimum of once weekly, with supplemental sweepings added on a more frequent basis as dictated by weather conditions. All unpaved haul roads are watered as needed. All heavy equipment is maintained on a 250 operating hour interval, and all heavy trucks (e.g., roll-off trucks) undergo annual exhaust opacity testing as required by SCAQMD.

AQ-4

In the event monitoring indicates that permissible levels of PM_{10} are being exceeded, some combination of the following dust control measures shall be implemented:

- **Washing of truck wheels.**
- **Routing paved access roads away from directions that result in property boundary impacts.**
- **Curtailing specific activities (e.g., new phase construction) when conditions are unfavorable for fugitive PM_{10} control. (Responsible Agencies: LEA, SCAQMD)**

Status:

This mitigation measure has not been triggered, because PM_{10} levels are not being exceeded.

AQ-5

The following activities would occur based on SCAQMD Regulation XIII - New Source Review:

- **Control devices for stationary emission sources shall be provided which satisfy BACT requirements.**
- **NOx, ROG, SOx, and PM_{10} emissions from stationary sources shall be offset according to SCAQMD requirements for essential public services. (Responsible Agencies: SCAQMD)**

Status:

Landfill emissions are analyzed on an annual basis to ensure that the landfill is operating within permitted threshold limits. An annual emission report is submitted to SCAQMD and the RCDWR to ensure compliance with this mitigation measure. A copy of the annual emission report is on file and available at the offices of SCAQMD and Waste Management, Inc. (included in appendix).

AQ-6

The following activity shall occur based on SCAQMD Regulation XIV - Toxics and Other Noncriteria Pollutants:

- **Control devices for stationary emission sources shall be provided which assure that emissions of potentially carcinogenic and/or toxic compounds do not result in unacceptable health risks downwind of the landfill. (Responsible Agencies: SCAQMD)**

Status:

Landfill emissions from all sources are analyzed on an annual basis to ensure that the landfill is operating within permitted threshold limits. See Mitigation Measure AQ-5 above.

AQ-7

Onsite vehicles shall be routinely maintained. (Responsible Agencies: SCAQMD)

Status:

Routine maintenance of onsite vehicles and equipment is performed to ensure compliance with this mitigation measure.

AQ-8

Heavy construction equipment shall use low sulfur fuel (<0.05 percent by weight) and shall be properly tuned and maintained to reduce emissions. (Responsible Agencies: SCAQMD)

Status:

All diesel fuel used at the facility is low sulfur fuel with a sulfur content of less than 0.05% by weight, which is the only fuel available in California.

AQ-9

Construction equipment shall be fitted with the most modern emission control devices. (Responsible Agencies: SCAQMD)

Status:

All heavy equipment operated at the facility by USA Waste is fitted with the manufacturer's specified emission control devices for the period the equipment was manufactured. As equipment is routinely maintained, the most current available upgrades to the emission control systems are installed on the equipment in compliance with the California Air Resources Board (CARB) requirements.

AQ-10

The project shall comply with SCAQMD Rule 461, which establishes requirements for vapor control from the transfer of fuel from the fuel truck to vehicles. (Responsible Agencies: SCAQMD)

Status:

This mitigation measure has not been triggered, because the requirements of Rule 461 only apply if stationary or mobile gasoline fuel tanks have a capacity of over 119 gallons. The rule is not applicable to diesel storage tanks.

AQ-11

Prior to construction and construction/operation activities, the following premonitoring measures shall be implemented to avoid or lessen boundary concentrations of $N0_2$:

- **Normal landfill operations and cell construction/closure activities shall be preplanned to avoid potentially adverse alignments (both horizontally and vertically) during anticipated periods of meteorological conditions which could result in the greatest property boundary concentration.**
- **During periods when both disposal and construction activities are occurring, downwind property line monitoring of NO_2 shall be implemented for wind and stability conditions which could result in the highest boundary concentrations.**

During construction and construction/operation activities, the following postmonitoring measures shall be implemented to avoid or lessen boundary concentrations of NO_2:

- **If monitoring determines that the 1-hour NO_2 standard (i.e., 470 µg/m3) is being approached (i.e., within 95 percent of the standard or approximately 450 µg /m3), construction or cell closure activities shall be curtailed until the appropriate tiered mitigation measures can be implemented, or until adverse meteorological conditions no longer exist.**
- **The waste placement and/or clay preparation areas shall be moved to a preplanned alternative working location to separate emissions from clay placement construction emissions.**
- **Construction procedures shall be configured such that operations requiring heavy equipment do not occur simultaneously (e.g., clay placement and protective soil placement by scrapers will not be done during periods with adverse meteorological conditions).**
- **Construction scheduling will be slowed to reduce daily equipment usage.**
- **Hours of construction with designated pieces of equipment (e.g., scrapers) shall be constrained to occur outside of peak adverse meteorological conditions. (Responsible Agencies: LEA, SCAQMD)**

Status:

During 2014 construction activities, the landfill operator continued to implement a "CEQA Mitigation Monitoring Work plan for NO_2," which was prepared by SCS Engineers to incorporate these measures and submitted to the SCAQMD on January 27, 2003 (included in appendix).

AQ-12

Within three years of start date [July 1, 2001], USA Waste or its successor-in-interest shall submit to the County of Riverside an evaluation of the technological and economical feasibility of using natural gas fuel or other alternative fuel in transfer trucks. The technological feasibility of the evaluation shall include review comments by the South Coast Air Quality Management District. The evaluation shall be subject to County approval. If the County finds that natural gas fuel or other alternative fuel in transfer trucks is technologically and economically feasible, USA Waste or its successor-in- interest shall develop and implement a program to phase-in transfer trucks capable of using these fuels. The program shall be subject to County approval. If the County concludes that transfer trucks capable of using alternative fuels are not technologically and economically feasible, USA Waste or its successor-in-interest shall periodically reevaluate the feasibility of using alternative fuels in transfer trucks. Such reevaluations shall be at least every three (3) years. USA Waste or its successor-in-interest shall, however, conduct such a reevaluation anytime deemed appropriate by County. (Responsible Agencies: RCDWR)

Status:

The initial evaluation report was submitted with the 2004 Annual Report and is included in the appendix. The report indicated that alternatively fueled engines with sufficient power ratings for a transfer truck application were not available at that time. The insufficient power issue in a transfer truck application was not overcome in continuing studies through 2009, making it infeasible for USA Waste to implement this requirement at that time. USA Waste is continuing to test alternative fuel engines; however, results have been negative due to power/torque limitations. Newer engines are being tested in 2015, with test results available in early 2016 (see AQ-12 Update in Appendix).

AQ-13

The project shall provide the required emission reductions of NO_X and ROG sufficient to cause no net increase of project emissions. (Responsible Agencies: SCAQMD, RCDWR)

Status:

The "Annual 2014 Mitigation Monitoring Program Status Report, Air Quality Mitigation Measure AQ-13, El Sobrante Landfill, Corona, California", prepared by SCS Engineers and dated September 27, 2013, provides both a summary of the site's emission inventory for stationary, mobile, and construction sources and a summary of the emission increases, or reductions, from the various site emission sources from the baseline year of 2001 to the 2014 projected emissions (included in appendix). Based on the report's results, it is forecast that there will be an emission reduction of 661.9 lbs/day for NOx and 8.8 lbs/day for ROG. These reductions are achieved by use of an ultra-low NOx flare and the use of transfer trucks in place of packer trucks. No emission offsets were required for 2014, and the project is in compliance with this mitigation measure.

AQ-14

USA Waste shall amend its Policies and Procedures Manual at the landfill to require that heavy construction and operating equipment at the landfill shall not idle for longer than 15 minutes. (Responsible Agencies: RCDWR)

Status:

Site Policies and Procedures have been amended to enforce the "no idle longer than 15 minutes" mitigation measure.

Biological Resources (B) Mitigation Measures

B-1

Development shall be phased so that the area to be disturbed shall be minimized. Restoration of previously disturbed areas shall be performed in accordance with the Multiple Species Habitat Conservation Plan for the El Sobrante Landfill and its Implementing Agreement, both dated July 2001, and any approved modifications or amendments thereto. (Responsible Agencies: USFWS, CDFG, ACOE, RWQCB, RCDWR)

Status:

Phased development, closure and restoration are being performed in accordance with the Implementing Agreement, dated July 2001, for the approved El Sobrante Landfill HCP that was entered into by USFWS, CDFW, USA Waste, and Riverside County. New cell development excavation continues to be minimized as much as operationally possible and monitored by biological consultants to ensure that appropriate preserve/excavated ratios are maintained. During 2003, the expansion phases were redesigned to facilitate expansion and soil stockpiling activities. A minor modification request was formally submitted to USFWS and CDFW in May 2004 to re-phase the grading plan, increasing the number of phases from 15 to 17.

In 2014, the remaining 5 acres of the Phase 11 Berm were completed and hydro seeded with RSS in the fall. Cactus pads were planted on the Phase 10 Berm and on the Pond 4 storm water detention basin face.

B-2

Areas within the landfill limits of disturbance shall be restored with Riversidian sage scrub in accordance with the Multiple Species Habitat Conservation Plan for the El Sobrante Landfill and its Implementing Agreement, both dated July 2001, and any approved modifications or amendments thereto. (Responsible Agencies: USFWS, CDFG, ACOE, RWQCB, RCDWR)

Status:

Refer to "Status" under Mitigation Measure B-1.

B-3

Dudleya salvaging and restoration shall be performed in accordance with the Multiple Agreement, both dated July 2001, and any approved modifications or amendments thereto. (Responsible Agencies: USFWS, CDFG, ACOE, RWQCB, RCDWR)

Status:

Dudleya salvaging and restoration is being performed by the Habitat Manager (Mariposa Biology), in accordance with the Dudleya Restoration Plan, prepared pursuant to the approved HCP. The goal of the HCP is to replace impacted Dudleya at a 1:1 ratio through salvage, propagation, and translocation, while at the same time controlling non-native plant species within the 15-acre Dudleya Restoration Area that was established in 2004. Through 2009, 15,210 plants had been salvaged from landfill phases prior to grading disturbance. Of the 15,210 plants salvaged, 7,760 plants survived to be planted within 67 test plots located in the Dudleya Restoration Area. Another 6,942 Dudleya plants were grown from seed and planted in the Dudleya Restoration Area. The survival rate of the 14,702 plants that were transplanted through 2009 in the test plots has been low due to factors such as herbivory and drought, decreasing from 318 plants in 2012 to 140 plants in 2013 after a second year of drought, which indicates that plants, while dying off, are not reproducing in the test plots. In December 2012, 7 rock outcrops were seeded with Many-stemmed Dudleya on rock outcrops that supported Dudleya lanceolata in the North and East Preserves to increase the number of Dudleya plants onsite for mitigation purposes. The rock outcrops were seeded again in the summer of 2014. In December 2014, 4 of the 7 outcrops had 251 Dudleya seedlings. To prevent further loss of plants in the restoration area after repeated drought years, adaptive management measures were implemented in 2013. Measures included the strategic placement of rocks to provide protection of the plants and the installation of temporary irrigation lines to water approximately 17 of the more successful test plots or test plots that can be watered without watering any natural rock outcrops. Watering to replace lack of rainwater occurred from November 2013 through February 2014. Water was not used in the fall of 2014 due to multiple rain events.

B-4

Prior to disturbance to wetland/riparian areas, a wetland compensation and mitigation plan shall be developed in consultation with the ACOE, if a 404 Permit is required, the CDFG, pursuant to Section 1603 of the California Fish and Game Code, the RWQCB, pursuant to 401 Water Quality requirements and/or policies to protect wetlands, and the USFWS, if consultation is triggered pursuant to Section 7 of the Endangered Species Act. Mitigation of riparian habitats shall be targeted at a 3:1 ratio with compensation of 6.36 acres. Target mitigation of an additional 1.28 acres of riparian herb vegetation shall be at a 1:1 ratio. Final determination of mitigation ratios shall be made subsequent to onsite evaluation by the ACOE, CDFG, RWQCB, and/or USFWS and shall not be unreasonable or arbitrary. (Responsible Agencies: USFWS, CDFG, ACOE, RWQCB, RCDWR)

Status:

From 2002, when construction of the landfill expansion project began, no wetland/riparian areas identified in the EIR have been impacted. This mitigation measure has not been triggered for any grading or construction related to the landfill and would not be triggered until the final phase of landfill development, Phase 15 (now Phase 17).

B-5

Activities to mitigate the disturbance to wetlands may include, but are not limited to:

- **Identification and assessment of sites and specific riparian mitigation measures along Temescal Wash.**

- **Enhancement of degraded areas within existing channels.**
- **Weed removal to improve existing riparian habitat.**
- **Potential purchase of offsite riparian habitat. (Responsible Agencies: USFWS, CDFG, ACOE, RWQCB, RCDWR)**

Status:

Any wetland compensation plan developed in the future as a result of implementing Mitigation Measure B-4 will incorporate measures such as those noted in Mitigation Measure B-5.

In 2014, a drainage in the North Preserve was identified as a potential riparian mitigation for riparian habitat impacts associated with Phase 17 drainage. The drainage has cement pipes approximately every 10 meters that direct the water flow into an underground pipe system. Closing the pipe system would restore the hydrology of the drainage and allow for riparian restoration.

B-6

The purchase of offsite riparian/wetland habitat shall be incorporated into the mitigation plan in the event that the ACOE Section 404 permit and CDFG Section 1603 agreement process conclude that onsite enhancement and offsite mitigation along Temescal Wash could not provide sufficient compensation for disturbance to onsite riparian habitat. If this mitigation were implemented, surveys shall be conducted in coordination with USFWS and CDFG to identify offsite riparian habitat that would be suitable for purchase as mitigation for onsite habitat disturbance. Considerations shall include, but not be limited to:

- **Proximity to landfill site.**
- **Similarity of adjacent habitat.**
- **Management plans.**
- **Comparability.**
- **Sustainability.**
- **Cost. (Responsible Agencies: USFWS, CDFG, ACOE)**

Status:

Any wetland compensation plan developed in the future because of implementing Mitigation Measure B-4 will be developed in negotiation with the resource agencies.

B-7

Wetland/riparian habitat mitigation shall be implemented in accordance with all permits, approvals, and/or agreements as may be required by ACOE, CDFG, RWQCB, and/or USFWS. (Responsible Agencies: USFWS, CDFG, ACOE, RWQCB)

Status:

Wetland/riparian habitat mitigation will be implemented in accordance with an approved plan and upon issuance of all approvals and/or permits from these resource agencies.

B-8

Landfill personnel shall be instructed as to the requirement for and importance of restoration of completed areas of the site. (Responsible Agencies: USFWS, CDFG)

Status:

Worker education for El Sobrante Landfill employees and contractor employees was conducted in 2014 by El Sobrante supervisory staff as needed. This is an ongoing requirement. Restored and undisturbed habitat is also closely monitored by the Habitat Manager to ensure that impacts from landfill activity do not occur. In 2014, the Habitat Manager conducted worker education for the construction and landfill staff.

B-9

Approximately 406 acres of undisturbed open space, upon which a Declaration of Conservation Covenants and Restrictions has been recorded in favor of CDFG and USFWS, shall be maintained and managed for the benefit of Covered Species, pursuant to federal and state incidental take permits and the *Multiple Species Habitat* Conservation *Plan for the El Sobrante Landfill* and its Implementing Agreement, both dated July 2001, and any approved modifications or amendments thereto. (Responsible Agencies: RCDWR)

A restrictive covenant was placed over the approximately 406 acres of Undisturbed Open Space on the landfill property in favor of USFWS and CDFG. A Declaration of Conservation Covenants and Restrictions was recorded on August 7, 2002 (Instrument No. 434614). Another 292 acres were conveyed to the County in 2002, subject to a conservation easement granted in favor of the CDFG.

B-10

Pursuant to Section 5 of the Agreement, USA Waste or its successor-in-interest shall pay the County a per ton charge for the deposit of Non-County waste at El Sobrante Landfill, $1.50 of which shall be utilized for multi-species habitat acquisition and management, including planning and research activities, as provided in Section 10.7 of the Agreement and as approved by the Board of Supervisors on September 1, 1998. Monies to be utilized for multi-species purposes shall be deposited in a trust fund administered by the Executive Officer of the County. (Responsible Agencies: RCDWR)

Status:

For calendar year 2014, approximately $2,228,117 was collected from out-of-county waste imports and conveyed to the Executive Office for MSHCP funding (as based on 1,485,411 tons of out-of-County waste in 2014 at $1.50/ton). No portion of the out-of-County fee that is allocated for multi-species habitat acquisition and management is utilized to fund the El Sobrante Landfill HCP. The County maintains entire discretion over the trust fund, which is currently being utilized to fund a major portion of the Western Riverside County Multiple Species Habitat Conservation Plan. USA Waste (or its successors-in-interest) is entirely responsible for funding and carrying out its obligations under the approved HCP for the El Sobrante Landfill.

B-11

In the unlikely event that out-of-County waste ceases to be disposed of at El Sobrante, use of the 60 million tons of air space currently allocated for out-of-County waste shall include the requirement for payment of $1.00 per ton for multispecies habitat acquisition and management. (Responsible Agencies: RCDWR)

Status:

The circumstances cited in this measure have not occurred.

B-12

Lighting at the working face shall be downcast and shielded to minimize reflection, and shall be directed inward toward the landfill. (Responsible Agencies: RCDWR)

Status:

All outdoor lighting, both permanent and portable, is shielded and directed toward the ground and/or working face in accordance with this mitigation measure. In 2014, a complaint was registered with the LEA regarding lighting. The LEA performed an investigation and found that the site was in compliance with this measure, and no violations were issued or noted by the LEA following their inspection of the portable lighting.

B-13

A predator monitoring and control plan shall be implemented in accordance with the *Multiple Species Habitat Conservation Plan for the El Sobrante Landfill* and its Implementing Agreement, both dated July 2001, and any approved modifications or amendments thereto. (Responsible Agencies: USFWS, CDFG)

Wildlife control measures that include the following have been incorporated in the approved HCP and are being implemented by the Habitat Manager in accordance with the Implementing Agreement:

- Cowbird trapping to avoid parasitism during the breeding season of the California Gnatcatcher.
- Monitoring for the occurrence of Argentine ants and fire ants, and implementation of control measures that are based on methods prescribed by County and State agencies and approved by the Management Committee. Implementation of the measures must be consistent with the terms of the incidental take permits.
- Monitoring for the presence of domestic pets and feral cats, and implementation of trapping or other appropriate actions to limit the effects on these animals on Covered Species in Conserved Habitat and in undisturbed habitat in the Landfill Area.

In 2008 and 2009, the number of cowbirds trapped remained significantly lower than previous years. As a result, the Habitat Management Committee (HMC) for the El Sobrante HCP mutually agreed in September 2009 to reduce cowbird trapping from every year to every other year, starting in 2012. The last cowbird-trapping program was conducted by TeraCor Resource Management during the California Gnatcatcher's spring nesting season from March through June of 2012. 360 brown-headed cowbirds were caught in 4 maintained traps during this period. There was no observed evidence of parasitism of Gnatcatcher nests, and no cowbirds were detected in or near Gnatcatcher habitat areas. The cowbirds that were present were part of a mixed blackbird flock that winters at the landfill and feeds on the landfill. No cowbird trapping has been conducted since that time. In 2014, predator control measures, such as monitoring for the occurrence of Argentine ants and fire ants, were implemented. No pest problems were noted.

B-14

Brush clearing and habitat removal in each phase of landfill expansion will not be allowed to occur between February 1 and August 15, pursuant to the *Multiple Species Habitat Conservation Plan for the El Sobrante Landfill* and its Implementing Agreement, both dated July 2001, and any approved modifications or amendments thereto. (Responsible Agencies: USFWS, CDFG)

Status:

There was no brush clearing in 2014.

B-15

When the landfill expansion is complete (i.e., after closure of all phases and at the end of the postclosure monitoring maintenance period [currently a minimum of 30 years]), including all restoration activities in accordance with the *Multiple Species Habitat Conservation Plan for the El Sobrante Landfill* and its Implementing Agreement, both dated July 2001, and any approved modifications or amendments thereto, the area of onsite disturbance (approximately 645 acres) shall be kept in permanent conservation through a conservation easement in favor of the CDFG. In the event that CDFG revokes its acceptance of the conservations easement, the land shall be placed into conservation with the County, or other County-designated entity, such as Western Riverside County Regional Conservation Authority as approved by the US Fish and Wildlife Service and the El Sobrante habitat management committee. (Responsible Agencies: RCDWR)

Status:

As noted, this mitigation measure will not be triggered until after the post-closure period of approximately 30 years beyond closure of all phases of the landfill expansion project.

B-16

USA Waste or its successor-in-interest shall continue to include the County in all aspects of future permitting processes involving USFWS, pursuant to Section 7 of the Endangered Species Act, CDFG, pursuant to Section 1603 of the California Fish and Game Code, ACOE 404 permitting, and RWQCB, pursuant to 401 Water Quality requirements and/or policies to protect wetlands. (Responsible Agencies: RCDWR)

Status:

As party to the Implementing Agreement for the approved HCP, the County of Riverside has been and will be included in all aspects of future permitting processes involving USFWS, CDFW, ACOE, and/or RWQCB.

In 2014, notifications were sent to CDFW for the clearing of Pond 3 and for the long-term maintenance of existing Ponds 1, 3, 4, and future Ponds 1A and 5. RWQCB staff visited the Pond 4 site. A meeting was held with ACOE to discuss permitting.

Cultural Resources (C) Mitigation Measures

C-1

Prior to grading, a Society of Professional Archaeologists (SOPA)-certified archaeologist(s) shall be retained, at the expense of the project, to provide surface collection, mapping, and test excavations for identified archaeological sites. If the sites are determined to be important, the resources within these sites shall be either preserved or a data recovery excavation shall be conducted. (Responsible Agencies: RCPD)

Status:

No pre-impact archaeological surveys were conducted in 2014, because no new landfill grading was performed in 2014. The last excavation occurred in 2011 in Phases 9B, 10, and 11, for which pre-impact archaeological surveys were conducted for Phases 8 and 9 by SOPA-certified archeologists with RECON in 2003. As shown in the original Cultural Reports completed for the Expansion EIR, no archaeological sites or resources were identified in Phase 10 and 11. Due to the lack of any evidence of any archaeological resources, RECON did not recommend any further archaeological work within these areas, and no data was recorded with the local data repository.

C-2

In the event that additional archaeological sites are uncovered during initial grading, work shall be redirected and an archaeologist shall be retained at the expense of the project, to evaluate the importance of the site and, if necessary, shall develop and implement an appropriate data recovery program. The archaeologist shall be allowed to redirect grading in the area of exposed resources until inspection, evaluation, and recovery activities are completed. (Responsible Agencies: RCPD)

Status:

No archaeological sites have been uncovered during any grading or excavation work in current phases. There was no evidence for a subsurface component.

C-3

Routine road or stormwater facilities, maintenance or other land-altering activities in the vicinity of sites shall be monitored by a SOPA-certified archaeologist to prevent inadvertent disturbance or loss of important resources. (Responsible Agencies: RCPD)

Status:

Pre-impact archaeological surveys have been conducted by SOPA-certified archaeologists in order to identify previously recorded resources and to identify new resources in expansion areas prior to any disturbance activities. As noted under "Status" for Mitigation Measure C-1, no resources have been identified in currently active landfill phases. The area in the vicinity of these sites will be monitored by a SOPA certified archaeologist on a semi-annual basis while performing routine tasks outlined in mitigation measure C-4 below.

C-4

The status of the sites shall be monitored on a semi-yearly basis to assure that incidental disturbance or recreational collection of resources has not occurred. (Responsible Agencies: RCPD)

Status:

While semi-yearly monitoring of recorded sites within the landfill property has not occurred, based on the 2003 archaeological report prepared by RECON in 2003, there is no evidence of archaeological resources within the active landfill phases. However, Archaeological monitoring will be performed on a semi-annual basis. RECON was contracted in December of 2014 for monitoring services and the results of those services submitted in a report on February 6, 2015 (included in appendix).

C-5

Archaeological materials recovered during surface collections, subsurface excavations, and monitoring shall be curated in perpetuity at a regional repository approved by the County. Expenses for curation shall be borne by the project. (Responsible Agencies: RCPD)

Status:

No archaeological materials were identified or recovered in 2014 (the current expansion phases.). El Sobrante Landfill will comply with this mitigation measure if triggered.

C-6

While the archaeological sites that will be affected by the proposed project are not expected to include human remains or burial artifacts, should such items be discovered during subsurface testing or data recovery, or if such items are discovered at unknown sites during construction or operation of the proposed action, project-related earthmoving activities shall be redirected away from the area. A SOPA-certified archaeologist shall consult with the County and representatives of local Native American groups regarding removal and re-interment. (Responsible Agencies: RCPD)

Status:

No human remains or burial artifacts have been recovered during subsurface testing or during grading. Therefore, this mitigation measure has not been triggered. However, should human remains or burial artifacts be discovered, proper protocol procedures will be followed.

C-7

The approved archaeological mitigation measures shall be affixed to all copies of the project grading plans. (Responsible Agencies: RCBSD)

The approved archaeological mitigation measures will continue to be affixed to all future copies of project grading plans in accordance with this mitigation measure.

Geology, Soils and Seismicity (G) Mitigation Measures

G-1

The landfill and associated structures shall be designed and constructed to withstand the expected ground motions and potential effects of seismic ground shaking. (Responsible Agencies: RCBSD, LEA, RWQCB, CIWMB)

Status:

All cell designs are engineered based on seismic stability analyses and subject to review and approval of the RWQCB. Likewise, all building plans must comply with all applicable building standards and are submitted to Riverside County for review and permitting.

G-2

Final exterior waste fill slopes shall not be steeper than 1.75:1 with a minimum of one 15- foot wide bench for every 50-feet of vertical height. (Responsible Agencies: LEA, RWQCB, CIWMB)

Status:

All final exterior waste fill slopes are a more conservative 2.7:1 with benches every 50 vertical feet. Interim slopes are constructed at 3:1 per RWQCB guidelines.

G-3

A slope or foundation stability report shall be prepared by a registered civil engineer or certified engineering geologist. The report must indicate at least a 1.5 factor of safety for the critical slope under dynamic conditions, or appropriate factor of safety in accordance with applicable regulations. (Responsible Agencies: LEA, RWQCB, CIWMB)

Status:

All stability analyses are included in the Joint Technical Document (JTD) reviewed and approved by the RWQCB. The JTD, revised March 2009, incorporated an updated seismic stability analysis of the landfill's liner system.

G-4

In lieu of achieving a 1.5 factor of safety under dynamic conditions, a more rigorous analytical method that provides a quantified estimate of the magnitude of movement may be employed. (Responsible Agencies: LEA, RWQCB, CIWMB)

Status:

All stability critical structures within the footprint of the landfill are designed to the 1.5 factor of safety.

G-5

Significant slopes (including cut, fill, and waste prism slopes greater than 20 feet high and steeper than 3:1) shall be designed to comply with RWQCB and CIWMB requirements for the identified maximum probable earthquake peak acceleration. (Responsible Agencies: LEA, RWQCB, CIWMB)

All cut, fill, and waste slopes are designed by an engineering firm to comply with regulatory requirements.

G-6

RWQCB and CIWMB requirements shall be complied with, and the final cover surface slopes shall be limited to 3:1, based on seismic considerations, with intermediate fill stage heights limited to 70 feet, with 15-foot wide benches to improve stability, unless subsequent analyses verify the acceptability of steeper slopes or greater fill heights. Under no circumstance, however, shall the final exterior waste fill slope be steeper than 1.75:1 (see G-2 above). (Responsible Agencies: LEA, RWQCB, CIWMB)

Status:

This mitigation measure is implemented as it is stated.

G-7

Slope buttresses shall be provided, if necessary, to increase slope stability and reduce deformations. (Responsible Agencies: LEA, RWQCB, CIWMB)

Status:

The need for a slope buttress or berm is based on an approved landfill cell design and corresponding slope stability analysis. This measure was implemented for the construction of the Phase 11 stability berm partially constructed in 2011 and completed in 2014.

G-8

Parameters developed by geosynthetic and geotechnical testing shall be included in the analysis of liner systems on side slopes. Residual strength values (i.e., after shearing) shall be used, unless control of peak strengths can be demonstrated. (Responsible Agencies: LEA, RWQCB, CIWMB)

Status:

Compliance with this mitigation measure is documented in the Construction Quality Assurance As-Built Reports for each specific landfill phase that is constructed.

G-9

A post-earthquake inspection plan shall be submitted to the RWQCB and CIWMB, for approval which provides for detailed site inspection after an earthquake of magnitude (M)
5.0 or greater within 25 miles of the site to determine the integrity of landfill structures and systems. The plan shall identify appropriate measures which may be initiated to correct earthquake-related damage. Also, a routine inspection plan shall be developed and implemented by a registered certified engineer to examine slope conditions. (Responsible Agencies: LEA, RWQCB, CIWMB)

Status:

A post-earthquake and routine inspection plan was submitted to the RWQCB and CIWMB in 2008 and incorporated in the approved JTD, revised March 2009. The plan has been designed to include integrity inspections of structures, slopes and the landfill's integrated systems following an earthquake. In 2014, there were no earthquakes that triggered implementation of this mitigation measure. However, El Sobrante Landfill staff currently inspects slopes and structures for maintenance issues including signs of settlement and fissures on a weekly basis.

G-10

If geotechnical investigations reveal the need for blasting for a specific landfill phase, a blasting study shall be conducted in compliance with County requirements. If such a study is necessary, it shall be conducted by a licensed engineer and submitted to the County Engineering Geologist for approval. (Responsible Agencies: RCPD)

Status:

Blasting occurred in 2014 when geotechnical investigation revealed the need for minor blasting to occur as part of development of the subdrain system for the leachate collection and removal system (LCRS) in Phase 11A. El Sobrante complied with this mitigation measure at that time by submitting approved design plans for the LCRS to the County Engineering Geologist, who with concurrence from the Riverside County Department of Waste Resources, determined that a blasting study was not necessary.

G-11

If isolated saturated bedrock conditions are encountered in cut slopes, appropriate drainage systems shall be installed. These systems could consist of weep systems, subdrain systems, or the flattening of excavated cut slopes to improve slope stability. (Responsible Agencies: LEA, RWQCB, CIWMB)

Status:

Subdrain systems were installed in the Phase11A construction during 2014. This measure will continue to be implemented at the El Sobrante Landfill during cell construction when these conditions are encountered and will continue to comply with this mitigation measure.

G-12

Landfill liners shall be placed over the side slopes, and surface water runoff control systems (e.g., V-ditches at the top of slopes) shall be constructed to prevent uncontrolled flow down the face of the slopes. (Responsible Agencies: LEA, RWQCB, CIWMB)

Status:

El Sobrante has constructed and continuously maintains a surface drainage network system to prevent erosion over the slopes of the landfill, which consists of v-ditches, berms, check dams, sand bags, and silt fences.

G-13

Structural fills shall be built above ground water and compacted in place to a specific high relative density. (Responsible Agencies: LEA, RWQCB, CIWMB)

Status:

A canyon subdrain system was installed in 2011 beneath the Phase 11 stability berm that was completed in 2014.

G-14

Expansive index testing shall be performed to verify the suitability of native soils for fill materials. If testing indicates a potential for high expansiveness in the soil, such soils shall be either treated (e.g., mixed with non-expansive soils) or removed. (Responsible Agencies: LEA, RWQCB, CIWMB)

Status:

All fill materials have been tested prior to fill placement and documented in a Construction Quality Assurance As-Built Report submitted to the regulatory agencies.

G-15

Blasting shall be conducted in compliance with local building code requirements to prevent damage to structures and new construction from shear waves generated during blasting. (Responsible Agencies: RCPD)

Status:

The blasting that occurred during Cell 11A construction was performed in compliance with all building code requirements. This measure will continue to be implemented at the El

Sobrante Landfill when blasting is required for cell development.

G-16

Only state-licensed blasters shall be used to design, supervise, and detonate explosives on the site. (Responsible Agencies: RCPD)

Status:

Precision Blasting Services, Inc., a fully licensed and permitted company, performed blasting operations at the landfill in 2014.

G-17

Seismic monitoring of each blast shall be conducted by an independent, qualified consultant. (Responsible Agencies: RCPD)

Status:
Seismic monitoring was identified in the Blasting Plan. The Blasting Plan is attached to the sample notification letter, and included in the Appendix.

G-18

There shall be no onsite storage of explosives. Explosives shall be transported to the site by the licensed blaster on an as-needed basis. (Responsible Agencies: RCPD)

Status:

Explosives are not stored on the site of the landfill.

G-19

USA Waste shall inform the Riverside County Sheriff's Department (Sheriff's Dept.) and the Riverside County Fire Department (Fire Dept.) prior to blasting. (Responsible Agencies: RCPD)

Status:

An Explosives Permit was obtained from the Riverside County Sheriff's Department prior to blasting. A copy of the Permit is included in the Blasting Plan (see Appendix).

G-20

USA Waste shall notify neighbors within 1,000 feet of potential blasting areas prior to a blasting episode. (Responsible Agencies: RCPD)

Status:
Not applicable for the 2014 blasting activity as there are no neighbors within 1,000 feet of the blasting areas.

G-21

A record of each blast shall be retained for at least three years and shall be submitted to the County Building and Safety Department as requested by the Building and Safety Director. (Responsible Agencies: RCBSD)

Status:
Blasting records are kept by USA Waste as required, and are available upon request.

G-22

Preblast inspections shall be made by a civil engineer licensed by the State of California of residences and facilities existing at the time of landfill permit approval and located within 1,000 feet of potential blasting areas. (Responsible Agencies: RCPD)

Status:

Not applicable for the 2014 blasting activity as there were no residences or facilities located within 1,000 feet of the blasting areas.

G-23

A letter containing a general description of the blasting operations and precautions, including the blast-warning whistle signals that are required by the State of California Construction Safety orders, shall be sent to residents within a one-half mile radius of the landfill operations by USA Waste in accordance with applicable regulations. (Responsible Agencies: RCPD)

Status:

A notification letter was sent to residents within a one-half mile radius of the landfill operations. A sample of the notification letter is included in the Appendix.

G-24

Blasting complaints, if any, shall be recorded by USA Waste as to complainant, address, data, time, nature of the complaint, name of the person receiving the complaint, and the complaint investigation conducted. Complaint records shall be made available to the County Engineering Geologist, Planning Department, and Building and Safety Department. (Responsible Agencies: RCPD, RCBSD, LEA)

Status:

No complaints were received as a result of the 2014 blasting operations.

Land Use and Land Use Plans (L) Mitigation Measures

L-1

The development of El Sobrante Landfill Expansion shall be in accordance with the mandatory requirements of all applicable County ordinances and shall conform substantially with the project description in the EIR (State Clearinghouse No. 90020076), as filed in the office of the RCDWR. (Responsible Agencies: RCDWR, RCPD)

Status:

While there have been changes over time to conceptual grades based on updated seismic stability analysis, the El Sobrante Landfill continues to be developed in overall accordance with the Expansion Project first approved by the BOS in 1998 and with its SWFP and corresponding JTD, last revised in 2009. There have also been changes over time to the conceptual limits of grading for the landfill expansion project, both onsite and offsite. In 2011, Pond 4 was relocated to primarily disturbed land purchased by USA Waste outside the original landfill boundary. In conformance with the Expansion Project, the development

of this ancillary facility and all future offsite grading will not exceed the approximately 11 acres of offsite grading assessed in the EIR. The relocation of Pond 4 resulted in a substantial reduction of impacts to RSS, a sensitive plant species, when compared to RSS impacts at the original (undisturbed) location. In addition, the relocation allowed for continued preservation of rock outcrops in the area of the original location, which serve as important habitat for sensitive plants and animals. The original location of Pond 4 will be conserved and managed as part of the El Sobrante Landfill Preserve.

L-2

Prior to any offsite grading, USA Waste or its successor-in-interest shall obtain and record appropriate offsite easements. (Responsible Agencies: RCDWR)

Status:

Offsite grading, requiring offsite easements, was not conducted in 2014.

L-3

A Citizen Oversight Committee shall be formed by the Board of Supervisors upon approval of the project. The Citizen Oversight Committee shall be composed of a total of five (5) members, whose term of service will be established upon formation of the committee. Three (3) of the five (5) members will be appointed by the Supervisor of the district in which the landfill is located. Of these three (3), two (2) members must reside within a three (3) mile radius of the landfill property. One (1) member shall be a representative from a corporate operation within a three (3) mile radius of the landfill property. The remaining two (2) members will be appointed by the entire Board of Supervisors and shall be chosen at large to represent the affected communities of interest. (Responsible Agencies: County Board of Supervisors)

Status:

The Citizen Oversight Committee (COC) was formed by the BOS in 2003 and meets throughout the year as needed to discuss issues related to the use of the Mitigation Trust, illegal dumping and programs, and landfill operations.

L-4

The Citizen Oversight Committee shall meet at least once annually to review the Annual Status Reports that will be submitted by an Administrative Review Committee which will include all reports and data that will be provided by USA Waste or its successor-in- interest and shall submit written comments on the project to the Board of Supervisors as they deem necessary. (Responsible Agencies: County Board of Supervisors)

Status:

The COC met in 2014 to review the Annual Status Reports.

Noise (N) Mitigation Measures

N-1

Excavation and liner construction of new landfill cells shall be limited to the hours of 7:00 a.m. to 10:00 p.m., Monday through Saturday, with the following restrictions:

a) The conveyor belt system shall not be located less than 295 feet from

occupied residences; and,

b) Excavation and liner construction of new cells within 10 feet of the top of slope shall be limited to the hours of 7:00 a.m. to 6:00 p.m., Monday through Saturday. (Responsible Agencies: LEA)

Status:

All activities involving the use of the conveyor belt were completed in 2012. The conveyor belt system has been removed and is no longer in use. The excavation and liner construction activity for Cell 11A during 2014 was limited to the hours stipulated by this measure.

N-2

Landfill equipment working on the outside slopes of the landfill shall be limited to the hours of 8:00 a.m. to 5:00 p.m. (Responsible Agencies: LEA)

Status:

In compliance with this mitigation measure, El Sobrante Landfill limits its hours when working on outside slopes with landfill equipment.

N-3

Construction equipment shall use industrial-grade mufflers to reduce noise emission. (Responsible Agencies: LEA)

Status:

Only construction equipment with industrial-grade mufflers to reduce noise emission will be utilized at the landfill.

N-4

Blasting shall be postponed during temperature inversions and unfavorable wind conditions (wind blowing toward residences). (Responsible Agencies: RCPD)

Status:

The blasting that occurred during 2014 cell construction conformed to this measure.

N-5

Drilling and blasting shall be conducted between the hours of 8:00 a.m. and 5:00 p.m., Monday through Friday, and will not occur on federal, state, and local holidays. (Responsible Agencies: RCPD)

Status:

The blasting that occurred during 2014 cell construction conformed to this measure.

N-6

Acoustic blankets shall be used around drilling operations to reduce potential drilling noise. (Responsible Agencies: RCPD)

Status:

This mitigation measure requires that acoustic blankets be used when drilling associated with blasting occurs. The blasting that occurred during 2014 cell construction conformed to this measure. A photo of an acoustic blanket in use is included in the appendix.

N-7

Wherever feasible, temporary earthen or landscape berms, or other structures or measures, shall be utilized to reduce potential noise impacts on surrounding homeowners from nighttime activities at the working face of El Sobrante. Any measures implemented for this purpose shall be subject to annual review by the Citizen Oversight Committee. (Responsible Agencies: LEA)

Status:

This mitigation measure is addressed to construction activities only. In 2014, construction occurred in Phase 11A. Prior landfilling activities shielded this phase to the west and the Phase 11 Berm shielded this phase to the south. As a result, no temporary measures to reduce potential noise impacts to surrounding homeowners were required. With respect to operations, even though not expressly addressed in the mitigation measure, the landfill phasing has been restructured to increase the distance and minimize the potential for any audible impact of filling activities on surrounding neighbors. During periods of 2014, when filling operations occurred at higher elevations on the western portion of the landfill footprint, it was not feasible to provide audible screening of operations from all surrounding communities due to the location of active filling and the height of the landfill. However, impacts on these communities from noise are significantly reduced due to their distance from the landfill. No noise complaints related to nighttime operations were received in 2014. According to the Supplemental EIR (certified by BOS in 2009) and the Addendum to the Final EIR (considered by BOS in 2012), no significant impacts relating to the landfill's nighttime activities were identified.

Based on its review, RCDWR commented, requesting additional information as to how the height and location impact the ability to provide screening of operational noise, and why was temporary screening infeasible. The following discussion addresses those comments.

1. Construction Noise

MM N-7 only applies to nighttime construction activities, not nighttime operations.

- In accordance with Section IX.G.1 of the BOS CEQA Resolution (entitled "Construction Noise"), MM N-7 only applies during periods of nighttime construction to address "short-term noise impacts".

- The CEQA Resolution discussion of noise from "operational activities at the working face", at Section IX.G.2, expressly stated "no mitigation measures are required." This makes it even clearer that MM N-7 was intended to apply only to construction activities.

- Construction activities in 2014 took place in Phase 11A. Prior landfilling activities shielded this phase to the west and the Phase 11 Berm shielded this phase to the south. These provided a noise barrier from surrounding homeowners that was more effective than any temporary measures that could have been implemented.

- All construction activities in 2014 took place in accordance with MM N-1, N-2 and N-5, as modified by Section 11.10(d) of the Second Agreement (Third Amendment). The

expansion of construction hours from 7:00 am until 10:00 pm expressly contemplated evening construction.

- A few complaints were received for construction noise in 2014, but were related to construction noise within approved hours.

2. Operational Noise

Even if applicable, this requirement was not triggered in 2014.

- In 2014, filling activities occurred at higher elevations in the western portion of the landfill footprint. Given its height, this location does not provide any barriers to the transmission of noise, such as natural ridgelines. However, the nearest residents to the west are located approximately 1½ miles away with the I-15 freeway, a much more significant source of noise, between the residences and the landfill. No complaints related to nighttime operational noise were received in 2014, which is not surprising since the landfill does not produce noise levels that are significant and that contribute to existing background noise (i.e., I-15) affecting residences in the vicinity of the landfill.

Even if applicable, complete shielding of 2014 filling operations was not feasible.

- See feasibility discussion for MM A-6.

Paleontological Resources (P) Mitigation Measures

P-1

A qualified paleontologist shall be retained, at the expense of the project, to monitor ongoing grading or other extensive activities in the Silverado Canyon and Lake Mathews formations. The monitoring program shall reflect the County's intent to research, recover, and preserve significant paleontological resources. (Responsible Agencies: RCPD)

Status:

El Sobrante Landfill has maintained compliance with this mitigation measure since the 1998 approval of the Expansion Project by the Riverside County BOS by retaining a qualified paleontologist to monitor any excavation activities within the Silverado Canyon or Lake Mathews formations. No excavations in these formations were conducted in 2014.

P-2

In the event that significant paleontological resources are uncovered during excavation, earthmoving and/or grading, work shall be redirected from the area until an appropriate data recovery program can be developed and implemented. (Responsible Agencies: RCPD)

Status:

No paleontological resources were uncovered during excavation or earthmoving activities during 2014.

P-3

Recovered fossils shall be cleaned, cataloged, and identified to the lowest taxon possible. A report containing monitoring results, including an itemized list of fossils, shall be submitted to the County. A copy shall accompany the fossils to an appropriate repository. (Responsible Agencies: RCPD)

Status:

Since no significant paleontological resources have been uncovered, this mitigation measure has not been triggered.

P-4

Collected fossils shall be curated at a public institution with an educational/research interest in the material. The expenses shall be borne by the project. (Responsible Agencies: RCPD)

Status:

Since no significant paleontological resources have been uncovered, this mitigation measure has not been triggered.

P-5

The approved paleontological mitigation measures shall be affixed to all copies of the project grading plans. (Responsible Agencies: RCBSD)

Status:

The approved paleontological mitigation measures will continue to be affixed to all future copies of project grading plans in accordance with this mitigation measure.

Traffic and Circulation (T) Mitigation Measures

T-1

Out-of-County waste from Los Angeles County, Orange County, San Bernardino County, and San Diego County shall be transported to El Sobrante by transfer trucks. (Responsible Agencies: RCDWR, LEA)

Status:

USA Waste's contracts for out-of-County waste include a requirement to comply with all applicable conditions of the Second Agreement. While the vast majority of contracted out-of-County waste was delivered by transfer trucks or equivalent trucks in 2014, a portion of contracted out-of-county waste was delivered in vehicles not meeting the intent of this mitigation measure. As RCDWR scale house attendants have the authority to reject any deliveries not in compliance with this Mitigation Measure, USA Waste and RCDWR are working cooperatively to identify those trucks that violate this mitigation measure. The RCDWR scale house attendants did not report any violations of this Mitigation Measure to USA Waste in 2014. Additionally, RCDWR scale attendants typically do not reject minor amounts of non-contracted out-of-county waste from public customers or small commercial haulers in order to prevent illegal dumping of those loads.

T-2

Transportation of out-of-County waste from areas other than Los Angeles County, Orange County, San Bernardino County, and San Diego County shall not be permitted without additional environmental review and approval. (Responsible Agencies: RCDWR, LEA)

Status:

USA Waste has not contracted for the receipt of waste from counties other than the ones listed in this Condition of Approval. As the operator of the landfill scale house, RCDWR allows out of County waste to enter the landfill and is the entity responsible for jurisdictional reporting. In conversations with Riverside County staff, it is the understanding of USA Waste that it is the policy of Riverside County to allow incidental volumes of waste from any jurisdiction to be disposed of at a County facility to avoid or minimize illegal dumping.

T-3

Transfer trucks hauling waste from out-of-County to El Sobrante that use State Route (SR) 91 shall travel to and from the landfill during off-peak hours for SR 91. (Responsible Agencies: RCDWR, RCTD)

Status:

The 1996 Final EIR and 2009 Supplemental EIR for the landfill project found no significant traffic impact on SR 91 at any number of transfer truck trips. However, USA Waste agreed to a mitigation measure to avoid the use of SR 91 in Riverside County during peak hours.

It is not feasible to guarantee that transfer trucks (trucks) will never use SR 91 in Riverside County during peak hours, especially when traffic conditions can cause unexpected delays (i.e., accidents, breakdowns, lane closures, weather-related incidents, construction, etc.) Regardless, USA Waste has implemented measures to ensure that significant impacts from Out-of-County (OOC) truck operations during peak hours on the SR 91 in Riverside County do not occur.

This includes implementing 24-hour operations, including a prohibition in customer contracts, and periodic notification to both USA Waste facilities and non-USA Waste OOC facilities to utilize off-peak hours. Furthermore, extensive residential growth has occurred since the expansion EIR was prepared, leading to greater traffic congestion on both SR 91 and I-15. As a direct consequence, truck operators have been forced to adjust their travel to avoid peak commute times as a prudent business practice.

Riverside County Department of Waste Resources (RCDWR), which controls and operates the El Sobrante Landfill scale house and system, monitors and tracks, and provides official records for all inbound trucks entering El Sobrante. It is important to emphasize that the scale house data only reflects inbound trucks, yet the actual number of truck trips are both inbound and outbound and therefore double what is reported by the scales.

An accounting for USA Waste and other facility OOC trucks potentially using SR 91 during peak hours has been historically performed by evaluating RCDWR scale house records showing the time the truck entered the scales. While this accounting shows when a truck is at the scales, it fails to determine which USA Waste and other facility OOC trucks actually use SR 91. Therefore, in 2014 USA Waste implemented a “Geo-fence” (a GPS tracking tool) for all

USA Waste owned trucks from its OOC origins in Los Angeles County traveling to and from El Sobrante on the SR 91. The Geo-fence encompasses SR 91 in Riverside County and is set to trigger for any USA Waste truck within that boundary at any time of day, and regardless of direction. This system is highly effective in determining peak hour truck trips on SR 91. USA Waste also controls under transportation contract, but does not own, some transfer trucks that deliver waste to El Sobrante. Those transfer trucks are not installed with Geo-fence, but in those cases transfer trucks do not utilize SR 91 except for a small number of trips from the USA Waste Orange Transfer Station.

There are other transfer trucks delivering waste to El Sobrante under disposal contracts but are not controlled under transportation contracts. They are considered as other OOC facility trucks. In May 2015, these other OOC facilities were contacted via telephone to eliminate those that do not use SR 91

Overall, there are six facilities delivering waste to El Sobrante that potentially use the SR 91 at any time of the day. In addition, there are likely some small customers, such as demolition contractors, that could potentially use SR 91 at any time of the day.

Follow up investigation by RCDWR raised some concerns as to whether the City of Los Angeles CLARTS facility was utilizing SR 91 for deliveries. USA Waste was able to obtain confirmation that transfer trucks to and from CLARTS were routed on the SR 60/I-15 and did not utilize SR 91.

USA Waste's trucks represent approximately 95% of all OOC trucks using SR 91. All of the transfer trucks from the Carson and South Gate Transfer stations are USA Waste owned and are installed with Geo-fence.

With this information, USA Waste calculated truck trips on SR 91 during peak hours were compared to the total OOC truck traffic at all times of the day, and OOC truck traffic on the SR 91 at all times of the day. This information was compiled using 2014 peak hour truck trip data for the USA Waste and other OOC facilities discussed above.

The calculations were based partly on hard data from USA Waste's Geo-fence, and partly on extrapolations made for third party OOC transfer truck trips based on RCDWR scale house information for the other OOC facilities that use SR 91. For those other OOC facilities, it was assumed that all of these transfer trucks utilized SR 91 during peak hours where the actual time the truck weighed in at the scale was in or near peak hours. This assumption was conservative, and very likely overstates the amount of other facility OOC transfer truck traffic on SR 91 during peak hours.

To illustrate this, USA Waste compared scale house times with its Geo-fence data for USA Waste owned transfer trucks, and found that there was not a strong correlation between peak hour scale house times and the use of SR 91 during peak hours. This is completely understandable from a human perspective; the last thing professional truck drivers need or want is to sit in congested traffic. They may alter their routes or simply use that period as their break time. This assumption makes the calculations a conservative estimate.

The calculations may also be viewed as conservative because it did not consider that all third party contracts require avoidance of peak hours on SR 91. In addition, USA Waste has made efforts over the past few years to expressly state this requirement in customer contracts, for both other OOC facilities and small customers. Therefore, it is expected that the other OOC

facility customers would abide by this requirement and avoid usage of SR 91 during peak hours.

Based on its analysis, USA Waste concludes that peak hour trips on SR 91 number in the range of approximately 130-200 per year, which equates to far less than 1% of the overall OOC transfer truck traffic trips, and far less than 1% of OOC transfer truck trips using SR 91. Based on 306 working days per year, the peak hour trips on SR 91 would be approximately one every 1.5-2.3 working days.

In order to compare those trips with overall peak hour traffic on SR 91, USA Waste consulted Caltrans (2014), Traffic Volumes on the California State Highway System. The Average Annual Daily Trips (AADT) for peak hours were averaged for each monitoring station on SR 91 starting with Green River Drive and ending at Main Street in Corona. The average was 16,421 peak hour trips daily. As a result, anticipated El Sobrante truck traffic represented approximately 0.002%-0.004% of overall peak hour traffic on SR 91.

RCDWR undertook a similar analysis but used different assumptions. RCDWR took a more conservative approach than USA Waste, assuming that every customer that could conceivably use SR 91 did so, and in addition that CLARTS used the SR 91 for all trips. Based on this analysis, RCDWR concluded that there were approximately 11 peak hour trips (8 in the a.m. and 3 in the p.m.) on SR 91 daily.

USA Waste believes that RCDWR's estimate of peak hour trips very substantially overstates the actual number of peak hour trips and represents an extreme worst case.

Nonetheless, this type of extreme worst case analysis has value, in that should this level of trips not create a significant traffic impact on SR 91, there is high assurance that there would not be a significant impact now or in the future. Based on the average AADT peak hour trips of 16,421, estimated El Sobrante truck traffic would represent approximately 0.06% of overall peak hour traffic on SR 91.

T-4

Vehicles delivering waste from out-of-County to be disposed at El Sobrante shall utilize on all trips (both inbound and outbound) only that portion of Temescal Canyon Road between its intersection with 1-15 and the landfill access road, except in the event of a closure of the on- and/or offramps at Temescal Canyon Road and 1-15. (Responsible Agencies: RCDWR, RCTD)

Status:

El Sobrante Landfill requires all transfer trucks to utilize the designated route for deliveries of waste. USA Waste notified all out-of-county and in-county transfers stations that the designated route was I-15 to Temescal Canyon Road, then north on Temescal Canyon Road to Dawson Canyon Road. A sign has been installed at the intersection of Dawson Canyon Road and Temescal Canyon Road to clearly indicate to drivers leaving the landfill that no right turn is allowed and to indicate the landfill operator's commitment to enforce this restriction. When a driver is observed not using the designated route, the management of the trucking company is notified of the violation, and a request is made to correct the behavior. The El Sobrante staff tracks violations, with repeated violations by a driver resulting in the driver being banned from using the El Sobrante facility.

T-5

Except for vehicles collecting waste in the immediate vicinity of El Sobrante, USA Waste's or successor's-in-interest collection vehicles delivering waste from in-County to be disposed at El Sobrante shall utilize only that portion of Temescal Canyon Road between its intersection with 1-15 and the landfill access road for all trips (both inbound and outbound), except in the event of a closure of the on-and/or off-ramps at Temescal Canyon Road and I-15. (Responsible Agencies: RCDWR, RCTD)

Status:

The landfill operator has implemented this mitigation measure similarly to Mitigation Measure T-4. A sign has been installed at the intersection of Dawson Canyon Road and Temescal Canyon Road to clearly indicate to drivers leaving the landfill that no right turn is allowed and to indicate the landfill operator's commitment to enforce this restriction. When a driver is observed not using the designated route, WMI hauling operations are notified of the violation and a request is made to correct the behavior. The El Sobrante staff tracks violations, with repeat violations by a driver resulting in the driver being banned from using the El Sobrante facility.

Public Services and Utilities (U) Mitigation Measures

U-1

Access roads/streets shall be wide enough to accommodate movement and parking without hindering the flow of traffic. Roadway modifications shall be designed to provide smooth and orderly traffic flow and shall be well lighted. (Responsible Agencies: RCTD)

Status:

El Sobrante Landfill is in compliance with this mitigation measure.

U-2

Warning or caution signs shall be placed on Temescal Canyon Road and the El Sobrante access road to indicate the presence of slow-moving traffic/trucks. (Responsible Agencies: RCTD)

Status:

El Sobrante Landfill has placed multiple speed limit and caution signs at strategic points along the access route to the landfill to indicate the presence of slow-moving traffic in compliance with this mitigation measure.

U-3

Upon assignment of a numbered street address by the County, the project entrance shall be clearly marked with address numbers. (Responsible Agencies: RCTD)

Status:

El Sobrante Landfill is in compliance with this mitigation measure. The landfill entrance is well marked by many signs and monumentation. Address numbers are now posted on the mailbox and are installed on the facia of the administrative office(s).

U-4

Buildings shall be constructed with fire retardant roofing material as approved by the County Fire Department. (Responsible Agencies: RCBSD)

Status:

No new building applications were submitted in 2014. All new building applications for permanent structures will be routed through the Fire Department as required by the standard building permit process and this mitigation measure.

U-5

Water mains and fire hydrants providing required fire flows shall be constructed subject to approval by the County Fire Department. (Responsible Agencies: RCFD)

Status:

No new water service applications were submitted in 2014. All new water mains and fire hydrants will be routed through the Fire Department as required.

U-6

Prior to approval of any development plan for lands adjacent to open space areas, a fire protection/revegetation management plan shall be submitted to the Riverside County Fire Department for review and comment. (Responsible Agencies: RCFD)

Status:

El Sobrante Landfill developed and submitted a fire management plan to the Fire Department in 2003. This plan is implemented pursuant to El Sobrante HCP and Implementing Agreement and monitored by the Habitat Manager. Construction of two additional water storage tanks (140K gallon and 40K gallon) and pump upgrades were completed in 2007 to increase the water supply at El Sobrante for potential fire mitigation. The Fire Department has received a dedicated hook-up to each of the new tanks.

U-7

Landfill equipment operators, waste transfer vehicle drivers, and landfill personnel assigned to nighttime operations shall have appropriate training for night operation of heavy equipment. (Responsible Agencies: LEA)

Status:

El Sobrante Landfill equipment operators assigned to night operations receive weekly training on safety within the landfill, inclusive of maintaining proper lighting while operating in other than daylight conditions. All operator training is documented, with records maintained on site.

U-8

Portable lights shall be used at the working face to provide a safe working environment during nighttime operations. (Responsible Agencies: LEA)

Status:

El Sobrante Landfill is in compliance with this mitigation measure.

U-9

The landfill access road and onsite roads to the working face shall be equipped with reflectors, reflective cones, reflective barriers and signs. (Responsible Agencies: LEA)

Status:

El Sobrante Landfill is in compliance with this mitigation measure.

U-10

Public access to the landfill shall be restricted to the hours of 6:00 a.m. to 6:00 p.m. (Responsible Agencies: LEA)

Status:

El Sobrante Landfill is in compliance with this mitigation measure.

U-11

Installation of low flow toilets, faucets, and showers. (Responsible Agencies: RCBSD)

Status:

El Sobrante Landfill is in compliance with this mitigation measure.

U-12

Wastewater shall go to the Lee Lake Treatment Facility, which makes water available for reuse. (Responsible Agencies: RCDWR, RCEHA)

Status:

The active landfill requires potable, non-potable or reclaimed water, and wastewater handling in its operations. Potable water to the active landfill is currently provided by the City of Corona, non-potable or reclaimed water is provided by the Lake Elsinore Water District, and wastewater generated at the landfill is currently handled onsite, with gray water from restroom facilities routed into an onsite septic system approved by Riverside County and leachate and condensate collected for dust control purposes via a LCRS, pursuant to approvals from the RWQCB.

In order for wastewater from the landfill to go to the Lee Lake Treatment Facility to ensure that the landfill does not exceed its onsite capacity and allow for its reuse, as well as to consolidate services under one purveyor, the landfill property had to be annexed into the service area of the Lee Lake Water District (LLWD), which is the only purveyor able to meet the entire needs of the landfill for not only wastewater collection, treatment, and reuse/disposal, but also for potable and non-potable water. Applications for an annexation and Sphere of Influence (SOI) amendment were filed with the Riverside County Local Agency Formation Commission (LAFCO) in late summer 2010. On March 24, 2011, the LAFCO Board approved the annexation and SOI amendment. LAFCO's Notice of Results, including signed resolutions, were filed with and recorded by the State Board of Equalization in May and June of 2011, finalizing the decision.

As of 2014, LLWD has not started construction of non-potable reservoir/supply or wastewater lines. LLWD has indicated an anticipated start date for the pipeline and reservoir for late summer of 2015.

Water Resources (W) Mitigation Measures

W-1

Drainage structures, such as the perimeter drainage channels, sedimentation basins, leachate evaporation ponds, stormwater retention basins, and collection pipes and ditches, shall be inspected and maintained on a regular basis. (Responsible Agencies: RCFCD, RWQCB, LEA)

Status:

At a minimum, El Sobrante Landfill supervisors inspect and maintain all drainage structures (including ditches, sedimentation basins/storm water retention basins and drainage piping) within the site on a monthly basis. Routine maintenance and cleaning of drainage structures was completed in 2014. This task is part of the supervisors' regular responsibility and serves to facilitate compliance with this mitigation measure.

In 2014, there was one erosion event that occurred in the Phase B1/B2 closure, due to a late February rain event and was repaired the following week. It was reported to RWCQB in the April 2014 groundwater report.

W-2

Regular monitoring (and possibly testing) of perimeter drainage channels and retention ponds shall be completed to assure that discharged stormwater does not contain contaminants from the landfill. (Responsible Agencies: RCFCD, RWQCB)

Status:

El Sobrante Landfill employs a dedicated environmental engineer and retains consulting specialists to provide testing and monitoring of all drainage components within the landfill as required by State and Local regulatory agencies. There were two qualifying sampling events during 2014 per the requirements contained in the Industrial General Permit for Storm Water Discharges (Water Quality Order No. 97-03-DWQ). One event on February 28, 2014 produced samples for three discharge locations, which were sampled and reported in the 2014 annual storm water report (see FY13/14 Analytical Report in appendix). Another sample was collected on December 12, 2014, which will be reported in the upcoming 2015 report.

W-3

A Stormwater Pollution Prevention Plan (SWPPP) shall be prepared. It shall include a Spill Prevention and Response Plan and a monitoring plan. The facility shall implement "best management practices" as required by NPDES. (Responsible Agencies: RWQCB)

Status:

El Sobrante Landfill is in compliance with this mitigation measure. A new SWPPP was prepared in December 2014, by Golder Associates, Inc. Table 1 in the latest SWPPP includes a list of "best management practices" (BMPs) used at the El Sobrante Landfill (see appendix).

W-4

Leachate shall be collected by the leachate collection and removal system (LCRS) installed at the base of each landfill cell. Such leachate shall be sampled regularly and, if necessary, treated prior to use for dust control on lined areas of the landfill. (Responsible Agencies: LEA, RWQCB, CIWMB)

Status:

El Sobrante Landfill has received approval from the RWQCB to utilize leachate collected via the LCRS for dust control on lined portions of the landfill based upon testing results, as directed by the RWQCB staff. LCRS information is reported annually in the fall and winter semi-annual groundwater report to satisfy the requirements of the RWQCB, as specified in the landfill's Waste Discharge Requirements (WDR), dated July 20, 2001. According to the Fall 2013-Winter 2014 Semi-Annual Groundwater Monitoring Report and Annual Reporting Requirements, prepared by SCS Engineers and dated April 28, 2014, the LCRS recovered leachate from 4 LCRS locations in the landfill. From April 2013 to March 2014, a total of 216,642 gallons of leachate were collected and used for dust control. The leachate control systems are inspected weekly, and annual leachate samples were collected on October 17, 2013. The use of leachate, as approved by the RWQCB, as the responsible agency, is in compliance with this mitigation measure.

W-5

Stormwater runoff that falls on the active working face of the landfill shall be diverted to a collection sump and reused for dust control on lined areas of the landfill. The sump for stormwater runoff from the active working face shall be designed to hold the runoff from the 100-year, 24-hour storm. (Responsible Agencies: LEA, RWQCB, CIWMB)

Status:

El Sobrante Landfill is in compliance with this mitigation measure. A berm is constructed at the toe of the active face to collect contact water that may come into contact with refuse and prevent co-mingling with storm water. This is done prior to the rainy season every year and maintained throughout the rainy season. This condition rarely occurs due the predominately dry conditions at El Sobrante.

W-6

Drainage improvements shall be designed and constructed to provide all-weather access to the landfill. (Responsible Agencies: RCTD, RCFCD)

Status:

El Sobrante Landfill is in compliance with this mitigation measure.

W-7

To reduce the quantity of water used, the following measures shall be implemented:

- **Low-flow plumbing fixtures shall be installed for onsite facilities.**
- **Washwater for cleaning equipment at the operations and maintenance center shall be collected and recycled, and reused for washing or dust control.**
- **Stormwater that falls on the active working face of the landfill shall be collected and used for dust control. (Responsible Agencies: RCBSD)**

Status:

El Sobrante Landfill is in compliance with this mitigation measure.

W-8

The liner system for the expansion of El Sobrante shall meet the following requirements:

- **The liner system (inclusive of the bottom liner and the sideslope liner) of the landfill shall exceed the requirements of Subtitle D and California Code of Regulations (CCR) Title 27 and shall be composed of the alternative bottom liner (identified as Alternative Bottom Liner B2) and the alternative sideslope liner (identified as Sideslope Liner Alternative S2), which are both described and evaluated in Evaluation of Liner System Alternatives, El Sobrante Landfill Expansion, Riverside County, California, prepared by GeoSyntec Consultants and dated February 1998.**
- **If it is determined that this liner system will not meet the requirements of the regulatory agencies, a substitute liner system must be approved by the regulatory agencies, and evidence of such a determination shall be forwarded to the El Sobrante Landfill Administrative Review Committee of Riverside County. In this event, the substitute liner system shall be composed of a bottom liner and a sideslope liner that are at least equal to Alternative Bottom Liner B2 and Sideslope Liner Alternative S2, respectively, and must be approved by the Administrative Review Committee. (Responsible Agencies: LEA, RWQCB, CIWMB)**

Status:

El Sobrante Landfill is in compliance with this mitigation measure.

W-9

Landfill gas collectors shall be placed as compacted lifts of waste are finished. Once sufficient waste has been placed above the collectors to prevent air intrusion, the collectors shall be used for active landfill gas extraction. (Responsible Agencies: LEA, RWQCB, CIWMB, SCAQMD)

Status:

A LFG Collection and Control System (GCCS) has been in operation at the El Sobrante Landfill since 1993. The GCCS currently consists of approximately 170 vertical and horizontal extraction wells that are placed under vacuum via a piping network that extracts the LFG from the waste mass and conveys the LFG to both a Zink Ultra Low Emissions flare station and a LFG-to- energy facility. LFG is combusted in the flare station and used as a fuel in the LFG-to-energy facility to generate electricity. The GCCS is continually adjusted to minimize LFG impacts to groundwater and fugitive LFG emissions from the landfill. While El Sobrante principally relies on sufficient LFG extraction from the vertical well field to maintain compliance, the horizontal collectors are used as a compliance measure to collect any newly generated gas and prevent venting from the working face. Due to the generally arid climate of the area and the young age of the waste, the horizontal collectors do not collect a significant quantity of landfill gas from the landfill. No horizontal wells have been added to the GCCS since before 2005, but in 2013, a total of 6 horizontal wells were tied into the GCCS in Phases 9B/10; 3 were trenched in 2012 and 3 in 2013. In 2014, a total of 6 additional horizontal wells and 13 vertical wells were tied into the GCCS (see Appendix for Exhibit).

W-10

The final cover of the landfill shall conform to Subtitle D and CCR Title 27, and shall consist of a minimum of four (4) feet of vegetative layer in accordance with the augmented cover described in the EIR (State Clearinghouse No. 90020076). Any change from the augmented cover shall require clearance from the RCDWR, the California Integrated Waste Management Board (CIWMB), Regional Water Quality Control Board (RWQCB), the U.S. Fish and Wildlife Service (USFWS), and the California Department of Fish and Game (CDFG). (Responsible Agencies: LEA, RWQCB)

Status:

El Sobrante Landfill is in compliance with this mitigation measure.

W-11

In accordance with applicable regulations, landfill gas shall be monitored at the landfill perimeter and in the vadose zone. (Responsible Agencies: LEA, RWQCB, SCAQMD)

Status:

El Sobrante Landfill has sixteen (16) permanent perimeter gas probes (GP) with multiple completions in its approved monitoring network. The probes are monitored and reported in accordance with applicable regulations to ensure that landfill gas does not migrate off the landfill site. All 16 probes are spaced no more than 1,000 feet apart around the perimeter of the landfill in static locations. The probes are routinely tested and monitored on a quarterly basis by landfill staff and reported to the LEA. The LEA may also perform its own testing of random probes during their regular monthly inspections of the landfill and/or may monitor landfill staff's quarterly testing of the probes. If excess levels are detected during quarterly monitoring, regulations require that the LEA be immediately notified by the landfill operator and that each immediate notification be followed up with a letter from the landfill within 7 days. Whenever excess levels are detected, the site immediately takes all steps necessary to reduce methane levels and to protect public health and safety and the environment.

In 2014 there were four reportable methane gas exceedances in two perimeter gas probes Probe GP2-A and GP3 on the north side of the landfill. El Sobrante installed additional gas extraction wells to resolve the gas exceedances. On December 29, 2014 the gas probes were re-monitored and the results indicated 0% methane in those probes. All reporting was done in accordance with applicable regulation.

W-12

"Point of compliance" ground water monitoring wells, as required by CCR Title 27, shall be installed along the downgradient perimeter of the landfill footprint, pursuant to a monitoring plan approved by the RWQCB. These wells shall be sampled on a quarterly basis beginning one year prior to landfilling each respective cell, and will provide a secondary warning of a leak in the liner system. (Responsible Agencies: LEA, RWQCB)

Status:

El Sobrante Landfill has implemented a "point of compliance" ground water monitoring program consisting of seventeen (17) ground water monitoring wells, one of which was installed in 2014 as part of the Phase 11A cell construction, and two ground water

piezometers, in compliance with CCR Title 27 and as approved by the RWQCB. One of these ground water monitoring wells has been dry since at least 2001 (MW-15). Quarterly monitoring reports are provided to the RWQCB, and copies are maintained on site. All monitoring activity in 2014 was in compliance with RWQCB requirements.

W-13

If leachate or landfill gas generated by the landfill expansion were determined to be a potential risk to ground water, a corrective action plan shall be developed and implemented in conjunction with the RWQCB as required by CCR Title 27. (Responsible Agencies: LEA, RWQCB, SCAQMD)

Status:

In 2014, there was no determination that leachate or landfill gas generated by the landfill posed any risk to ground water, and a corrective action plan has not been developed nor implemented. Prior to approval of the landfill expansion project in 1998, a corrective action plan was implemented in 1996 for apparent landfill gas impacts to ground water from the original landfill footprint. This plan was developed and implemented in conjunction with the RWQCB. On June 4, 2003, the RWQCB gave El Sobrante permission to turn off the ground water remediation system as the impacts appeared to have been mitigated. Monitoring continues to this day and in the event that impacts appear to return, El Sobrante Landfill will re-institute the mitigation measures.

W-14

Whenever a specified material, design, system or action is required by the project or any exhibit thereto, USA Waste or its successor-in-interest may substitute such material, design, system or action, provided that:

- **Such material, design, system or action complies with applicable Federal, State, and local regulations; and,**
- **Any Federal, State or local regulatory agency having jurisdiction has approved the use of the material, design, system or action for similar facilities (i.e., Class III landfills); and,**
- **The General Manager - Chief Engineer of the RCDWR, with concurrence of the appropriate regulatory agency(ies), has determined that such material, design, system or action is technically equal, or superior to, those required in these conditions. (Responsible Agencies: RCDWR, LEA, RWQCB)**

Status:

In 2014, the ARC directed staff to review WMI's compliance with this measure as it relates to a cut-off wall. Specifically, staff and County Counsel (Counsel) evaluated whether a cut-off-wall is required pursuant to the environmental documents prepared under CEQA for the landfill. Staff and Counsel reviewed the Landfill Expansion EIR, 1994 Water Resources Technical Report, and other applicable documents, and determined that there are no specific requirements, conditions of approval, or mitigation measures that require the use of a cut-off-wall. As such, the El Sobrante Landfill is in compliance with this mitigation measure.

W-15

USA Waste or its successor-in-interest shall deposit 50 cents per ton into a Third Party, Environmental Impairment Trust, which fund shall be established and maintained throughout the life of the project. Any balance in the existing fund contributed by USA Waste or its successor-in-interest under the First El Sobrante Landfill Agreement, as amended, shall continue to accrue with deposits from all waste delivered to the site on or after the start date, including interest earnings on the funds, until the fund has reached a total of $2,000,000, at which time deposits may be discontinued until withdrawals cause the fund to fall below the $2,000,000 cap. The cap shall increase annually by 90 percent of the change in the Consumer Price Index (CPI) starting in the year 2002. (Responsible Agencies: RCDWR)

Status:

The balance of the Environmental Impairment Trust at the end of 2014 was $3,041,132.07. El Sobrante Landfill is in compliance with this mitigation measure.

W-16

Monies may be withdrawn from the Environmental Impairment Trust only for environmental remediation purposes with approval by USA Waste or its successor-in- interest and the General Manager - Chief Engineer of the RCDWR. The Trustee shall be required to report quarterly to the Department on all fund activity and balances. (Responsible Agencies: RCDWR)

Status:

El Sobrante Landfill did not withdraw any funds from this Trust in 2014.

Mitigation Monitoring Program Status Report

Appendix

A-1
Supplemental Irrigation Memorandum

AQ-1
Landfill Gas Barrier Technical Memorandum

AQ-5
2014 Annual Emissions Report

AQ-11
CEQA Mitigation Monitoring Workplan for NO_2

AQ-12
Alternative Fuel Engines and Emission Control Technologies
Transfer Truck Operations Analysis, March. 2015

AQ-13
Annual 2014 Mitigation Monitoring Program Status Report

AQ-14
Off-Road Vehicles Idling Policy

C-4
Cultural Report (RECON, 2015)

G-23
Sample Blasting Notification Letter

N-6
Acoustic Blanket Photograph

T-3
Peak Hour Avoidance Letters
Sample Contract Language for Peak Hour avoidance
2014 Geo-Fence Data

W-2
Annual Report for Storm Water Discharges Associated with Industrial Activities
Analytical Report

W-3
2014 Storm Water Pollution Prevention Plan (SWPPP)

W-9
LFG Collection and Control System (GCCS) Exhibit

A-1

Supplemental Irrigation Memorandum

RIVERSIDE COUNTY
PLANNING DEPARTMENT

Juan C Perez
Interim Director

MEMORANDUM

DATE: May 14, 2014

TO: Ryan Ross
Principal Planner
Riverside County Waste Management

FROM: Harry Sandoval
Ecological Resource Specialist
Riverside County Planning Department - Environmental Programs Division

RE: **Use of Irrigation for Vegetation Restoration Projects**

Introduction

The use of supplemental irrigation can be beneficial and is often necessary to successfully restore native vegetation in the arid climate of Riverside County and surrounding areas of Southern California. Supplemental irrigation is commonly used to carry out successful re-vegetation and restoration projects involving native vegetation throughout Southern California. Studies conducted on Coastal Sage Scrub species in Orange County, California have determined that the careful use of supplemental irrigation does aid in the establishment of plants by promoting root growth. Establishing an efficient root system will aid plants in dealing with natural periods of drought common in Riverside County as well as increasing foliar density.

Once successfully established, native plants may not benefit greatly from supplemental irrigation and therefore it is not advised to provide supplemental irrigation for a period of more than two years following installation. Supplemental irrigation after establishment of a native plant may alter root characteristics, leading to dependence on artificial water supplies which may make the plant vulnerable during periods of low precipitation. Supplemental irrigation on established plant communities may lead to a greater amount of above ground plant growth, which would reduce visual impacts on the restoration area but may lead to failure of the restoration project in the future.

It is advised that supplemental irrigation be employed for establishment of native plant species utilized in restoration projects within Riverside County when it is anticipated that an adequate amount of precipitation will not be available. Climatic events, such as the predicted El Niño condition, forecasted to occur in 2014 may negate the need for supplemental irrigation. When relying upon a climatic event such as El Niño, restoration activities must be carefully planned in order to take advantage of the potential benefits of the forecasted climatic event. Consideration of water availability, soil moisture retention, and time necessary for the planted species to successfully establish must be considered when planning to take advantage of a precipitation-rich climatic event.

In order to avoid the undesired effects associated with supplemental irrigation, the irrigation system or methods used should be carefully planned and executed. Micro irrigation systems with flows that can be controlled are well suited for vegetation restoration projects. Micro irrigation systems disperse water in a localized area, limiting irrigation of unwanted areas and promoting root growth by allowing water to penetrate deeper into the ground. Overhead irrigation systems are best suited for providing water over a large area or areas with slopes. Overhead systems have been utilized to successfully germinate Coastal Sage Scrub species from seed in various locations throughout Southern California. An aggressive non-native monitoring and eradication plan should be in place when utilizing an overhead irrigation system as water from this type of system will be deposited over a broader spectrum than a micro irrigation system, thus providing more opportunities for non-native establishment.

A well designed and operated supplemental irrigation system will have no negative effects on native plants that are utilizing mycorrhizal fungi. Mycorrhizal fungi creates a mutualistic relationship with plants that essentially increases the surface area of a plant's root system, which in turn aids in the uptake of water. The use of mycorrhizal fungi does reduce the amount of water necessary, but does not eliminate the need for water. Oversaturation or mechanical disturbance of mycorrhizal fungi hyphae would be detrimental to the symbiotic mechanisms associated with plants and mycorrhizal fungi. Supplemental irrigation systems should be designed, operated, and maintained in a manner that will provide sufficient water without compromising plant root systems.

An efficient supplemental irrigation system when properly employed will aid in the establishment of native plants and the reduction of negative visual impacts to an area by increasing foliar density. The lack of any significant precipitation in Riverside County warrants the use of supplemental irrigation systems when carrying out vegetation restoration projects.

If you have any questions, please contact me directly at (951) 955-6441 or via email at hsandova@rctlma.org.

Riverside Office · 4080 Lemon Street, 12th Floor
P.O. Box 1409, Riverside, California 92502-1409
(951) 955-3200 · Fax (951) 955-1811

Desert Office · 38686 El Cerrito Road
Palm Desert, California 92211
(760) 863-8277 · Fax (760) 863-7555

AQ-1

Landfill Gas Barrier Technical Memorandum

TECHNICAL MEMORANDUM

Date: June 12, 2014
To: Cody Cowgill, P.E.
From: Ryan Hillman, P.E.
Rich Haughey, P.E.

Project No.: 1400539
Company: USA Waste of California, Inc.

RE: ASSESSMENT OF NEED FOR 10- TO 20-MIL PLASTIC LANDFILL GAS BARRIER LAYER EL SOBRANTE LANDFILL – RIVERSIDE COUNTY, CALIFORNIA

1.0 INTRODUCTION

The El Sobrante Landfill ("the site" or "the landfill") is an existing active municipal solid waste (MSW) landfill located near the City of Corona in Riverside County, California. The permitting process for the landfill from 1993 to 1996 resulted in air quality (AQ) mitigation measures being established for the site that included the following as part of mitigation measure AQ-1:

> *"The project includes a landfill gas barrier layer (i.e., 10- to 20-mil high-density polyethylene [HDPE] or polyvinyl chloride [PVC] sheeting) as part of the intermediate cover and final cover system. This gas barrier layer is not required by Subtitle D and would minimize excess air infiltration and fugitive landfill gas emissions, and would increase landfill gas collection efficiency."*

Golder Associates Inc. (Golder) is submitting this memorandum that discusses various technical considerations and issues associated with incorporating a 10- to 20-mil plastic landfill gas (LFG) barrier layer in the landfill's intermediate and final covers. As the intended purpose of the LFG barrier layer would be to control surface emissions, Section 2.0 discusses the regulatory changes enacted since the 1993 to 1996 permitting of the El Sobrante Landfill that have resulted in significantly stricter requirements governing the control and monitoring of LFG emissions at California landfills. Section 2.0 also lists several technological improvements for controlling LFG emissions that have been implemented since mitigation measure AQ-1 was adopted.

2.0 ADVANCEMENT OF LFG MONITORING AND CONTROL

2.1 Regulatory Changes

In 1993, the modern federal regulations governing MSW landfills became effective. These regulations are contained in the Code of Federal Regulations (CFR), Title 40, Part 258 (commonly referred to as Subtitle D). As such, many of the advances in MSW disposal technology that are seen today were not yet developed and/or implemented when the El Sobrante Landfill was being permitted. Today's landfills are highly regulated with ever increasing controls on liner systems, allowable waste materials for disposal, and environmental controls on LFG and leachate.

Golder Associates Inc.
230 Commerce, Suite 200
Irvine, CA 92602 USA
Tel: (714) 508-4400 Fax: (714) 508-4401 www.golder.com

There are currently several regulations that govern the installation of LFG collection and control systems and that provide requirements for LFG monitoring:

- Title 40 of the CFR: promulgated by the United States Environmental Protection Agency (USEPA) and referred to as the New Source Performance Standards (NSPS).
- Title 17 of the California Code of Regulations (CCR): known as the Assembly Bill 32 (AB32) landfill methane rule.
- Rule 1150.1 ("Control of Gaseous Emissions from Municipal Solid Waste Landfills"): issued by the South Coast Air Quality Management District (SCAQMD).
- Title 27 of the CCR.

The above-listed regulations are considerably more stringent than the April 5, 1985 version of SCAQMD Rule 1150.1 that was in effect during the permitting of the El Sobrante Landfill in 1993 to 1996. The April 5, 1985 version of SCAQMD Rule 1150.1 required the following:

- Integrated surface emissions monitoring with a limit of 50 parts per million by volume (ppmv); grids and monitoring pattern not specified.
- Probe and perimeter air monitoring.
- Surface emissions limit of 500 ppmv; no instantaneous surface emissions monitoring required.
- LFG collection and control system (GCCS) installation by January 1, 1989.

The following provides a brief summary of the significant changes in LFG regulations that took effect after the permitting of the El Sobrante Landfill:

1. March 12, 1996: USEPA adopts NSPS subpart WWW that requires:
   - GCCS installation by December 10, 1998 for sites with over 50 megagrams (Mg) of non-methane organic compounds (NMOC).
   - Instantaneous surface emissions monitoring with a limit of 500 ppmv and 100-foot monitoring spacing.
   - Wellhead pressure, temperature, and oxygen standards.
   - 2/5 year rule for installation of wells and GCCS coverage.
   - Enclosed flare emission limit of 20 ppmv NMOC as hexane.
2. April 10, 1998 and March 17, 2000: SCAQMD revises Rule 1150.1 to require:
   - 50,000-square foot monitoring grids for integrated surface emissions monitoring with a limit of 50 ppmv.
   - Instantaneous surface emissions monitoring with a limit of 500 ppmv within the 50,000-square foot grids.
   - Detailed probe standards and enhanced spacing.
   - All areas of landfills are subject to surface emissions monitoring requirements and GCCS installation.
3. April 1, 2011: SCAQMD revises Rule 1150.1 to incorporate the AB32 landfill methane rule that requires:

- Reducing the integrated surface emissions monitoring limit from 50 ppmv to 25 ppmv.
- Recording of all instantaneous surface emissions monitoring results above 200 ppmv instead of 500 ppmv.
- The monitoring pattern for integrated and instantaneous surface emissions monitoring is enhanced from 100 feet to 25 feet.

2.2 Technological Improvements

Since the permitting of the El Sobrante Landfill in 1993 to 1996, the following technological improvements have been made with regard to GCCSs:

- Better extraction technologies.
- Better flares, such as the ultra-low emissions flare currently used at the El Sobrante Landfill.
- Better understanding of collection efficiencies.
- Enhanced monitoring systems.
- Development of economically-feasible LFG-to-energy facilities.

3.0 CURRENT SITE CONDITIONS

3.1 Description

A GCCS has been in operation at the El Sobrante Landfill since 1993. The GCCS currently consists of approximately 160 vertical and horizontal extraction wells that are placed under vacuum via a piping network that extracts the LFG from the waste mass and conveys the LFG to both a flare station and a LFG-to-energy facility. The GCCS has been installed consistent with mitigation measure AQ-1 and SCAQMD regulations.

LFG is combusted in the flare station and used as a fuel in the LFG-to-energy facility to generate electricity. The flare and the LFG-to-energy facility meet Best Available Control Technology (BACT) requirements established by the SCAQMD, consistent with AQ-1. The flare is tested annually to confirm that the flare emissions meet or exceed the requirements contained in the SCAQMD Permit to Operate.

LFG monitoring probes have been installed around the landfill's perimeter to detect any subsurface migration of LFG. The probes are monitored quarterly consistent with CCR Title 27 regulations and mitigation measure AQ-1. The GCCS components (e.g., wellheads, piping, etc.) are monitored for leakage in accordance with SCAQMD regulations and mitigation measure AQ-1.

3.2 Performance

The purpose of mitigation measure AQ-1 is to minimize fugitive LFG emissions from the landfill. Methane, which comprises approximately 50 percent of LFG, is a significant contributor to greenhouse gas (GHG).

The intermediate and final soil covers at the site help in minimizing LFG emissions that could add to GHG. A portion of the methane and reactive organic gases (ROG) in LFG is oxidized by bacteria that live in cover soils. Historically, it was believed that on the order of 10 percent of methane and ROG was oxidized in cover soils. However, several studies conducted over the past 5 to 10 years have indicated that the 10 percent oxidation value is a gross underestimate of the actual amount of oxidation that occurs in cover soils. For landfills such as El Sobrante that are located in arid regions, recent research reported by SWANA[1] indicates that bacteria oxidize 50 to 70 percent of the methane and ROG that pass into the cover soil. It is possible that the use of a LFG barrier layer would lead to localized increases in LFG emissions caused by preferential pathways being developed. These preferential pathways would allow LFG to emit to the atmosphere without significant bacterial oxidation.

The performance of the El Sobrante Landfill GCCS can be evaluated in two ways: 1) perimeter LFG probe monitoring results, and 2) landfill surface emissions monitoring results. The perimeter LFG probes are monitored quarterly and the current (December 2013) monitoring results for these probes indicate that the GCCS effectively controls subsurface LFG migration from the landfill. Typical quarterly surface emissions monitoring results for the El Sobrante Landfill indicate very few (if any) exceedances for integrated monitoring and relatively few exceedances for instantaneous monitoring. Furthermore, when exceedances are recorded, repairs are made and/or the GCCS is adjusted to lower the surface emissions below the regulatory limits within the timeframes stipulated in SCAQMD Rule 1150.1. Thus, the existing GCCS at the El Sobrante Landfill is effective in controlling LFG emissions in accordance with the current regulatory requirements, which exceed the regulatory requirements that were in place when mitigation measure AQ-1 was adopted.

The El Sobrante Landfill has an ultra-low emission enclosed flare that achieves a 60 percent reduction in nitrogen oxides (NOx) emissions and a 70 percent reduction in carbon monoxide (CO) emissions from the flare stack as compared to traditional biogas flares that were in use in the 1990s.

Additionally, monitoring of the GCCS components have detected minimal leaks. When leaks are detected, they are promptly repaired.

GHG emissions are also decreased by the production of electricity at the site's LFG-to-energy facility. The LFG is consumed as fuel in the site's LFG-to-energy facility, which reduces GHG by replacing fossil fuels.

The El Sobrante Landfill's current GCCS has been designed to limit infiltration of excess air into the landfill, as required by mitigation measure AQ-1. The use of horizontal and vertical extraction wells allows

[1] Solid Waste Association of North America (SWANA), 2013, "Practical Methods for Measuring Landfill Methane Emissions and Cover Soil Oxidation," December.

for greater control on the vacuum at various depths within the landfill. The wells at the site are designed to allow each well to be precisely tuned to control vacuum and flow. By applying the correct amount of vacuum near the surface, both emissions and infiltration can be controlled. The low amount of oxygen measured in the LFG helps demonstrate that the system is operating properly.

Based on the above, the current GCCS at the El Sobrante Landfill is meeting the requirements of the current regulations and exceeding the requirements of the less-stringent regulations that were in effect when mitigation measure AQ-1 was adopted. It follows that the current GCCS is meeting the goal of mitigation measure AQ-1 to minimize fugitive LFG emissions at the site.

4.0 TECHNICAL CONSIDERATIONS FOR LFG BARRIER

To date, the landfill has relied on the GCCS and methane/ROG oxidation capability of the cover soils to control LFG emissions. Given the effective performance of the existing GCCS at the El Sobrante Landfill, as described in Section 3.2, it has not been necessary to install the LFG barrier layer referred to in mitigation measure AQ-1. It should be noted that neither the SCAQMD nor CCR require the use of a LFG barrier layer for LFG emissions control.

Reliance on a GCCS and cover soils to control LFG emissions is consistent with the current standard of practice for landfills. Golder is not aware of any landfill in California that uses a LFG barrier layer for the primary purpose of controlling LFG emissions.

Given the effective performance of the existing GCCS and cover soils, the following should be considered related to a LFG barrier layer:

- A LFG barrier layer will likely develop holes over time as a result of the ongoing landfilling activities. The presence of holes in the LFG barrier layer could create localized LFG control issues as LFG emissions would tend to concentrate at the holes, which increases the risk of having localized LFG emissions that exceed the regulatory limit.
- LFG may migrate to the edges of the LFG barrier layer and be emitted to the atmosphere.
- If the LFG barrier layer is left exposed (i.e., not covered with soil), it would be very susceptible to ultraviolet and wind damage. Furthermore, localized pockets of LFG could possibly accumulate under the barrier, which would result in a safety hazard and potential explosive atmosphere if ignited.
- In older areas of the landfill, use of the LFG barrier layer could increase the risk of subsurface migration of LFG through the base of the landfill, which could potentially result in groundwater contamination.
- If the LFG barrier layer were to be left in place under intermediate waste slopes that are covered with additional waste, the barrier may interfere with the operation of the site's GCCS by impeding LFG collection.
- The use of the LFG barrier layer may cause increased stormwater runoff and potentially result in intermediate cover stability issues. To ensure the intermediate waste slopes are

stable, it is possible that their inclinations would need to be decreased (i.e., flattened). If the intermediate slopes were to be flattened, the total surface area of these slopes would increase and potentially lead to an increase in cumulative surface emissions from the landfill.

5.0 CONCLUSIONS

Based on the above technical considerations and our experience at numerous landfills across California, it is Golder's professional opinion that the existing soil covers and GCCS at the El Sobrante Landfill are the most practical and economic way to control LFG emissions and associated GHG at the site. The existing GCCS at the El Sobrante Landfill represents the current industry standard of practice for LFG emissions control and monitoring has demonstrated that this system is effective in limiting LFG emissions in accordance with current SCAQMD and other regulatory requirements. Similarly, the existing system of vertical and horizontal LFG wells are operated such that infiltration of excess air into the waste mass can be controlled, as confirmed by sampling and testing of the collected LFG. Installation of a LFG barrier layer is not expected to have a major impact on LFG collection efficiency at the site. By virtue of its compliance with the current regulations, the existing GCCS exceeds the less-stringent regulatory requirements that were in effect when the El Sobrante Landfill was permitted in 1993 to 1996. It follows that the existing GCCS is operating at an efficiency that meets the requirements of mitigation measure AQ-1.

As discussed in Section 4.0, there are several technical considerations that demonstrate risks of increased LFG emissions and/or other negative consequences associated with the use of a LFG barrier layer. For these reasons, the inclusion of a LFG barrier layer is not considered to be an effective mitigation measure for attaining additional reductions in LFG surface emissions at the site.

In Golder's opinion, the El Sobrante Landfill's existing GCCS and cover soils are the preferred measures for the continued control of LFG surface emissions in accordance with current regulatory requirements and, thereby, for achieving the goals of mitigation measure AQ-1.

AQ-5

2014 Annual Emissions Report

South Coast

AQMD

Annual Emission Report

Reporting Year: **2014**

Print Date: **05/18/2015**

Facility Id: **113674**

Facility Name **U S A WASTE OF CAL(EL SOBRANTE LANDFILL)**

Facility Type: **Landfill - Municipal Solid Waste**

True

StatusUpdate

Facility ID	113674
Facility Shutdown Date	N/A
Change of Ownership Date	N/A
Change in Equipment Location Date	N/A
Emissions are zero for this year's report, or emissions reduced by 50%	N/A
Exemption Request	N/A
Use of alternative Calculation methodology	N/A
Other	N/A
Refund Request	$3,678.03

South Coast AQMD

Annual Emission Report

Reporting Year: **2014**

Print Date: **05/18/2015**

Facility Id: **113674**

Facility Name **U S A WASTE OF CAL(EL SOBRANTE LANDFILL)**

Facility Type: **Landfill - Municipal Solid Waste**

External Combustion Process List Overview

AER Device ID	Permit Device ID	A/N	Process ID	Equipment	Fuel	Fuel Usage	Units		Criteria Pollutant Units	ROG	SPOG	NOx	SOx	CO	PM
ES10		537512	P1	Flare	Landfill Gas (Biogas)			EF	lbs/ mmscf	0.671000		1.342000	7.046000	13.756000	7.255000
								Emissions	lbs	850.74		1,701.48	8,933.41	17,440.82	9,198.40
							Total Emissions		lbs	850.74		1,701.48	8,933.41	17,440.82	9,198.40
							Total Emissions		tons	0.43	0.00	0.85	4.47	8.72	4.60

South Coast AQMD

Annual Emission Report

Reporting Year: **2014**

Print Date: **05/18/2015**

Facility Id: **113674**

Facility Name **U S A WASTE OF CAL(EL SOBRANTE LANDFILL)**

Facility Type: **Landfill - Municipal Solid Waste**

Internal Combustion Process List Overview

AER Device ID	Permit Device ID	A/N	Process ID	Equipment	Fuel	Fuel Usage	Units		Criteria Pollutant Units	ROG	SPOG	NOx	SOx	CO	PM
ES1		390256	P1	Portable I.C. Engines, 4 Stroke-Lean Burn	Distillate Fuel Oil No. 2			EF	lbs/ gal	37.500000		469.000000	0.210000	102.000000	33.500000
								Emissions	lbs	123.00		1,538.32	0.69	334.56	109.88
ES2		415169	P1	Portable I.C. Engines, 4 Stroke-Lean Burn	Distillate Fuel Oil No. 2			EF	lbs/ gal	37.500000		469.000000	0.210000	102.000000	33.500000
								Emissions	lbs	153.00		1,913.52	0.86	416.16	136.68
ES3		430422	P1	Stationary I.C. Engines, 2 Stroke-Lean Burn	Landfill Gas (Biogas)			EF	lbs/ mmscf	21.560000		32.950000	7.320000	223.710000	1.100000
								Emissions	lbs	5,070.91		7,749.84	1,721.66	52,616.59	258.72
ES4		430424	P1	Stationary I.C. Engines, 2 Stroke-Lean Burn	Landfill Gas (Biogas)			EF	lbs/ mmscf	19.120000		50.170000	6.510000	233.200000	1.830000
								Emissions	lbs	4,523.98		11,870.72	1,540.33	55,177.45	433.00
ES5		430726	P1	Stationary I.C. Engines, 2 Stroke-Lean Burn	Landfill Gas (Biogas)			EF	lbs/ mmscf	18.910000		44.600000	6.420000	207.670000	0.960000
								Emissions	lbs	4,083.43		9,630.92	1,386.33	44,844.26	207.30
ES6		438805	P1	Portable I.C. Engines, 4 Stroke-Lean Burn	Distillate Fuel Oil No. 2			EF	lbs/ gal	37.500000		469.000000	0.210000	102.000000	33.500000
								Emissions	lbs	52.13		651.91	0.29	141.78	46.57

Total Emissions	lbs	14,006.45		33,355.23	4,650.16	153,530.80	1,192.15
Total Emissions	tons	7.00	0.00	16.68	2.33	76.77	0.60

South Coast AQMD

Annual Emission Report

Reporting Year: **2014**

Print Date: **05/18/2015**

Facility Id: **113674**

Facility Name **U S A WASTE OF CAL(EL SOBRANTE LANDFILL)**

Facility Type: **Landfill - Municipal Solid Waste**

Storage Tanks Process List Overview

AER Device ID	Permit Device ID	A/N	Process ID	Equipment	Product	Throughput	Units		Criteria Pollutant Units	ROG	SPOG	NOx	SOx	CO	PM
ES14			P1	Storage tank - Will estimate emissions using EPA TANKS	Distillate fuel oil no. 2	377.48	M gal	EF	lbs/ M gal	0.0320					
								Emissions	lbs	12.09					
							Total Emissions		lbs	12.09					
							Total Emissions		tons	0.01	0.00	0.00	0.00	0.00	0.00

South Coast

AQMD

Annual Emission Report

Reporting Year: **2014**

Print Date: **05/18/2015**

Facility Id: **113674**

Facility Name **U S A WASTE OF CAL(EL SOBRANTE LANDFILL)**

Facility Type: **Landfill - Municipal Solid Waste**

Criteria Pollutants Permitted Emissions Summary

	VOC (tons)	SPOG (tons)	NOx (tons)	NOx RECLAIM (tons)	SOx (tons)	SOx RECLAIM (tons)	CO (tons)	PM (tons)
External Combustion	0.43	0.00	0.85	0.00	4.47	0.00	8.72	4.60
Internal Combustion	7.00	0.00	16.68	0.00	2.33	0.00	76.77	0.60
Spray Coating/ Spray Booth	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other Use of Organics	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Storage Tanks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fugitive Components	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other Process Emissions	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Shutdown/Startup/Turnaround and Upsets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Permitted Emissions	**7.43**	**0.00**	**17.53**	**0.00**	**6.80**	**0.00**	**85.49**	**5.20**

South Coast

AQMD

Annual Emission Report

Reporting Year: **2014**

Print Date: **05/18/2015**

Facility Id: **113674**

Facility Name **U S A WASTE OF CAL(EL SOBRANTE LANDFILL)**

Facility Type: **Landfill - Municipal Solid Waste**

Criteria Pollutants Non-Permitted Emissions Summary

	VOC (tons)	SPOG (tons)	NOx (tons)	NOx RECLAIM (tons)	SOx (tons)	SOx RECLAIM (tons)	CO (tons)	PM (tons)
External Combustion	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Internal Combustion	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Spray Coating/ Spray Booth	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other Use of Organics	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Storage Tanks	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fugitive Components	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other Process Emissions	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Shutdown/Startup/Turnaround and Upsets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Non-Permitted Emissions	**0.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

South Coast AQMD

Annual Emission Report

Reporting Year: **2014**

Print Date: **05/18/2015**

Facility Id: **113674**

Facility Name **U S A WASTE OF CAL(EL SOBRANTE LANDFILL)**

Facility Type: **Landfill - Municipal Solid Waste**

Toxic Air Contaminants (TAC) / Ozone Depleting Compounds (ODC) Emissions and Fees Summary

TAC Group	TAC / ODC	Annual Emissions (lbs)	Emissions Subject to Fee (lbs)	Fee Rates ($/lbs)	Fee Due
32	Ammonia	2.537E+1	0	0.03	0.00
1	Asbestos	0E+0	0	0.00	0.00
2	Benzene	1.041E+2	104	2.00	208.00
3	Beryllium	0E+0	0	0.00	0.00
4	Butadiene [1,3]	1.902E+0	2	5.94	11.88
5	Cadmium	1.313E-2	0	5.94	0.00
6	Carbon tetrachloride	8.68E-1	0	2.00	0.00
7	Chlorinated dioxins and dibenzofurans	0E+0	0	0.00	0.00
8	1,4-Dioxane	0E+0	0	0.00	0.00
9	Ethylene dibromide {1,2-Dibromoethane}	1.417E+0	1	2.00	2.00
10	Ethylene dichloride {1,2-Dichloroethane}	2.16E+1	22	2.00	44.00
11	Ethylene oxide	0E+0	0	0.00	0.00
12	Formaldehyde	1.955E+1	20	0.44	8.80
13	Chromium, hexavalent (and compounds)	8.75E-4	0	7.91	0.00
14	Arsenic and Compounds (inorganic)	1.4E-2	0	5.94	0.00
15	Lead compounds (inorganic)	7.262E-2	0	2.00	0.00
16	Methylene chloride {Dichloromethane}	5.165E+1	52	0.08	4.16
17	Nickel	3.412E-2	0	3.94	0.00
18	Perchloroethylene {Tetrachloroethene}	2.813E+1	28	0.44	12.32
19	PAHs [PAH, POM]	1.824E+1	18	5.94	106.92
20	Trichloroethylene	1.07E+1	0	0.16	0.00
21	Vinyl chloride	4.039E+0	4	2.00	8.00
22	Fluorocarbons (chlorinated)	5.611E+1	56	0.38	21.28
23	Methyl chloroform {1,1,1-Trichloroethane}	7.529E-1	1	0.05	0.05
				Fees due total ($)	**427.41**

South Coast

AQMD

Annual Emission Report

Reporting Year: **2014**

Print Date: **05/18/2015**

Facility Id: **113674**

Facility Name **U S A WASTE OF CAL(EL SOBRANTE LANDFILL)**

Facility Type: **Landfill - Municipal Solid Waste**

Total Emissions and Fees

Submittal Date: No later than June 04 2015	Total Permitted Emissions (tons)	Total Non-Permitted Emissions (tons)	Total RECLAIM Emissions (tons)	Total Emission (tons)	Total Emissions/ Subject To Fee (tons)	Emissions Fees Due
Organic Gasses	7.43	0.01		7.44	7.00	$2,272.36
Specific Organics	0.00	0.00		0.00	0.00	$0.00
Nitrogen Oxides	17.53	0.00	0.00	17.53	18.00	$4,985.25
Sulfur Oxides	6.80	0.00	0.00	6.80	7.00	$1,576.12
Carbon Monoxide	85.49	0.00		85.49	0.00	$0.00
Particulate Matter	5.20	0.00		5.20	5.00	$868.80
1. TOTAL EMISSION FEES FOR ALL CRITERIA POLLUTANTS						$9,702.53
2. TOXIC AIR CONTAMINANTS/ OZONE DEPLETER FEES (Total amount from Form TACS or DC)						$427.41
3. TOTAL FEES DUE						$10,129.94
4. INSTALLMENTS PAID FOR 2014 - (if any) -- All criteria pollutants						$5,099.33
5. INSTALLMENTS PAID -- Toxic Air Contaminants/Ozone Depleters						$1,352.58
6. BALANCE DUE (Line 3 - Line 4 - Line 5)						$3,678.03
7. LATE PAYMENT SURCHARGE						$0.00
8. AMOUNT DUE						**$3,678.03**

South Coast AQMD

Annual Emission Report

Reporting Year: **2014**

Facility Id: **113674**

Print Date: **05/18/2015**

Facility Name **U S A WASTE OF CAL(EL SOBRANTE LANDFILL)**

Facility Type: **Landfill - Municipal Solid Waste**

Signature Sheet

Information

NAICS code:	562212
AB2588 Filing Period:	No
RECLAIM:	No
Facility Operating Status:	Operating
Classified As Small Business:	No
Business Operating Hours	
Hours/Day;	24
Days/Week:	7
Weeks/Year:	52

Brief Description of Operation

MSW landfill with enclosed flare and three LFG-fired IC Engines

Equipment Location Address

Facility Name:
U S A WASTE OF CAL(EL SOBRANTE LANDFILL)
10910 DAWSON CANYON RD
CORONA, CA 92883

Mailing Information

Facility Name:
U S A WASTE OF CAL(EL SOBRANTE LANDFILL)
10910 DAWSON CANYON RD
CORONA, CA 92883

Contact Information

Name:	Cody Cowgill	Phone:	951 277-5106
Title:	Engineer	Fax:	
E-mail:	ccowgill@wm.com		

Preparer Information

Name:	Matt Rana	Phone:	510 613-2852
Title:	EP Specialist	Fax:	
E-mail:	mrana@wm.com		

Authorized Person Information

Name:	David Harich	Phone:	951 277-5103
Title:	District Manager	Fax:	951 277-1861
E-mail:	dharich@wm.com		

I declare under penalty of perjury that the data submitted truly represents throughput and emissions for this reporting period, and that the emission factors represent the best available data for my company in the calculation of annual emission figures.

Authorized Signature _____ Date _____

Preparer Signature _____ Date _____

South Coast

AQMD

Annual Emission Report

Reporting Year: **2014**

Facility Id: **113674**

Print Date: **05/18/2015**

Facility Name **U S A WASTE OF CAL(EL SOBRANTE LANDFILL)**

Facility Type: **Landfill - Municipal Solid Waste**

AER Submittal Confirmation

Thank you for submitting your Annual Emissions Report for Facility ID: 113674 on 05/18/2015.

Please print the submittal forms, sign the Signature Sheet (plus a check for emission fees due if applicable) and mail them to the SCAQMD.

The reports are first received and processed by Bank of America for check deposits, return receipts for certified mails will be stamped by Bank of America rather than AQMD. Please mail the required forms and fees to the following address:

South Coast Air Quality Management District
Annual Emission Reporting Program
File No. 54493
Los Angeles, CA 90074-4493

* To avoid late payment surcharges, all mails must be postmarked by the Post Office on or before June 04, 2015

If you wish to use a messenger (or hand deliver), the package should be delivered to the cashier's booth at AQMD Headquarters at the address listed below in Diamond Bar on or before 5:00 p.m. June 04, 2015
Please note that AQMD is closed on Mondays.

South Coast Air Quality Management District
ATTN: Finance Cashier
Annual Emission Reporting Program
21865 Copley Drive
Diamond Bar, CA 91765-4178

AQ-11

CEQA Mitigation Monitoring Workplan for NO_2

Environmental Consultants

3050 Fite Circle
Suite 101
Sacramento, California 95827-1808

916 361-1297
FAX 916 361-1299
www.scsengineers.com

SCS ENGINEERS

January 27, 2003
File No. 01202020.01

Ms. Linda Dejbakhsh
South Coast Air Quality Management District
21865 East Copley Drive
Diamond Bar, California 91765
(909) 396-2614

SUBJECT: CEQA MITIGATION MONITORING WORKPLAN FOR NO_2, EL SOBRANTE LANDFILL, CORONA, CALIFORNIA

Dear Ms. Dejbakhsh:

As part of a certified Environmental Impact Report (EIR) for a recent landfill expansion, USA Waste of California, Inc. (USA Waste) is required to implement a California Environmental Quality Act (CEQA) mitigation monitoring and reporting program (MMRP) for the El Sobrante Landfill in Corona, California. The workplan was developed by SCS Engineers (SCS) on behalf of USA Waste for submittal to the South Coast Air Quality Management District (SCAQMD).

BACKGROUND

Condition AQ-11 of the MMRP requires that USA Waste: (1) implement various control measures to lessen boundary concentrations of nitrogen dioxide (NO_2) and (2) conduct downwind property line monitoring of NO_2 during wind and stability conditions, which could result in the greatest property boundary concentrations.

This CEQA Mitigation Monitoring Workplan for NO_2 is proposed as the strategy to be used for NO_2 monitoring during construction and ongoing operation of the landfill expansion that was approved by the recent CEQA action. It describes USA Waste's proposed strategy, which is already being implemented.

CONTROL MEASURES

During normal landfill operations and cell construction, USA Waste will pre-plan on-site activities to avoid potentially adverse alignments during periods of anticipated meteorological conditions that are conducive to high levels of NO_2. USA Waste and its contractors will conduct their on-site construction and operational activities to reduce nitrogen oxide (NOx) emissions to the extent feasible.

When NO_2 monitoring results (see below) show concentrations of NO_2 that are at or above 95% of the 1-hour standard (i.e., 450 ug/m^3 of the 470 ug/m^3 standard set forth under the CEQA mitigation measures) in the surrounding area, USA Waste will implement one or more of the following control measures:

- Curtail construction activities until other mitigation measures can be implemented or until adverse meteorological conditions no longer exist.
- Move the construction or operational activities to preplanned alternate working locations in order to provide maximum separation of NOx emissions.
- Configure construction operations such at multiple operations requiring heavy do not occur simultaneously.
- Change construction scheduling to reduce daily equipment usage.
- Limit the hours of operations of certain heavy NOx emitting equipment so that operation occurs outside of peak adverse meteorological conditions.

NO_2 MONITORING

When construction activities and operations for the expansion area of the landfill occur simultaneously, USA Waste may be required to implement NO_2 monitoring to determine when additional mitigation measures are necessary, as described above. This monitoring will be completed to determine when NO_2 levels are in excess of 450 micrograms per cubic meter (ug/m^3), the trigger level for additional control measures.

In order to determine when NO_2 monitoring is required, USA Waste will, on an approximately weekly basis, review projections of adverse meteorological conditions that are conducive to high ambient concentrations of NO_2 in the Riverside County area. If such conditions exist or are expected to exist, USA Waste will begin to track and compile ambient data from the nearest SCAQMD meteorological stations (#22 Norco/Corona and #23; Metropolitan Riverside County 1) to determine possible exceedances of the 450 ug/m^3 threshold.

If NO_2 concentration are expected to meet or exceed 450 ug/m3, USA Waste will implement NO_2 monitoring at the site. As part of this monitoring, USA Waste will install a temporary NO_2 monitoring station at a downwind location, which includes key activity areas and is as close to the property line as feasible, such that the impacts from off-site sources between the sampler and the property line are minimized.

Monitoring will be conducted using hand-held or other instrument(s) that can measure NO_2 on a real-time basis. Readings will be take over consecutive 1-hour periods representing the worst-case times of the day for NO_2 and averaged for comparison to the 1-hour standard. A minimum of two 1-hour periods would be included in each day of monitoring.

Please note that USA Waste already maintains an on-site meteorological station under SCAQMD Rule 1150.1, which will be used to determine the downwind location. Note also that locations may vary from day to day based on the wind conditions and the on-site areas being affected by construction.

USA Waste proposes that samples be collected on "representative" days during periods of time when both construction and operations are ongoing and when the conditions noted above are being experienced. Representative days include those days where construction activities are at their most significant, such that the days could be considered "worst-case."

If the monitoring events show evidence of exceedance of the 450 ug/m^3 standard, USA Waste will implement the additional control measures under mitigation measure AQ-11 and listed above. In addition, we will continue with daily monitoring until NO_2 levels drop below 450 ug/m^3 or until meteorological conditions improve.

Annually, USA Waste will prepare and submit a brief summary of the results of the monitoring that was conducted during the previous year, if any, including a description of the control measures that were implemented based on the results of the monitoring.

SCHEDULE

USA Waste has already begun implementation of this workplan and will continue to do so throughout the duration of the construction and operational life of the expansion area covered by the recent EIR.

CLOSING

We believe that this workplan satisfies USA Waste's requirements under AQ-11 of the MMRP under CEQA should allow construction and landfill operations to continue as scheduled.

Please review this letter workplan provide comments. Upon your review, we would be willing to meet with the SCAQMD to discuss implementation of this workplan as well as development of a long-term NO_2 monitoring strategy. USA Waste will implement this workplan as written until we receive input from the SCAQMD on any modifications or changes that you deem necessary. Thank you for your time and consideration.

A plan filing fee of $89.59 is included with this submittal per Rule 306 for plans submitted under Rule 403. Please let us know if any additional fees are required for this submittal, and we will pay them promptly. A completed Form 400-P is provided in Attachment 4.

If you have any questions regarding this submittal or desire any additional information, please contact the undersigned.

Sincerely,

Patrick S. Sullivan, C.P.P., R.E.A.
Vice President
SCS ENGINEERS

Enclosure

cc: Damon DeFrates; USA Waste
Paul Willman; Waste Management, Inc.
Leslie Likins; Riverside County

ATTACHMENT 1

SCAQMD FORM 400-P

South Coast Air Quality Management District
P. O. BOX 4944
Diamond Bar, CA 91765
(909) 396- 2000

APPLICATION FOR PLANS
FORM 400 - P

Section I - Company Information

LEGAL NAME OF APPLICANT
USA Waste of California, Inc. (El Sobrante Landfill)

☒ IRS OR ☐ S.S.NUMBER
73-1309529

PERMIT TO BE ISSUED TO (SEE INSTRUCTIONS) Same

BUSINESS MAILING ADDRESS 10910 Dawson Canyon Road, Corona, California 92883

Section II - Facility Information

EQUIPMENT ADDRESS/LOCATION
10910 Dawson Canyon Road
NUMBER/STREET
Corona — CA — 92883
CITY OR COMMUNITY — ZIP CODE

FACILITY NAME
El Sobrante Landfill

FACILITY ID NUMBER
1 1 3 6 7 4

NAME OF CONTACT PERSON Damon DeFrates

TITLE District Manager

CONTACT TELEPHONE NUMBER
(909) 277-1740

TYPE OF BUSINESS AT THIS FACILITY
Municipal Solid Waste Landfill

BUSINESS TYPE CODE (SEE INSTRUCTIONS)
4 9 5 3

Section III - Equipment Information

APPLICATION HEREBY SUBMITTED FOR: Review of Plan for Implementation of Mitigation Measures under CEQA

RULE NUMBER WHICH THIS APPLICATION APPLIES TO: N/A

TYPE OF PLAN APPLICATION:
☐ Compliance Plan
☐ Excavation Plan
☒ Other
☐ Alternative Emission Control Plan (AECP)
☐ Extreme Performance Coating Classification

IF THIS APPLICATION IS ASSOCIATED WITH CERTAIN DISTRICT APPLICATIONS(S)/PERMIT(S), ENTER APPLICATION/PERMIT NUMBER(S):

FOR THIS PROJECT HAS A CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA) DOCUMENT BEEN REQUIRED BY ANOTHER GOVERNMENTAL AGENCY?
☒ No ☐ Yes, IF YES, ENTER NAME OF AGENCY AND SUBMIT A COPY IF APPROVED.

DO YOU CLAIM CONFIDENTIALITY OF DATA? (SEE INSTRUCTIONS) ☐ Yes ☒ No

OPERATING SCHEDULE

	HOURS/DAY	DAYS/WEEK	WEEKS/YEAR
MAXIMUM	24	7	52
AVERAGE	24	6	52

FOR AECP PLEASE FILL IN THE TABLE BELOW:

	LBS/YEAR	DAYS/YEAR
ACTUAL USAGE TWO YEARS AGO		
ACTUAL USAGE LAST YEAR		
PROPOSED AVERAGE USI		

Section IV - Signature

I HEREBY CERTIFY THAT ALL INFORMATION CONTAINED HEREIN AND INFORMATION SUBMITTED WITH THIS APPLICATION IS TRUE AND CORRECT.

SIGNATURE OF RESPONSIBLE OFFICIAL OF FIRM: Damon DeFrates

TITLE OF RESPONSIBLE OFFICIAL OF FIRM: District Manager

TYPE OR PRINT NAME OF RESPONSIBLE OFFICIAL OF FIRM: Damon DeFrates

RESPONSIBLE OFFICIAL'S TELEPHONE NUMBER: (909) 277-5103

DATE SIGNED: 11 29 03

I HEREBY CERTIFY THAT ALL INFORMATION CONTAINED HEREIN AND INFORMATION SUBMITTED WITH THIS APPLICATION IS TRUE AND CORRECT.

SIGNATURE OF PREPARER: Patrick S. Sullivan

TITLE OF PREPARER: Vice President

TYPE OR PRINT NAME OF PREPARER: Patrick S. Sullivan

PREPARER'S TELEPHONE NUMBER: (916) 361-1297

DATE SIGNED: 1 13 03

AQMD USE ONLY	APPLICATION/TRACKING #	PROJECT #	TYPE B C D	EQUIPMENT CATEGORY CODE:	FEE SCHEDULE:	VALIDATION
					$	

ENG. A R DATE	ENG. A R DATE	CLASS I III IV	ASSIGNMENT UNIT ENGINEER	ENF. SECT.	CHECK/MONEY ORDER #	AMOUNT $

FORM 400-E-P, Rev. 10/97

PATRICK S SULLIVAN
JULIE L SULLIVAN
4721 MARGUERITE WAY
CARMICHAEL, CA 95608
916-489-7678

2913

Jan. 27, 2003 DATE

90-7162/3222

PAY TO THE ORDER OF South Coast AQMD $ 89.59

Eighty-nine and 59/100 DOLLARS

Security Features Details on Back.

Washington Mutual
Washington Mutual Bank, FA
Oakland Montclair Financial Center 1320
2051 Mountain Boulevard
Oakland, CA 94611
1-800-788-7000
24 Hour Customer Service

FOR El Sobrante Landfill Plan Fee

Patti S. Sullivan MP

⑆322271627⑆ 374 3194094 2913

AQ-12

Alternative Fuel Engines and Emission Control Technologies
Transfer Truck Operations Analysis

WASTE MANAGEMENT

Alternative fuel Engines and Emission Control Technologies for Transfer Truck Operations
El Sobrante Landfill

July 2015

Mitigation Measure AQ-12 of the Second El Sobrante Landfill Agreement requires an evaluation of the technological and economic feasibility of using natural gas fuel or other alternative fuel in transfer truck operations. The evaluation is subject to County approval. If the County finds that natural gas fuel or other alternative fuel in transfer truck is technologically and economically feasible, USA Waste (WM) shall develop and implement a program to phase-in transfer trucks capable of using these fuels.

The purpose of this document is to update Riverside County since the last version of this document was produced several years ago. WM continues to look at the alternatives that may or may not be available to replace heavy-duty conventional diesel engines in transfer operations. The rules remain the same - appropriate alternative fuel engines must provide adequate power and torque, while reducing certain controllable emissions, such as Oxides of Nitrogen (NOx) and particulate matter (PM).

The Engine Update section below provides an update on the current alternative fuel engine technologies for WM's transfer operations. The one major change since the last version of this document pertains to available alternative fuel infrastructure. Compressed natural gas (CNG) and liquefied natural gas (LNG) fueling stations are now readily available throughout the South Coast Basin, so fueling infrastructure will not be a limiting factor going forward.

Engine Update

While CNG/LNG fueling infrastructure have become readily available throughout the South Coast Basin, the availability of heavy-duty engines suitable for transfer truck operations remains very limited.

As in the previous edition of this document, WM has investigated the availability of *heavy-heavy-duty* engines that are capable of working in transfer operations, which are generally considered to require 400hp and 1,450 lb-ft torque and upward. In this category (and even in the lighter medium-heavy-duty category), natural gas engines remain the only commercially available alternative fuel options.

Table 1 (below) shows the list of currently available heavy-duty natural gas engines. As one can see from the table, even including engines below 400hp only results in two commercially available engines (CWI ISL-G and ISX12-G). The third engine in the table was the previous generation LNG Westport ISX (HPDI) engine, but that is no longer in production and suffered from many performance/durability issues. The fourth engine in the table is the next generation ISX12-G engine that is expected to meet CARB's newly adopted 0.02 gram NOx standard when introduced. WM is not familiar with any other heavy-heavy-duty natural gas or other alternative fuel engines that are slated for introduction in the U.S. market at this time.

Table 1 – Current Available Heavy-Duty, On-Road Natural Gas Engines

Manufacturer/Engine Name	Specifications	Emission Level	Cost	Availability
Cummins Westport ISL-G	8.9L, 250-320hp, 730-1,000 lb-ft, CNG/LNG	CARB/EPA 2010 – 0.20 gNOx/hp-hr	$44,000	Commercial availability
Cummins-Westport ISX12-G	11.9L, 320-400hp, 1,150-1,450 lb-ft, CNG/LNG	CARB/EPA 2010 – 0.20 gNOx/hp-hr	$54,000	Full commercial availability began in 2014
Westport ISX	15L, 400-475hp, 1,450-1,750 lb-ft, LNG only	CARB/EPA 2007	N/A	*Out of production*
Cummins-Westport ISX12-G	11.9L, 320-400hp, 1,150-1,450 lb-ft, CNG/LNG	CARB 2015 – 0.02 gNOx/hp-hr	TBD	TBD

WM knew that the ISL-G was undersized for heavy-heavy-duty transfer operations, but was willing to test this engine out in transfer duty because of its familiarity with the ISL-G product being used in its collection vehicles across the U.S. and a desire to use natural gas in transfer operations. WM began a test program in early 2014 with 9 CNG transfer trucks using the ISL-G engine at its Carson Transfer Facility (servicing El Sobrante). WM added 4 more ISL-G CNG transfer trucks to the program, so is now running a total of 13 CNG ISL-G trucks. Performance of these initial trucks has been lackluster because of their weight limitations, but WM is still exploring ways to make these trucks successful.

Beyond these initial 13 ISL-G trucks, WM has ordered a new ISX12-G CNG transfer truck for its Carson Transfer Facility, it should be in operation in the first half of 2015. WM will then begin its testing phase for this new truck servicing El Sobrante and begin collecting operational performance data to validate this engine in transfer operations. While WM remains confident the higher horsepower/torque engine will be an improvement over the ISL-G, significant testing is still required to validate it.

Conclusion

WM has been testing a significant fleet of 8.9L CNG trucks, but the experience has been negative due to the power/torque restrictions of that engine. WM is beginning a test with an 11.9L CNG truck in the first half of 2015, so useful test results will be available in early 2016. It remains difficult to predict exactly what the performance of the new 11.9L CNG truck will be until it is running daily operations servicing the El Sobrante landfill. If test results from the new engine are favorable, WM would then develop a long-term plan for CNG transfer operations to El Sobrante.

Beyond the initial testing of the new 11.9L ISX12-G CNG truck, WM would be interested in testing and potentially purchasing the new low-NOx ISX12-G engine when it becomes available. Given that the new engine is expected to be certified to the optional 0.02 gram low NOx standard, heavy-duty vehicles equipped with that engine should also be eligible for future Carl Moyer funding. WM has participated in the Carl Moyer program many times in past years and would be interested in participating in it once again.

Alternative fuel Engines and Emission Control Technologies
Transfer Truck Operations
El Sobrante Landfill

Mitigation Measure AQ-12 of the Second El Sobrante Landfill Agreement requires an evaluation of the technological and economical feasibility of using natural gas fuel or other alternative fuel in transfer trucks. The evaluation is subject to County approval. If the County finds that natural gas fuel or other alternative fuel in transfer truck is technologically and economically feasible, USA Waste shall develop and implement a program to phase-in transfer trucks capable of using these fuels.

The purpose of this document is to look at the alternatives that may or may not be available to replace heavy-duty conventional diesel engines. Appropriate alternatives must reduce certain controllable emissions, such as Oxides of Nitrogen (NOx) and particulate matter (PM). Engine alternatives in California have focused primarily on natural gas. Existing infrastructure available to support alternative fuels is also investigated.

Engines

The availability of natural gas engines was investigated through various sources. Although there may be smaller alternative fuel engines, this document focuses on industrial applications. Industrial applications refer to engines that deliver greater than 325-horse power (h.p.) and 1050 ft-lbs of torque. The attached table is a recent compilation of engines that meet these specifications.

Of the engines listed in the table, only two are currently available. These engines are used in waste collection vehicles for residential and commercial service. Neither of these engines is used for transfer truck operations due to the limited horsepower. For transfer trucks, 400 h.p. is considered the minimum requirement.

The engines listed are all configured for Liquified Natural Gas (LNG). Compressed natural gas requires about twice the tank capacity of LNG. These types of trucks do not have the space to accommodate additional tanks.

The only engine currently being developed with adequate horsepower is by Clean Air Power. This engine is a dual fuel model that uses diesel as it primary fuel and LNG to provide a cleaner burn and reduced emissions.

There is some uncertainty about the future of natural gas engines. Manufacturers have significantly scaled back engine development. This is the result of two factors. First, interest in natural gas engines is primarily focused in California. The California Air Resources Board has mandated PM reductions from waste collection vehicles by using Best Available Technology. The State has also provided grants to build infrastructure for

alternative fuels. Similar focus has not developed in other States, and as a result manufacturers have not identified a sufficient market to provide financial returns needed for the substantial investment required. Second, engine manufacturers have stepped up research efforts to develop diesel engines that will meet mandated emission standards. Research funds previously devoted to alternative fuel engines have been transferred to low NOx and PM diesel research.

Infrastructure

The infrastructure for operating clean air vehicles is still very limited. LNG fueling stations are sparsely located around the Southern California area. However, most of these stations are owned and controlled by Waste Management, Inc. or a subsidiary. Stations are located in the following cities:

- Long Beach
- Irwindale
- Simi Valley
- Palmdale
- Corona
- El Cajon

For transfer truck operations to be successful, fueling stations are required at/near both the transfer stations and landfills. The LNG fuel tanks do not have the storage capacity required to make long-haul operations efficient without convenient refueling. Substantial delays due to fueling make LNG economically impractical. The proximity of our Corona fueling station to the El Sobrante Landfill provides a semi-convenient location for future fueling of transfer trucks transporting waste from the Los Angeles and Inland Empire areas. However, only the Carson Transfer Station is located near a fueling station. Therefore, the majority of transfer stations cannot currently operate LNG vehicles.

Supplies of LNG fuel are limited. Currently, LNG is produced in Tupock, AZ and Shutte Creek, WY. Supply interruptions, as have occurred during the past few years, significantly impact fleet operations. Such interruptions can temporarily idle truck fleets. Additional suppliers will be required to make LNG a viable fuel source.

Conclusion

Neither the engine technology nor the infrastructure for alternative fuels is available to convert transfer trucks to LNG fuels.

ALTERNATIVE FUEL ENGINES

Manufacturer	Specifications	Emission Reduction	Cost	Availability	Reference
Cummins-Westport	8.9 Liter, "L" gas plus, Max h.p. 320, configured for LNG	Certified to 1.8 gm NOx plus NMHC	$35,000	Available	Cummins-Westport Inc., California Natural Gas Vehicle Coalition
Mack	E-7G 11.7 Liter, Max h.p. 325, configured for LNG	Certified to 2.4 gm NOx plus NMHC	$35,000	Available	Mack Trucks Inc., California Natural Gas Vehicle Coalition
Cummins-Westport	I.S.X 14 Liter	In testing	NA	2 to 3 years before available	Cummins-Westport Inc.
Clean Air Power	Dual fuel (diesel/natural gas), h.p. 425	2007-2010 EPA emissions standards	NA	2006	Clean Air Power website

NA refers to Not Available

AQ-13

Annual 2014 Mitigation Monitoring Program Status Report

Environmental Consultants

3900 Kilroy Airport Way
Suite 100
Long Beach, California 90806-6816

562-426-9544
FAX 562-492-6210
www.scsengineers.com

SCS ENGINEERS

September 27, 2013
File No. 01202020.05, Task 47, 48

South Coast Air Quality Management District
21865 East Copley Drive
Diamond Bar, California 91765
(909) 396-2614

SUBJECT: ANNUAL 2014 MITIGATION MONITORING PROGRAM STATUS REPORT, AIR QUALITY MITIGATION MEASURE AQ-13, EL SOBRANTE LANDFILL, CORONA, CALFORNIA

To Whom It May Concern:

As part of the certified Environmental Impact Report (EIR) for its most recent landfill expansion, USA Waste of California, Inc. (USA Waste) is required to implement a California Environmental Quality Act (CEQA) mitigation monitoring and reporting program (MMRP) for the El Sobrante Landfill (El Sobrante) in Corona, California. Condition AQ-13 of the MMRP requires that USA Waste determine the need, if any, for emission offsets for Nitrogen Oxides (NO_x) and Reactive Organic Gases (ROG) from stationary and mobile sources as defined by the EIR.

This report was prepared by SCS Engineers (SCS) on behalf of USA Waste and constitutes the required Annual MMRP Status Report (Report) for calendar year 2014.

BACKGROUND

Condition AQ-13 of the MMRP requires that USA Waste provides emission reductions of non-attainment pollutants, NO_x, ROG and their precursors, sufficient to result in no net increase of project emissions after correction to baseline emissions, as defined by the CEQA document.

Under Condition AQ-13 of the MMRP, USA Waste is required to determine the amount of annual emission offsets for NO_x and ROG, which are needed for the upcoming year. The emission offset calculations are required to include an estimate of the baseline NO_x and ROG emissions prior to the landfill expansion and a comparison to the projected 2014 NO_x and ROG emissions from both stationary, mobile and construction sources at the site. If emission increases are determined to occur, USA Waste must provide written proof of acquisition of emission reduction credits (ERCs) in sufficient quantity to ensure no net increases in NO_x and ROG.

The emission calculations are required to be summarized in this Report and submitted to the South Coast Air Quality Management District (SCAQMD) and Riverside County Waste Management Department (County) 90 days prior to the beginning of the next calendar year or by September 30, 2013.

EMISSION OFFSET CALCULATIONS

Emission offset calculations were based on the difference between the baseline 2001 NO_x and ROG emissions prior to the landfill expansion and the projected 2014 NO_x and ROG emissions for stationary sources, off-site vehicles, on-site vehicles and equipment, excluding the landfill gas (LFG) flare emissions, LFG Internal Combustion (IC) engines emissions, and surface emissions of LFG.

LFG Sources

As allowed by the MMRP, the LFG flare emissions and LFG IC engines emissions were removed from the offset calculation since the SCAQMD provides ERCs for these sources from its Priority Reserve account for sources that are exempt from offsets due to their status as essential public services, as defined by SCAQMD Rule 1302 (i.e. LFG-derived emissions). If the landfill operator can demonstrate compliance with Rule 1150.1, which regulates fugitive emissions, then the surface emissions can also be removed from the offset calculation.

The four quarters of surface emissions monitoring from the 4th quarter 2012 and 1st, 2nd and 3rd quarter 2013 resulted in surface emissions with Total Organic Compound (TOC) concentrations above 500 ppmv during initial monitoring. However, emissions exceedances were remediated per Rule 1150.1, and follow-up monitoring and repairs were performed per the rule timelines, resulting in no areas over 500 ppmv after mitigation. This is in full compliance with Rule 1150.1. Therefore, surface emissions are exempt from offset calculation based on compliance with Rule 1150.1. A summary of the emission calculations in Tables 1 through 3 is provided in Attachment 1.

- Table 1: LFG Generation Potential, Projected Emission Source Estimates for Flares (2014)
- Table 2: Actual Emission Source Estimates for Landfill and Flare (2001)
- Table 3-A: Projected Emission Source Estimates for Landfill and Flare (2014)
- Table 3-B: Projected Emission Source Estimates for IC Engines (2014)

Off-Site Waste Haul Vehicle Emission Calculations

Off-site vehicle emission calculations from transfer trucks and packer trucks were also estimated as shown in Table 4. Baseline emission estimates from Updated Table G.1.1 of the *Draft South Coast Air Quality Management District (SCAQMD) –Consultation Work in Progress Air Quality Analysis Refinements El Sobrante Landfill Expansion (*TRC Environmental Solutions, Inc., TRC, February 5, 1997), which was an update to the air quality section of the final EIR (FEIR), were used in determining the baseline and projected 2014 emissions from the landfill. We continue to use this methodology for consistency with the FEIR and with previous annual reports.

The baseline emissions, as defined by the MMRP, are based on a refuse acceptance rate of 4,000 tons per day (tpd). The 2014 emissions were based on an assumption that the landfill would operate at approximately 6,552 tpd in 2014, based on waste disposal rates of 6,800 tpd Monday through Friday, 3,300 tons on Saturday, and no waste disposal on Sunday. It is anticipated that the waste disposal capacity increase at the El Sobrante site will be diverted from other landfills, primarily located within the South Coast Air Basin (SCAB); therefore, the above-referenced TRC document and FEIR

compared refuse vehicle emissions from facilities or areas within the SCAB that would potentially be routed to El Sobrante after expansion.

As shown in Table 4, the use of transfer trucks in place of packer trucks would result in a net reduction of approximately 5,108 miles of daily vehicle travel in the SCAB for the scenario where El Sobrante is receiving 6,552 tpd of municipal solid waste (MSW) compared to the 4,000 tpd of waste under the baseline scenario. Estimated baseline NO_x and ROG emissions are 1,077.7 and 26.6 lbs/day, respectively. The net reduction in NO_x and ROG is 862.2 and 19.7 lbs/day, respectively, due to change in refuse hauling practice. The reduction occurs since the transfer trucks have a 22-ton capacity, whereas packer trucks have only an 8-ton capacity. Therefore, fewer vehicle miles are required for transfer trucks than packer trucks to haul the same amount of waste.

Since the FEIR compared vehicle emissions from the worst-case 10,000 tpd scenario, rather than a 6,552 tpd scenario, SCS used the ratios of the waste hauled in developing the 2014 emissions. Baseline emissions were evaluated assuming 6,552 tpd of MSW was transferred throughout the SCAB if the expansion of El Sobrante did not occur. El Sobrante accepted up to 4,000 tpd in 2001; therefore 2,552 tpd of waste was equally allocated among other landfills, which included the Sunshine Canyon, BKK, and Miliken Landfill. The number of truck trips per day was also altered from Updated Table G.1.1 in the TRC study to reflect the 6,552 tpd of MSW being transported. In particular, the number of trips estimated under the 10,000 tpd scenario was multiplied by a ratio of 2001 amount of MSW transferred to the maximum (10,000 tpd) amount of MSW transferred within each area.

Baseline emission factors were updated from the TRC SCAQMD Consultation document, which used the EMFAC7G model for Heavy-Duty Trucks traveling 60 miles per hour (mph) at 75 degrees Fahrenheit (F). For this study, the EMFAC2002 model was used to estimate heavy-duty trucks traveling 60 mph at 75 degrees F and a relative humidity of 60% in 2001. EMFAC2002 was used to maintain consistency with previous reports.

Projected 2014 off-site truck travel emission estimates were determined in a similar manner. The amount of waste being hauled from each facility or area to El Sobrante was based on the projected incoming tonnage rate to the El Sobrante site of 6,552 tpd multiplied by a ratio of the amounts of MSW arriving from in- and out-of-county areas under the 10,000 tpd scenario to a value of 10,000 tpd. For example, the amount of 2014 MSW traveling from the Carson Transfer Station to El Sobrante equals 6,552 tpd multiplied by a ratio (4,000 tpd/10,000 tpd), which equals 2,620.8 tpd. Under the 10,000 tpd scenario, the FEIR projects 4,000 tpd (40% of total waste) of MSW traveling from Carson Transfer Station to the El Sobrante Landfill.

The number of truck trips for both in- and out-of county areas were estimated using the number of trips projected under the 10,000 tpd scenario and multiplying by a ratio of 2014 MSW tpd transferred to the maximum MSW tpd transferred within each area.

Approximately 47 liquefied natural gas (LNG) vehicles per day will be traveling to the El Sobrante Landfill in 2014; therefore, an LNG vehicle emissions estimate was calculated to determine the amount of reduced NO_x emissions from the baseline year, which did not include any LNG vehicles. Attachment 3 provides an emission comparison of diesel and LNG engines, which shows a 49%

reduction in NO_x emissions. ROG emission reductions from vehicle conversions from diesel to LNG were not studied and were, therefore, not calculated in the 2014 scenario. However, USA Waste reserves the right to complete this calculation in the future.

Projected 2014 emission factors were derived from the EMFAC2002 model for heavy-duty trucks traveling 60 mph at 75 degrees F and a relative humidity of 60% in 2014. Using these factors, the NO_x and ROG emissions for 2014 are estimated to be 209.1 and 6.9 lbs/day, respectively. This equates to an emission reduction of 862.17 and 19.71 lbs/day of NO_x and ROG, respectively, from the off-site refuse hauling vehicles as compared to baseline conditions.

On-Site Mobile Equipment- Landfill Operations

On-site mobile equipment emission calculations were also estimated as shown in Tables 5a and 5b. Emissions and load factors from Attachment 6 of the July 22, 1997 memorandum to Robert A. Nelson of USA Waste from Eric Walther and Bob Mason of TRC were used in determining baseline and projected 2014 emissions. The on-site mobile equipment emissions provided in the memorandum was for a 10,000 tpd scenario; therefore, total usage time for 2001 and 2014 scenarios had to be extrapolated. Baseline total usage time for each piece of equipment was estimated using total usage times provided in the TRC memorandum multiplied by a ratio of baseline to expansion hours of operation and support activities. New equipment obtained to accommodate additional waste tonnages in the expansion was provided by USA Waste.

EMFAC2002 modeling was used to determine baseline and 2014 emission factors for heavy-duty trucks at 75 degrees F traveling 25 mph with a relative humidity of 60%. Baseline mobile equipment emissions for NO_x and ROG are estimated to be 133.9 and 7.23 lbs/day, respectively. The 2014 mobile equipment emissions for NO_x and ROG are estimated to be 340.5 and 17.62 lbs/day, respectively. This equates to an emission increase of 206.6 and 10.39 lbs/day of NO_x and ROG, respectively, from the on-site mobile equipment.

On-Site Solid Waste Hauling and Employee Vehicle Emissions

On-site solid waste hauling and employee vehicle emission calculations were also estimated within the landfill as shown in Table 6 (Solid Waste Haul and Employee Vehicle Emissions at the Landfill) with 4,000 tons per day for baseline in 2001 and with 6,552 tons per day in 2014. Emission information from Attachment 6 of the July 22, 1997 memorandum to Robert A. Nelson of USA Waste from Eric Walther and Bob Mason of TRC was used in determining baseline and projected emissions from 6,552 tpd of MSW.

The amount of waste being hauled from each facility or area to the El Sobrante Landfill was based on the hauled tonnages from the 10,000 tpd scenario provided in the TRC SCAQMD Consultation document and multiplying by the ratio of 2001 or 2014 daily tonnages (4,000 or 6,552 tpd) to the maximum daily tonnage (10,000 tpd). The numbers of vehicles were estimated from the amount hauled divided by the assumed capacity of each vehicle type. For instance, transfer trucks have a 22-ton MSW capacity, whereas light-duty trucks have an approximately 1-ton MSW capacity.

Emission factors for both 2001 and 2014 estimates were from the EMFAC2002 model for heavy-duty trucks and light weight automobiles and trucks at 75 degrees F traveling 25 mph with a relative humidity of 60%. The results of the modeling are located in Attachment 2.

The number of employee vehicles (12) decreased between baseline and expansion scenarios based on site-specific data and the fact that additional employees have not been and are not expected to be necessary to handle the additional refuse.

Table 6 indicates an emission decrease of 9.15 and 0.53 lbs/day of NO_x and ROG from on-site hauling and employee vehicles, respectively.

On-Site Equipment Emissions Related to Structural Fill

On-site solid vehicle emission calculations were also estimated for structural filling to be performed in 2014, as shown in Table 7. The estimated fulltime structural fill will occur from 8AM to 5PM, Monday through Fridays for six out of twelve months of the year. The usage time as well as the number and types of vehicles were estimated by Waste Management.

Emission factors for 2014 estimates were from the EMFAC2002 model for heavy-duty trucks at 75 degrees F traveling 2, 3, 4, and 10 mph with a relative humidity of 60%. Since the structural fill is planned for 2014, there are no baseline emissions to compare to. The vehicle emissions related to structural fill is estimated to be 3,401.4 and 396.2 lbs/day of NO_x and ROG, respectively, which represent a project increase.

RESULTS OF EMISSIONS ANALYSIS

Table 8 (Project Emission Inventory for Baseline and 6,552 TPD) provides a summary of the project emission inventory, which includes stationary, mobile, and construction sources associated with the El Sobrante Landfill expansion project. Table 9 (Emission Offsets Required for Future (2014)) provides a summary of the emission increases (or reductions) from the various projected emission sources from the baseline year of 4,000 tpd to the project 2014 emissions at 6,552 tpd. This calculation includes an adjustment for the amount of ERCs that have been/will be provided from the SCAQMD's Priority Reserve account due to the offset exemption for essential public services. The results show a projected emission reduction of 661.9 and 8.8 lbs/day for NO_x and ROG, respectively. The NO_x reduction is primarily due to the use of an ultra-low NO_x flare and the use of transfer trucks in place of packer trucks. The ROG reduction is primarily the result of transfer trucks in place of packer trucks. Therefore, no emission offsets are required for 2014.

CLOSING

We believe that this Report satisfies USA Waste's requirements under AQ-13 of the MMRP under CEQA and should allow operations to continue as projected at the site. Please let us know if any fees are required under SCAQMD Rule 301 for this submittal, and USA Waste will pay them promptly.

If you have any questions regarding this submittal or desire any additional information, please contact the undersigned.

Sincerely,

James Kim
Staff Scientist

Raymond Huff
Vice President

Patrick Sullivan, C.P.P
Senior Vice President
SCS ENGINEERS

Attachments

Table 1. Landfill Gas Generation Projection, El Sobrante Landfill
Table 2. Actual Emission Source Estimates for Landfill and Flare (2001), El Sobrante Landfill and Recycling Center, Corona, California
Table 3a. Projected Emission Source Estimates for Landfill and Flare (2014), El Sobrante Landfill and Recycling Center, Corona, California
Table 3b. Projected Emissions Source Estimates for IC Engines (2014), El Sobrante Landfill and Recycling Center, Corona, California
Table 4. Emissions Comparison Within the South Coast Air Basin (2001) and Projected Off-site Truck Travel Emissions (2014)
Table 5a.On-site Mobile Equipment Emissions at 4,000 tons per day (2001)
Table 5b.On-site Mobile Equipment Emissions at 6,552 tons per day (2014)

Table 6. Solid Waste Haul and Employee Vehicle Emissions at the Landfill with 4,000 tons per day (2001)
Solid Waste Haul and Employee Vehicle Emissions at the Landfill with 6,552 tons per day (2014)
Table 7. On-site Equipment Emissions Related to Structural Fill (2014)
Table 8. Project Emission Inventory for Baseline and 6,552 tons per day
Table 9. Emission Offsets Required for Future (2014)
Attachment 1. Stationary Source Calculations
Attachment 2. EMFAC2002 Model Results
Attachment 3. Liquefied Natural Gas to Diesel Comparison Table

cc: Mike Williams; USA Waste (w/attachments)
Cody Cowgill; USA Waste (w/attachments)
Christian Colline, Waste Management, Inc. (w/attachments)
Ryan Ross; Riverside County Waste Management Department (w/attachments)
Joe McCann; Riverside County Waste Management Department (w/attachments)

TABLES

TABLE 1. LFG GENERATION POTENTIAL
PROJECTED EMISSION SOURCE ESTIMATES FOR LANDFILL SURFACE (2014)

Year	Disposal Rate (tons/yr)	Refuse In-Place (tons)	LFG Recovery Potential (scfm)	(mmcf/day)	(mmBtu/yr)	LFG System Coverage (%)	LFG Recovery from Existing and Planned System (scfm)	(mmcf/day)	(mmBtu/yr)
1986	79,121	79,121	0	0.00	0	100%	0	0.00	0
1987	246,361	325,482	24	0.03	6,324	100%	24	0.03	6,324
1988	274,562	600,044	97	0.14	25,845	100%	97	0.14	25,845
1989	376,768	976,812	177	0.26	47,100	100%	177	0.26	47,100
1990	348,316	1,325,128	286	0.41	75,958	100%	286	0.41	75,958
1991	297,904	1,623,032	383	0.55	101,773	100%	383	0.55	101,773
1992	270,298	1,893,330	462	0.67	122,871	100%	462	0.67	122,871
1993	455,984	2,349,314	531	0.76	141,201	100%	531	0.76	141,201
1994	499,823	2,849,137	654	0.94	173,883	100%	654	0.94	173,883
1995	413,649	3,262,786	787	1.13	209,198	100%	787	1.13	209,198
1996	456,970	3,719,756	890	1.28	236,685	100%	890	1.28	236,685
1997	617,411	4,337,167	1,004	1.45	266,902	100%	1,004	1.45	266,902
1998	520,983	4,858,150	1,162	1.67	309,138	100%	1,162	1.67	309,138
1999	900,610	5,758,760	1,288	1.85	342,541	100%	1,288	1.85	342,541
2000	931,508	6,690,268	1,524	2.20	405,395	100%	1,524	2.20	405,395
2001	1,120,379	7,810,647	**1,764**	2.54	469,045	100%	1,764	2.54	469,045
2002	1,868,255	9,678,902	2,053	2.96	546,094	100%	2,053	2.96	546,094
2003	2,218,630	11,897,532	2,560	3.69	680,862	100%	2,560	3.69	680,862
2004	2,396,469	14,294,001	3,159	4.55	840,044	100%	3,159	4.55	840,044
2005	2,310,173	16,604,174	3,795	5.46	1,009,199	100%	3,795	5.46	1,009,199
2006	2,451,544	19,055,718	4,388	6.32	1,166,950	100%	4,388	6.32	1,166,950
2007	2,173,201	21,228,919	5,008	7.21	1,331,798	100%	5,008	7.21	1,331,798
2008	2,109,752	23,338,671	5,527	7.96	1,470,009	100%	5,527	7.96	1,470,009
2009	1,889,485	25,228,155	6,014	8.66	1,599,466	100%	6,014	8.66	1,599,466
2010	2,025,391	27,253,547	6,422	9.25	1,707,871	100%	6,422	9.25	1,707,871
2011	2,189,826	29,443,373	6,859	9.88	1,824,250	100%	6,859	9.88	1,824,250
2012	1,945,712	31,389,085	7,335	10.56	1,950,672	100%	7,335	10.56	1,950,672
2013	1,945,712	33,334,797	7,724	11.12	2,054,215	100%	7,724	11.12	2,054,215
2014	1,945,712	35,280,509	**8,103**	11.67	2,154,999	100%	8,103	11.67	2,154,999
2015	1,945,712	37,226,221	8,472	12.20	2,253,099	100%	8,472	12.20	2,253,099
2016	1,945,712	39,171,933	8,831	12.72	2,348,586	100%	8,831	12.72	2,348,586
2017	1,945,712	41,117,645	9,180	13.22	2,441,529	100%	9,180	13.22	2,441,529
2018	1,945,712	43,063,357	9,520	13.71	2,531,997	100%	9,520	13.71	2,531,997
2019	1,945,712	45,009,069	9,852	14.19	2,620,054	100%	9,852	14.19	2,620,054
2020	1,945,712	46,954,781	10,174	14.65	2,705,766	100%	10,174	14.65	2,705,766
2021	1,945,712	48,900,493	10,488	15.10	2,789,194	100%	10,488	15.10	2,789,194
2022	1,945,712	50,846,205	10,793	15.54	2,870,400	100%	10,793	15.54	2,870,400
2023	1,945,712	52,791,917	11,090	15.97	2,949,442	100%	11,090	15.97	2,949,442
2024	1,945,712	54,737,629	11,379	16.39	3,026,380	100%	11,379	16.39	3,026,380
2025	1,945,712	56,683,342	11,661	16.79	3,101,267	100%	11,661	16.79	3,101,267
2026	1,945,712	58,629,054	11,935	17.19	3,174,160	100%	11,935	17.19	3,174,160
2027	1,945,712	60,574,766	12,202	17.57	3,245,111	100%	12,202	17.57	3,245,111
2028	1,945,712	62,520,478	12,461	17.94	3,314,171	100%	12,461	17.94	3,314,171
2029	1,945,712	64,466,190	12,714	18.31	3,381,393	100%	12,714	18.31	3,381,393
2030	1,945,712	66,411,902	12,960	18.66	3,446,823	100%	12,960	18.66	3,446,823
2031	1,945,712	68,357,614	13,200	19.01	3,510,511	100%	13,200	19.01	3,510,511
2032	1,945,712	70,303,326	13,433	19.34	3,572,501	100%	13,433	19.34	3,572,501
2033	1,945,712	72,249,038	13,660	19.67	3,632,841	100%	13,660	19.67	3,632,841
2034	1,945,712	74,194,750	13,881	19.99	3,691,573	100%	13,881	19.99	3,691,573
2035	35,505,250	109,700,000	14,095	20.30	3,748,741	100%	14,095	20.30	3,748,741
2036	0	109,700,000	24,390	35.12	6,486,554	100%	24,390	35.12	6,486,554

Methane Content of LFG Adjusted to: 50%
Selected Decay Rate Constant (k): 0.0270
Selected Ultimate Methane Recovery Rate (Lo): 2,925 cu ft/ton

TABLE 2
ACTUAL EMISSION SOURCE ESTIMATES FOR LANDFILL SURFACE (2001)
EL SOBRANTE LANDFILL AND RECYCLING CENTER, CORONA, CALIFORNIA

CAS	COMPOUNDS	Molecular Weight	Average Concentration of Compounds Found In LFG[1]	Maximum Concentration of Compounds Found In LFG[2]	Average Uncontrolled LFG Flow Rate- Surface Emissions	Maximum Uncontrolled LFG Flow Rate- Surface Emissions	Average LFG Flow Rate to Flare[3]	Maximum LFG Flow Rate to Flare[3]	Cmp. Spec. Average Flare Destruction Efficiency[4]	Average Emissions from Flare	Maximum Emissions from Flare
		g/mol	ppmv	ppmv	tons/yr	tons/yr	tons/yr	tons/yr	%	tons/yr	tons/yr
	Hazardous Air Pollutants (HAPs)[1]										
71-55-6	1,1,1-Trichloroethane (methyl chloroform)*	133.42	0.310	0.368	1.87E-03	2.22E-03	4.23E-02	5.02E-02	98.0%	8.46E-04	1.00E-03
79-34-5	1,1,2,2-Tetrachloroethane+	167.85	0.070	0.070	5.30E-04	5.30E-04	1.20E-02	1.20E-02	98.0%	2.40E-04	2.40E-04
107-06-2	1,1-Dichloroethane (ethylidene dichloride)*	98.95	5.965	6.910	2.66E-02	3.09E-02	6.04E-01	7.00E-01	98.0%	1.21E-02	1.40E-02
75-35-4	1,1-Dichloroethene (vinylidene chloride)*	96.94	0.212	0.253	9.25E-04	1.11E-03	2.10E-02	2.51E-02	98.0%	4.20E-04	5.02E-04
107-06-2	1,2-Dichloroethane (ethylene dichloride)*	98.96	0.565	1.000	2.52E-03	4.47E-03	5.72E-02	1.01E-01	98.0%	1.14E-03	2.03E-03
78-87-5	1,2-Dichloropropane (propylene dichloride)+	112.99	0.023	0.023	1.17E-04	1.17E-04	2.66E-03	2.66E-03	98.0%	5.32E-05	5.32E-05
107-13-1	2-Propanol (isopropyl alcohol)+	60.11	7.908	7.908	2.15E-02	2.15E-02	4.86E-01	4.86E-01	98.0%	9.73E-03	9.73E-03
107-13-1	Acrylonitrile+	53.06	0.036	0.036	8.62E-05	8.62E-05	1.95E-03	1.95E-03	98.0%	3.91E-05	3.91E-05
71-43-2	Benzene*	78.11	1.788	2.115	6.30E-03	7.46E-03	1.43E-01	1.69E-01	98.0%	2.86E-03	3.38E-03
75-25-2	Bromodichloromethane+	163.83	0.311	0.311	2.30E-03	2.30E-03	5.21E-02	5.21E-02	98.0%	1.04E-03	1.04E-03
75-15-0	Carbon disulfide*	76.13	0.435	0.590	1.49E-03	2.03E-03	3.39E-02	4.60E-02	98.0%	6.78E-04	9.19E-04
56-23-5	Carbon tetrachloride*	153.84	0.017	0.018	1.15E-04	1.25E-04	2.60E-03	2.83E-03	98.0%	5.19E-05	5.67E-05
463-58-1	Carbonyl sulfide*	60.07	0.155	0.170	4.20E-04	4.61E-04	9.53E-03	1.04E-02	98.0%	1.91E-04	2.09E-04
108-90-7	Chlorobenzene*	112.56	0.079	0.128	4.01E-04	6.50E-04	9.10E-03	1.47E-02	98.0%	1.82E-04	2.95E-04
75-00-3	Chloroethane (ethyl chloride)+	64.52	0.239	0.239	6.96E-04	6.96E-04	1.58E-02	1.58E-02	98.0%	3.16E-04	3.16E-04
67-66-3	Chloroform*	119.39	0.012	0.012	6.47E-05	6.47E-05	1.47E-03	1.47E-03	98.0%	2.93E-05	2.93E-05
75-45-6	Chlorodifluoromethane+	86.47	0.355	0.355	1.39E-03	1.39E-03	3.14E-02	3.14E-02	98.0%	6.28E-04	6.28E-04
74-87-3	Chloromethane (methyl chloride)+	50.49	0.249	0.249	5.67E-04	5.67E-04	1.29E-02	1.29E-02	98.0%	2.57E-04	2.57E-04
106-46-7	Dichlorobenzene (1,4-Dichlorobenzene)*	147.00	0.989	1.090	6.56E-03	7.23E-03	1.49E-01	1.64E-01	98.0%	2.97E-03	3.28E-03
75-43-4	Dichlorodifluoromethane+	120.91	3.395	3.395	1.85E-02	1.85E-02	4.20E-01	4.20E-01	98.0%	8.40E-03	8.40E-03
75-71-8	Dichlorofluoromethane+	102.92	0.355	0.355	1.65E-03	1.65E-03	3.74E-02	3.74E-02	98.0%	7.48E-04	7.48E-04
75-09-2	Dichloromethane (Methylene Chloride)*	84.94	34.325	36.050	1.32E-01	1.38E-01	2.98E+00	3.13E+00	98.0%	5.97E-02	6.27E-02
64-17-5	Ethanol++	46.08	27.200	27.200	5.66E-02	5.66E-02	1.28E+00	1.28E+00	98.0%	2.56E-02	2.56E-02
100-41-4	Ethylbenzene+	106.16	6.789	6.789	3.25E-02	3.25E-02	7.37E-01	7.37E-01	98.0%	1.47E-02	1.47E-02
106-93-4	Ethylene dibromide (1,2-Dibromoethane)*	187.88	0.009	0.012	7.63E-05	1.02E-04	1.73E-03	2.31E-03	98.0%	3.46E-05	4.61E-05
75-69-4	Fluorotrichloromethane+	137.40	0.327	0.327	2.03E-03	2.03E-03	4.60E-02	4.60E-02	98.0%	9.19E-04	9.19E-04
110-54-3	Hexane+	86.18	2.324	2.324	9.04E-03	9.04E-03	2.05E-01	2.05E-01	98.0%	4.10E-03	4.10E-03
7647-01-0	Hydrochloric acid[5]	36.50	46.930	46.930	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.0%	1.77E+00	1.77E+00
2148-87-8	Hydrogen Sulfide*	34.08	19.950	21.100	3.07E-02	3.25E-02	6.96E-01	7.36E-01	98.0%	1.39E-02	1.47E-02
7439-97-6	Mercury (total)[6]	200.61	0.0003	0.0003	2.64E-06	2.64E-06	5.99E-05	5.99E-05	0.0%	5.99E-05	6.05E-05
78-93-3	Methyl ethyl ketone+	72.11	10.557	10.557	3.44E-02	3.44E-02	7.79E-01	7.79E-01	98.0%	1.56E-02	1.56E-02
108-10-1	Methyl isobutyl ketone+	100.16	0.750	0.750	3.39E-03	3.39E-03	7.69E-02	7.69E-02	98.0%	1.54E-03	1.54E-03
127-18-4	Perchloroethylene (tetrachloroethylene)*	165.83	3.940	4.160	2.95E-02	3.11E-02	6.68E-01	7.06E-01	98.0%	1.34E-02	1.41E-02
108-88-3	Toluene*	92.13	60.625	72.650	2.52E-01	3.02E-01	5.71E+00	6.85E+00	98.0%	1.14E-01	1.37E-01
79-01-6	Trichloroethylene (trichloroethene)*	131.38	1.838	1.975	1.09E-02	1.17E-02	2.47E-01	2.65E-01	98.0%	4.94E-03	5.31E-03
75-01-4	Vinyl chloride*	62.50	0.126	0.156	3.55E-04	4.40E-04	8.06E-03	9.98E-03	98.0%	1.61E-04	2.00E-04
1330-20-7	Xylenes*	106.16	27.535	32.960	1.32E-01	1.58E-01	2.99E+00	3.58E+00	98.0%	5.98E-02	7.16E-02
Total HAPs:					8.20E-01	9.16E-01	1.86E+01	2.08E+01		2.141	2.184
	Criteria Air Pollutants										
Total Non-Methane Organics (NMOCs) as Hexane[4]		86.18	1,892	2,090	29.434	32.524	166.795	184.304	98.0%	3.336	3.686

TABLE 2
ACTUAL EMISSION SOURCE ESTIMATES FOR LANDFILL SURFACE (2001)
EL SOBRANTE LANDFILL AND RECYCLING CENTER, CORONA, CALIFORNIA

	Maximum Particulate Emissions	Permitted Emission Factor	Emission Factor	Average Uncontrolled LFG Flow Rate- Surface Emissions	Maximum Uncontrolled LFG Flow Rate- Surface Emissions	Emissions from Flare		
	g/dscf	lbs/MMBtu	lbs/MMBtu	lbs/day	lbs/day	lbs/hr	lbs/day	tons/yr
Nitrogen Oxides (NOx)[8]	--	0.060	0.024	--	--	1.079	25.9	4.728
Reactive Organic Gases (ROGs)[9]	--	--	--	62.9	69.5	0.328	7.9	1.438

Variables:

MODEL INPUT VARIABLES:	VALUE:		
Methane Concentration	50.0%		
Fuel Value[7]	500	Btu/cf	
Total Landfill Gas Generation Rate	1764	SCFM	
Total Uncontrolled Landfill Gas Collection Rate	265	SCFM	
Total Landfill Gas Collection Rate (to flare)[8]	1,499	SCFM	Assuming an 85% collection efficiency

Notes:

[1] List of hazardous air pollutants was from Title III Clean Air Act Amendments, 1990, and include compounds found in landfill gas, as determined from a list in AP-42 Tables 2.4-1 ("Uncontrolled Landfill Gas Concentrations") and 2.4-2.

[2] Actual data from the 2001 source test was used and marked by "*" if available. For compounds analyzed for but not detected during the testing, the Method Detection Limits were used. Concentrations of HAPs were also taken from "Waste Industry Air Coalition Comparison of recent Landfill Gas Analyses with Historic AP-42 Values." (+) if site specific data was unavailable, otherwise AP-42 Tables 2.4-1 and 2.4-2 was used (++).

[3] Based on a maximum flow rate into the flare of 2200 scfm at 36.2% methane, which was converted to 50% methane.

[4] Values taken from AP-42 Table 2.4-3 ("Control Efficiencies for LFG Consituents")

[5] Concentration of HCl is based on AP-42 Section 2.4.4.2. (11/98)

[6] Concentration of Mercury based on the EPA AP-42 Section 2.4 Table 2.4-1 (11/98).

[7] In accordance with the proposed permit modifications, ROCs are assumed equal to NMOCs minus Exempt Compounds.

[8] Existing flares in 2001 permitted at 1,389 scfm each.

[9] Based on 2001 source test

TABLE 3-A
PROJECTED EMISSION SOURCE ESTIMATES FOR LANDFILL SURFACE (2014)
EL SOBRANTE LANDFILL AND RECYCLING CENTER, CORONA, CALIFORNIA

CAS	COMPOUNDS	Molecular Weight	Max Concentration of Compounds Found In LFG[2]	Total Landfill Gas Generation	Maximum Uncontrolled LFG Flow Rate- Surface Emissions	Maximum LFG Flow Rate to Flare[3]	Flare Destruction Efficiency[4]	Maximum Emissions from Flare
		g/mol	ppmv	tons/yr	tons/yr	tons/yr	%	tons/yr
	Hazardous Air Pollutants (HAPs)[1]							
71-55-6	1,1,1-Trichloroethane (methyl chloroform)*	133.42	0.020	0.015	2.21E-03	9.37E-03	98.0%	1.87E-04
79-34-5	1,1,2,2-Tetrachloroethane+	167.85	0.070	0.065	9.75E-03	4.13E-02	98.0%	8.26E-04
107-06-2	1,1-Dichloroethane (ethylidene dichloride)*	98.95	0.302	0.165	2.48E-02	1.05E-01	98.0%	2.10E-03
75-35-4	1,1-Dichloroethene (vinylidene chloride)*	96.94	0.063	0.034	5.07E-03	2.15E-02	98.0%	4.29E-04
107-06-2	1,2-Dichloroethane (ethylene dichloride)*	98.96	1.820	0.996	1.49E-01	6.33E-01	98.0%	1.27E-02
78-87-5	1,2-Dichloropropane (propylene dichloride)+	112.99	0.023	0.014	2.16E-03	9.13E-03	98.0%	1.83E-04
107-13-1	2-Propanol (isopropyl alcohol)+	60.11	7.908	2.629	3.94E-01	1.67E+00	99.7%	5.01E-03
107-13-1	Acrylonitrile+	53.06	0.036	0.011	1.58E-03	6.71E-03	99.7%	2.01E-05
71-43-2	Benzene*	78.11	7.000	3.024	4.54E-01	1.92E+00	99.7%	5.76E-03
75-25-2	Bromodichloromethane+	163.83	0.311	0.282	4.23E-02	1.79E-01	98.0%	3.58E-03
75-15-0	Carbon disulfide*	76.13	0.100	0.042	6.32E-03	2.67E-02	99.7%	8.02E-05
56-23-5	Carbon tetrachloride*	153.84	0.020	0.017	2.55E-03	1.08E-02	98.0%	2.16E-04
463-58-1	Carbonyl sulfide*	60.07	0.100	0.033	4.98E-03	2.11E-02	99.7%	6.33E-05
108-90-7	Chlorobenzene*	112.56	0.078	0.049	7.30E-03	3.09E-02	98.0%	6.18E-04
75-00-3	Chloroethane (ethyl chloride)+	64.52	0.239	0.085	1.28E-02	5.42E-02	98.0%	1.08E-03
67-66-3	Chloroform*	119.39	0.020	0.013	1.98E-03	8.39E-03	98.0%	1.68E-04
75-45-6	Chlorodifluoromethane+	86.47	0.355	0.170	2.55E-02	1.08E-01	98.0%	2.16E-03
74-87-3	Chloromethane (methyl chloride)+	50.49	0.249	0.070	1.04E-02	4.42E-02	98.0%	8.83E-04
106-46-7	Dichlorobenzene (1,4-Dichlorobenzene)*	147.00	0.964	0.784	1.18E-01	4.98E-01	98.0%	9.96E-03
75-43-4	Dichlorodifluoromethane+	120.91	3.395	2.270	3.41E-01	1.44E+00	98.0%	2.88E-02
75-71-8	Dichlorofluoromethane+	102.92	0.355	0.202	3.03E-02	1.28E-01	98.0%	2.57E-03
75-09-2	Dichloromethane (Methylene Chloride)*	84.94	3.540	1.663	2.49E-01	1.06E+00	98.0%	2.11E-02
64-17-5	Ethanol++	46.08	27.200	6.932	1.04E+00	4.40E+00	99.7%	1.32E-02
100-41-4	Ethylbenzene+	106.16	6.789	3.986	5.98E-01	2.53E+00	99.7%	7.60E-03
106-93-4	Ethylene dibromide (1,2-Dibromoethane)*	187.88	0.030	0.031	4.68E-03	1.98E-02	98.0%	3.96E-04
75-69-4	Fluorotrichloromethane+	137.40	0.327	0.248	3.73E-02	1.58E-01	98.0%	3.16E-03
110-54-3	Hexane+	86.18	2.324	1.108	1.66E-01	7.04E-01	99.7%	2.11E-03
7647-01-0	Hydrochloric acid[5]	36.50	46.930	0.000	0.00E+00	0.00E+00	0.0%	6.07E+00
2148-87-8	Hydrogen Sulfide*	34.08	12.70	2.394	3.59E-01	1.52E+00	99.7%	4.56E-03
7439-97-6	Mercury (total)[6]	200.61	0.0003	0.0003	4.86E-05	2.06E-04	0.0%	2.06E-04
78-93-3	Methyl ethyl ketone+	72.11	10.557	4.210	6.32E-01	2.67E+00	99.7%	8.02E-03
108-10-1	Methyl isobutyl ketone+	100.16	0.750	0.415	6.23E-02	2.64E-01	99.7%	7.92E-04
127-18-4	Perchloroethylene (tetrachloroethylene)*	165.83	1.560	1.431	2.15E-01	9.09E-01	98.0%	1.82E-02
108-88-3	Toluene*	92.13	44.200	22.520	3.38E+00	1.43E+01	99.7%	4.29E-02
79-01-6	Trichloroethylene (trichloroethene)*	131.38	0.644	0.468	7.02E-02	2.97E-01	98.0%	5.94E-03
75-01-4	Vinyl chloride*	62.50	0.167	0.058	8.66E-03	3.67E-02	98.0%	7.33E-04
1330-20-7	Xylenes*	106.16	22.180	13.022	1.95E+00	8.27E+00	99.7%	2.48E-02
Totals: HAPs				6.95E+01	1.04E+01	4.41E+01		6.305
Criteria Air Pollutants								
Total Non-Methane Organics (NMOCs) as Hexane[7]		86.18	2,158	1.03E+03	1.54E+02	653.251	99.2%	5.226

TABLE 3-A
PROJECTED EMISSION SOURCE ESTIMATES FOR LANDFILL SURFACE (2014)
EL SOBRANTE LANDFILL AND RECYCLING CENTER, CORONA, CALIFORNIA

			Maximum Uncontrolled LFG Flow Rate-Surface Emissions	Emission Factor	Estimated Emissions from Flare		
			lbs/day	lbs/MMBtu	lbs/hr	lbs/day	tons/yr
Nitrogen Oxides (NO_X)[7]			--	0.010	1.544	37.1	6.764
Reactive Organic Gases (ROGs)[8]			329.6		0.465	11.2	2.038

Variables:

MODEL INPUT VARIABLES:	POTENTIAL TO EMIT		
Methane Concentration	50.0%		
Fuel Value	500	Btu/cf (Default Value)	
Total Landfill Gas Generation Rate	8,103	SCFM	
Total Uncontrolled Landfill Gas Collection Rate	1215	SCFM	
Total Landfill Gas Collection Rate (to flare)	5,147	SCFM	Assume a collection efficiency of 85%
Total Landfill Gas Collection Rate (to IC engines)	1,740	SCFM	
Total Landfill Gas Collection Rate	6,887	SCFM	

Notes:

[1] List of hazardous air pollutants was from Title III Clean Air Act Amendments, 1990, and include compounds found in landfill gas, as determined from a list in AP-42 Tables 2.4-1 ("Uncontrolled Landfill Gas Concentrations") and 2.4-2.

[2] Actual data from the September 2013 source test was used and marked by "*" if available. For compounds analyzed for but not detected during the testing, the Method Detection Limits were used. Concentrations of HAPs were also taken from "Waste Industry Air Coalition Comparison of recent Landfill Gas Analyses with Historic AP-42 Values." (+) if site specific data was unavailable, otherwise AP-42 Tables 2.4-1 and 2.4-2 was used (++).

[3] Based on a projected maximum flow rate into the flare of 5,147 scfm at 50% methane

[4] Values taken from AP-42 Table 2.4-3 ("Control Efficiencies for LFG Consituents".

[5] Concentration of HCl is based on AP-42 Section 2.4.4.2. (11/98)

[6] Concentration of Mercury based on the EPA AP-42 Section 2.4 Table 2.4-1 (11/98)

[7] Based on maximum values from most recent source testing results (September 2013).

[8] ROGs are assumed equal to NMOCs minus exempt compounds

TABLE 3-B
PROJECTED EMISSION SOURCE ESTIMATES FOR LANDFILL SURFACE (2014)
EL SOBRANTE LANDFILL AND RECYCLING CENTER, CORONA, CALIFORNIA

CAS	COMPOUNDS	Molecular Weight	Maximum Concentration of Compounds Found In LFG[2]	Hourly Uncontrolled LFG Flow Rate to IC Engines[3]	Daily Uncontrolled LFG Flow Rate to IC Engine	IC Engine Destruction Efficiency[4]	Hourly Controlled Emissions	Daily Controlled Emissions	Annual Emissions
		g/mol	ppmv	lbs/hr	lbs/day	%	lbs/hr	lbs/day	lbs/yr
	Toxic Air Contaminants (TACs)[1]								
71-55-6	1,1,1-Trichloroethane (methyl chloroform)*	133.42	0.625	2.26E-02	5.43E-01	98.0%	4.52E-04	1.09E-02	3.96E+00
79-34-5	1,1,2,2-Tetrachloroethane*	167.85	0.625	2.84E-02	6.83E-01	98.0%	5.69E-04	1.37E-02	4.98E+00
107-06-2	1,1-Dichloroethane (ethylidene dichloride)*	98.95	0.625	1.68E-02	4.02E-01	98.0%	3.35E-04	8.05E-03	2.94E+00
75-35-4	1,1-Dichloroethene (vinylidene chloride)*	96.94	0.625	1.64E-02	3.94E-01	98.0%	3.29E-04	7.89E-03	2.88E+00
107-06-2	1,2-Dichloroethane (ethylene dichloride)*	98.96	0.625	1.68E-02	4.02E-01	98.0%	3.35E-04	8.05E-03	2.94E+00
78-87-5	1,2-Dichloropropane (propylene dichloride)*	112.99	0.625	1.91E-02	4.60E-01	98.0%	3.83E-04	9.19E-03	3.35E+00
107-13-1	2-Propanol (isopropyl alcohol)+	60.11	7.908	1.29E-01	3.09E+00	98.0%	2.58E-03	6.19E-02	2.26E+01
107-13-1	Acrylonitrile+	53.06	0.036	5.18E-04	1.24E-02	98.0%	1.04E-05	2.49E-04	9.07E-02
71-43-2	Benzene*	78.11	2.460	5.21E-02	1.25E+00	98.0%	1.04E-03	2.50E-02	9.13E+00
75-25-2	Bromodichloromethane+	163.83	0.311	1.38E-02	3.32E-01	98.0%	2.76E-04	6.63E-03	2.42E+00
75-15-0	Carbon disulfide+	76.13	0.320	6.61E-03	1.59E-01	98.0%	1.32E-04	3.17E-03	1.16E+00
56-23-5	Carbon tetrachloride*	153.84	0.625	2.61E-02	6.26E-01	98.0%	5.21E-04	1.25E-02	4.57E+00
463-58-1	Carbonyl sulfide+	60.07	0.183	2.98E-03	7.15E-02	98.0%	5.96E-05	1.43E-03	5.22E-01
108-90-7	Chlorobenzene*	112.56	0.625	1.91E-02	4.58E-01	98.0%	3.81E-04	9.16E-03	3.34E+00
75-00-3	Chloroethane (ethyl chloride)*	64.52	0.625	1.09E-02	2.62E-01	98.0%	2.19E-04	5.25E-03	1.92E+00
67-66-3	Chloroform*	119.39	0.625	2.02E-02	4.86E-01	98.0%	4.05E-04	9.71E-03	3.54E+00
75-45-6	Chlorodifluoromethane+	86.47	0.355	8.32E-03	2.00E-01	98.0%	1.66E-04	4.00E-03	1.46E+00
74-87-3	Chloromethane (methyl chloride)*	50.49	0.625	8.56E-03	2.05E-01	98.0%	1.71E-04	4.11E-03	1.50E+00
106-46-7	Dichlorobenzene (1,4-Dichlorobenzene)*	147.00	0.625	2.49E-02	5.98E-01	98.0%	4.98E-04	1.20E-02	4.36E+00
75-43-4	Dichlorodifluoromethane*	120.91	0.625	2.05E-02	4.92E-01	98.0%	4.10E-04	9.83E-03	3.59E+00
75-71-8	Dichlorofluoromethane+	102.92	0.355	9.91E-03	2.38E-01	98.0%	1.98E-04	4.76E-03	1.74E+00
75-09-2	Dichloromethane (Methylene Chloride)*	84.94	0.625	1.44E-02	3.45E-01	98.0%	2.88E-04	6.91E-03	2.52E+00
64-17-5	Ethanol++	46.08	27.200	3.40E-01	8.16E+00	98.0%	6.80E-03	1.63E-01	5.95E+01
100-41-4	Ethylbenzene*	106.16	4.060	1.17E-01	2.80E+00	98.0%	2.34E-03	5.61E-02	2.05E+01
106-93-4	Ethylene dibromide (1,2-Dibromoethane)*	187.88	0.625	3.18E-02	7.64E-01	98.0%	6.37E-04	1.53E-02	5.58E+00
75-69-4	Fluorotrichloromethane*	137.40	0.625	2.33E-02	5.59E-01	98.0%	4.66E-04	1.12E-02	4.08E+00
110-54-3	Hexane+	86.18	2.324	5.43E-02	1.30E+00	98.0%	1.09E-03	2.61E-02	9.51E+00
7647-01-0	Hydrochloric acid[5]	36.50	46.930	0.00E+00	0.00E+00	0.0%	4.69E-01	1.12E+01	4.11E+03
2148-87-8	Hydrogen Sulfide+	34.08	23.58	2.18E-01	5.23E+00	98.0%	4.36E-03	1.05E-01	3.82E+01
7439-97-6	Mercury (total)[6]	200.61	0.0003	1.59E-05	3.81E-04	0.0%	1.59E-05	3.81E-04	1.39E-01
78-93-3	Methyl ethyl ketone+	72.11	10.557	2.06E-01	4.95E+00	98.0%	4.13E-03	9.91E-02	3.62E+01
108-10-1	Methyl isobutyl ketone+	100.16	0.750	2.04E-02	4.89E-01	98.0%	4.07E-04	9.78E-03	3.57E+00
127-18-4	Perchloroethylene (tetrachloroethylene)*	165.83	0.625	2.81E-02	6.74E-01	98.0%	5.62E-04	1.35E-02	4.92E+00
108-88-3	Toluene*	92.13	18.000	4.50E-01	1.08E+01	98.0%	8.99E-03	2.16E-01	7.88E+01
79-01-6	Trichloroethylene (trichloroethene)*	131.38	0.625	2.23E-02	5.34E-01	98.0%	4.45E-04	1.07E-02	3.90E+00
75-01-4	Vinyl chloride*	62.50	0.625	1.06E-02	2.54E-01	98.0%	2.12E-04	5.08E-03	1.86E+00
1330-20-7	Xylenes*	106.16	9.210	2.65E-01	6.36E+00	98.0%	5.30E-03	1.27E-01	4.64E+01
Totals: HAPs				2.27E+00	5.46E+01		0.514	12.342	4504.791
Criteria Air Pollutants									
Total Non-Methane Organics (NMOCs) as Hexane[4]		86.18	1,332	31.133	747.20	98.0%	0.62	14.94	5,455

TABLE 3-B
PROJECTED EMISSION SOURCE ESTIMATES FOR LANDFILL SURFACE (2014)
EL SOBRANTE LANDFILL AND RECYCLING CENTER, CORONA, CALIFORNIA

			Emission Factor	Emission from Single IC Engine		Emissions from All (3) IC Engines		
			gm/bhphr	lbs/hr		lbs/hr	lbs/day	lbs/yr
Nitrogen Oxides (NO_X)[7]			0.35	1.448		4.345	104.3	38,062
Reactive Organic Gases (ROGs)[7]			0.125	0.517		1.552	37.2	13,594

Variables:

MODEL INPUT VARIABLES:	POTENTIAL TO EMIT	
Methane Concentration	50.0%	(at 580 scfm per engine)
Genset horsepower	5631	hp (1,877 hp per engine)
Fuel Value	500	Btu/cf
Total Landfill Gas Collection Rate (IC Engine)[3]	1,740	SCFM (580 scfm per engine)

Notes:

[1] List of hazardous air pollutants was from 1150.1 Table 1

[2] Actual data from most recent Engine No. 3 3/28/2013 source test was used and marked by "*" if available. Assumed half of detection limit, when below the detection limit. For compounds analyzed for but not detected during the testing, the Method Detection Limits were used. Concentrations of HAPs were also taken from "Waste Industry Air Coalition Comparison of recent Landfill Gas Analyses with Historic AP-42 Values." (+) if site specific data was unavailable, otherwise AP-42 Tables 2.4-1 and 2.4-2 was used (++).

[3] Flow rate (at 50% methane) was calculated based on the permitted throughput of 17.4 MMBtu/hr for each engin

[4] 98% based on permitted limit.

[5] Concentration of HCl is based on AP-42 Section 2.4.4.2. (11/98

[6] Concentration of Mercury based on the EPA AP-42 Section 2.4 Table 2.4-1 (11/98)

[7] Values based on most recent Engine 3 source test conducted on 3/28/2013

TABLE 4
EMISSION COMPARISON WITHIN THE SOUTH COAST AIR BASIN (2001)
EL SOBRANTE LANDFILL AND RECYCLING CENTER, CORONA, CALIFORNIA

Baseline Off-Site Truck Travel Emissions for El Sobrante Landfill Including Off-Site Truck Travel Emissions from Landfills within the South Coast Air Basin

From	To	Road Miles (1 way)[1]		Waste[2]	Number of Truck Trips Per Day[4]		Total Daily	NOx Emission Factors[3]	ROG Emission Factors[3]	NOx Emissions	ROG Emissions
		Packer	Transfer	(tons/day)	Packer	Transfer	Truck Miles	g/mi		lbs/day	
In-County MSW											
Corona-Norco Area	El Sobrante	13	0	1,250	169.0	0.0	2,197	24.089	0.594	--	--
Riverside Area	Agua Mansa/El Sobrante	7.7	25.7	1,250	169.0	57.0	2,766			--	--
In-County Sub-Total		--	--	2,500	--	--	4,963			263.6	6.5
Out-of-County MSW											
Carson Transfer Station	El Sobrante	0	55.9	1000	0.0	45.0	2,516	24.089	0.594	--	--
Upland-Ontario Area	El Sobrante	21.8	0	250	34	0.0	736			--	--
Upland-Ontario Area	El Sobrante	21.8	0	250	34	0.0	736			--	--
Pomona-Chino Area	Milliken	13.5	0	925	125	0.0	1,688			--	--
Upland-Ontario Area	Milliken	9.4	0	925	125	0.0	1,175			--	--
Carson-Wilmington Area	BKK	33.9	0	925	125	0.0	4,238			--	--
Carson-Wilmington Area	Sunshine	33.9	0	925	125	0.0	4,238			--	--
Out-of-County Sub-Total		--	--	5,200	--	--	15,326			814.1	20.1
Total		--	--	7,700	906	102	20,289			**1077.7**	**26.6**

Notes:

1) Road miles to and from all areas and number of trips for trucks traveling to El Sobrante in 2001 are provided by the *Draft South Coast Air Quality*

2) 1,220,000 tpy of MSW was received by El Sobrante Landfill in 2001 (4,000 tpd). 6,000 tpd of MSW was transferred to other landfills within the air basin in 2001 prior to expansion,

3) Emissions Factors were updated from the *Draft South Coast Air Quality Management District Consultation, Work in Progress Air Quality Analysis Refinements, El Sobrante Landfill Expansion* , TRC Environmental Solutions, Inc., February 5, 1997, using EMFAC2001 Modeling for Heavy Duty Trucks at 75 degrees F, 60 mph, and 60% relative humidity in 2001.

4) In and out-of-County truck trips for each area were estimated by taking the estimated daily tonnage divided by 7.4 tons for packer trucks or 22 tons for transfer trucks.

PROJECTED OFF-SITE TRUCK TRAVEL EMISSIONS (2014)
EL SOBRANTE LANDFILL AND RECYCLING CENTER, CORONA, CALIFORNIA

From	To	Road Miles (1 way)[1]		Waste[2]	Number of Truck Trips Per Day[1,4]		Total Daily	NOx Emission Factors[3]	ROG Emission Factors[3]	NOx Emissions	ROG Emissions
		Packer	Transfer	(tons/day)	Packer	Transfer	Truck Miles	g/mi		lbs/day	
In-County MSW											
Total Project at 6552 tpd	El Sobrante	13	0	1,310	177	0.0	2,302	6.438	0.21	--	--
Riverside Area	Agua Mansa/El Sobrante	7.7	25.7	1,310	177	60	2,894			--	--
In-County Sub-Total				2,621	354	60	5,196			73.8	2.3
Out-of-County MSW											
Carson Transfer Station[4]	El Sobrante	0	55.9	2,621	0	119	6,659	6.438	0.21	--	--
Pomona-Chino Area[4]	West Valley/El Sobrante	13.5	21.8	655	89	30	1,845			--	--
Upland-Ontario Area[4]	West Valley/El Sobrante	9.4	21.8	655	89	30	1,482			--	--
Out-of-County Sub-Total		--	--	3,931	177	179	9,985			141.7	4.5
LNG Vehicle Emissions Reduction[5]	--	--	--	--	47		--	--	--	-6.5	--
Total		--	--	6,552	531	238	15,182	--	--	**209.1**	**6.9**

Notes:

1) Road miles are provided by the *Draft South Coast Air Quality Management District Consultation, Work in Progress Air Quality Analysis Refinements, El Sobrante Landfill Expansion* , TRC Environmental Solutions, Inc., February 5, 1997.

2) El Sobrante is projected to receive 6,552 tons per day in 2014 after the completion of expansion. The Draft SCAQMD Consultation document projects 40% of the MSW will be transferred from within the county. Projected out-of-county waste transferred in 2014 is estimated based on incoming tonnage of 6,552 to El Sobrante multiplied by the percentage of MSW estimated to be transferred to El Sobrante from in and out-of-county areas under the 10,000 tpd scenario as shown in the above Consultation document. Carson transfer station is assumed to transfer a maximum of 4,000 tpd, and Pomona-Chino and Upland-Ontario areas are projected to transfer a maximum of 1,000 tpd each when El Sobrante reaches its peak tpd.

3) Emissions Factors were estimated using the EMFAC2002 Modeling for Heavy Duty Trucks (HHD, DSL) at 75 degrees F, 60 mph, and 60% relative humidity in 2014.

4) In and out-of-County truck trips for each area were estimated by taking the estimated daily tonnage divided by 7.4 tons for packer trucks or 22 tons for transfer trucks.

5) Approximately 17,328 vehicle trips/yr from LNG vehicles are estimated for 2014, based on a tonnage ratio difference from 16,000 vehicle trips/yr from 2008. An emission comparison of Diesel and LNG engines was performed showing a 49% reduction in NOx emissions. NOx reductions from LNG vehicles are based on 47 vehicle trips per day multiplied by the average lb/day of NOx per vehicle multiplied by 49%. ROG reductions data were not available.

TABLE 5-A
ON-SITE MOBILE EQUIPMENT EMISSIONS AT 4,000 TONS PER DAY (2001)
EL SOBRANTE LANDFILL AND RECYCLING CENTER, CORONA, CALIFORNIA

Equipment Type	Available Running Time**	Total Usage Time	Round Trip Distances	Hp	Load Factor	Emissions Factor			Emissions	Emissions Factor	Emissions Factor	Emissions	
						NOx				ROGs			
		hrs/day	mi			g/hr	g/mi [2]	lb/hp-hr	lbs/day	g/hr	g/mi	lb/hp-hr	lbs/day
Water Wagon (Scraper Mounted) 613C	12	0.36	--	--	0.361	1308	--	--	0.37	40	--	--	0.01
Water Wagon (Scraper Mounted) 613B	12	0.54	--	--	0.361	1308	--	--	0.56	40	--	--	0.02
Compactor (peak use) 836 C[3]	3.6	1.86	--	--	0.413	2661	--	--	4.51	11	--	--	0.02
Compactor (continuous use) 836 C[3]	12	5.76	--	--	0.413	2661	--	--	13.96	11	--	--	0.06
Compactor (continuous use) 836 C[3]	12	5.76	--	--	0.413	2661	--	--	13.96	11	--	--	0.06
Rex Compactor (Surplus)*	12	0.25	--	--	0.413	2661	--	--	0.61	11	--	--	0.00
D-8N Dozer (peak use)[4]	12	6.24	--	--	0.538	2520	--	--	18.65	250	--	--	1.85
D-8N Dozer (peak use)[4]	3.6	6.42	--	--	0.538	2520	--	--	19.19	250	--	--	1.90
D-9R Dozer (non-peak use)[4]	16	2	--	--	0.538	2412	--	--	5.72	250	--	--	0.59
D-6R Dozer (peak use)[4]	3.6	1.8	--	--	0.538	2520	--	--	5.38	250	--	--	0.53
Backhoe 580K[1]	16	4	--	--	0.465	780	--	--	3.20	72	--	--	0.30
Roll Off Trucks (Medium/Heavy Duty Vehicles) (3)[1]	16	0.5	2.1	--	--	--	15.284	--	0.57	--	1.032	--	0.04
Light Truck (gasoline) (10)	16	1.67	2.1	--	--	--	0.905	--	0.11	--	0.295	--	0.04
Excavator 325L	16	2.47	--	--	0.58	6240	--	--	19.68	127	--	--	0.40
Wheel Loader 936	16	4	--	--	0.465	1650	--	--	6.77	105	--	--	0.43
Motor Grader 14G	16	1.67	--	--	0.322	2370	--	--	2.80	180	--	--	0.21
Columbia Tipper	16	0.5	2.1	--	--	--	15.284	--	0.57	--	1.032	--	0.04
Tool Carrier IT28B	16	4	--	--	0.465	590	--	--	2.42	72	--	--	0.30
Light Plant (9)	5.10	21.97	--	5	0.74	--	--	0.018	1.46		--	0.002	0.16
Scraper 627E	16	2.47	--	--	0.396	6240	--	--	13.44	127	--	--	0.27
Total									**133.9**				**7.23**

Notes:

* Surplus equipment assumed to run 0.25 hours per day.

Total usage time estimated by taking the *Draft South Coast Air Quality Management District Consultation, Work in Progress Air Quality Analysis Refinements, El Sobrante Landfill Expansion* , TRC Environmental Solutions, Inc., February 5, 1997 usage times and multiplying by the ratio of 2001 available running time to available running time at 10,000 tpd.

Consultation, Work in Progress Air Quality Analysis Refinements, El Sobrante Landfill Expansion, TRC Environmental Solutions, Inc., February 5, 1997 using EMFAC2002 Modeling for Heavy Duty Trucks at 75 degrees F, 60 mph in 2001 .

[1] trips per hour were used rather than hours per day

[2] EMFAC 2002 Modeling for Heavy Duty Trucks at 75 degrees F, 25 mph in 2001

[3] A load factor of 0.413 was used for the various compactors; the load factor was provided by Caterpillar for an 836C compactor.

[4] A load factor of 0.538 was used for the various dozers; the load factor was provided by Caterpillar for an D9N dozer.

TABLE 5-B, ON-SITE MOBILE EQUIPMENT EMISSIONS AT 6,552 TONS PER DAY (2014)
EL SOBRANTE LANDFILL AND RECYCLING CENTER, CORONA, CALIFORNIA

Equipment Type	Available Running Time**	Total Usage Time	Round Trip Distances	Hp	Load Factor	Emissions Factor			Emissions	Emissions Factor	Emissions Factor	Emissions	
						NOx				ROGs			
		hrs/day	mi			g/hr	g/mi[2]	lb/hp-hr	lbs/day	g/hr	g/mi	lb/hp-hr	lbs/day
Compactor (continuous use) 836 H [3]	24	9.60	--	--	0.413	2661	--	--	23.26	11	--	--	0.10
Compactor (continuous use) 836 H [3]	24	9.60	--	--	0.413	2661	--	--	23.26	11	--	--	0.10
Compactor (continuous use) 836 H [3]	24	9.60	--	--	0.413	2661	--	--	23.26	11	--	--	0.10
Compactor (continuous use) 836 G [3]	24	9.60	--	--	0.413	2661	--	--	23.26	11	--	--	0.10
D-7E Dozer (peak use) [4]	24	10.70	--	--	0.538	2412			30.62	250			3.17
D-9T Dozer (peak use) [4]	24	10.70	--	--	0.538	2412			30.62	250			3.17
D-8R Dozer (peak use) [4]	24	10.70	--	--	0.538	2412			30.62	250			3.17
D-8T Dozer (peak use) [4]	24	10.70	--	--	0.538	2412			30.62	250			3.17
Motor Grader 14G	24	2.50	--	--	0.322	2370	--	--	4.21	180	--	--	0.32
John Deere Loader 644H	24	6.00	--	--	0.465	1650	--	--	10.15	105	--	--	0.65
John Deere Loader 744H	24	6.00	--	--	0.465	1650	--	--	10.15	105	--	--	0.65
Excavator 325L	24	3.70	--	--	0.580	6240	--	--	29.53	127	--	--	0.60
Excavator 365BL	24	3.70	--	--	0.580	6240	--	--	29.53	127	--	--	0.60
Volvo Excavator EC460BLC	24	3.70	--	--	0.580	6240	--	--	29.53	127	--	--	0.60
Case 586G Forklift	24	2.50	--	--	0.300	1308	--	--	2.16	40	--	--	0.07
Volvo Articulating Dump Truck (3) [1,2]	24	0.75	2.1	--	--	--	4.179	--	0.35	--	0.379	--	0.03
Volvo Articulating Water Truck [1,2]	24	0.25	2.1	--	--	--	4.179	--	0.12	--	0.379	--	0.01
Columbia Tipper (3) [1,2]	24	2.25	2.1	--	--	--	4.179	--	1.04	--	0.379	--	0.09
Roll Off Trucks (Medium/Heavy Duty Vehicles) (6) [1,2]	24	1.50	2.1	--	--	--	4.179	--	0.70	--	0.379	--	0.06
Light Truck (gasoline) (12) [1,5]	24	3.00	2.1	--	--	--	0.306	--	0.102	--	0.096	--	0.03
Light Plant (18)	13	112.00	--	5	0.74	--	--	0.018	7.46	--	--	0.002	0.83
Total									**340.5**				**17.62**

Notes:

* Surplus equipment assumed to run 0.5 hours per day.

Total usage time estimated by taking the Draft South Coast Air Quality Management District Consultation, Work in Progress Air Quality Analysis Refinements, El Sobrante Landfill Expansion, TRC Environmental Solutions, Inc., February 5, 1997 usage times for 10,000 tpd scenario. The actual total usage times for 2014 should be lower.

** Future Maintenance/support activities are 24 hour/day and waste disposal is 24 hours per day as discussed in the Draft South Coast Air Quality Management District Consultation, Work in Progress Air Quality Analysis Refinements, El Sobrante Landfill Expansion, TRC Environmental Solutions, Inc., February 5, 1997 and Riverside County Waste Management Department Response comments dated October 24, 2011.

[1] Trips per hour were used rather than hours per day.

[2] EMFAC2002 Modeling for Heavy Duty Trucks (HHD, DSL) at 75 degrees F, 25 mph in 2014.

[3] A load factor of 0.413 was used for the various compactors; the load factor was provided by Caterpillar for an 836C compactor.

[4] A load factor of 0.538 was used for the various dozers; the load factor was provided by Caterpillar for a D9N dozer.

[5] EMFAC2002 Modeling for Light Duty Trucks (LDT2, CAT) at 75 degrees F, 25 mph in 2014.

TABLE 6
SOLID WASTE HAUL AND EMPLOYEE VEHICLE EMISSIONS AT THE LANDFILL WITH 4,000 TONS PER DAY (2001
EL SOBRANTE LANDFILL AND RECYCLING CENTER, CORONA, CALIFORNIA

Equipment Type	Available Running Time**	Amount Hauled[1]	Round Trip Distances	Number of Vehicles[2,3]	Emissions Factor[4]	Emissions	Emissions Factor	Emissions
					NOx		ROGs	
		tpd	mi		g/mi [2]	lbs/day	g/mi	lbs/day
Solid Waste Haul (Transfer Truck Engines)	12	3414	2.1	155	15.284	10.98	1.032	0.74
Solid Waste Packer Truck Engines	12	554	2.1	75	15.284	5.29	1.032	0.36
Light Duty Truck Engines	12	12	2.1	12	0.878	0.05	0.366	0.02
Automobile Engines	12	20	2.1	40	0.598	0.11	0.309	0.06
Employee Vehicles	16	–	1.0	57	0.598	0.08	0.309	0.04
Total						**16.5**		**1.22**

[1] Amount hauled was estimated by taking the *Draft South Coast Air Quality Management District Consultation, Work in Progress Air Quality Analysis Refinements, El Sobrante Landfill Expansion* , TRC Environmental Solutions, Inc., February 5, 1997 amount hauled values and multiplying by the ratio of 2001 daily tonnage (4,000 tpd) to maximum daily tonnage (10,000 tpd).

[1] Amount hauled was estimated by taking the *Draft South Coast Air Quality Management District Consultation, Work in Progress Air Quality Analysis Refinements, El Sobrante Landfill Expansion* , TRC Environmental Solutions, Inc., February 5, 1997 amount hauled values and multiplying by the ratio of 2001 daily tonnage (4,000 tpd) to maximum daily tonnage (10,000 tpd).

[2] Number of vehicles were estimated by using the *Draft South Coast Air Quality Management District Consultation, Work in Progress Air Quality Analysis Refinements, El Sobrante Landfill Expansion* , TRC Environmental Solutions, Inc., February 5, 1997 amount hauled and number of vehicle estimates in Table C to determine the number of vehicles required for the amount hauled in 2001.

[3] Employee vehicles numbers are based on Table C from the SCAQMD consultation document, which is based on a 10,000 tpd scenario. Employee vehicle numbers are assumed to remain the same before and after expansion.

[4] EMFAC2002 modeling for heavy duty trucks and light weight gasoline automobiles and trucks at 75 degrees F, 25 mph in 2001.

** Waste disposal is 12 hours per day and maintenance/support activities are 16 hours per day as shown in the Draft South Coast Air Quality Management District Consultation, Work in Progress Air Quality Analysis Refinements, El Sobrante Landfill Expansion, TRC Environmental Solutions, Inc., February 5, 1997.

SOLID WASTE HAUL AND EMPLOYEE VEHICLE EMISSIONS AT THE LANDFILL WITH 6,552 TONS PER DAY (2014)
EL SOBRANTE LANDFILL AND RECYCLING CENTER, CORONA, CALIFORNIA

Equipment Type	Available Running Time*	Amount Hauled [1]	Round Trip Distances	Number of Vehicles[2,3]	Emissions Factor[4]	Emissions	Emissions Factor	Emissions
					NOx		ROGs	
		tpd	mi		g/mi	lbs/day	g/mi	lbs/day
Solid Waste Haul (Transfer Truck Engines)	24	5,593	2.1	254	4.179	4.92	0.379	0.45
Solid Waste Packer Truck Engines	24	907	2.1	123	4.179	2.37	0.379	0.22
Light Duty Truck Engines	24	20	2.1	20	0.244	0.02	0.096	0.01
Automobile Engines	24	33	2.1	66	0.147	0.04	0.058	0.02
Employee Vehicles	24	–	1.0	14	0.147	0.00	0.058	0.002
Total						**7.4**		**0.69**

Notes:

[1] Amount hauled was estimated by taking the Draft South Coast Air Quality Management District Consuyltation, Work in Progress Air Quality Analysis Refinements, El Sobrante Landfill Expansion, TRC Environmental Solutions, Inc., February 5, 1997 amount hauled values and multiplying by the ratio of 2014 daily tonnage (6,552 tpd) to maximum daily tonnage

[2] Number of vehicles were provided by using the *Draft South Coast Air Quality Management District Consultation, Work in Progress Air Quality Analysis Refinements, El Sobrante Landfill Expansion* , TRC Environmental Solutions, Inc., February 5, 1997 amount hauled and number of vehicle estimates in Table C to determine the number of vehicles required for the amount hauled in future.

[3] Employee vehicles numbers are based on site-specific data. The number of employees is less than Table C from the SCAQMD Consultation document.

[4] EMFAC2002 modeling for heavy duty trucks (HHD, DSL) and light weight gasoline automobiles (LDA, CAT) and trucks (LDT1, CAT) at 75 degrees F, 25 mph in 2014.

* Waste disposal is 24 hours per day and maintenance/support activities are 24 hours per day as shown in the Draft South Coast Air Quality Management District Consultation, Work in Progress Air Quality Analysis Refinements, El Sobrante Landfill Expansion, TRC Environmental Solutions, Inc., February 5, 1997, and Riverside County Waste Management Department Response comments dated October 24, 2011.