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.

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.

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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

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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.

TABLE 7

ON-SITE EQUIPMENT EMISSIONS RELATED TO STRUCTURAL FILL (2014)

Source	Available Running Time* (hrs/day)	Total Usage Time (hrs/day)	(days/year)	Speed (mph)	NOx		ROG	
					Emission Factor (g/mi)	Emissions (lbs/yr)	Emission Factor (g/mi)	Emissions (lbs/yr)
D9L Dozer[1, 3]	9	8	130	2	7.128	32.691859	0.875	4.0
834B Compaction Dozer[1, 3]	9	8	130	3	7.128	49.037789	0.875	6.0
8,000 Gallon Water Pull[1, 3] (631D)	9	8	130	4	7.128	65.383718	0.875	8.0
657B Scrapers (6)[2, 3]	9	48	130	10	5.91	3254.326	0.687	378.1
Total						**3,401.4**		**396.2**

Notes:

1) Estimated fulltime structural fill will occur 8 am to 5 pm, Monday-Friday for 6 out of 12 months of the year (Waste Management Estimate)

2) Emissions Factors were estimated using the EMFAC2002 Modeling for Heavy Duty Trucks (HHD, DSL) at 75 degrees F, 2 mph, 3 mph, 4 mph, and 10 mph and 60% relative humidity in 2014.

TABLE 8
PROJECT EMISSION INVENTORY FOR BASELINE AND 6,552 TPD
EL SOBRANTE LANDFILL AND RECYCLING CENTER, CORONA, CALIFORNIA

Source	**Maximum Emissions Rate (lbs/day)**	
	NOX	ROG
Stationary (Onsite) at 6,552 tpd - Flare	37.1	11.2
Stationary (Onsite) at 6,552 tpd - IC Engines	104.3	37.2
Surface Emissions (Onsite) at 6,552 tpd	--	329.6
Mobile (Onsite) at 6,552 tpd	340.5	17.6
On-site Solid Waste Hauling and Employee Vehicles at Landfill at 6,552 tpd	7.4	0.7
Waste Transport (Off-site) at 6,552 tpd	209.1	6.9
Structural Fill	9.3	1.1
Total Project at 6,552 tpd (2014)	707.6	404.3
Stationary (Onsite) at 4,000 tpd - Flare	25.9	7.9
Surface Emissions (Onsite) at 4,000 tpd	--	69.5
Mobile (Onsite) at 4,000 tpd	133.9	7.2
On-site Solid Waste Hauling and Employee Vehicles at Landfill at 4,000 tpd	16.5	1.2
Waste Transport (Off-site) at 4,000 tpd	1077.7	26.6
Baseline Project at 4,000 tpd	1254.0	112.4

TABLE 9
EMISSION OFFSETS REQUIRED FOR FUTURE (2014)
EL SOBRANTE LANDFILL EXPANSION, CORONA, CALIFORNIA

Source	Maximum Emissions Rate (lbs/day)	
	NOx	ROG
Stationary (Onsite) at 6,552 tpd - Flare*	--	--
Stationary (Onsite) at 6,552 tpd - IC Engines*	--	--
Surface Emissions (Onsite) at 6,552 tpd**	--	--
Mobile (Onsite) at 6,552 tpd	340.5	17.6
On-site Solid Waste Hauling and Employee Vehicles at Landfill at 6,552 tpd	7.4	0.7
Waste Transport (Off-site) at 6,552 tpd	209.1	6.9
Structural Fill	9.3	1.1
Total Project at 6,552 tpd (2014)	566.3	26.3
Stationary (Onsite) at 4,000 tpd - Flare*	--	--
Surface Emissions (Onsite) at 4,000 tpd**	--	--
Mobile (Onsite) at 4,000 tpd	133.9	7.2
On-site Solid Waste Hauling and Employee Vehicles at Landfill at 4,000 tpd	16.5	1.2
Waste Transport (Off-site) at 4,000 tpd	1077.7	26.6
Total Project at 4,000 tpd (2001)	1228.1	35.0
Expansion (6,552 tpd minus 4,000 tpd)	**-661.9**	**-8.8**
SCAQMD Emission Rate Significance Threshold	**55.0**	**55.0**
Required Emission Reduction	0.0	0.0

* Already offset by SCAQMD through essential public service exemption.
** Surface emissions are exempt from offset calculation based on compliance with Rule 1150.1.

ATTACHMENT 1

STATIONARY SOURCE CALCULATIONS

Stationary Source Calculations

Stationary sources from the landfill include NO_x and ROG emitted through the combustion of LFG in the on-site flare, IC engines, and surface emissions of ROG from uncollected LFG. Baseline emissions from these sources were estimated by using actual flare flow rate data from 2001 and other available information. Actual source test data from 2001 were used to determine baseline ROG and NO_x emissions from 2001 where available. Projected 2014 emissions from the flare and IC engines were estimated in the same manner; however, the 2014 gas flow rate was projected using an SCS calibrated version of the U.S. Environmental Protection Agency's (EPA's) LFG generation (LANDGEM) model.

The model inputs included refuse data provided by USA Waste as shown in Table 1. The selected "L_0" and "k" values for the El Sobrante site were calibrated based on precipitation data. The L_o (2,925 ft^3/ton) and k (0.027) values were based upon 12.5 inches of annual rainfall.

SCS assumed a collection efficiency for the baseline and 2014 scenarios of 85% per the EPA's *Compilation of Air Pollutant Emission Factors*, Section 2.4 (AP-42) document. As mentioned in the above reference, EPA notes that collection efficiencies for LFG systems can range between 60-85%, with a default of 75%. An 80-85% collection efficiency was assumed in the certified Final Environmental Impact Report (FEIR) El Sobrante Landfill Expansion (State Clearinghouse No. 90020076), dated April 1996.

Although USA Waste is required to complete these emission calculations, stationary source emissions from LFG-derived sources were not included in the offset calculations since the landfill is considered an essential public service as defined by SCAQMD Rule 1302. The LFG control systems have already been offset by ERCs banked in the Priority Reserve, as required by Rule 1302. 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.

Table 2 (baseline 2001) and 3-A (2014) provide NO_x and ROG emission estimates for flare and surface emissions. Baseline flare maximum NO_x and ROG emissions are 25.9 lbs/day and 7.9 lbs/day, respectively. Baseline maximum surface emission estimates for ROG is 69.5 lbs/day. The 2014 NO_x and ROG emission estimates for the flare are 37.1 and 11.2 lbs/day, respectively. Surface emission estimates for 2014 are 329.6 lbs/day of ROG. Table 3-B (2014) provides NO_x and ROG emission estimates for the IC engines. The IC engines did not exist in 2001. The 2014 NO_x and ROG emission estimates for the IC engines are 104.3 and 37.2 lbs/day, respectively.

The total increase from the baseline and 2014 LFG-derived emissions are 115.44 and 300.65 lbs/day of NO_x and ROG, respectively. However, please note that the 2014 emissions estimate was calculated based on the projected flow rate generated via LANDGEM model. It is considered an over-estimate. As noted above, these emissions are not required to be offset since they essentially have been already through the

District essential public services/Priority Reserve account and/or are not required to be offset because the landfill is in compliance with SCAQMD Rule 1150.1.

ATTACHMENT 2

EMFAC2002 MODEL RESULTS

Title : Statewide totals Avg 2014 Annual Default Title
Version : Emfac2002 V2.2 Sept 23 2002
Run Date : 09/24/13 17:21:51
Scen Year: 2014 -- Model Years: 1969 to 2014
Season : Annual
Area : South Coast AB
****

Year: 2014 -- Model Years 1969 to 2014 Inclusive -- Annual
Emfac2002 Emission Factors: V2.2 Sept 23 2002

South Coast A Basin Average Basin Average

Table 1: Running Exhaust Emissions (grams/mile)

Pollutant Name: Reactive Org Gases Temperature: 75F Relative Humidity: 60%

Speed	LDA	LDA	LDA	LDA	LDT1	LDT1	LDT1	LDT1	LDT2	LDT2	LDT2	LDT2							
MPH	NCAT	CAT	DSL	ALL	NCAT	CAT	DSL	ALL	NCAT	CAT	DSL	ALL							
2																			
3																			
4																			
5																			
10																			
25	5.796	0.058	0.286	0.067	5.739	0.096	0.164	0.125	5.782	0.086	0.109	0.102							
60	4.966	0.035	0.154	0.043	4.917	0.06	0.089	0.084	4.954	0.053	0.059	0.067							

MDV	MDV	MDV	MDV	LHD1	LHD1	LHD1	LHD1	LHD2	LHD2	LHD2	LHD2	MHD							
NCAT	CAT	DSL	ALL	NCAT	CAT	DSL	ALL	NCAT	CAT	DSL	ALL	NCAT							
		0.242																	
		0.242																	
		0.242																	
		0.242																	
		0.19																	
7.1	0.143	0.105	0.169	3.903	0.055	0.268	0.098	3.903	0.083	0.294	0.173	5.903							
6.086	0.087	0.057	0.11	1.492	0.021	0.145	0.045	1.492	0.031	0.159	0.085	2.282							

MHD	MHD	MHD	HHD	HHD	HHD	HHD	LHV	LHV	LHV	LHV	UBUS	UBUS							
CAT	DSL	ALL	NCAT	CAT	DSL	ALL	NCAT	CAT	DSL	ALL	NCAT	CAT							
	0.62				0.875														
	0.62				0.875														
	0.62				0.875														
	0.62				0.875														
	0.487				0.687														
0.35	0.269	0.292	16.015	3.262	0.379	0.444	0	0	0	0	7.472	2.14							
0.126	0.145	0.145	6.287	1.25	0.205	0.228	0	0	0	0	2.903	0.835							

UBUS	UBUS	MCY	MCY	MCY	MCY	SBUS	SBUS	SBUS	SBUS	MH	MH	MH	MH	ALL	ALL	ALL	ALL		
DSL	ALL	NCAT	CAT	DSL	ALL	NCAT	CAT	DSL	ALL	NCAT	CAT	DSL	ALL	NCAT	CAT	DSL	ALL		
0.843	1.557	2.593	1.665	0	2.095	5.903	1.252	0.465	0.597	5.903	0.324	0.133	0.379	4.69	0.085	0.353	0.118		
0.495	0.696	4.671	2.643	0	3.583	2.282	0.471	0.251	0.293	2.282	0.12	0.072	0.143	4.807	0.053	0.192	0.079		

Pollutant Name: Oxides of Nitrogen Temperature: 75F Relative Humidity: 60%

Speed	LDA	LDA	LDA	LDA	LDT1	LDT1	LDT1	LDT1	LDT2	LDT2	LDT2	LDT2	MDV	MDV	MDV	MDV	LHD1		
MPH	NCAT	CAT	DSL	ALL	NCAT	CAT	DSL	ALL	NCAT	CAT	DSL	ALL	NCAT	CAT	DSL	ALL	NCAT		
2															1.856				
3															1.856				
4															1.856				
5															1.856				
10															1.54				
25	3.3	0.147	1.072	0.153	3.171	0.244	1.041	0.263	3.193	0.306	1.087	0.319	4.922	0.458	1.088	0.486	1.581		
60	4.39	0.138	1.651	0.146	4.218	0.246	1.604	0.273	4.247	0.291	1.675	0.311	6.547	0.449	1.677	0.494	2.047		

LHD1	LHD1	LHD1	LHD2	LHD2	LHD2	LHD2	MHD	MHD	MHD	MHD	HHD	HHD	HHD	HHD	LHV	LHV	LHV	LHV	
CAT	DSL	ALL	NCAT	CAT	DSL	ALL	NCAT	CAT	DSL	ALL	NCAT	CAT	DSL	ALL	NCAT	CAT	DSL	ALL	
									7.245				7.128						
									7.245				7.128						
									7.245				7.128						
									7.245				7.128						
									6.011				5.913						
0.234	2.588	0.67	1.581	0.35	2.694	1.341	2.371	1.191	4.247	3.691	13.735	7.234	4.179	4.246	0	0	0	0	
0.304	3.988	0.985	2.047	0.453	4.151	2.017	3.07	1.542	6.544	5.634	17.787	9.368	6.438	6.503	0	0	0	0	

UBUS	UBUS	UBUS	UBUS	MCY	MCY	MCY	MCY	SBUS	SBUS	SBUS	SBUS	MH	MH	MH	MH	ALL	ALL	ALL	ALL
NCAT	CAT	DSL	ALL	NCAT	CAT	DSL	ALL	NCAT	CAT	DSL	ALL	NCAT	CAT	DSL	ALL	NCAT	CAT	DSL	ALL
3.1	3.066	14.804	9.317	1.001	0.822	0	0.905	2.371	2.04	8.793	8.027	2.371	0.736	4.421	1.032	2.478	0.228	4.366	0.477
4.014	3.971	26.282	15.852	1.303	0.949	0	1.113	3.07	2.642	13.548	12.309	3.07	0.954	6.812	1.418	3.281	0.226	6.85	0.623

ATTACHMENT 3

LIQUIFIED NATURAL GAS TO DIESEL COMPARISON TABLE

Reduced Air Pollution from LNG Refuse Trucks

Emission Comparison – Diesel and LNG Engines

Emissions in Grams Per Brake Horsepower (g/BHP-hr)

Engine Type	Oxides of Nitrogen	Particulate Matter	Carbon Dioxide
Conventional Diesel (1998 Model Year)	3.72	0.157	555.0
New Mack LNG	1.90	0.023	495.8

Annual Emissions Reductions in Pounds

Engine Type	Oxides of Nitrogen	Particulate Matter	Carbon Dioxide
Conventional Diesel (1998 Model Year)	1,261.2	53.2	188,162
New Mack LNG	644.2	8.0	168,091
Percent Reduction	49%	85%	11%

Total Annual Emission Reductions For 120-Truck Project

Oxides of Nitrogen	Particulate Matter	Carbon Dioxide
74,040 lbs (37.02 tons)	5,400 lbs (2.7 tons)	2,408,520 lbs (1,204.6 tons)

The NOx reductions that result from purchasing 120 Mack LNG trucks instead of conventional diesels is equivalent to taking 9,255 new passenger cars off the road.

File name: PressAirEmissionRed.doc

AQ-14

Off-Road Vehicles Idling Policy

Waste Management CA Specific
OFF ROAD VEHICLES IDLING POLICY- 2009

This policy will be posted in an area visible to employees and made available by request. This policy will be reviewed with employees along with the Tailgate Training at least annually.

California Air Resources Board (ARB) regulates smoke emissions from on road and off road diesel vehicles. Particulate matter or diesel soot from excessive smoke emissions is harmful to human health and the environment.

Idling creates more smoke emissions and wastes fuel. No vehicle or engine subject to the in-use off-road diesel regulation may idle for more than 5 consecutive minutes. The idling restrictions took effect on June 15, 2008, the day that the regulation became effective under California law.

The idling restrictions apply to all off-road diesel vehicles which are covered by the regulation, except where they are granted full exemption from the regulation, or have a waiver that specifically exempts the vehicle type or engine from the idling restrictions.

Fleets owners who believe they have a unique situation which qualifies their vehicles for a waiver from the idling restrictions may write a letter to ARB's Executive Officer detailing their circumstances and explaining why they should receive a waiver. Employees should inform their Fleet Manager if they believe a vehicle may qualify for a waiver for idling restrictions.

Idling limits do NOT apply for the following:

- Idling while queuing. Queuing is the time a unit spends waiting to perform work when shutting off would impede queue progress; Queuing does not include the start of a workday
- Idling to verify vehicle is in safe operating condition
- Idling for testing, repair or diagnostic services
- Idling that is necessary to accomplish the work for which a vehicle was designed
- Idling to bring the unit to operating temperature
- Idling to ensure safe operation

ARB will consider vehicle idling due to delays of materials used by the vehicle (e.g., shot, concrete, rock, water), including delays waiting for other vehicles used in tandem with the idling vehicle, to be violations, except for when the vehicle is queuing to accept materials. It will be at ARB's enforcement staff's discretion to determine if idling to provide air conditioning or heating to operators will be considered a violation, based on whether or not it can be shown that it was a medical necessity.

Refer to Waste Management's Operator Tailgate Training for Off Road Vehicle Emissions OFF ROAD for more information on idling restrictions. The ARB enforcement advisory for idling is also available online from ARB's website at http://www.arb.ca.gov/msprog/ordiesel/guidance/idling.pdf .The enforcement advisory describes the method by which the idling policy will be enforced by ARB staff, and also states "As a matter of policy, each first time violation of the idling requirements will be assessed a minimum civil penalty of $300. Subsequent penalties can be up to $1,000 to $10,000." Employees may be liable for fees associated with idling violations if it is found that idling was unnecessary.

For more information on this policy and the in use Off Road Rule, contact the Fleet Manager. Employees may also visit ARB's website at http://www.arb.ca.gov/msprog/ordiesel/ordiesel.htm, which contains links to the regulation language, fact sheets, and reporting forms. The idling restrictions are listed in the final regulation order on page 15, section 2449(d)(3).

To report complains or concerns:
Concerned operators, fleet owners, or citizens may report off-road diesel vehicles which are violating the idling restrictions to ARB by calling 1-800-END-SMOG (1-800-363-7664), or by filling out a form at http://www.arb.ca.gov/enf/complaints/icv.htm.

File/CARB Off Road Policy

C-4

Cultural Report (RECON, 2015)

1927 Fifth Avenue
San Diego, CA 92101
P 619.308.9333
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2033 East Grant Road
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5951 Encina Road, Suite 104
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RECON

An Employee-Owned Company

February 6, 2015

Mr. David Harich
El Sobrante Landfill
10910 Dawson Canyon Road
Corona, CA 92883

Reference: Results of a Cultural Resources Site Evaluation Survey at the El Sobrante Landfill Expansion (RECON Number 3291-4)

Dear Mr. Harich:

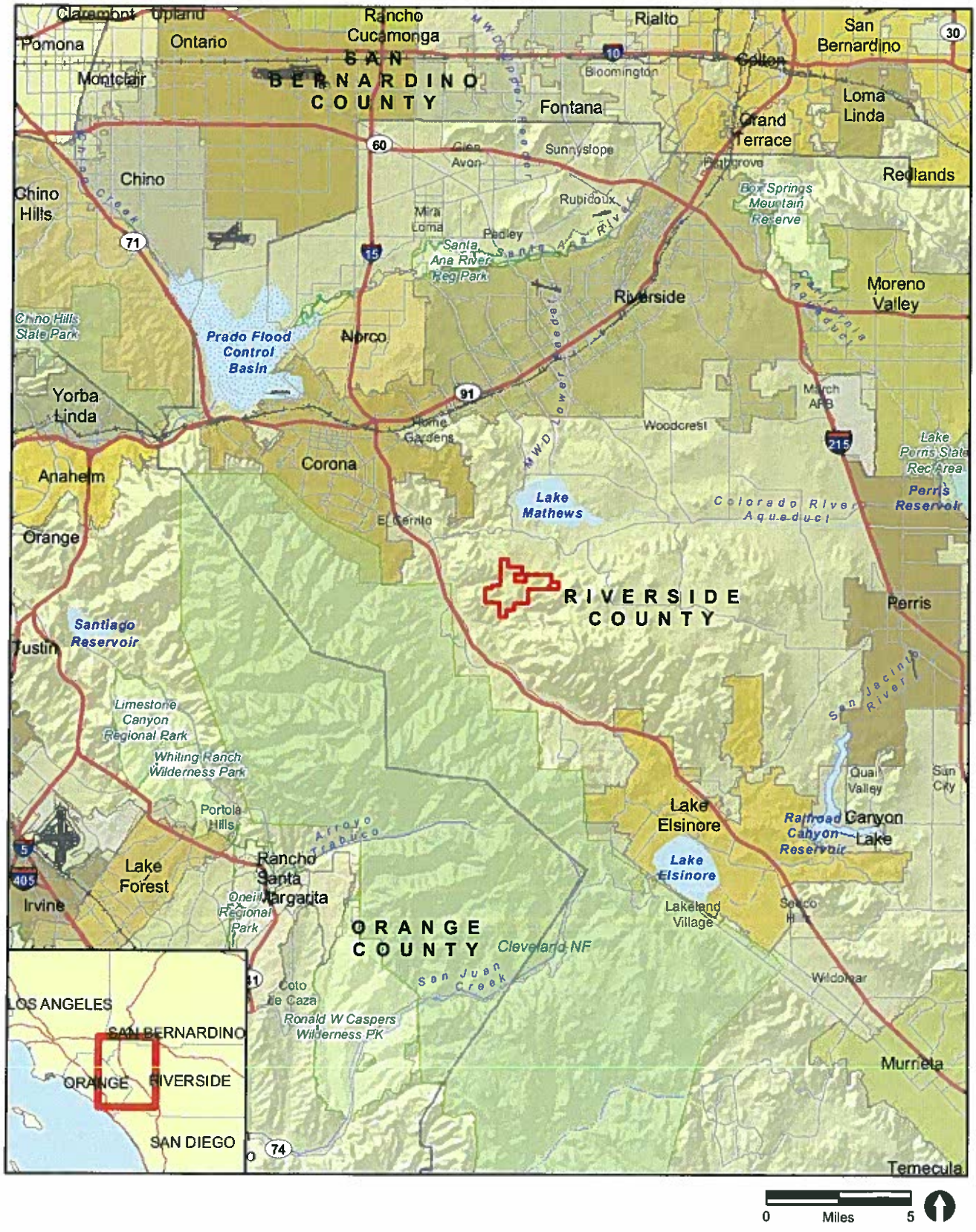
The following letter report is submitted in response to your request for a cultural resources evaluation survey of the seven recorded archaeological sites on the currently undeveloped portions of the El Sobrante Landfill property in western Riverside County. The evaluation survey was performed to meet mitigation requirements set forth in the 1994 El Sobrante Landfill Expansion Environmental Impact Report (Riverside County Waste Resource Management District 1994). RECON completed a literature review of recorded site conditions and a field reconnaissance to assess the current site conditions of the seven prehistoric sites. In addition, an eighth site immediately adjacent to the landfill boundary was visited.

Background

The El Sobrante Landfill is a Class III, non-hazardous, municipal solid waste disposal facility in western Riverside County, owned by the County of Riverside (Figures 1 and 2). In 1991, a plan was proposed to expand the existing landfill area by approximately 1,144 acres. This expansion is designed to accept solid waste from adjacent southern California counties and Riverside County.

Physical Setting

The El Sobrante Landfill Expansion Area is in western Riverside County, east of Interstate 15, south of Lake Mathews, and west of the Gavilan Plateau. It is in portions of Sections 24, 25 and 26 of Township 4 south, Range 6 west, and a portion of Section 19, Township 4 south, Range 5 west on the U.S. Geological Survey (USGS) map, Lake Mathews quadrangle (see Figure 2). The project area is east of Interstate 15, off Temescal Canyon Road. It is at the east end of Olsen Canyon, and Temescal Wash is approximately 1.7 miles to the west. Lake Mathews is approximately 1.9 miles to the northeast.



El Sobrante Boundary

RECON

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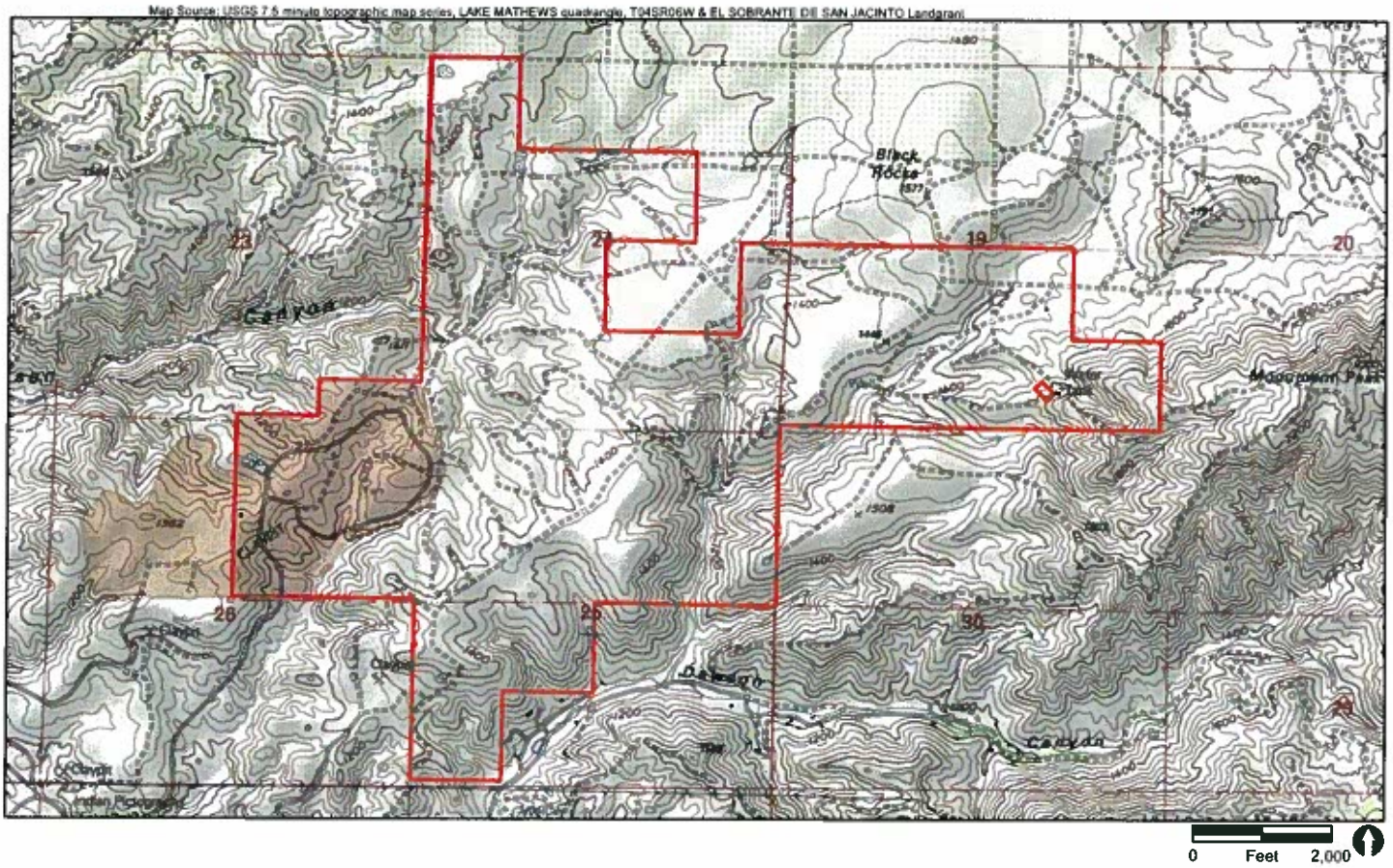
FIGURE 1

Regional Location



El Sobrante Boundary

RECON

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FIGURE 2

Project Location on USGS Map

The study area is in the rolling, steep hills northeast of Temescal Wash. The following topography summary is based on the 1997 USGS Lake Mathews 7.5-Minute Quadrangle. Elevation ranges between approximately 1100 and 1800 feet above mean sea level. The area is characterized by a series of steeply to moderately shouldered ridges and knolls with similar elevations, drainages with narrow bottoms, and slope gradients that range between 1 degree and 27 degrees. The study area exhibits low levels of localized erosion resulting from landscape alteration, contouring, road grading, and reduced vegetation cover.

Riversidean sage scrub dominates the project area. This plant community occurs in xeric areas, such as steep slopes, severely drained soils, and clays that release moisture slowly. California sagebrush, California buckwheat, and brittlebush are the dominant shrubs (Holland 1986). During springtime, annual rains promote the growth of an understory of numerous native annual and perennial wildflowers and introduced grasses. Some Riversidean sage scrub areas, especially on south-facing slopes, have a greatly reduced shrub cover and could be considered sage scrub grassland community. These dry, south-facing slopes contain brittlebush and Box Springs goldenbush. Small to large patches of prickly pear cactus occur on gentle slopes. Other common shrubs include sawtooth goldenbush, coastal deerweed, white sage, and black sage. There are scattered juniper trees in the drainages and on the slopes. Drainage bottoms support some riparian areas, dominated by willow species.

Cultural Setting

The following culture chronology for Riverside County is based on a synthesis of the existing literature. This chronology is intended as a general model, which is dynamic and subject to modification as new information is uncovered. The prehistory of western Riverside County has been included as part of the coastal San Diego subregion (Moratto 1984). Consequently, much is made of work completed in San Diego County, to the south.

1. Early Holocene (10,000-7,000 B.P.)

The early occupants of the Riverside area are archaeologically represented by a culture pattern known as the Western Pluvial Lakes Tradition (Bedwell 1970). The Western Pluvial Lakes Tradition includes the Playa, San Dieguito, Lake Mojave, and Death Valley I complexes. It is defined by:

- Site locations being on or near former pluvial lakeshores or along old streams;
- A focus on hunting mammals and collecting and gathering plant materials;
- A toolkit including chipped-stone crescents, large flake and core scrapers, choppers, scraper-planes, hammerstones, several types cores, drills and gravers, and a variety of flakes; and a developed flaked-stone technology with percussion-flaked foliate knives and points, Silver Lake and Lake Mojave points; and
- A lack of ground stone artifacts.

2. Middle Holocene (7,000-1,500 B.P.)

The Millingstone Horizon occurs during this time period in western Riverside County. The Millingstone Horizon includes the La Jolla, Pauma, and Sayles complexes (Moratto 1984). The La Jolla Complex was defined from coastal San Diego sites (Rogers 1938, 1945). An apparent inland manifestation of the La Jolla Complex was termed the "Pauma Complex" by D. L. True (1958), who proposed the name to describe assemblages recovered from more than 20 inland sites in northern San Diego County. The La Jolla and Pauma complexes have very similar assemblages and are thought to be different environmental adaptations of the same culture (True 1958).

The Millingstone Horizon assemblages suggest a generalized subsistence focus with an emphasis on hard seeds. This emphasis is indicated by the increased frequency of slab and basin metates and the adoption of a mixed cobble/core-based tool assemblage composed primarily of crudely made choppers, scrapers, and cobble hammerstones. The assemblage is typically dominated by crude, cobble-based choppers, scrapers, and flake knives. Scraper-planes are also abundant, which Kowta (1969) suggests were used to process agave and yucca. Projectile points are relatively rare but Elko type points are occasionally seen late in the period. Portable basin and slab metates are relatively plentiful, suggesting an economic focus on gathering plant resources. Mortars and pestles appear in the Late Archaic. The presence of shell middens on coastal sites distinguishes the La Jolla Complex from the other Millingstone Horizon complexes.

3. Late Holocene (1,500 B.P. [450A.D.]-1769 A.D.)

Shoshonean-speaking people from the Colorado River region moved westward into Riverside County (Moratto 1984) during the Late Holocene. Cultures representative of this time are the San Luis Rey Complex in northern San Diego County and western Riverside County, and the Irvine Complex in Orange County (Meighan 1954; Moratto 1984; True et al. 1974). First described by Meighan (1954) and based on excavations at Pala, the San Luis Rey Complex is divided into an early phase, San Luis Rey I, and a later phase, San Luis II. San Luis Rey I sites are associated with bedrock outcrops and often have recognizable midden soils. Features may include cremations and bedrock mortars. The artifact assemblage includes metates, Cottonwood Triangular type projectile points, drills, bifacially flaked knives, bone awls, occasional steatite arrow shaft straighteners, and bone and shell ornaments (True and Waugh 1981). San Luis Rey II sites consist of the same assemblage with the addition of Tizon Brown Ware ceramics, red and black pictographs, cremation remains in urns, and historic materials such as glass beads and metal objects. The projectile points commonly found in San Luis Rey assemblages, Cottonwood Triangular and less frequently Desert Side-notched forms, are both smaller than earlier types, suggesting the introduction of bow-and-arrow technology into the region.

Previous Archaeological Work

Three previous surveys have included either part or all of the El Sobrante Landfill Expansion property. In 1977, Jean and W. Lewis Tadlock conducted a survey for the archaeological element of an environmental impact report for the Tallichet-Hurford Ranch project (Tadlock 1977). Christopher E. Dover produced two cultural resource assessments of the El Sobrante Landfill Expansion (Drover 1990, 1991). Eleven prehistoric archaeological sites were recorded as a result of the surveys conducted on the landfill property.

In 1993, Environmental Solutions conducted a reconnaissance survey of the landfill property to relocate the recorded prehistoric sites (Bergen 1993). Recommendations for all eleven sites in the El Sobrante property were presented in the reconnaissance report and were adopted as mitigation in the final environmental impact report for the landfill expansion (Riverside County Waste Resources Management District 1994).

Seven prehistoric archaeological sites remain in the undeveloped areas of the El Sobrante Landfill property. These are CA-RIV-1143, CA-RIV-1144, CA-RIV-1146, CA-RIV-1148, CA-RIV-1651, CA-RIV-4307, and CA-RIV-4981. An additional archaeological site CA-RIV-1147, is mapped immediately north of the landfill boundary. See Figure 3 for Site locations.

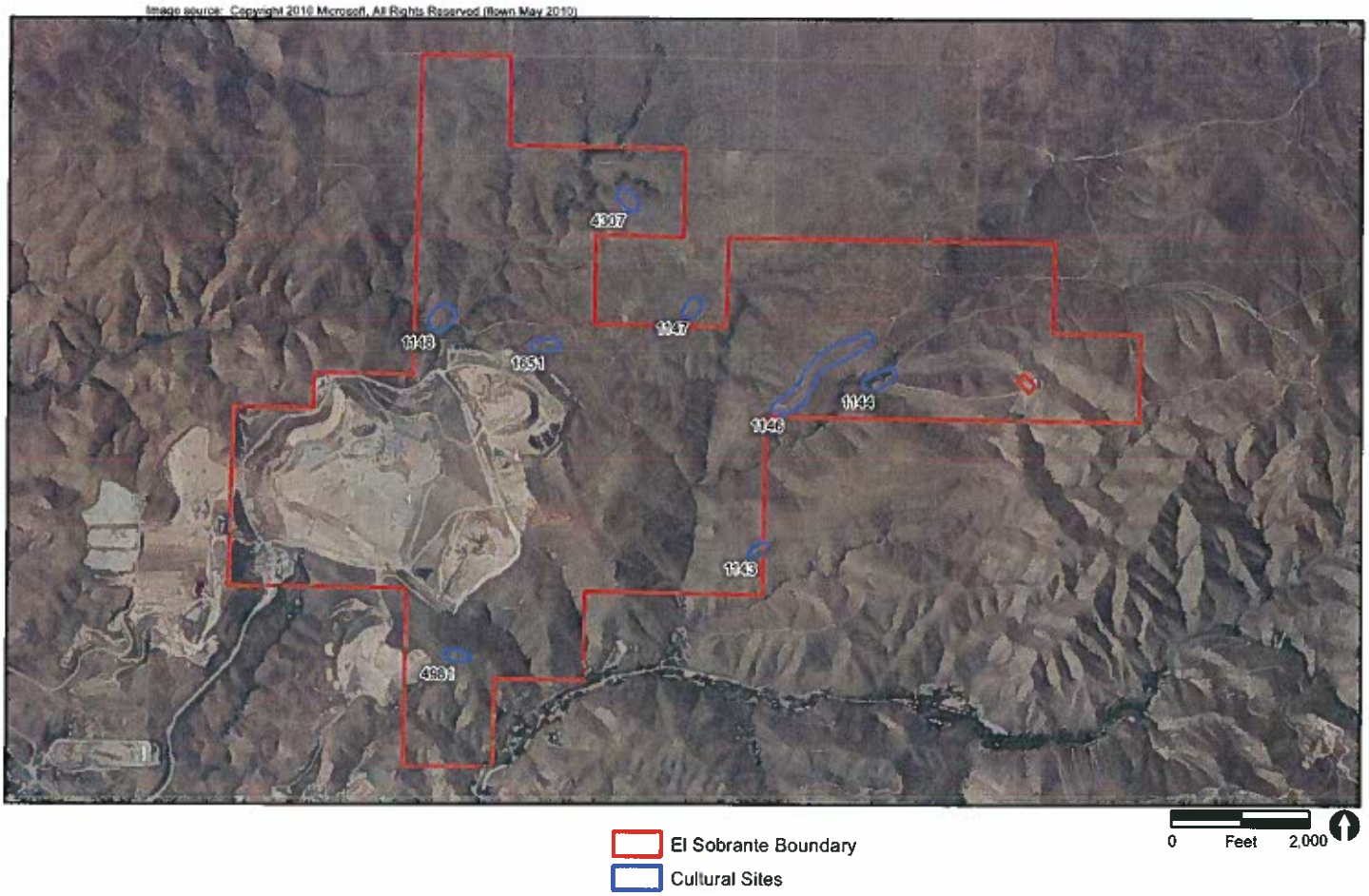

FIGURE 3

Location of Remaining Archaeological sites on El Sobrante Landfill

RECON

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Current Survey Results

The field survey was conducted on January 15, by RECON archaeologists Nathanial Yerka and Jeffrey Syrop. Five of the sites were relocated: CA-RIV-1143, CA-RIV-1144, CA-RIV-1146, CA-RIV-4307, and CA-RIV-4981. No cultural material could be found at the mapped locations of CA-RIV-1148 and CA-RIV-1651. CA-RIV-1147, adjacent to the landfill boundary, was also visited. A discussion of each site follows, including a description based on site records, description of site impacts noted on previous site visits, cultural materials found during the current site visit, and a description of current site impacts observed.

CA-RIV-1143

This site was originally described as a large lithic reduction/tool production site with about 20 surface lithic flakes and other debitage observed within the parcel boundary.

CA-RIV-1143 was relocated during the current site visit. Cultural materials observed included 10 plus surface debitage at the western end of the ridge, which is marked by 3 steep slopes. Recent rain and accompanying ground vegetation created less than 5 percent ground surface visibility, which restricted surface observations to the path and its approximately 5-square-meter, foot-trodden terminus. Current site disturbances include a single motorcycle track and scattered modern refuse including glass bottles and ammunition shells/cartridges.

CA-RIV-1144

This site was originally described in 1987 as a large residential/village site with 2 midden locations, single bedrock mortar, about 20 tools, exotic lithics, and hundreds of debitage. CA-RIV-1144 was relocated during the current site visit. Cultural materials observed included a mortar milling feature on small boulder just north of east/west creek/wash as well as 1 grinding slick on another small boulder 2 meters to the north with associated debitage which included 1 flake. Recent rain and accompanying ground vegetation created less than 5 percent ground surface visibility, which restricted surface observations.

Original 1977 impacts noted included road grading and extensive grading to construct a dirt dam. Subsequent visits noted a dirt access road running through site and numerous berms and scrapes on and around the site. Current site disturbances include maintenance of the existing dirt road, modern refuse, and active motorcycle trails crisscrossing the site. Evidence of past grading is still evident. The existing dirt road is currently maintained. This site suffers from the highest off-road traffic.

CA-RIV-1146

This site was originally described as a lithic reduction and probable seasonal camping site with 2 metate fragments, 1 grinding slick, 6 cores, 7 hammerstones, fire-affected rock, bifaces, and 500 plus debitage.

CA-RIV-1146 was relocated during the current site visit. Cultural materials observed included 25 plus debitage including 10 flakes and 1 core. Recent rain and accompanying ground vegetation created less than 5 percent ground surface visibility, which restricted surface observations. There were two small barren areas where most of the cultural material was observed as well as along the dirt road.

Original 1977 impacts described included a dirt road bisecting the site and grubbing to remove brush that had destroyed considerable value of any surface data present. Subsequent visits noted the dirt road but no evidence of grubbing. Current site disturbances include road maintenance grading, recent scattered trash, and off-road vehicle activity. The off-road activity impacts are from use of a golf cart to spray herbicide for weed control.

CA-RIV-1148

This site was originally described as containing 6 lithic flakes and 1 portable metate.

No cultural material was observed at the mapped location of CA-RIV-1148 during the current site visit, although the area was intensively inspected. This may be the result of very low surface visibility in drainage areas due to dense ground cover.

The original 1977 site form described impacts as a graded dirt road bisecting the site and removal of topsoil for check dam. Subsequent visits describe extensive grading but did not say if it was recent or old. Current site area disturbances include 1 new dirt road and continuing use of the original dirt roads. Old grading activity and the check dam are still evident.

CA-RIV-1651

This site was originally described as having 2 scrapers and lithic waste reflecting ephemeral camping and hunting activities.

No cultural material was observed at the mapped location of CA-RIV-1651, although the area was intensively inspected. Recent rain and accompanying ground vegetation created less than 5 percent ground surface visibility, which restricted surface observations. Site appears to have had some minor earth moving activity but no evidence of recent or on-going site disturbances.

The original 1979 site description does not mention disturbances. Subsequent site visits state the entire area had been graded, grubbed, or plowed. No current disturbances such as roads or trails were noted.

CA-RIV-4307

This site was originally described as a repeated seasonal occupation site containing 2 bifacial manos, 2 metate fragments, a pestle tip, 2 cores, fire-affected rock and 100 plus debitage.

CA-RIV-4307 was relocated during the current site visit. Cultural materials observed included 1 bifacial mano and 30 plus debitage including 1 made of chalcedony. Recent rain and accompanying ground vegetation created less than 5 percent ground surface visibility, which restricted surface observations.

The original 1989 site form notes disturbance by a dirt road. A subsequent visit describes a dirt runway intersecting the site, trails, and grading associated berms, scrapes, and road cuts. Current site disturbances observed include continuing use of the dirt road, light 4-wheel off-road vehicle activity, and high concentrations of modern refuse.

CA-RIV-4981

This site was originally described as containing 1 grinding slick, 1 mano fragment and 2 lithic flakes representing a minimal camp/habitation.

CA-RIV-4981 was relocated during the current site visit. The boulder with the grinding slick was relocated but the mano fragment or associated debitage could not be relocated. Recent rain and accompanying ground vegetation created less than 5 percent ground surface visibility, which restricted surface observations.

The original 1991 site form states that the entire area of the site has been graded and two dirt roads may bisect the site. Current disturbance includes continued use of one of the dirt roads and multiple low-use turnaround areas. There was no evidence of recent or on-going site grading.

CA-RIV-1147

This site was originally mapped very close to the northern boundary of the landfill but not extending into it. CA-RIV-1147 was described as having large quantities of fire-affected rock with 1 mano fragment and 15 debitage. The original description included bifaces and scrapers not noted in subsequent descriptions.

CA-RIV-1147 was relocated during the current site visit. No cultural materials were found on El Sobrante property during the current inspection. Cultural materials observed up to approximately 20 meters of the property included approximately 5 fire-affected rock and 5 debitage.

The original 1977 description included impacts from a dirt road circumscribing the site and grubbing to remove brush that had destroyed considerable value of surface data present. Subsequent visits did not mention grubbing but describe dirt airstrip impacting eastern portion of the site. Current site disturbances include continuing use of the dirt road and high concentrations of recent trash.

Assessment and Recommendations

Six of the seven archaeological sites within the El Sobrante Landfill property, CA-RIV-1143, CA-RIV-1144, CA-RIV-1146, CA-RIV-1148, CA-RIV-4307, and CA-RIV-4981 are currently being subjected to varying degrees of impacts. The impacts to CA-RIV-1143, CA-RIV-1148, and CA-RIV-4307 consist of continued use of existing dirt roads and a small number of consistently used motorcycle trails. These impacts are in limited areas, most of which were in existence when the sites were first recorded. Since these ongoing impacts are in areas that already have been impacted, the sites are not experiencing impacts to previously un-impacted areas. El Sobrante Landfill has an ongoing access control program to reduce impacts from off-road vehicular use. Continued implementation of this program will help keep impacts to these sites from increasing beyond their existing limits, and decrease impacts to existing impacted areas.

No impacts were observed in the mapped location of CA-RIV-1651.

CA-RIV-1146 is experiencing continued use of an established dirt road, and additional impacts due to a light four-wheeled cart used to spread herbicide. The site had previously been impacted by grubbing that heavily impacted the surface of the site. The cart used to spread herbicide is crisscrossing the site at a slow pace, which is not digging up the ground surface and creating subsurface disturbance. Also, surface artifacts are not being significantly displaced. RECON does recommend that, if feasible, some sort of non-vehicular method of herbicide application be used in the site area.

CA-SDI-4981 is experiencing impacts from continued use of one of the dirt roads and multiple low-use motorcycle turnaround areas. When the site was originally recorded, the dirt road was in existence and the entire site area had been graded. The existing road is not a new impact. The multiple low-use turnaround areas are new impacts and, although not doing extensive subsurface damage yet, are resulting in surface impacts to the site. The significance of this surface impact is somewhat balanced by the fact that the site had been graded in the past, resulting in extensive surface disturbance. Inclusion of this area in the ongoing access control program could reduce the motorcycle impacts.

CA-RIV-1144 is experiencing the most substantial impacts to the site area. Impacts consist of maintenance of the existing dirt road and active motorcycle trails crisscrossing the site. The continued use and maintenance of the dirt road is not an increased impact. Even though the site was impacted by grading in the past, the extensive surface impacts from the numerous motorcycle trails is a significant new impact to the site. CA-RIV-1144 is located in a drainage confluence, which is also a convergence of motorcycle trails, and the presence of the dam and other earthen berms adds to the popularity of the site. Every effort should be made by the ongoing access control program to block trails into the site area.

Sincerely,

Harry J. Price
Project Archaeologist

HJP:jg

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Sample Blasting Notification Letter

WASTE MANAGEMENT
EL SOBRANTE LANDFILL
10910 Dawson Canyon Road
Corona, CA 92883
(951) 277-1740
(951) 277-1861 Fax

July 29, 2014

RE: Planned Blasting Activity at El Sobrante Landfill – August 6, 2014

Dear Dawson Canyon Resident:

This courtesy letter is being sent to inform you of planned minor blasting activity at El Sobrante Landfill that will take place tentatively on August 6, 2014. Please note that this date is subject to change. For the most up-to-date information, please call Miriam Cardenas at (951) 277-5112.

As part of the construction of the new landfill cell, controlled blasting will be required within a small area of the newly excavated cell bottom. While most of the cell construction has been done by earth moving equipment, we will need to use controlled blasting for the construction of a trench, which is beyond normal excavation equipment capability.

Controlled blasting is a technique used to break rock using blasting, without generating fly rocks and with minimum ground vibrations. The process is rather low-key and you will probably not notice the activity. More than 90% of the explosive's energy is used in breaking the rock. The rest of the energy goes into the ground.

The controlled blasting will be restricted to the hours of 8:00 am to 5:00 pm, Monday through Friday, and take place at the bottom of the cell, approximately 150 feet below neighboring ground elevations (at the bottom of our new cell). Any noise and vibration will effectively be retained within the landfill perimeter as a result of this approach.

For the purposes of this project all drilling operations will be performed by Arizona Drilling & Blasting and all blasting operations will be performed by Precision Blasting Services, Inc, an affiliated company. They are well qualified and have been issued a permit from Riverside County to perform the blasts. The local Fire and Sherriff Department have been notified as required for this type of activity.

We have used controlled blasting in the past during our previous cell constructions, such as in June 2011 for Phase 9B/10, and we did not receive any disturbance concerns from neighbors following the blasting activity. We've enclosed the Preliminary Blasting Plan and Blasting Safety Plan that contain a general description of the blasting operations and precautions.

Sincerely,

Cody Cowgill
Environmental Protection