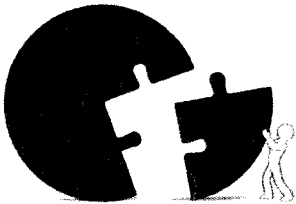


A-1

**Supplemental Irrigation Memorandum**



*Juan C Perez*  
Interim Director

## **RIVERSIDE COUNTY**

---

# **PLANNING DEPARTMENT**

### **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**

HS

#### **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.

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

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

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](mailto:hsandova@rctlma.org).

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

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



AQ-1

**Landfill Gas Barrier Technical Memorandum**





## TECHNICAL MEMORANDUM

**Date:** June 12, 2014  
**To:** Cody Cowgill, P.E.  
**From:** Ryan Hillman, P.E.  
Rich Haughey, P.E.  
**Project No.:** 1400539  
**Company:** USA Waste of California, Inc.  
**RE:** **ASSESSMENT OF NEED FOR 10- TO 20-MIL PLASTIC LANDFILL GAS BARRIER LAYER  
EL SOBRANTE LANDFILL – RIVERSIDE COUNTY, CALIFORNIA**

### 1.0 INTRODUCTION

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

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

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

### 2.0 ADVANCEMENT OF LFG MONITORING AND CONTROL

#### 2.1 Regulatory Changes

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

Golder Associates Inc.  
230 Commerce, Suite 200  
Irvine, CA 92602 USA

Tel: (714) 508-4400 Fax: (714) 508-4401 [www.golder.com](http://www.golder.com)

Golder Associates: Operations in Africa, Asia, Australasia, Europe, North America and South America

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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<sup>1</sup> 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

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<sup>1</sup> 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

**2013 Annual Emissions Report**

Environmental Consultants

3900 Kilroy Airport Way  
Suite 100  
Long Beach, California 90806

562-426-9544  
FAX 562-427-0805  
www.scsengineers.com

## SCS ENGINEERS

February 28, 2014  
File No. 01202020.05 Task 49

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

**SUBJECT: SUBMITTAL 2013 ANNUAL EMISSIONS REPORT, EL SOBRANTE LANDFILL  
(FACILITY ID 113674), CORONA, CALIFORNIA**

To Whom It May Concern:

Enclosed, please find a copy of the completed South Coast Air Quality Management District (SCAQMD) 2013 Annual Emissions Reporting (AER) Program submittal package for the El Sobrante Landfill (El Sobrante), located in Corona, California.

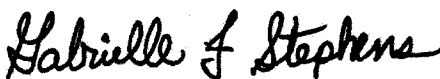
The package includes the submittal forms (Forms S, X, A, TACs) and a check for \$7,567.34.

If you have any questions, please feel free to contact either of the undersigned at (562) 426-9544.

Sincerely,



James J. Kim  
Staff Scientist



Gabrielle F. Stephens  
Project Manager  
SCS ENGINEERS

### Enclosures

1. Form X
2. Form S
3. Form TACs
4. Form A
5. Confirmation Page
6. Check for fee amount

cc: Cody Cowgill; Waste Management, Inc. (w/enclosure)



South Coast

AQMD

# Annual Emission Report

2013

Reporting Year:

113674

Facility ID:

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

2/25/2014

Print Date:

Facility Type: GENERAL FACILITIES

## TACS - Toxic Air Contaminants and Ozone Depleters Emissions / Fee Summary

TAC Code	Toxic Air Contaminants / Ozone Depleters	Gross Emissions (lbs)	Recycling Credit (lbs)	Net Emissions (lbs)	Emissions subject to fees	Fee Rate (\$/lb)	Fee Due (\$)
01	Asbestos	0.00	0.00	0.00	0.00	5.85	0.00
02	Benzene	725.22	0.00	725.22	725.00	1.97	1,428.25
03	Beryllium	0.00	0.00	0.00	0.00	5.85	0.00
04	1,3-Butadiene	3.20	0.00	3.20	3.00	5.85	17.55
05	Cadmium	0.02	0.00	0.02	0.00	5.85	0.00
06	Carbon Tetrachloride	43.98	0.00	43.98	44.00	1.97	86.68
07	Chlorinated Dioxins & Dibenzofurans	0.00	0.00	0.00	0.00	9.74	0.00
08	1,4-Dioxane	0.00	0.00	0.00	0.00	0.43	0.00
09	Ethylene Dibromide	56.08	0.00	56.08	56.00	1.97	110.32
10	Ethylene Dichloride	234.97	0.00	234.97	235.00	1.97	462.95
11	Ethylene Oxide	0.00	0.00	0.00	0.00	1.97	0.00
12	Formaldehyde	565.98	0.00	565.98	566.00	0.43	243.38
13	Hexavalent Chromium	0.00	0.00	0.00	0.00	7.79	0.00
14	Inorganic Arsenic	0.02	0.00	0.02	0.00	5.85	0.00



TAC Code	Toxic Air Contaminants / Ozone Depleters	Gross Emissions (lbs)	Recycling Credit (lbs)	Net Emissions (lbs)	Emissions subject to fees	Fee Rate (\$/lb)	Fee Due (\$)
15	Lead	0.12	0.00	0.12	0.00	1.97	0.00
16	Methylene Chloride	396.67	0.00	396.67	397.00	0.08	31.76
17	Nickel	0.06	0.00	0.06	0.00	3.88	0.00
18	Perchloroethylene	264.92	0.00	264.92	265.00	0.43	113.95
19	Polynuclear Aromatic Hydrocarbons (PAHs)	14.59	0.00	14.59	15.00	5.85	87.75
20	Trichloroethylene	135.36	0.00	135.36	135.00	0.16	21.60
21	Vinyl Chloride	30.45	0.00	30.45	30.00	1.97	59.10
22	Chlorofluorocarbons (CFCs/Freons)	108.48	0.00	108.48	108.00	0.37	39.96
23	1,1,1-Trichloroethane (Methyl chloroform)	38.13	0.00	38.13	38.00	0.05	1.90
32	Ammonia	42.69	0.00	42.69	0.00	0.03	0.00
Total Fees Due:							2,705.15



South Coast

AQMD

# Annual Emission Report

Reporting Year:

2013

Facility ID: 113674

Print Date

2/25/2014

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

Facility Type: GENERAL FACILITIES

## A - Status Update

Status Update (If Applicable)

Contact Permit Services for Official Status Changes

☐ Facility Shutdown Date:

☐ Change of Ownership Date:

New Facility I.D.

New Facility Name

☐ Change in Equipment Location Date

New Facility I.D.

Change in Equipment Location Facility Address

Old Location Address

10910

DAWSON CANYON RD

CORONA

CA 92883

-None-

☐ Variance/Abatement order that resulted in Excess Emissions

Case Number:

☐ Emissions are Zero for this year's Report, or Emissions Reduced by 50% or more from last year's Annual Emission Report.  
(Provide a brief description)

## Refund Request

☐ I request a refund for overpayment of fees paid for this reporting period (installment payment exceeded total fees due). Provide or attach a brief explanation for your reduced emissions during this reporting period

Amount Requested \$

## Exemption Request

I request to be exempt from next year's Annual Emissions Reporting Program for the reason marked below. If approved, I understand the facility will still be required to report its annual emissions and pay any applicable fee in future years if operations change, or AQMD rules change, in any manner that results in increased emissions above those specified under the Exemption Criteria specified

☐ Annual Emissions for this year meet the Exemption Criteria, and emissions for this year will also meet the Exemption Criteria.

☐ Facility will meet the Exemption Criteria for next year based on changes in operations or operating status as shown in Status Update section.

## Use of Alternative Emissions Factors or Calculation Methodologies

☐ To expedite District's review, if you are proposing to use a different (non-default) emission factor or calculation methodology that requires AQMD approval pursuant to AQMD Rule 301 (e)(8)(C), please check this box and attach your supporting documentation with your report. Do not check this box for emission factors reported on Form B3 or B3U (Use of Organics) which are based on VOC contents listed on MSDS. Please identify the Form(s) for which an alternative factor or methodology is



South Coast

AQMD

# Annual Emission Report

Reporting Year: 2013

Print Date: 2/25/2014

Facility ID: 113674

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

Facility Type: GENERAL FACILITIES

## S - Fees Due Summary

Submittal Date: No later than March 4 2014	Total Permitted Emissions from Form C (tons)	Total Non-Permitted Emissions from Form CU (tons)	Total Emissions from Form CR (tons)	Total Emissions/ Subject to Fee (tons)	Emissions Fee Due
Organic Gases	6.12	0.28		6	\$1,677.42
Specific Organics	0.00	0.00		0	\$0.00
Nitrogen Oxides	19.58	3.45	0.00	23	\$6,542.40
Sulfur Oxides	7.47	0.00	0.00	7	\$1,551.28
Carbon Monoxide	76.41	0.75		0	\$0.00
Particulate Matter	3.83	0.25		4	\$427.56
1. TOTAL EMISSION FEES FOR ALL CRITERIA POLLUTANTS					\$10,198.66
2. TOXIC AIR CONTAMINANTS/OZONE DEPLETER FEES (Total amount from Form TACS or DC)					\$2,705.15
3. TOTAL FEES DUE					\$12,903.81
4. INSTALLMENTS PAID FOR 2013 - (If any) -- All criteria pollutants					\$4,195.01
5. INSTALLMENTS PAID -- Toxic Air Contaminants/Ozone Depleters					\$1,141.46
6. BALANCE DUE (Line 3 - Line 4 - Line 5)					\$7,567.34
7. LATE PAYMENT SURCHARGE					\$0.00
8. AMOUNT DUE					\$7,567.34
9. Please write Facility ID#(s) and AER reporting Year on the check.					N/A





South Coast

AQMD

## Annual Emission Report

Reporting Year:

2013

Print Date:

2/25/2014

Facility ID: 113674

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

Facility Type: GENERAL FACILITIES

## X - Signature Sheet

## Information

NAICS Code: 562212

No - AB2588 Filing Period

AB2588 Receptor Distance

Worker(ft) 6500

No - RECLAIM

Residential (ft) 4000

## Business Operating Hours

Hours/Day: 24

Days/Week: 6

Weeks/Year: 52

## Brief Description of Operation

Municipal solid waste landfill

## Equipment Location Address

## Facility Name:

U S A WASTE OF CAL(EL SOBRANTE LANDFILL)

10910 DAWSON CANYON RD

CORONA CA 92883

## Mailing Information

## Company Name:

U S A WASTE OF CAL(EL SOBRANTE LANDFILL)

10910 Dawson Canyon RD 0130

Corona CA 92877 0130

## Contact Information

Name Cody Cowgill  
Title Site Engineer  
email ccowgill@wm.com

phone (951) 2775106  
fax (951) 4154194

## Preparer Information

Organization Name: SCS Engineers  
Name James Kim  
Title Staff Scientist  
email jkim@scsengineers.com

phone (562) 4269544  
fax (562) 4270805

## Authorized Person Information

Name Mike Williams  
Title Senior District Manager  
email mwilli13@wm.com

phone (951) 2775103  
fax (951) 2771861

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

2/26/14

Preparer Signature

Date

2/26/14



South Coast  
AQMD

# Annual Emission Report

Reporting Year: **2013**

Print Date: **2/25/2014**

Facility ID: **113674**

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

Facility Type: **GENERAL FACILITIES**

## Review Submit Confirmation

Thank you for submitting your Annual Emissions Report for Facility ID: 113674 on 2/25/2014 5:24:03 PM . You will receive an e-mail confirmation at your registered e-mail address.

Please proceed to the Forms and Reports section to print out & submit the required forms (plus a check for fees due if applicable) to the SCAQMD. Refer to the online Help for mailing address and other related information.

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  
2013 Emission Report  
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 March 04, 2014

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. March 04, 2014. Please note that AQMD is closed on Mondays.

South Coast Air Quality Management District  
ATTN: Finance Cashier  
2013 Emission Report  
21865 Copley Drive  
Diamond Bar, CA 91765-4178

AQ-11

**CEQA Mitigation Monitoring Workplan for NO<sub>2</sub>**

## 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<sub>2</sub>,  
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<sub>2</sub>) and (2) conduct downwind property line monitoring of NO<sub>2</sub> during wind and stability conditions, which could result in the greatest property boundary concentrations.

This CEQA Mitigation Monitoring Workplan for NO<sub>2</sub> is proposed as the strategy to be used for NO<sub>2</sub> 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<sub>2</sub>. USA Waste and its contractors will conduct their on-site construction and operational activities to reduce nitrogen oxide (NO<sub>x</sub>) emissions to the extent feasible.

When NO<sub>2</sub> monitoring results (see below) show concentrations of NO<sub>2</sub> that are at or above 95% of the 1-hour standard (i.e., 450 ug/m<sup>3</sup> of the 470 ug/m<sup>3</sup> 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 NO<sub>x</sub> 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 NO<sub>x</sub> emitting equipment so that operation occurs outside of peak adverse meteorological conditions.

## NO<sub>2</sub> MONITORING

When construction activities and operations for the expansion area of the landfill occur simultaneously, USA Waste may be required to implement NO<sub>2</sub> monitoring to determine when additional mitigation measures are necessary, as described above. This monitoring will be completed to determine when NO<sub>2</sub> levels are in excess of 450 micrograms per cubic meter (ug/m<sup>3</sup>), the trigger level for additional control measures.

In order to determine when NO<sub>2</sub> 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<sub>2</sub> 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<sup>3</sup> threshold.

If NO<sub>2</sub> concentration are expected to meet or exceed 450 ug/m<sup>3</sup>, USA Waste will implement NO<sub>2</sub> monitoring at the site. As part of this monitoring, USA Waste will install a temporary NO<sub>2</sub> 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<sub>2</sub> on a real-time basis. Readings will be taken over consecutive 1-hour periods representing the worst-case times of the day for NO<sub>2</sub> 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<sup>3</sup> 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<sub>2</sub> levels drop below 450 ug/m<sup>3</sup> 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.



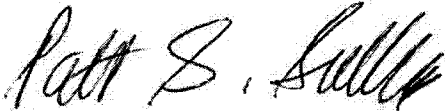
Ms. Linda Dejbakhsh  
January 27, 2003  
Page 4

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<sub>2</sub> 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 APPLICATION(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

FOR AECp PLEASE FILL IN THE TABLE BELOW:

	HOURS/DAY	DAYS/WEEK	WEEKS/YEAR		LBS/YEAR	DAYS/YEAR
MAXIMUM	24	7	52	ACTUAL USAGE TWO YEARS AGO		
AVERAGE	24	6	52	ACTUAL USAGE LAST YEAR		
				PROPOSED AVERAGE USE		

### 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:

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:

TITLE OF PREPARER: Vice President

TYPE OR PRINT NAME OF PREPARER:

Patrick S. Sullivan

PREPARER'S TELEPHONE NUMBER

(916) 361-1297

DATE SIGNED:

1/30/03

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	ENF. SECT.	CHECK/MONEY ORDER #	AMOUNT \$

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

2913

Jan. 27, 2003

90-7162/3222

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FOR

El Solarte Landfill Plan Fee

Patrick S. Sullivan

⑆322271627⑆374⑆319409⑆9⑆ 2913

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AQ-12

**Alternative Fuel Engines and Emission Control Technologies  
Transfer Truck Operations Analysis**

**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 Liquefied 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 its primary fuel and LNG to provide a cleaner burn and reduced emissions.

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



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

### **Infrastructure**

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

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

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

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

### **Conclusion**

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

# ALTERNATIVE FUEL ENGINES

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

NA refers to Not Available

**AQ-13**

**Annual 2014 Mitigation Monitoring Program Status Report**

Environmental Consultants

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

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

## SCS ENGINEERS

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

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

COUNTY OF RIVERSIDE  
WASTE MANAGEMENT  
13 SEP 30 AM 10:46

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

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<sub>x</sub>) 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<sub>x</sub>, 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<sub>x</sub> and ROG, which are needed for the upcoming year. The emission offset calculations are required to include an estimate of the baseline NO<sub>x</sub> and ROG emissions prior to the landfill expansion and a comparison to the projected 2014 NO<sub>x</sub> 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<sub>x</sub> 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<sub>x</sub> and ROG emissions prior to the landfill expansion and the projected 2014 NO<sub>x</sub> 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 4<sup>th</sup> quarter 2012 and 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> 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  $\text{NO}_x$  and ROG emissions are 1,077.7 and 26.6 lbs/day, respectively. The net reduction in  $\text{NO}_x$  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  $\text{NO}_x$  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<sub>x</sub> 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<sub>x</sub> 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<sub>x</sub> 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<sub>x</sub> and ROG are estimated to be 133.9 and 7.23 lbs/day, respectively. The 2014 mobile equipment emissions for NO<sub>x</sub> 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<sub>x</sub> 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<sub>x</sub> 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<sub>x</sub> and ROG, respectively, which represent a project increase.

#### **RESULTS OF EMISSIONS ANALYSIS**

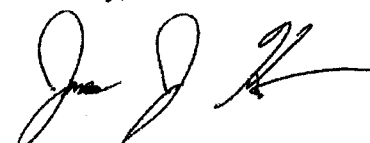
Table 8 (Project Emission Inventory for Baseline and 6,552 TPD) provides a summary of the project emission inventory, which includes stationary, mobile, and construction sources associated with the El Sobrante Landfill expansion project. Table 9 (Emission Offsets Required for Future (2014)) provides 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<sub>x</sub> and ROG, respectively. The NO<sub>x</sub> reduction is primarily due to the use of an ultra-low NO<sub>x</sub> 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**

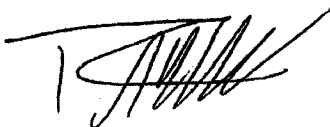
We believe that this Report satisfies USA Waste's requirements under AQ-13 of the MMRP under CEQA and should allow operations to continue as projected at the site. Please let us know if any fees are required under SCAQMD Rule 301 for this submittal, and USA Waste will pay them promptly.

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

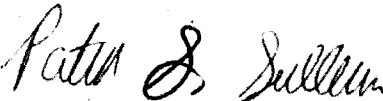
Sincerely,



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)

**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			LFG System Coverage (%)	LFG Recovery from Existing and Planned System		
			(scfm)	(mmcf/day)	(mmBtu/yr)		(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 <sup>1</sup>	Maximum Concentration of Compounds Found in LFG <sup>2</sup>	Average Uncontrolled LFG Flow Rate-Surface Emissions	Maximum Uncontrolled LFG Flow Rate-Surface Emissions	Average LFG Flow Rate to Flare <sup>3</sup>	Maximum LFG Flow Rate to Flare <sup>3</sup>	Cmp. Spec. Average Flare Destruction Efficiency <sup>4</sup>	Average Emissions from Flare	Maximum Emissions from Flare
		g/mol	ppmv	ppmv	tons/yr	tons/yr	tons/yr	tons/yr	%	tons/yr	tons/yr
<b>Hazardous Air Pollutants (HAPs)<sup>5</sup></b>											
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 (ethylene dichloride)*	98.95	5.955	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-Dichloroethane (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	0.555	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	0.035	0.035	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	7.48E-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	4.80E-02	98.0%	6.78E-04	9.19E-04
95-23-5	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	0.279	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	6.95E-04	6.95E-04	1.58E-02	1.58E-02	98.0%	3.16E-04	3.16E-04
57-66-3	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	0.869	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
106-83-4	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%	3.48E-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	2.06E-01	2.06E-01	98.0%	4.10E-03	4.10E-03
7647-01-0	Hydrochloric acid <sup>6</sup>	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
2146-87-8	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) <sup>7</sup>	200.61	0.0003	0.0003	2.64E-06	2.64E-06	5.99E-05	5.99E-05	0.0%	5.99E-05	5.99E-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%	1.54E-03	1.54E-03
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%	1.34E-02	1.41E-02
127-18-4	Perchloroethylene (tetrachloroethylene)*	165.83	3.940	4.160	2.96E-02	3.11E-02	6.68E-01	7.06E-01	98.0%	1.14E-01	1.37E-01
108-88-3	Toluene*	92.13	60.625	72.650	2.52E-01	3.02E-01	5.71E+00	6.85E+00	98.0%	4.94E-03	5.31E-03
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%	1.61E-04	2.00E-04
75-01-4	Vinyl chloride*	62.50	0.126	0.156	3.56E-04	4.40E-04	8.06E-03	9.98E-03	98.0%	5.99E-02	7.16E-02
1330-20-7	Xylenes*	106.16	27.535	32.980	1.32E-01	1.59E-01	2.99E+00	3.59E+00	98.0%	2.141	2.184
<b>Total HAPs:</b>											
<b>Criteria Air Pollutants</b>											
<b>Criteria Air Pollutants</b>											
<b>Total Non-Methane Organics (NMOs) as Hexane*</b>											
		86.18	1.892	2.090	29.434	32.574	166.785	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/day	lb/MMBtu	lb/MMBtu	lb/day	lb/day	lb/hr	lb/day	tons/yr
Nitrogen Oxides (NOx) <sup>1</sup>	—	0.060	0.024	—	—	1.079	25.9	4,728
Reactive Organic Gases (ROGs) <sup>2</sup>	—	—	—	62.9	69.5	0.328	7.9	1,438

**Variables:**

MODEL INPUT VARIABLES:	VALUE:
Methane Concentration	50.0%
Fuel Value <sup>7</sup>	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) <sup>8</sup>	1,499 SCFM
	Assuming an 85% collection efficiency

**Notes:**

- <sup>1</sup> 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.
- <sup>2</sup> 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 (+/-).
- <sup>3</sup> Based on a maximum flow rate into the flare of 2200 scfm at 36.2% methane, which was converted to 50% methane.
- <sup>4</sup> Values taken from AP-42 Table 2.4-3 ("Control Efficiencies for LFG Constituents")
- <sup>5</sup> Concentration of HCl is based on AP-42 Section 2.4.4.2. (11/98)
- <sup>6</sup> Concentration of Mercury based on the EPA AP-42 Section 2.4 Table 2.4-1 (11/98).
- <sup>7</sup> In accordance with the proposed permit modifications, ROCs are assumed equal to NMOCs minus Exempt Compounds.
- <sup>8</sup> Existing flares in 2001 permitted at 1,389 scfm each.
- <sup>9</sup> 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 <sup>6</sup>	Total Landfill Gas Generation	Maximum Uncontrolled LFG Flow Rate - Surface Emissions	Maximum LFG Flow Rate to Flare <sup>2</sup>	Flare Destruction Efficiency <sup>4</sup>	Maximum Emissions from Flare
		g/mol	ppmv	tons/yr	tons/yr	tons/yr	%	tons/yr
<b>Hazardous Air Pollutants (HAPs)<sup>5</sup></b>								
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	0.085	9.75E-03	4.13E-02	98.0%	8.26E-04
107-06-2	1,1-Dichloroethane (ethylene 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%	4.28E-04
107-06-2	1,2-Dichloroethane (ethylene dichloride)*	98.96	1.820	0.986	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	98.7%	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	98.7%	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	98.7%	6.33E-05
108-90-7	Chlorobenzene*	112.56	0.078	0.049	7.30E-03	3.06E-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
75-45-8	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
108-46-7	Dichlorobenzene (1,4-Dichlorobenzene)*	147.00	0.964	0.794	1.18E-01	4.98E-01	98.0%	9.98E-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
109-93-4	Ethylene dibromide (1,2-Dibromoethane)*	187.98	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 <sup>6</sup>	36.50	48.930	0.000	0.00E+00	0.00E+00	0.0%	6.07E+00
2149-87-8	Hydrogen Sulfide*	34.08	12.70	2.394	3.59E-01	1.52E+00	99.7%	4.56E-03
7439-87-6	Mercury (total) <sup>5</sup>	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-02	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-04
109-98-3	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	3.87E-02	98.0%	7.33E-04
1330-20-7	Xylenes*	106.16	22.160	13.022	1.95E+00	8.27E+00	99.7%	2.48E-02
<b>Totals: HAPs</b>				6.95E+01	1.04E+01	4.41E+01		6.305
<b>Criteria Air Pollutants</b>								
<b>Total Non-Methane Organics (NMOs) as Hexane<sup>7</sup></b>		86.18	2.168	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 lbs/day	Emission Factor lbs/MMBtu	Estimated Emissions from Flare lbs/day	tons/yr
Nitrogen Oxides (NO <sub>x</sub> ) <sup>1</sup>	323.6	0.010	1,944	8,764
Reactive Organic Gases (ROGs) <sup>2</sup>			0.465	2,038

**Variables:**

MODEL INPUT VARIABLES:	POTENTIAL TO EMIT
Methane Concentration	50.0%
Fuel Value	500 Btu/d (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
Total Landfill Gas Collection Rate (to IC engine)	1,740 SCFM
Total Landfill Gas Collection Rate	6,887 SCFM

**Notes:**

- <sup>1</sup> List of hazardous air pollutants was from Title III Clean Air Act Amendments, 1990, and includes 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.
- <sup>2</sup> Actual data from the September 2013 source test was used and marked by "m" 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 (---).
- <sup>3</sup> Based on a projected maximum flow rate into the flare of 5,147 scfm at 50% methane
- <sup>4</sup> Values taken from AP-42 Table 2.4-3 ("Control Efficiencies for LFG Constituents")
- <sup>5</sup> Concentration of HCl is based on AP-42 Section 2.4.4.2. (11/88)
- <sup>6</sup> Concentration of Mercury based on the EPA AP-42 Section 2.4 Table 2.4-1 (11/98)
- <sup>7</sup> Based on maximum values from most recent source testing results (September 2013).
- <sup>8</sup> ROG 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 <sup>2</sup>	Hourly Uncontrolled LFG Flow Rate to IC Engines <sup>3</sup>	Hourly Uncontrolled LFG Flow Rate to IC Engines <sup>3</sup>	Daily Uncontrolled LFG Flow Rate to IC Engines <sup>3</sup>	IC Engine Destruction Efficiency <sup>4</sup>	Hourly Controlled Emissions	Daily Controlled Emissions	Annual Emissions
		g/mol	ppmv	lb/hr	lb/day	lb/day	%	lb/hr	lb/day	lb/yr
<b>Total Air Contaminants (TACs)</b>										
71-55-6	1,1,1-Trichloroethane (methyl chloroform)*	133.42	0.625	2.26E-02	5.43E-01	1.08E-02	98.0%	4.52E-04	1.08E-02	3.96E+00
79-34-5	1,1,2,2-Tetrachloroethane*	167.85	0.625	2.84E-02	6.83E-01	1.37E-02	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	8.05E-03	98.0%	3.35E-04	8.05E-03	2.94E+00
75-35-4	1,1-Dichloroethane (vinylidene chloride)*	98.94	0.625	1.64E-02	3.94E-01	7.89E-03	98.0%	3.29E-04	7.89E-03	2.88E+00
107-06-2	1,2-Dichloroethane (ethylene dichloride)*	98.96	0.625	1.69E-02	4.02E-01	8.05E-03	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	9.19E-03	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	6.19E-02	98.0%	2.59E-03	6.19E-02	2.26E+01
107-13-1	Acrylonitrile+	53.06	0.036	5.18E-04	1.24E-02	2.49E-04	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	2.50E-02	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	6.63E-03	98.0%	2.78E-04	6.63E-03	2.42E+00
75-15-0	Carbon disulfide+	76.13	0.320	6.61E-03	1.59E-01	3.17E-03	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	1.25E-02	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	1.43E-03	98.0%	5.95E-05	1.43E-03	5.22E+01
108-90-7	Chlorobenzene*	112.56	0.625	1.91E-02	4.58E-01	9.16E-03	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	5.25E-03	98.0%	2.19E-04	5.25E-03	1.92E+00
87-86-3	Chloroform*	119.39	0.625	2.02E-02	4.95E-01	9.71E-03	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	4.00E-03	98.0%	1.66E-04	4.00E-03	1.46E+00
74-87-3	Chloromethane (methyl chloride)*	50.49	0.625	8.98E-03	2.05E-01	4.11E-03	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	1.20E-02	98.0%	4.98E-04	1.20E-02	4.36E+00
75-43-4	Dichlorodifluoromethane*	120.81	0.625	2.05E-02	4.92E-01	9.83E-03	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	4.76E-03	98.0%	1.98E-04	4.76E-03	1.74E+00
75-06-2	Dichloromethane (Methylene Chloride)*	84.94	0.625	1.44E-02	3.45E-01	6.91E-03	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	1.63E-01	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	5.61E-02	98.0%	2.34E-03	5.61E-02	2.05E+01
106-89-4	Ethylene dibromide (1,2-Dibromoethane)*	187.88	0.625	3.18E-02	7.64E-01	1.53E-02	98.0%	6.37E-04	1.53E-02	5.58E+00
75-59-4	Fluorotrichloromethane*	137.40	0.625	2.33E-02	5.59E-01	1.12E-02	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	2.61E-02	98.0%	1.09E-03	2.61E-02	9.51E+00
7647-01-0	Hydrochloric acid <sup>5</sup>	36.50	46.930	0.00E+00	0.00E+00	4.69E-01	0.0%	4.69E-01	1.12E+01	4.11E+03
2148-87-8	Hydrogen Sulfide+	34.08	23.98	2.18E-01	5.23E+00	1.05E-01	98.0%	4.36E-03	1.05E-01	3.82E+01
7439-87-6	Mercury (total) <sup>6</sup>	200.61	0.0003	1.59E-05	3.81E-04	3.81E-04	0.0%	1.59E-05	3.81E-04	1.38E-01
78-83-3	Methyl ethyl ketone+	72.11	10.957	2.08E-01	4.95E+00	9.91E-02	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	9.79E-03	98.0%	4.07E-04	9.79E-03	3.57E+00
127-18-4	Perchloroethylene (tetrachloroethylene)*	165.83	0.625	2.81E-02	6.74E-01	1.36E-02	98.0%	5.62E-04	1.36E-02	4.92E+00
106-88-3	Toluene*	92.13	18.000	4.50E-01	1.08E+01	2.16E-01	98.0%	8.98E-03	2.16E-01	7.88E+01
79-01-6	Trichloroethylene (trichloroethene)*	131.38	0.625	2.23E-02	5.34E-01	1.07E-02	98.0%	4.45E-04	1.07E-02	3.90E+00
78-01-4	Vinyl chloride*	62.50	0.625	1.08E-02	2.54E-01	5.08E-03	98.0%	2.12E-04	5.08E-03	1.88E+00
1330-20-7	Xylenes*	106.16	9.210	2.65E-01	6.36E+00	1.27E-01	98.0%	5.30E-03	1.27E-01	4.64E+01
<b>Total: HAPs</b>				2.27E+00	5.48E+01	12.342		0.514	12.342	4504.781
<b>Criteria Air Pollutants</b>										
<b>Total Non-Methane Organics (NMOGs) as Hexane<sup>7</sup></b>				31.133	747.20	14.94	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		
			lbs/hr	lbs/day	lbs/yr
Nitrogen Oxides (NO <sub>x</sub> ) <sup>1</sup>	0.35	1.448	4,345	104.3	38,062
Reactive Organic Gases (ROGs) <sup>2</sup>	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)
Greatest horsepower	5831 hp (1,877 hp per engine)
Fuel Value	500 Btu/cf
Total Landfill Gas Collection Rate (IC Engine) <sup>3</sup>	1,740 SCFM (580 scfm per engine)

**Notes:**

- <sup>1</sup> List of hazardous air pollutants was from 1150.1 Table 1
- <sup>2</sup> 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 (+/-).
- <sup>3</sup> Flow rate (at 50% methane) was calculated based on the permitted throughput of 17.4 MMbbl/yr for each engine
- <sup>4</sup> 98% based on permitted limit
- <sup>5</sup> Concentration of HCl is based on AP-42 Section 2.4.4.2 (11/98)
- <sup>6</sup> Concentration of Mercury based on the EPA AP-42 Section 2.4 Table 2.4-1 (11/98)
- <sup>7</sup> 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**

Baseline On-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) <sup>1</sup>		Waste <sup>2</sup>	Number of Truck Trips Per Day <sup>4</sup>		Total Daily	NOx Emission Factors <sup>3</sup>	ROG Emission Factors <sup>3</sup>	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	2,786			--	--
In-County Sub-Total		--	--	2,500	--	--	4,983			263.6	8.5
Out-of-County MSW											
Carson Transfer Station	El Sobrante	0	55.9	1000	0.0	45.0	2,518	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). 8,000 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) <sup>1</sup>		Waste <sup>2</sup>	Number of Truck Trips Per Day <sup>1,4</sup>		Total Daily	NOx Emission Factors <sup>3</sup>	ROG Emission Factors <sup>3</sup>	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 <sup>4</sup>	El Sobrante	0	55.9	2,621	0	119	6,659	6.438	0.21	--	--
Pomona-Chino Area <sup>4</sup>	West Valley/El Sobrante	13.5	21.8	655	89	30	1,845			--	--
Upland-Ontario Area <sup>4</sup>	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 <sup>5</sup>	--	--	--	--	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	NOx			Emissions Factor	Emissions	ROGs		
						g/hr	g/mi <sup>2</sup>	lb/hp-hr			g/hr	g/mi	lb/hp-hr
Water Wagon (Scraper Mounted) 613C	12	0.36	-	-	0.361	1308	-	-	40	0.37	-	-	0.01
Water Wagon (Scraper Mounted) 613B	12	0.54	-	-	0.361	1308	-	-	40	0.56	-	-	0.02
Compactor (peak use) 836 C <sup>3</sup>	3.6	1.86	-	-	0.413	2661	-	-	11	4.51	-	-	0.02
Compactor (continuous use) 836 C <sup>3</sup>	12	5.76	-	-	0.413	2661	-	-	11	13.96	-	-	0.06
Compactor (continuous use) 836 C <sup>3</sup>	12	5.76	-	-	0.413	2661	-	-	11	13.96	-	-	0.06
Rex Compactor (Surplus)*	12	0.25	-	-	0.413	2661	-	-	11	0.61	-	-	0.00
D-8N Dozer (peak use) <sup>4</sup>	12	6.24	-	-	0.538	2520	-	-	250	18.65	-	-	1.85
D-8N Dozer (peak use) <sup>4</sup>	3.6	6.42	-	-	0.538	2520	-	-	250	19.19	-	-	1.90
D-8R Dozer (non-peak use) <sup>4</sup>	16	2	-	-	0.538	2412	-	-	250	5.72	-	-	0.59
D-8R Dozer (peak use) <sup>4</sup>	3.6	1.8	-	-	0.538	2520	-	-	250	5.38	-	-	0.53
Backhoe 580K <sup>1</sup>	16	4	-	-	0.485	780	-	-	72	3.20	-	-	0.30
Roll Off Trucks (Medium/Heavy Duty Vehicles) (3) <sup>1</sup>	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	-	0.285	0.04
Excavator 325L	16	2.47	-	-	0.58	6240	-	-	127	19.68	-	-	0.40
Wheel Loader 930	16	4	-	-	0.485	1850	-	-	105	6.77	-	-	0.43
Motor Grader 14G	16	1.67	-	-	0.322	2370	-	-	180	2.80	-	-	0.21
Columbia Tipper	16	0.5	2.1	-	-	-	15.284	-	-	0.57	-	1.032	0.04
Tool Carrier 1728B	16	4	-	-	0.485	580	-	-	72	2.42	-	-	0.30
Light Plant (9)	5.10	21.97	-	5	0.74	-	-	0.018	-	1.46	-	-	0.16
Scraper 627E	16	2.47	-	-	0.398	6240	-	-	127	13.44	-	-	0.27
<b>Total</b>										<b>133.9</b>			<b>7.23</b>

**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.

<sup>1</sup> trips per hour were used rather than hours per day

<sup>2</sup> EMFAC 2002 Modeling for Heavy Duty Trucks at 75 degrees F, 25 mph in 2001

<sup>3</sup> A load factor of 0.413 was used for the various compactors; the load factor was provided by Caterpillar for an 836C compactor.

<sup>4</sup> 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	NOx			Emissions Factor	ROGs		
						g/hr	g/mi <sup>2</sup>	lb/hp-hr		g/hr	g/mi	lb/hp-hr
Compactor (continuous use) 836 H <sup>3</sup>	24	9.60	—	—	0.413	2661	—	—	11	—	—	0.10
Compactor (continuous use) 836 H <sup>3</sup>	24	9.60	—	—	0.413	2661	—	—	11	—	—	0.10
Compactor (continuous use) 836 H <sup>3</sup>	24	9.60	—	—	0.413	2661	—	—	11	—	—	0.10
Compactor (continuous use) 836 H <sup>3</sup>	24	9.60	—	—	0.413	2661	—	—	11	—	—	0.10
D-7E Dozer (peak use) <sup>4</sup>	24	10.70	—	—	0.538	2412	—	—	250	—	—	3.17
D-9T Dozer (peak use) <sup>4</sup>	24	10.70	—	—	0.538	2412	—	—	250	—	—	3.17
D-8R Dozer (peak use) <sup>4</sup>	24	10.70	—	—	0.538	2412	—	—	250	—	—	3.17
D-8T Dozer (peak use) <sup>4</sup>	24	10.70	—	—	0.538	2412	—	—	250	—	—	3.17
Motor Grader 14G	24	2.50	—	—	0.322	2370	—	—	180	—	—	0.32
John Deere Loader 644H	24	6.00	—	—	0.465	1650	—	—	105	—	—	0.65
John Deere Loader 744H	24	6.00	—	—	0.465	1650	—	—	105	—	—	0.65
Excavator 325L	24	3.70	—	—	0.580	8240	—	—	127	—	—	0.60
Excavator 365BL	24	3.70	—	—	0.580	8240	—	—	127	—	—	0.60
Volvo Excavator EC460BLC	24	3.70	—	—	0.580	8240	—	—	127	—	—	0.60
Case 586G Forklift	24	2.50	—	—	0.300	1308	—	—	40	—	—	0.07
Volvo Articulating Dump Truck (3) <sup>1,2</sup>	24	0.75	2.1	—	—	—	4.179	—	—	0.379	—	0.03
Volvo Articulating Water Truck <sup>1,2</sup>	24	0.25	2.1	—	—	—	4.179	—	—	0.379	—	0.01
Columbia Tipper (3) <sup>1,2</sup>	24	2.25	2.1	—	—	—	4.179	—	—	0.379	—	0.09
Roll Off Trucks (Medium/Heavy Duty Vehicles) (6) <sup>1,2</sup>	24	1.50	2.1	—	—	—	4.179	—	—	0.379	—	0.06
Light Truck (gasoline) (12) <sup>1,3</sup>	24	3.00	2.1	—	—	—	0.306	—	—	0.102	—	0.03
Light Plant (18)	13	112.00	—	5	0.74	—	—	0.018	—	—	0.002	0.83
<b>Total</b>												<b>17.62</b>

**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 hours per 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.
- <sup>1</sup> Trips per hour were used rather than hours per day.
- <sup>2</sup> EMFAC2002 Modeling for Heavy Duty Trucks (H-D, DSL) at 75 degrees F, 25 mph in 2014.
- <sup>3</sup> A load factor of 0.413 was used for the various compactors; the load factor was provided by Caterpillar for an 836C compactor.
- <sup>4</sup> A load factor of 0.538 was used for the various dozers; the load factor was provided by Caterpillar for a D9N dozer.
- <sup>5</sup> 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 <sup>1</sup>	Round Trip Distances	Number of Vehicles <sup>2,3</sup>	Emissions Factor <sup>4</sup>	Emissions	Emissions Factor	Emissions
					NOx		ROGs	
		tpd	mi		g/mi <sup>2</sup>	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	0.38
Light Duty Truck Engines	12	12	2.1	12	0.878	0.05	0.368	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
<b>Total</b>						<b>16.5</b>		<b>1.22</b>

<sup>1</sup> 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).

<sup>2</sup> 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 values and multiplying by the ratio of 2001 daily tonnage (4,000 tpd) to maximum daily tonnage (10,000 tpd).

<sup>3</sup> 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.

<sup>4</sup> 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.

<sup>5</sup> 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 <sup>1</sup>	Round Trip Distances	Number of Vehicles <sup>2,3</sup>	Emissions Factor <sup>4</sup>	Emissions	Emissions Factor	Emissions
					NOx		ROGs	
		tpd	mi		g/mi <sup>2</sup>	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
<b>Total</b>						<b>7.4</b>		<b>0.69</b>

**Notes:**

<sup>1</sup> 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 2014 daily tonnage (6,552 tpd) to maximum daily tonnage

<sup>2</sup> 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.

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

<sup>4</sup> 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 <sup>1,3</sup>	9	8	130	2	7.128	32.691859	0.875	4.0
834B Compaction Dozer <sup>1,3</sup>	9	8	130	3	7.128	49.037789	0.875	6.0
8,000 Gallon Water Pull <sup>1,3</sup> (631D)	9	8	130	4	7.128	65.383718	0.875	8.0
657B Scrapers (6) <sup>2,3</sup>	9	48	130	10	5.91	3254.326	0.687	378.1
<b>Total</b>						<b>3,401.4</b>		<b>396.2</b>

**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
<b>Total Project at 6,552 tpd (2014)</b>	<b>707.6</b>	<b>404.3</b>
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
<b>Baseline Project at 4,000 tpd</b>	<b>1254.0</b>	<b>112.4</b>

**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
<b>Total Project at 6,552 tpd (2014)</b>	<b>566.3</b>	<b>26.3</b>
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
<b>Total Project at 4,000 tpd (2001)</b>	<b>1228.1</b>	<b>35.0</b>
<b>Expansion (6,552 tpd minus 4,000 tpd)</b>	<b>-661.9</b>	<b>-8.8</b>
<b>SCAQMD Emission Rate Significance Threshold</b>	<b>55.0</b>	<b>55.0</b>
<b>Required Emission Reduction</b>	<b>0.0</b>	<b>0.0</b>

\* 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<sub>x</sub> 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<sub>x</sub> 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<sub>0</sub>" and "k" values for the El Sobrante site were calibrated based on precipitation data. The L<sub>0</sub> (2,925 ft<sup>3</sup>/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 4<sup>th</sup> quarter 2012 and 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> 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<sub>x</sub> and ROG emission estimates for flare and surface emissions. Baseline flare maximum NO<sub>x</sub> 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<sub>x</sub> 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<sub>x</sub> and ROG emission estimates for the IC engines. The IC engines did not exist in 2001. The 2014 NO<sub>x</sub> 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<sub>x</sub> 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**

[illegible]



**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

T-3

**Peak Hour Avoidance Letter**



**WASTE MANAGEMENT  
EL SOBRANTE LANDFILL**

10910 Dawson Canyon Road  
Corona, CA 92883  
(951) 277-1740  
(951) 277-1861 Fax

January 24, 2014

<<Company Name>>  
<<Street Address>>  
<<City, State, Zip Code>>

**RE: Transfer Truck Limitation on SR 91**

Dear <<Company Name>>:

Please note that no transfer truck traffic is allowed on The Riverside County segment of SR 91 during the identified peak traffic hours. The transfer truck limitation is during the following peak hours:

- 7:30 AM to 8:30 AM
- 4:30 PM to 5:30 PM

This requirement is one of the mitigation measures imposed as a condition of the El Sobrante Landfill operating agreement.

If you have any questions or need further information, please call our main office at (951) 277-1740.

Sincerely,

Mike Williams  
Senior District Manager



**Number of Vehicles by Date, Time and Account**

*Date Range is 01/01/2012-12/31/2012 and Time Range is 7:30-8:30 and Account # is 4180,4420,4300 and Vehicle Type is 19*

Account #: 4420 WMIE CITY OF LOS ANGELES

Date	Time	Vehicle Type
04/26/2012	08:28:56	19
11/02/2012	08:29:10	19
10/22/2012	08:29:17	19
03/14/2012	08:29:24	19
08/29/2012	08:29:25	19
02/20/2012	08:29:38	19
01/25/2012	08:29:39	19
05/07/2012	08:29:39	19
01/10/2012	08:29:41	19
04/03/2012	08:29:42	19
02/07/2012	08:29:44	19
10/17/2012	08:29:47	19
06/18/2012	08:29:55	19
02/16/2012	08:29:56	19
08/01/2012	08:29:56	19

**Total for the 08 Hour = 410**

**Total for Account # 4420 = 816**

**Total for All Accounts = 2,219**



**Number of Vehicles by Date, Time and Account**

Date Range is 01/01/2012-12/31/2012 and Time Range is 16:30-17:30 and Account # is 4180,4420,4300 and Vehicle Type is 19

Account #: 4420 WMIE/CITY OF LOS ANGELES

Date	Time	Vehicle Type
03/06/2012	17:09:12	19
12/03/2012	17:09:35	19
08/06/2012	17:09:40	19
06/27/2012	17:10:06	19
02/20/2012	17:10:52	19
04/10/2012	17:11:29	19
03/26/2012	17:11:53	19
11/07/2012	17:13:00	19
01/17/2012	17:13:12	19
09/06/2012	17:14:14	19
04/24/2012	17:16:58	19
08/08/2012	17:17:32	19
10/22/2012	17:17:42	19
09/11/2012	17:19:44	19
01/27/2012	17:19:45	19
08/29/2012	17:19:48	19
10/10/2012	17:22:16	19
11/21/2012	17:22:22	19
10/22/2012	17:24:15	19
08/07/2012	17:24:49	19
07/11/2012	17:25:53	19
01/19/2012	17:26:41	19
07/18/2012	17:26:58	19
10/03/2012	17:28:07	19
05/02/2012	17:29:01	19

Total for the 17 Hour = 39

Total for Account # 4420 = 126

Total for All Accounts = 154



**Number of Vehicles by Date, Time and Account**

*Date Range is 01/01/2013-12/31/2013 and Time Range is 16:30-17:30 and Account # is 4180,4420,4300 and Vehicle Type is 19*

Account #: 4420 WMIE/CITY OF LOS ANGELES

Date	Time	Vehicle Type
11/14/2013	17:19:18	19
03/04/2013	17:19:21	19
02/06/2013	17:19:59	19
10/09/2013	17:22:14	19
05/20/2013	17:22:37	19
08/21/2013	17:24:33	19
11/14/2013	17:24:50	19
02/07/2013	17:25:42	19
06/12/2013	17:25:42	19
04/16/2013	17:26:20	19
03/05/2013	17:26:48	19
05/29/2013	17:27:53	19
06/18/2013	17:28:24	19
09/25/2013	17:28:29	19
08/14/2013	17:29:01	19

**Total for the 17 Hour = 45**

**Total for Account # 4420 = 116**

**Total for All Accounts = 122**



**Number of Vehicles by Date, Time and Account**

*Date Range is 01/01/2013-12/31/2013 and Time Range is 7:30-8:30 and Account # is 4180,4420,4300 and Vehicle Type is 19*

Account #: 4420 WMIE/CITY OF LOS ANGELES

Date	Time	Vehicle Type
11/05/2013	08:29:39	19

Total for the 08 Hour = 336

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Total for Account # 4420 = 691

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Total for All Accounts = 1,623



W-2

**Annual Report for Storm Water Discharges Associated with Industrial Activities  
Analytical Report**

## ANALYTICAL REPORT

Job Number: 280-52652-1

Job Description: 1030|El Sobrante LF- Stormwater

For:

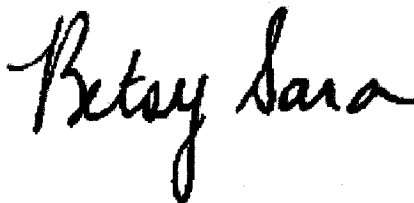
Waste Management

El Sobrante LF

10910 Dawson Canyon Road

Corona, CA 92883

Attention: Mr. Cody Cowgill



Approved for release:  
Betsy A. Sara  
Project Manager II  
3/12/2014 12:19 PM

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Betsy A Sara, Project Manager II  
4955 Yarrow Street, Arvada, CO, 80002  
(303)736-0189  
betsy.sara@testamericainc.com  
03/12/2014

cc: Ms. Tina Schmiesing

The test results in this report relate only to the samples in this report and meet all requirements of NELAC, with any exceptions noted. Pursuant to NELAP, this report shall not be reproduced except in full, without the written approval of the laboratory. All questions regarding this report should be directed to the TestAmerica Denver Project Manager.

The Lab Certification ID# is E87667.  
The Lab California Certification is # 2513.

Reporting limits are adjusted for sample size used, dilutions and moisture content if applicable.

TestAmerica Laboratories, Inc.

TestAmerica Denver 4955 Yarrow Street, Arvada, CO 80002

Tel (303) 736-0100 Fax (303) 431-7171 [www.testamericainc.com](http://www.testamericainc.com)



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## **CASE NARRATIVE**

**Client: Waste Management**

**Project: 1030|EI Sobrante LF- Stormwater**

**Report Number: 280-52652-1**

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

This report may include reporting limits (RLs) less than TestAmerica's standard reporting limit. The reported sample results and associated reporting limits are being used specifically to meet the needs of this project. Note that data are not normally reported to these levels without qualification because they are inherently less reliable and potentially less defensible than required by the latest industry standards.

### **Sample Receiving**

The samples were received on 03/03/2014 and 03/04/2014; the samples arrived in good condition. The temperatures of the coolers at receipt were 5.4° C, 5.6° C and 19.2° C.

Sample OUTFALL NORTH arrived at a temperature of 19.2 C which is above the recommended maximum temperature of 6.0 C. The ice in the cooler was melted due to a delay in Fed Ex delivery. The laboratory proceeded with the analysis per client request. The client was notified on 3/5/2014.

The sample ID for sample OUTFALL B was listed on the chain of custody and the container labels as Apple B. The sample ID was changed to OUTFALL B per request. The client was notified on 3/5/2014.

### **Holding Times**

The laboratory pH was measured outside of the TestAmerica recommended hold time and therefore the laboratory pH result is flagged with an "HF" flag.

All other holding times were met.

### **Method Blanks**

Total Organic Carbon (TOC) Method 5310B was detected in the Method Blank at a concentration below the reporting limit but above the method detection limit. No corrective action is taken for results in Method Blank that are below the reporting limits.

All other Method Blanks were within established control limits.

### **Laboratory Control Samples (LCS)**

All Laboratory Control Sample results were within established control limits.

### **Matrix Spike (MS) and Matrix Spike Duplicate (MSD)**

The percent recoveries and/or relative percent difference of the MS/MSD performed on sample OUTFALL B were outside control limits for Total Iron Method 200.7 because the sample concentration was greater than four times the spike amount. Because the corresponding Laboratory Control Sample and the Method Blank sample were within control limits, no corrective action was taken.

The method required MS/MSD could not be performed for Method 1664A due to insufficient sample volume; however, a LCS/LCSD pair was analyzed to demonstrate method precision and accuracy.

All other MS and MSD samples were within established control limits.

### **Sample Duplicate**

The RPD for Total Suspended Solids Method 2540D performed on a sample from another client was outside control limits. Because all other QC and calibration criteria were met no corrective action was needed.

#### **General Chemistry**

Due to the sample matrix, the initial volume used for the samples OUTFALL B and OUTFALL001\_D-1 deviated from the standard procedure for TSS. The reporting limit (RL) has been adjusted proportionately.

#### **General Comments**

For samples requiring analysis at a dilution, the dilution factor has been multiplied by the Method Detection Limit (MDL) for each analyte and evaluated versus the project-specific reporting limit (PSRL). If the obtained value is below the PSRL, then the PSRL is preserved as the reporting limit for the diluted result, otherwise, the obtained value becomes the reporting limit. This is done in order to maintain the PSRL to meet permit requirements at the request of the client and to report the lowest possible RL for each analyte.

## Waste Management

### EXECUTIVE SUMMARY - Exceedance Report

Lot/SDG Number: 280-52652-1

Permit Number: CA Stormwater

Site Name: 1030|El Sobrante LF

Client Sample Id	Collected	Sample	Analyte	Result	Exceedance?	Benchmark	Units	Method
OUTFALL001_D -1	02/28/2014 14:10	1	Oil & Grease (HEM)	ND	NO	15	mg/L	1664A
OUTFALL001_D -1	02/28/2014 14:10	1	Iron	790	BENCH	1.0	mg/L	200.7 Rev 4.4
OUTFALL001_D -1	02/28/2014 14:10	1	Specific Conductance	540	BENCH	200	umhos/cm	9050A
OUTFALL001_D -1	02/28/2014 14:10	1	Total Suspended Solids	26000	BENCH	100	mg/L	SM 2540D
OUTFALL001_D -1	02/28/2014 14:10	1	pH	8.37	NO	6.0-9.0	SU	SM 4500 H+ B
OUTFALL001_D -1	02/28/2014 14:10	1	Total Organic Carbon Result 1	17	NO	110	mg/L	SM 5310B
OUTFALL001_D -1	02/28/2014 14:10	1	Total Organic Carbon Result 2	17	NO	110	mg/L	SM 5310B

NA = Not Available

BENCH = Result > Benchmark =

**RESPONSE ACTION REQUIRED**

NO = Result <= Benchmark



THE LEADER IN ENVIRONMENTAL TESTING

Waste Management

EXECUTIVE SUMMARY - Exceedance Report

Lot/SDG Number: 280-52652-1

Permit Number: CA Stormwater

Site Name: 1030|El Sobrante LF

Client Sample Id	Collected	Sample	Analyte	Result	Exceedance?	Benchmark	Units	Method
OUTFALL B	02/28/2014 13:00	2	Oil & Grease (HEM)	3.2	NO	15	mg/L	1664A
OUTFALL B	02/28/2014 13:00	2	Iron	65	<b>BENCH</b>	1.0	mg/L	200.7 Rev 4.4
OUTFALL B	02/28/2014 13:00	2	Specific Conductance	190	NO	200	umhos/cm	9050A
OUTFALL B	02/28/2014 13:00	2	Total Suspended Solids	1800	<b>BENCH</b>	100	mg/L	SM 2540D
OUTFALL B	02/28/2014 13:00	2	pH	8.60	NO	6.0-9.0	SU	SM 4500 H+ B
OUTFALL B	02/28/2014 13:00	2	Total Organic Carbon Result 1	4.2	NO	110	mg/L	SM 5310B
OUTFALL B	02/28/2014 13:00	2	Total Organic Carbon Result 2	4.1	NO	110	mg/L	SM 5310B

NA = Not Available

BENCH = Result > Benchmark =

**RESPONSE ACTION REQUIRED**

NO = Result <= Benchmark

## Waste Management

### EXECUTIVE SUMMARY - Exceedance Report

Lot/SDG Number: 280-52652-1

Permit Number: CA Stormwater

Site Name: 1030|El Sobrante LF

Client Sample Id	Collected	Sample	Analyte	Result	Exceedance?	Benchmark	Units	Method
OUTFALL NORTH	02/28/2014 13:40	3	Oil & Grease (HEM)	ND	NO	15	mg/L	1664A
OUTFALL NORTH	02/28/2014 13:40	3	Iron	12	BENCH	1.0	mg/L	200.7 Rev 4.4
OUTFALL NORTH	02/28/2014 13:40	3	Specific Conductance	500	BENCH	200	umhos/cm	9050A
OUTFALL NORTH	02/28/2014 13:40	3	Total Suspended Solids	240	BENCH	100	mg/L	SM 2540D
OUTFALL NORTH	02/28/2014 13:40	3	pH	7.64	NO	6.0-9.0	SU	SM 4500 H+ B
OUTFALL NORTH	02/28/2014 13:40	3	Total Organic Carbon Result 1	8.0	NO	110	mg/L	SM 5310B
OUTFALL NORTH	02/28/2014 13:40	3	Total Organic Carbon Result 2	8.3	NO	110	mg/L	SM 5310B

NA = Not Available

BENCH = Result > Benchmark =

**RESPONSE ACTION REQUIRED**

NO = Result <= Benchmark



# EXECUTIVE SUMMARY - Detections

Client: Waste Management

Job Number: 280-52652-1

Lab Sample ID Analyte	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
<b>280-52652-1      OUTFALL001_D-1</b>						
Specific Conductance		540		2.0	umhos/cm	9050A
Total Suspended Solids		26000		55	mg/L	SM 2540D
pH		8.37	HF	0.100	SU	SM 4500 H+ B
TOC Result 1		17	B	1.0	mg/L	SM 5310B
TOC Result 2		17	B	1.0	mg/L	SM 5310B
<b>Total Recoverable</b>						
Iron		790		0.11	mg/L	200.7 Rev 4.4
<b>280-52652-2      OUTFALL B</b>						
HEM		3.2	J	5.0	mg/L	1664A
Specific Conductance		190		2.0	umhos/cm	9050A
Total Suspended Solids		1800		18	mg/L	SM 2540D
pH		8.60	HF	0.100	SU	SM 4500 H+ B
TOC Result 1		4.2	B	1.0	mg/L	SM 5310B
TOC Result 2		4.1	B	1.0	mg/L	SM 5310B
<b>Total Recoverable</b>						
Iron		65		0.10	mg/L	200.7 Rev 4.4
<b>280-52652-3      OUTFALL NORTH</b>						
Specific Conductance		500		2.0	umhos/cm	9050A
Total Suspended Solids		240		4.0	mg/L	SM 2540D
pH		7.64	HF	0.100	SU	SM 4500 H+ B
TOC Result 1		8.0	B	1.0	mg/L	SM 5310B
TOC Result 2		8.3	B	1.0	mg/L	SM 5310B
<b>Total Recoverable</b>						
Iron		12		0.10	mg/L	200.7 Rev 4.4

## METHOD SUMMARY

Client: Waste Management

Job Number: 280-52652-1

Description	Lab Location	Method	Preparation Method
<b>Matrix: Water</b>			
Metals (ICP)	TAL DEN	EPA 200.7 Rev 4.4	
Preparation, Total Recoverable Metals	TAL DEN		EPA 200.7
HEM and SGT-HEM	TAL DEN	1664A 1664A	
HEM and SGT-HEM (SPE)	TAL DEN		1664A 1664A
Specific Conductance	TAL DEN	SW846 9050A	
Solids, Total Suspended (TSS)	TAL DEN	SM SM 2540D	
pH	TAL DEN	SM SM 4500 H+ B	
Organic Carbon, Total (TOC)	TAL DEN	SM SM 5310B	

### Lab References:

TAL DEN = TestAmerica Denver

### Method References:

1664A = EPA-821-98-002

EPA = US Environmental Protection Agency

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

## METHOD / ANALYST SUMMARY

Client: Waste Management

Job Number: 280-52652-1

Method	Analyst	Analyst ID
EPA 200.7 Rev 4.4	Harre, John K	JKH
EPA 200.7 Rev 4.4	Scott, Samantha J	SJS
1664A 1664A	Benson, Alex F	AFB
SW846 9050A	Bland, Morgan R	MRB
SM SM 2540D	Woolley, Mark -	MW1
SM SM 4500 H+ B	Bland, Morgan R	MRB
SM SM 5310B	Jewell, Connie C	CCJ

## SAMPLE SUMMARY

Client: Waste Management

Job Number: 280-52652-1

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
280-52652-1	OUTFALL001_D-1	Water	02/28/2014 1410	03/03/2014 0830
280-52652-2	OUTFALL B	Water	02/28/2014 1300	03/03/2014 0830
280-52652-3	OUTFALL NORTH	Water	02/28/2014 1340	03/03/2014 0830

## **SAMPLE RESULTS**

**Analytical Data**

Client: Waste Management

Job Number: 280-52652-1

Client Sample ID: OUTFALL001\_D-1

Lab Sample ID: 280-52652-1

Date Sampled: 02/28/2014 1410

Client Matrix: Water

Date Received: 03/03/2014 0830

**200.7 Rev 4.4 Metals (ICP)-Total Recoverable**

Analysis Method: 200.7 Rev 4.4  
Prep Method: 200.7  
Dilution: 5.0  
Analysis Date: 03/05/2014 1450  
Prep Date: 03/04/2014 0730

Analysis Batch: 280-215710  
Prep Batch: 280-215248

Instrument ID: MT\_026  
Lab File ID: 26a030514a.asc  
Initial Weight/Volume: 50 mL  
Final Weight/Volume: 50 mL

Analyte	Result (mg/L)	Qualifier	MDL	RL
Iron	790		0.11	0.11

**Analytical Data**

Client: Waste Management

Job Number: 280-52652-1

Client Sample ID: OUTFALL B

Lab Sample ID: 280-52652-2

Date Sampled: 02/28/2014 1300

Client Matrix: Water

Date Received: 03/03/2014 0830

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**200.7 Rev 4.4 Metals (ICP)-Total Recoverable**

Analysis Method: 200.7 Rev 4.4

Analysis Batch: 280-215498

Instrument ID: MT\_026

Prep Method: 200.7

Prep Batch: 280-215248

Lab File ID: 26a030414c.asc

Dilution: 1.0

Initial Weight/Volume: 50 mL

Analysis Date: 03/04/2014 2211

Final Weight/Volume: 50 mL

Prep Date: 03/04/2014 0730

Analyte	Result (mg/L)	Qualifier	MDL	RL
Iron	65		0.022	0.10

## Analytical Data

Client: Waste Management

Job Number: 280-52652-1

Client Sample ID: OUTFALL NORTH

Lab Sample ID: 280-52652-3

Date Sampled: 02/28/2014 1340

Client Matrix: Water

Date Received: 03/03/2014 0830

### 200.7 Rev 4.4 Metals (ICP)-Total Recoverable

Analysis Method: 200.7 Rev 4.4  
Prep Method: 200.7  
Dilution: 1.0  
Analysis Date: 03/06/2014 1739  
Prep Date: 03/06/2014 0800

Analysis Batch: 280-215883  
Prep Batch: 280-215415

Instrument ID: MT\_025  
Lab File ID: 25A2030614.asc  
Initial Weight/Volume: 50 mL  
Final Weight/Volume: 50 mL

Analyte	Result (mg/L)	Qualifier	MDL	RL
Iron	12		0.022	0.10



# Analytical Data

Client: Waste Management

Job Number: 280-52652-1

## General Chemistry

Client Sample ID: OUTFALL001\_D-1

Lab Sample ID: 280-52652-1

Client Matrix: Water

Date Sampled: 02/28/2014 1410

Date Received: 03/03/2014 0830

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
HEM	ND		mg/L	4.0	5.0	1.0	1664A
	Analysis Batch: 280-216199			Analysis Date: 03/10/2014 1251			
	Prep Batch: 280-216121			Prep Date: 03/10/2014 0918			
Total Suspended Solids	26000		mg/L	55	55	1.0	SM 2540D
	Analysis Batch: 280-215401			Analysis Date: 03/04/2014 1515			
TOC Result 1	17	B	mg/L	0.16	1.0	1.0	SM 5310B
	Analysis Batch: 280-216059			Analysis Date: 03/07/2014 1829			
TOC Result 2	17	B	mg/L	0.16	1.0	1.0	SM 5310B
	Analysis Batch: 280-216059			Analysis Date: 03/07/2014 1829			
Analyte	Result	Qual	Units	RL	RL	Dil	Method
Specific Conductance	540		umhos/cm	2.0	2.0	1.0	9050A
	Analysis Batch: 280-216025			Analysis Date: 03/07/2014 1944			
pH	8.37	HF	SU	0.100	0.100	1.0	SM 4500 H+ B
	Analysis Batch: 280-215217			Analysis Date: 03/03/2014 1955			

# Analytical Data

Client: Waste Management

Job Number: 280-52652-1

## General Chemistry

Client Sample ID: OUTFALL B

Lab Sample ID: 280-52652-2

Client Matrix: Water

Date Sampled: 02/28/2014 1300

Date Received: 03/03/2014 0830

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
HEM	3.2	J	mg/L	3.2	5.0	1.0	1664A
	Analysis Batch: 280-216199	Analysis Date: 03/10/2014 1251					
	Prep Batch: 280-216121	Prep Date: 03/10/2014 0918					
Total Suspended Solids	1800		mg/L	18	18	1.0	SM 2540D
	Analysis Batch: 280-215401	Analysis Date: 03/04/2014 1515					
TOC Result 1	4.2	B	mg/L	0.16	1.0	1.0	SM 5310B
	Analysis Batch: 280-216059	Analysis Date: 03/07/2014 1922					
TOC Result 2	4.1	B	mg/L	0.16	1.0	1.0	SM 5310B
	Analysis Batch: 280-216059	Analysis Date: 03/07/2014 1922					
Analyte	Result	Qual	Units	RL	RL	Dil	Method
Specific Conductance	190		umhos/cm	2.0	2.0	1.0	9050A
	Analysis Batch: 280-216025	Analysis Date: 03/07/2014 1944					
pH	8.60	HF	SU	0.100	0.100	1.0	SM 4500 H+ B
	Analysis Batch: 280-215217	Analysis Date: 03/03/2014 1955					

# Analytical Data

Client: Waste Management

Job Number: 280-52652-1

## General Chemistry

Client Sample ID: OUTFALL NORTH

Lab Sample ID: 280-52652-3

Client Matrix: Water

Date Sampled: 02/28/2014 1340

Date Received: 03/03/2014 0830

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
HEM	ND		mg/L	1.6	5.0	1.0	1664A
	Analysis Batch: 280-216199			Analysis Date: 03/10/2014 1251			
	Prep Batch: 280-216121			Prep Date: 03/10/2014 0918			
Total Suspended Solids	240		mg/L	3.7	4.0	1.0	SM 2540D
	Analysis Batch: 280-215401			Analysis Date: 03/04/2014 1515			
TOC Result 1	8.0	B	mg/L	0.16	1.0	1.0	SM 5310B
	Analysis Batch: 280-216059			Analysis Date: 03/07/2014 1938			
TOC Result 2	8.3	B	mg/L	0.16	1.0	1.0	SM 5310B
	Analysis Batch: 280-216059			Analysis Date: 03/07/2014 1938			
Analyte	Result	Qual	Units	RL	RL	Dil	Method
Specific Conductance	500		umhos/cm	2.0	2.0	1.0	9050A
	Analysis Batch: 280-216025			Analysis Date: 03/07/2014 1944			
pH	7.64	HF	SU	0.100	0.100	1.0	SM 4500 H+ B
	Analysis Batch: 280-215418			Analysis Date: 03/04/2014 1734			

## DATA REPORTING QUALIFIERS

Client: Waste Management

Job Number: 280-52652-1

Lab Section	Qualifier	Description
Metals	4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
General Chemistry	B	Compound was found in the blank and sample.
	HF	Field parameter with a holding time of 15 minutes
	J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

## QUALITY CONTROL RESULTS

## Quality Control Results

Client: Waste Management

Job Number: 280-52652-1

### QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
<b>Metals</b>					
<b>Prep Batch: 280-215248</b>					
LCS 280-215248/2-A	Lab Control Sample	R	Water	200.7	
MB 280-215248/1-A	Method Blank	R	Water	200.7	
280-52652-1	OUTFALL001_D-1	R	Water	200.7	
280-52652-2	OUTFALL B	R	Water	200.7	
280-52652-2MS	Matrix Spike	R	Water	200.7	
280-52652-2MSD	Matrix Spike Duplicate	R	Water	200.7	
<b>Prep Batch: 280-215415</b>					
LCS 280-215415/2-A	Lab Control Sample	R	Water	200.7	
MB 280-215415/1-A	Method Blank	R	Water	200.7	
280-52652-3	OUTFALL NORTH	R	Water	200.7	
280-52663-F-4-B MS	Matrix Spike	R	Water	200.7	
280-52663-F-4-C MSD	Matrix Spike Duplicate	R	Water	200.7	
<b>Analysis Batch:280-215498</b>					
LCS 280-215248/2-A	Lab Control Sample	R	Water	200.7 Rev 4.4	280-215248
MB 280-215248/1-A	Method Blank	R	Water	200.7 Rev 4.4	280-215248
280-52652-2	OUTFALL B	R	Water	200.7 Rev 4.4	280-215248
280-52652-2MS	Matrix Spike	R	Water	200.7 Rev 4.4	280-215248
280-52652-2MSD	Matrix Spike Duplicate	R	Water	200.7 Rev 4.4	280-215248
<b>Analysis Batch:280-215710</b>					
280-52652-1	OUTFALL001_D-1	R	Water	200.7 Rev 4.4	280-215248
<b>Analysis Batch:280-215883</b>					
LCS 280-215415/2-A	Lab Control Sample	R	Water	200.7 Rev 4.4	280-215415
MB 280-215415/1-A	Method Blank	R	Water	200.7 Rev 4.4	280-215415
280-52652-3	OUTFALL NORTH	R	Water	200.7 Rev 4.4	280-215415
280-52663-F-4-B MS	Matrix Spike	R	Water	200.7 Rev 4.4	280-215415
280-52663-F-4-C MSD	Matrix Spike Duplicate	R	Water	200.7 Rev 4.4	280-215415

#### Report Basis

R = Total Recoverable

TestAmerica Denver

## Quality Control Results

Client: Waste Management

Job Number: 280-52652-1

### QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
<b>General Chemistry</b>					
<b>Analysis Batch:280-215217</b>					
LCS 280-215217/4	Lab Control Sample	T	Water	SM 4500 H+ B	
LCSD 280-215217/5	Lab Control Sample Duplicate	T	Water	SM 4500 H+ B	
280-52534-A-25 DU	Duplicate	T	Water	SM 4500 H+ B	
280-52652-1	OUTFALL001_D-1	T	Water	SM 4500 H+ B	
280-52652-2	OUTFALL B	T	Water	SM 4500 H+ B	
<b>Analysis Batch:280-215401</b>					
LCS 280-215401/1	Lab Control Sample	T	Water	SM 2540D	
LCSD 280-215401/2	Lab Control Sample Duplicate	T	Water	SM 2540D	
MB 280-215401/3	Method Blank	T	Water	SM 2540D	
280-52594-A-1 DU	Duplicate	T	Water	SM 2540D	
280-52652-1	OUTFALL001_D-1	T	Water	SM 2540D	
280-52652-2	OUTFALL B	T	Water	SM 2540D	
280-52652-3	OUTFALL NORTH	T	Water	SM 2540D	
<b>Analysis Batch:280-215418</b>					
LCS 280-215418/4	Lab Control Sample	T	Water	SM 4500 H+ B	
LCSD 280-215418/5	Lab Control Sample Duplicate	T	Water	SM 4500 H+ B	
280-52576-E-3 DU	Duplicate	T	Water	SM 4500 H+ B	
280-52652-3	OUTFALL NORTH	T	Water	SM 4500 H+ B	
<b>Analysis Batch:280-216025</b>					
LCS 280-216025/3	Lab Control Sample	T	Water	9050A	
LCSD 280-216025/4	Lab Control Sample Duplicate	T	Water	9050A	
MB 280-216025/5	Method Blank	T	Water	9050A	
280-52652-1	OUTFALL001_D-1	T	Water	9050A	
280-52652-1DU	Duplicate	T	Water	9050A	
280-52652-2	OUTFALL B	T	Water	9050A	
280-52652-3	OUTFALL NORTH	T	Water	9050A	
<b>Analysis Batch:280-216059</b>					
LCS 280-216059/3	Lab Control Sample	T	Water	SM 5310B	
LCSD 280-216059/4	Lab Control Sample Duplicate	T	Water	SM 5310B	
MB 280-216059/5	Method Blank	T	Water	SM 5310B	
280-52652-1	OUTFALL001_D-1	T	Water	SM 5310B	
280-52652-1MS	Matrix Spike	T	Water	SM 5310B	
280-52652-1MSD	Matrix Spike Duplicate	T	Water	SM 5310B	
280-52652-2	OUTFALL B	T	Water	SM 5310B	
280-52652-3	OUTFALL NORTH	T	Water	SM 5310B	

## Quality Control Results

Client: Waste Management

Job Number: 280-52652-1

### QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
<b>General Chemistry</b>					
<b>Prep Batch: 280-216121</b>					
LCS 280-216121/2-A	Lab Control Sample	T	Water	1664A	
LCSD 280-216121/3-A	Lab Control Sample Duplicate	T	Water	1664A	
MB 280-216121/1-A	Method Blank	T	Water	1664A	
280-52652-1	OUTFALL001_D-1	T	Water	1664A	
280-52652-2	OUTFALL B	T	Water	1664A	
280-52652-3	OUTFALL NORTH	T	Water	1664A	
<b>Analysis Batch: 280-216199</b>					
LCS 280-216121/2-A	Lab Control Sample	T	Water	1664A	280-216121
LCSD 280-216121/3-A	Lab Control Sample Duplicate	T	Water	1664A	280-216121
MB 280-216121/1-A	Method Blank	T	Water	1664A	280-216121
280-52652-1	OUTFALL001_D-1	T	Water	1664A	280-216121
280-52652-2	OUTFALL B	T	Water	1664A	280-216121
280-52652-3	OUTFALL NORTH	T	Water	1664A	280-216121

#### Report Basis

T = Total



## Quality Control Results

Client: Waste Management

Job Number: 280-52652-1

### Method Blank - Batch: 280-215248

Method: 200.7 Rev 4.4

Preparation: 200.7

Total Recoverable

Lab Sample ID: MB 280-215248/1-A  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 03/04/2014 2200  
Prep Date: 03/04/2014 0730  
Leach Date: N/A

Analysis Batch: 280-215498  
Prep Batch: 280-215248  
Leach Batch: N/A  
Units: mg/L

Instrument ID: MT\_026  
Lab File ID: 26a030414c.asc  
Initial Weight/Volume: 50 mL  
Final Weight/Volume: 50 mL

Analyte	Result	Qual	MDL	RL
Iron	ND		0.022	0.10

### Lab Control Sample - Batch: 280-215248

Method: 200.7 Rev 4.4

Preparation: 200.7

Total Recoverable

Lab Sample ID: LCS 280-215248/2-A  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 03/04/2014 2202  
Prep Date: 03/04/2014 0730  
Leach Date: N/A

Analysis Batch: 280-215498  
Prep Batch: 280-215248  
Leach Batch: N/A  
Units: mg/L

Instrument ID: MT\_026  
Lab File ID: 26a030414c.asc  
Initial Weight/Volume: 50 mL  
Final Weight/Volume: 50 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Iron	1.00	1.00	100	89 - 115	

### Matrix Spike/

### Matrix Spike Duplicate Recovery Report - Batch: 280-215248

Method: 200.7 Rev 4.4

Preparation: 200.7

Total Recoverable

MS Lab Sample ID: 280-52652-2  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 03/04/2014 2215  
Prep Date: 03/04/2014 0730  
Leach Date: N/A

Analysis Batch: 280-215498  
Prep Batch: 280-215248  
Leach Batch: N/A

Instrument ID: MT\_026  
Lab File ID: 26a030414c.asc  
Initial Weight/Volume: 50 mL  
Final Weight/Volume: 50 mL

MSD Lab Sample ID: 280-52652-2  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 03/04/2014 2217  
Prep Date: 03/04/2014 0730  
Leach Date: N/A

Analysis Batch: 280-215498  
Prep Batch: 280-215248  
Leach Batch: N/A

Instrument ID: MT\_026  
Lab File ID: 26a030414c.asc  
Initial Weight/Volume: 50 mL  
Final Weight/Volume: 50 mL

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Iron	718	1581	89 - 115	11	20	4	4

# Quality Control Results

Client: Waste Management

Job Number: 280-52652-1

## Method Blank - Batch: 280-215415

Method: 200.7 Rev 4.4

Preparation: 200.7

Total Recoverable

Lab Sample ID: MB 280-215415/1-A  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 03/06/2014 1732  
Prep Date: 03/06/2014 0800  
Leach Date: N/A

Analysis Batch: 280-215883  
Prep Batch: 280-215415  
Leach Batch: N/A  
Units: mg/L

Instrument ID: MT\_025  
Lab File ID: 25A2030614.asc  
Initial Weight/Volume: 50 mL  
Final Weight/Volume: 50 mL

Analyte	Result	Qual	MDL	RL
Iron	ND		0.022	0.10

## Lab Control Sample - Batch: 280-215415

Method: 200.7 Rev 4.4

Preparation: 200.7

Total Recoverable

Lab Sample ID: LCS 280-215415/2-A  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 03/06/2014 1734  
Prep Date: 03/06/2014 0800  
Leach Date: N/A

Analysis Batch: 280-215883  
Prep Batch: 280-215415  
Leach Batch: N/A  
Units: mg/L

Instrument ID: MT\_025  
Lab File ID: 25A2030614.asc  
Initial Weight/Volume: 50 mL  
Final Weight/Volume: 50 mL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Iron	1.00	1.05	105	89 - 115	

## Matrix Spike/

## Matrix Spike Duplicate Recovery Report - Batch: 280-215415

Method: 200.7 Rev 4.4

Preparation: 200.7

Total Recoverable

MS Lab Sample ID: 280-52663-F-4-B MS  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 03/06/2014 1803  
Prep Date: 03/06/2014 0800  
Leach Date: N/A

Analysis Batch: 280-215883  
Prep Batch: 280-215415  
Leach Batch: N/A

Instrument ID: MT\_025  
Lab File ID: 25A2030614.asc  
Initial Weight/Volume: 50 mL  
Final Weight/Volume: 50 mL

MSD Lab Sample ID: 280-52663-F-4-C MSD  
Client Matrix: Water  
Dilution: 1.0  
Analysis Date: 03/06/2014 1805  
Prep Date: 03/06/2014 0800  
Leach Date: N/A

Analysis Batch: 280-215883  
Prep Batch: 280-215415  
Leach Batch: N/A

Instrument ID: MT\_025  
Lab File ID: 25A2030614.asc  
Initial Weight/Volume: 50 mL  
Final Weight/Volume: 50 mL

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Iron	107	105	89 - 115	1	20		

## Quality Control Results

Client: Waste Management

Job Number: 280-52652-1

### Method Blank - Batch: 280-216121

**Method: 1664A**  
**Preparation: 1664A**

Lab Sample ID: MB 280-216121/1-A	Analysis Batch: 280-216199	Instrument ID: No Equipment Assigned
Client Matrix: Water	Prep Batch: 280-216121	Lab File ID: N/A
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 1000 mL
Analysis Date: 03/10/2014 1251	Units: mg/L	Final Weight/Volume: 1000 mL
Prep Date: 03/10/2014 0918		
Leach Date: N/A		

Analyte	Result	Qual	MDL	RL
HEM	ND		1.6	5.0

### Lab Control Sample/

### Lab Control Sample Duplicate Recovery Report - Batch: 280-216121

**Method: 1664A**  
**Preparation: 1664A**

LCS Lab Sample ID: LCS 280-216121/2-A	Analysis Batch: 280-216199	Instrument ID: No Equipment Assigned
Client Matrix: Water	Prep Batch: 280-216121	Lab File ID: N/A
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 1000 mL
Analysis Date: 03/10/2014 1251	Units: mg/L	Final Weight/Volume: 1000 mL
Prep Date: 03/10/2014 0918		
Leach Date: N/A		

LCSD Lab Sample ID: LCSD 280-216121/3-A	Analysis Batch: 280-216199	Instrument ID: No Equipment Assigned
Client Matrix: Water	Prep Batch: 280-216121	Lab File ID: N/A
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 1000 mL
Analysis Date: 03/10/2014 1251	Units: mg/L	Final Weight/Volume: 1000 mL
Prep Date: 03/10/2014 0918		
Leach Date: N/A		

Analyte	LCS	<div style="text-align: center;"><u>% Rec.</u></div> LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
HEM	84	83	78 - 114	1	18		

## Quality Control Results

Client: Waste Management

Job Number: 280-52652-1

### Method Blank - Batch: 280-216025

Method: 9050A  
Preparation: N/A

Lab Sample ID:	MB 280-216025/5	Analysis Batch:	280-216025	Instrument ID:	No Equipment Assigned
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	N/A
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	
Analysis Date:	03/07/2014 1944	Units:	umhos/cm	Final Weight/Volume:	25 mL
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	Result	Qual	RL	RL
Specific Conductance	ND		2.0	2.0

### Lab Control Sample/

### Lab Control Sample Duplicate Recovery Report - Batch: 280-216025

Method: 9050A  
Preparation: N/A

LCS Lab Sample ID:	LCS 280-216025/3	Analysis Batch:	280-216025	Instrument ID:	No Equipment Assigned
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	N/A
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	
Analysis Date:	03/07/2014 1944	Units:	umhos/cm	Final Weight/Volume:	25 mL
Prep Date:	N/A				
Leach Date:	N/A				

LCSD Lab Sample ID:	LCSD 280-216025/4	Analysis Batch:	280-216025	Instrument ID:	No Equipment Assigned
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	N/A
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	
Analysis Date:	03/07/2014 1944	Units:	umhos/cm	Final Weight/Volume:	25 mL
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	% Rec.		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
Specific Conductance	100	96	90 - 110	4	10		

### Duplicate - Batch: 280-216025

Method: 9050A  
Preparation: N/A

Lab Sample ID:	280-52652-1	Analysis Batch:	280-216025	Instrument ID:	No Equipment Assigned
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	N/A
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	
Analysis Date:	03/07/2014 1944	Units:	umhos/cm	Final Weight/Volume:	25 mL
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Specific Conductance	540	541	0.6	10	

## Quality Control Results

Client: Waste Management

Job Number: 280-52652-1

### Method Blank - Batch: 280-215401

**Method: SM 2540D**  
**Preparation: N/A**

Lab Sample ID: MB 280-215401/3	Analysis Batch: 280-215401	Instrument ID: No Equipment Assigned
Client Matrix: Water	Prep Batch: N/A	Lab File ID: N/A
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 250 mL
Analysis Date: 03/04/2014 1515	Units: mg/L	Final Weight/Volume: 250 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Result	Qual	MDL	RL
Total Suspended Solids	ND		1.1	4.0

### Lab Control Sample/

### Lab Control Sample Duplicate Recovery Report - Batch: 280-215401

**Method: SM 2540D**  
**Preparation: N/A**

LCS Lab Sample ID: LCS 280-215401/1	Analysis Batch: 280-215401	Instrument ID: No Equipment Assigned
Client Matrix: Water	Prep Batch: N/A	Lab File ID: N/A
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 100 mL
Analysis Date: 03/04/2014 1515	Units: mg/L	Final Weight/Volume: 250 mL
Prep Date: N/A		
Leach Date: N/A		

LCSD Lab Sample ID: LCSD 280-215401/2	Analysis Batch: 280-215401	Instrument ID: No Equipment Assigned
Client Matrix: Water	Prep Batch: N/A	Lab File ID: N/A
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 100 mL
Analysis Date: 03/04/2014 1515	Units: mg/L	Final Weight/Volume: 250 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	LCS	LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Total Suspended Solids	91	89	86 - 114	2	20		

### Duplicate - Batch: 280-215401

**Method: SM 2540D**  
**Preparation: N/A**

Lab Sample ID: 280-52594-A-1 DU	Analysis Batch: 280-215401	Instrument ID: No Equipment Assigned
Client Matrix: Water	Prep Batch: N/A	Lab File ID: N/A
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 250 mL
Analysis Date: 03/04/2014 1515	Units: mg/L	Final Weight/Volume: 250 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Total Suspended Solids	4.4	5.20	17	10	

## Quality Control Results

Client: Waste Management

Job Number: 280-52652-1

**Lab Control Sample/  
Lab Control Sample Duplicate Recovery Report - Batch: 280-215217**

**Method: SM 4500 H+ B  
Preparation: N/A**

LCS Lab Sample ID:	LCS 280-215217/4	Analysis Batch:	280-215217	Instrument ID:	No Equipment Assigned
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	N/A
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	
Analysis Date:	03/03/2014 1605	Units:	SU	Final Weight/Volume:	1 mL
Prep Date:	N/A				
Leach Date:	N/A				

LCSD Lab Sample ID:	LCSD 280-215217/5	Analysis Batch:	280-215217	Instrument ID:	No Equipment Assigned
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	N/A
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	
Analysis Date:	03/03/2014 1605	Units:	SU	Final Weight/Volume:	1 mL
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	% Rec.		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
pH	100	100	99 - 101	0	5		

**Duplicate - Batch: 280-215217**

**Method: SM 4500 H+ B  
Preparation: N/A**

Lab Sample ID:	280-52534-A-25 DU	Analysis Batch:	280-215217	Instrument ID:	No Equipment Assigned
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	N/A
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	
Analysis Date:	03/03/2014 1606	Units:	SU	Final Weight/Volume:	1 mL
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
pH	5.61	5.640	0.5	5	

## Quality Control Results

Client: Waste Management

Job Number: 280-52652-1

**Lab Control Sample/  
Lab Control Sample Duplicate Recovery Report - Batch: 280-215418**

**Method: SM 4500 H+ B  
Preparation: N/A**

LCS Lab Sample ID: LCS 280-215418/4	Analysis Batch: 280-215418	Instrument ID: No Equipment Assigned
Client Matrix: Water	Prep Batch: N/A	Lab File ID: N/A
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume:
Analysis Date: 03/04/2014 1733	Units: SU	Final Weight/Volume: 1 mL
Prep Date: N/A		
Leach Date: N/A		

LCSD Lab Sample ID: LCSD 280-215418/5	Analysis Batch: 280-215418	Instrument ID: No Equipment Assigned
Client Matrix: Water	Prep Batch: N/A	Lab File ID: N/A
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume:
Analysis Date: 03/04/2014 1733	Units: SU	Final Weight/Volume: 1 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
pH	100	100	99 - 101	0	5		

**Duplicate - Batch: 280-215418**

**Method: SM 4500 H+ B  
Preparation: N/A**

Lab Sample ID: 280-52576-E-3 DU	Analysis Batch: 280-215418	Instrument ID: No Equipment Assigned
Client Matrix: Water	Prep Batch: N/A	Lab File ID: N/A
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume:
Analysis Date: 03/04/2014 1734	Units: SU	Final Weight/Volume: 1 mL
Prep Date: N/A		
Leach Date: N/A		

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
pH	7.16	7.180	0.3	5	

# Quality Control Results

Client: Waste Management

Job Number: 280-52652-1

## Method Blank - Batch: 280-216059

Method: SM 5310B

Preparation: N/A

Lab Sample ID:	MB 280-216059/5	Analysis Batch:	280-216059	Instrument ID:	WC_SHI2
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	030714.bt
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	
Analysis Date:	03/07/2014 1325	Units:	mg/L	Final Weight/Volume:	
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
TOC Result 1	0.288	J	0.16	1.0
TOC Result 2	0.236	J	0.16	1.0

## Lab Control Sample/

Method: SM 5310B

## Lab Control Sample Duplicate Recovery Report - Batch: 280-216059

Preparation: N/A

LCS Lab Sample ID:	LCS 280-216059/3	Analysis Batch:	280-216059	Instrument ID:	WC_SHI2
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	030714.bt
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	
Analysis Date:	03/07/2014 1250	Units:	mg/L	Final Weight/Volume:	200 mL
Prep Date:	N/A				
Leach Date:	N/A				

LCSD Lab Sample ID:	LCSD 280-216059/4	Analysis Batch:	280-216059	Instrument ID:	WC_SHI2
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	030714.bt
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	
Analysis Date:	03/07/2014 1308	Units:	mg/L	Final Weight/Volume:	200 mL
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	% Rec.		Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
	LCS	LCSD					
TOC Result 1	107	107	88 - 112	1	15		
TOC Result 2	106	106	88 - 112	0	15		



## Quality Control Results

Client: Waste Management

Job Number: 280-52652-1

### Matrix Spike/

Matrix Spike Duplicate Recovery Report - Batch: 280-216059

Method: SM 5310B

Preparation: N/A

MS Lab Sample ID:	280-52652-1	Analysis Batch:	280-216059	Instrument ID:	WC_SHI2
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	030714.txt
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	
Analysis Date:	03/07/2014 1847			Final Weight/Volume:	50 mL
Prep Date:	N/A				
Leach Date:	N/A				

MSD Lab Sample ID:	280-52652-1	Analysis Batch:	280-216059	Instrument ID:	WC_SHI2
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	030714.txt
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	
Analysis Date:	03/07/2014 1905			Final Weight/Volume:	50 mL
Prep Date:	N/A				
Leach Date:	N/A				

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
TOC Result 1	105	104	88 - 112	1	15		
TOC Result 2	102	102	88 - 112	0	15		



## Login Sample Receipt Checklist

Client: Waste Management

Job Number: 280-52652-1

Login Number: 52652

List Source: TestAmerica Denver

List Number: 1

Creator: Dedio, Michael T

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	N/A	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Sampling Company provided.	True	
Samples received within 48 hours of sampling.	False	
Samples requiring field filtration have been filtered in the field.	True	
Chlorine Residual checked.	N/A	

State of California  
STATE WATER RESOURCES CONTROL BOARD

2013 2014  
**ANNUAL REPORT**

FOR  
STORM WATER DISCHARGES ASSOCIATED  
WITH INDUSTRIAL ACTIVITIES

Reporting Period July 1, 2013 through June 30, 2014

**An annual report is required to be submitted to your local Regional Water Quality Control Board (Regional Board) by July 1 of each year.** This document must be certified and signed, under penalty of perjury, by the appropriate official of your company. Many of the Annual Report questions require an explanation. Please provide explanations on a separate sheet as an attachment. **Retain a copy of the completed Annual Report for your records.**

Please circle or highlight any information contained in Items A, B, and C below that is new or revised so we can update our records. Please remember that a Notice of Termination and new Notice of Intent are required whenever a facility operation is relocated or changes ownership.

If you have any questions, please contact your Regional Board Industrial Storm Water Permit Contact. The names, telephone numbers and e-mail addresses of the Regional Board contacts, as well as the Regional Board office addresses can be found at <http://www.swrcb.ca.gov/stormwtr/contact.html>. To find your Regional Board information, match the first digit of your WDID number with the corresponding number that appears in parenthesis on the first line of each Regional Board office.

**GENERAL INFORMATION:**

**A. Facility Information:**

Facility Business Name: Waste Mgt Inc El Sobrante Land  
Physical Address: 10910 Dawson Canyon Rd  
City: Corona  
SIC Code(s): 4953-Refuse Systems

**Facility WDID No:** 8 33I000559

Contact Person: Cody Gowgill  
e-mail: ccowgill@wm.com  
**CA** Zip: 92883 Phone: 951-277-5106

**B. Facility Operator Information:**

Operator Name: Waste Management Inc  
Mailing Address: 10910 Dawson Canyon Rd  
City: Corona

Contact Person: Cody Gowgill  
e-mail: ccowgill@wm.com  
State: CA Zip: 91719 Phone: 951-277-5106

**C. Facility Billing Information:**

Operator Name: \_\_\_\_\_  
Mailing Address: \_\_\_\_\_  
City: \_\_\_\_\_

Contact Person: \_\_\_\_\_  
e-mail: \_\_\_\_\_  
State: \_\_\_\_\_ Zip: \_\_\_\_\_ Phone: \_\_\_\_\_

2013      2014  
**ANNUAL REPORT**

**SPECIFIC INFORMATION**

**MONITORING AND REPORTING PROGRAM**

**D. SAMPLING AND ANALYSIS EXEMPTIONS AND REDUCTIONS**

1. For the reporting period, was your facility exempt from collecting and analyzing samples from **two** storm events in accordance with sections B.12 or 15 of the General Permit?

☐ **YES**      Go to Item D.2

☒ **NO**      Go to Section E

2. Indicate the reason your facility is exempt from collecting and analyzing samples from **two** storm events. Attach a copy of the first page of the appropriate certification if you check boxes ii, iii, iv, or v.

i. ☐ Participating in an Approved Group Monitoring Plan      **Group Name:** \_\_\_\_\_

ii. ☐ Submitted **No Exposure Certification (NEC)**      **Date Submitted:** \_\_\_\_\_

**Re-evaluation Date:** \_\_\_\_\_

Does facility continue to satisfy NEC conditions?      ☐ **YES**      ☐ **NO**

iii. ☐ Submitted **Sampling Reduction Certification (SRC)**      **Date Submitted:** \_\_\_\_\_

**Re-evaluation Date:** \_\_\_\_\_

Does facility continue to satisfy SRC conditions?      ☐ **YES**      ☐ **NO**

iv. ☐ Received Regional Board Certification      **Certification Date:** \_\_\_\_\_

v. ☐ Received Local Agency Certification      **Certification Date:** \_\_\_\_\_

3. If you checked boxes i or iii above, were you scheduled to sample **one** storm event during the reporting year?

☐ **YES**      Go to Section E

☐ **NO**      Go to Section F

4. If you checked boxes ii, iv, or v, go to Section F.

**E. SAMPLING AND ANALYSIS RESULTS**

1. How many storm events did you sample?      1      If less than 2, **attach explanation** (if you checked item D.2.i or iii. above, only attach explanation if you answer "0").

2. Did you collect storm water samples from the first storm of the wet season that produced a discharge during scheduled facility operating hours? (Section B.5 of the General Permit)

☒ **YES**

☐ **NO, attach explanation** (Please note that if you do not sample the first storm event, you are still required to sample 2 storm events)

3. How many storm water discharge locations are at your facility?      7