Draft

Altamont Recycling and Composting Facility Conditional Use Permit

Initial Study and Mitigated Negative Declaration

Prepared for

Alameda County Planning Department

June 2011

With Technical Assistance from

CH2MHILL

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Acronyms and Abbreviations

µg/m^3	micrograms per cubic meter
A	Agricultural zone
AB	Assembly Bill
ACFD	Alameda County Fire Department
ALRRF	Altamont Landfill Resource Recovery Facility
BAAQMD	Bay Area Air Quality Management District
BACT	Best Available Control Technology
bgs	below ground surface
BMP	best management practice
C&D	construction and demolition
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CalRecycle	California Department of Resources Recycling and Recovery
CAP	Clean Air Plan
CARB	California Air Resources Board
CASP	Covered Aerated Static Pile
CBC	California Building Code
CBSC	California Building Standards Commission
CCAA	California Clean Air Act
CCR	California Code of Regulations
CDC	California Department of Conservation
CDF	California Department of Forestry
CDFG	California Department of Fish and Game
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Release Compensation and Liability Act
CESA	California Endangered Species Act
CGS	California Geological Society

CH_4	methane
cm/sec	centimeters per second
CMP	Congestion Management Program
CNDDB	California Natural Diversity Database
CNG	compressed natural gas
CNPS	California Native Plant Society
CO	carbon monoxide
CO_2	carbon dioxide
CO_{2e}	carbon dioxide equivalent
CUP	Conditional Use Permit
DTSC	California Department of Toxic Substances Control
EBRPD	East Bay Regional Parks District
ECAP	East County Area Plan
EFZ	Earthquake Fault Zoning
EIR	environmental impact report
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act
FEMA	Federal Emergency Management Agency
ft/ft	foot per foot
GHG	greenhouse gas
HCP	Habitat Conservation Plan
HFC	hydrofluorocarbons
I	Interstate
IS	Initial Study
IS/ND	Initial Study/Negative Declaration
LEA	Local Enforcement Agency
LFG	landfill gas
LNG	liquid natural gas
LOS	level of service
MACT	Maximum Achievable Control Technology

MRF	Materials Recovery Facility
MSW	municipal solid waste
MND	Mitigated Negative Declaration
NAAQS	National Ambient Air Quality Standards
NCCP	Natural Community Conservation Plan
NESHAP	national emissions standards for hazardous air pollutants
N_2O	nitrous oxide
NO_2	nitrogen dioxide
NOAA	National Oceanographic and Atmospheric Administration
NOI	Notice of Intent
NOx	oxides of nitrogen
NPDES	National Pollutant Discharge Elimination System
OMMA	Organic Materials Management Area
PDF	Project Design Features
PFC	perfluorocarbons
$PM_{2.5}$	particulate matter less than 2.5 microns in aerodynamic diameter
PM_{10}	particulate matter less than 10 microns in aerodynamic diameter
Ppm	parts per million
RAC	Reclaimable Anaerobic Compost
RES	Renewable Electricity Standard
ROG	reactive organic gases
SCAQMD	South Coast Air Quality Management District
SF_6	sulfur hexafluoride
SFBAAB	San Francisco Bay Area Air Basin
SFBRWQCB	San Francisco Bay Regional Water Quality Control Board
SIP	state implementation plan
SMARA	Surface Mining and Reclamation Act
SO_2	sulfur dioxide
SWFP	Solid Waste Facilities Permit
SWPPP	Stormwater Pollution Prevention Plan

SWRCB	State Water Resources Control Board
TAC	toxic air contaminant
TDM	Transportation Demand Management
TDS	total dissolved solids
tpd	tons per day
tpy	tons per year
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
V/C	volume-to-capacity
WARM	EPA's Waste Reduction Model
WDR	Waste Discharge Requirement
WEAT	Worker Environmental Awareness Training
WMAC	Waste Management of Alameda County, Inc.

CHAPTER 1

Project Description

1.1 Project Title

Altamont Landfill Recycling and Composting Facility Conditional Use Permit.

1.2 Lead Agency Name and Address

Alameda County Planning Department
224 W. Winton Avenue, Rm. 111
Hayward, CA 94544

1.3 Lead Agency Contact Person and Phone Number

Jeff Bonekemper, Associate Planner (510) 670-5400

1.4 Project Location

The project is located in an unincorporated area of Alameda County east of Livermore, at the existing Altamont Landfill and Resource Recovery Facility (ALRRF), 10840 Altamont Pass Road, Livermore, CA 94551.

1.5 Project Sponsor's Name and Address

Ken Lewis, Area Director
Waste Management of Alameda County, Inc.
10840 Altamont Pass Road, Livermore, CA 94551

1.6 General Plan Designation

The Alameda County East County Area Plan (acting as the area General Plan) designation for the project site is Large Parcel Agricultural.

1.7 Zoning

The Alameda County Zoning Ordinance designates the project site as A (Agricultural).

1.8 Description of the Project

1.8.1 Project Overview

Waste Management of Alameda County, Inc. (WMAC) is proposing the development of three recycling and composting facilities for waste diversion and resource recovery at the existing ALRRF in Alameda County.

TABLE 1-1
Proposed Facilities

Proposed Facility	Size	Waste Stream Type and Amount
Materials recovery facility (MRF) complex (two buildings), Reclaimable Anaerobic Composting (RAC) pre-processing facility	11 acres, 209,000 square feet (total for all buildings)	Municipal solid waste (MSW), recyclables and construction debris Maximum of 900 tons per day (MRF) Maximum of 250 tons pre-processing per day (RAC pre-processing)
Organic Materials Management Area (OMMA), with RAC and Covered Aerated Static Pile (CASP) facilities	Approximately 90 acres	Green waste and food waste Maximum of 750 tons per day
Garden Center Retail Compost Sales Yard	1 to 2 acres	Not applicable

The facilities are proposed by WMAC to increase the rate of waste diversion and recycling in the region and reduce the volume of waste that would otherwise be landfilled at the ALRRF and elsewhere. The facilities would be constructed in an existing disturbed area of the ALRRF. The proposed facilities would not expand the landfill facility footprint or require development of offsite facilities.

Figure 1 shows the regional location of the project site, which is located in the Altamont Hills in an unincorporated area of Alameda County, approximately 2 miles north of Interstate 580 (I-580) and 3.5 miles east of Livermore. Properties adjacent to the project site are used for cattle grazing and wind power production. The nearest residences are located along Dyer Road approximately 1.8 miles west of the ALRRF operations.

The ALRRF site comprises approximately 2,170 acres, of which approximately 445 acres are used for solid waste management, about 661 acres for support operations or future facility expansion, about 992 acres for a resource conservation area, and about 172 acres are associated with the California Department of Water Resources water supply reservoir. Existing uses in and around the active landfill area are shown in Figure 2. The ALRRF is a Class II and Class III[1] waste disposal facility that began operation in 1980 and currently operates pursuant to permits issued to WMAC. The current solid waste facilities permit (SWFP) allows disposal operations and a defined disposal expansion area as approved by conditional use permit (CUP) C-5512. While the proposed recycling facilities would be

[1] Class II waste consists of all designated non-hazardous waste, Class III waste consists of only clean, non-hazardous refuse material (such as household waste) (California Code of Regulations, Title 27, Chapter 3).

developed entirely within the active permitted area, they are not covered by the current SWFP (SWFP would need to be revised to include the proposed uses). As presented in ALRRF's Conditional Use Permit (CUP 5512), the ALRRF primarily receives waste from Alameda and San Francisco counties and also accepts waste from other surrounding northern California counties including, but not limited to, Contra Costa, Marin, Napa, San Joaquin, San Mateo, Santa Clara, and Sonoma counties. The proposed recycling facilities would accept materials for recycling, diversion, and associated residual waste disposal from other jurisdictions not listed above.

Figure 3 shows the location of the proposed MRF complex, RAC pre-processing facility, organic materials management area (OMMA), and garden center retail area. The MRF complex and RAC pre-processing facility would be located adjacent to the existing landfill gas to liquid natural gas (LFG-to-LNG) facility and northwest of the active waste disposal area in a current truck staging area. The proposed organics management facilities would be located on an area of the existing landfill that contains an approved California Code of Regulations (CCR) Title 27-compliant base liner system

Access to the project site is from Altamont Pass Road. Inside the ALRRF gate, a private access road owned and maintained by WMAC runs north for approximately 1 mile to the facility scale house. The private access road is a two-lane, all-weather, asphalt-paved roadway. The proposed facilities would share this access road with the existing site uses. Improvement or expansion of the road is not required to accommodate the proposed recycling and composting facilities.

1.8.2 Project Purpose and Need

The purpose of the project is to provide organic material management and recycling facilities that increase the capacity for waste diversion in Alameda County. Eastern Alameda County currently does not have a materials recovery facility that processes municipal solid waste and has only a small number of organic material management facilities. By increasing the capacity for diversion and providing a potential renewable energy source included in the proposed RAC facility, the project would help to fulfill the following state and local policies and goals:

- The California Department of Resources Recycling and Recovery's (CalRecycle) Strategic Directive 6.1 to reduce the amount of organics in the waste stream by 50 percent by 2020.
- Support Assembly Bill 32 (AB 32), the Global Warming Solutions Act of 2006, greenhouse gas reduction measures related to the use of anaerobic digestion by helping achieve a 33 percent renewable energy mix by 2020. Operation of the project would result in a net benefit in terms of GHG emissions due to the reduction of material entering the landfill and the reduced truck miles traveled to dispose materials. In addition, the biogas produced will be converted into renewable energy. Operation of the project would result in a net reduction of approximately 23,500 metric tons of carbon dioxide equivalents per year.
- The Alameda County Waste Management Authority's (Stopwaste.org) mission statement to reach a 75 percent waste diversion goal.

1.8.3 Project Facilities

Materials Recovery Facility Complex

The 11-acre MRF complex would include the following resource recovery facilities:

- A 400-ton-per-day (tpd) dry waste MRF to recover wood waste, cardboard, metal, aggregate, and green material
- A 100-tpd single-stream sorting line located within the dry waste MRF to process select loads of mixed recycled materials
- A 400-tpd municipal solid waste processing and recycling facility

A combined 900 tpd of waste material would be processed through the MRF complex. Of this volume, approximately 400 tpd would be recovered and diverted from disposal at the ALRRF landfill, with the remaining 500 tpd of residual materials continuing to be landfilled at the ALRRF. The actual diversion rate could be substantially greater depending on the quality of material received at ALRRF. The 900 tpd of waste material would be transported in 4- to 5-ton roll-offs or packer trucks that would result in approximately 225 one-way truck trips per day to the MRF complex. Figure 4 provides a conceptual site plan for the MRF complex area.

Dry Waste Materials Recovery Facility

The 400 tpd dry waste MRF would be designed to capture three types of waste: (1) construction and demolition (often called C&D) wastes that are currently processed through the Davis Street Transfer Station or other facilities or disposed in landfills in the region; (2) green materials, such as landscaping waste and other source-separated organic materials, and plant materials; and (3) recyclables (e.g., metal, glass, plastic, paper, and cardboard).

The dry waste MRF building would be approximately 95,000 square feet, with a height of approximately 44 feet, and would include several processing/sorting lines that would process up to 400 tpd (Figure 5). The types of lines and equipment in the system would vary, depending on the specific types of wastes received.

Single-stream Sorting Line

A 100-tpd single-stream sorting line would serve as a supplementary facility to the dry waste MRF to process select loads that primarily consist of recyclable materials. The sorting line area would include an approximately 54-foot-high end-dump truck tipping canopy and would be enclosed in a building.

Municipal Solid Waste Materials Recovery Facility

Currently, significant quantities of mixed residential and commercial MSW that contain potentially significant amounts of recyclable materials that can be recovered are landfilled. The MSW MRF would be capable of receiving up to 400 tpd of this MSW stream, which would be transported to the ALRRF in either 20- to 25-ton transfer vehicles or 4- to 5-ton route trucks. The MSW MRF building would be approximately 69,000 square feet and 44 feet tall (Figure 5).

Recovered recyclables would be collected, bailed, and transported offsite by truck for reuse. Any residuals would be disposed of at the landfill.

RAC Pre-Processing Building

A 35,000-square-foot RAC pre-processing building would be constructed adjacent to the MSW MRF facility to receive organic material streams that require pre-processing (for example, sorting; removing contaminants such as plastic or glass; pulping or grinding food and organic wastes; size reduction; and mixing) prior to being composted or treated in the RAC or other digester systems on or off-site.

Organic Material Management Area

The OMMA would consist of two organic material management facilities: a 250-tpd RAC system and a 500-tpd CASP system. The OMMA would be developed in a 90-acre area of the lined Class II landfill and would be constructed to synchronize with landfill closure activities in accordance with applicable regulations. Figure 3 shows the location of the OMMA facilities.

Forty-seven truck trips per day are estimated for RAC operations, and 73 truck trips per day are estimated for CASP operations, consisting of 4- to 5-ton route trucks and commercial drop boxes and 18- to 20-ton transfer trucks. Approximately half the CASP truck trips and one-third of the RAC truck trips would originate from the Davis Street Transfer Station. The other half of the CASP trips and two-thirds of the RAC trips would come from routes and sources not currently using the ALRRF.

Reclaimable Anaerobic Compost System

Up to 250 tpd of food waste, green material, and other source-separated organic material would be processed through the RAC system. Organic material that has been pre-processed before arriving onsite or processed at the RAC pre-processing building would be placed into a cell constructed below-grade and sealed in a geomembrane to promote the production of biogas (methane), a renewable energy (see Figures 6, 7 and 8). Each RAC cell would be approximately 150 feet by 75 feet by 15 feet deep and contain up to 5,000 tons of organics, assuming a mix of 50 percent food material and 50 percent green material. As shown in Figures 6, 7, and 8, the RAC cell would include collection and control systems for leachate and biogas. Leachate would be collected and contained for re-circulation back into the RAC cell. Biogas would be collected and integrated into the ALRRF's existing landfill gas collection and control system, where it would be converted into electricity, liquefied natural gas, compressed natural gas, or flared in accordance with the ALRRF permits. When the material is nearing the end of anaerobic decomposition process with declining methane production, the material would undergo an aerobic process to finish the compost. The air collected from the aerobic process would be treated in a biofilter. When the aerobic process is complete, the cell would be opened and the compost material removed for curing beside the cell or in the CASP system. However, some of the material may remain within the cell to serve as "seed" for starting the anaerobic digestion process of the next batch of raw organic material. The RAC cell would then be prepared to receive organic materials to start the process anew. The finished compost would be screened, and possibly blended with other materials, then sold as compost or a soil amendment. Residual material that is not sold may be used as biocover for the CASP operations, biofilter media, or for erosion control where needed within the facility.

Covered Aerated Static Pile Composting System

The 500 tpd CASP system would process green wastes and green waste combined with food waste (up to 40 percent by weight). The organic materials would be received and placed into bunkers approximately 180 feet long by 30 feet wide by 12 feet high. The bunkers would be constructed on an improved surface pad capable of withstanding heavy equipment traffic and scraping, graded to drain for collection of stormwater and leachate, and equipped with leachate collection and aeration piping. Once placed in the bunkers, the organic materials would be covered and subject to negative aeration. The collected air would be treated in a biofilter for air emissions and odor-control purposes. After the active composting phase in the bunkers is complete, the compost would be moved to the curing/storage area for finishing and then screened into commercial-grade compost or other products such as mulch.

Public Compost and Landscape Products Retail Sales Yard

As shown in Figure 3, up to 2 acres near the MRF complex would be developed as a compost sales yard to sell the finished compost and other landscape products (such as soil blends, mulch, and aggregates) to the public. Because compost sales are seasonal (highest in spring and early winter) and because the proposed compost sales yard will be relatively small and accessed by the general public, an average of 10 pickup truck / private vehicle trips per day (on an annual basis) is assumed.

1.8.4 Construction

Construction is expected to commence after all project approvals and permits have been obtained and last for approximately 8 months. The number of daily construction workers is expected to average 15, with construction activities limited mainly to daylight hours, 6 days a week. Parking for construction crews would be onsite. Most construction activity would be concentrated in the MRF area because the OMMA would not include any permanent structures.

1.8.5 Best Management Practices and Mitigation Measures

WMAC has included best management practices (BMPs) and mitigation measures in the project description to address potential impacts on aesthetics, air quality, biological resources, cultural resources, hydrology, and transportation. These measures would reduce potential environmental impacts to less-than-significant levels.

If the project is approved, the project applicant would implement the BMPs and mitigation measures listed in Tables 1-2 and 1-3, and described in detail in Chapter 3.

TABLE 1-2
Proposed Best Management Practices

Section	Best Management Practice
Aesthetics	Lighting for the MRF complex will be designed to reduce impacts related to light and glare off site. Design features will include low wattage light fixtures, lights aimed internally, non-glare finishes for project features, and shades on light fixtures to focus light only where needed.

TABLE 1-2
Proposed Best Management Practices

Section	Best Management Practice
Biological Resources	Protective barrier fencing would be erected along portion of active construction site that borders undisturbed lands. A biological monitor would be present at project start-up to deliver a Worker Environmental Awareness Training (WEAT) to onsite construction workers. Printed WEAT materials, which would be stored onsite, would include photographs and descriptions of potentially occurring sensitive species that could be encountered during construction. A biological site monitor would be available on an on-call basis in the event that a sensitive species is encountered during construction. If any listed species is observed, it will not be physically removed from the site under any circumstances. The listed species individual will be allowed to leave the site under its own power or an appropriate response will be developed between the client, the biological monitor, and the regulatory agencies, as appropriate.
Cultural Resources	In the event that cultural, archaeological or paleontological resources, including human remains, are encountered during trenching for utilities or other grading activities, excavation or disturbance of the site, or portions expected to overlie the resources, would cease until the following procedures are completed: • In the event of uncovered human remains the Alameda County Coroner shall be contacted to determine if cause of death must be investigated, and if determined to be of Native American origin, the Coroner shall contact the California Native American Heritage Commission, who shall in turn notify the most likely descendants, as designated by the Commission. • If such remains are identified as Native American in origin, the most likely descendants designated by the Commission shall make recommendations to the landowner or contractor for means of treating or disposing of the remains, and associated grave goods, in an appropriate, dignified manner. If the Commission is unable to ascertain the identity of the most likely descendants, the descendent does not make a recommendation, or following mediation by the Commission of a disagreement on procedures between the landowner and the most likely descendant (s), the landowner or their representative shall rebury the remains and any associated grave goods with appropriate dignity on the property in a location not subject to further surface disruption. • In the event that other cultural resources are located on the site, the contractor shall contact a qualified archaeologist to inspect the site. If the archaeologist determines that potentially significant archaeological materials or human remains are encountered, the archaeologist must record, recover, retrieve, rebury and/or remove appropriate archaeological materials. • The archaeologist must study any archaeological resources found onsite and publish data concerning these resources, and shall provide a copy of documentation of all recovered data and materials found onsite to the regional information center of the California Archaeological Inventory for inclusion in the permanent archives, and another copy shall accompany any recorded archaeological materials and data.

TABLE 1-2
Proposed Best Management Practices

Section	Best Management Practice
	• Monitoring for these measures must be performed by the applicant on a continual basis during site disturbance activities. At the completion of work, the applicant shall submit a summary of findings to the Planning Director for review and for the final record.
Hydrology	Best management practices will be employed to control storm water in contact with finished compost storage piles including, but not limited to, use of bioswales in the vicinity of the storage piles for treatment prior to entering the site's drainage infrastructure; placing straw waddles around or down slope of the storage piles to decrease sediment; and covering piles.

TABLE 1-3
Proposed Mitigation Measures

Section	Number	Mitigation Measure
Air Quality	AQ-1	All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day during active use of these operations areas.
	AQ-2	All haul trucks transporting soil, sand, or other loose material offsite shall be covered.
	AQ-3	All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.
	AQ-4	All vehicle speeds on unpaved roads shall be limited to 15 mph.
	AQ-5	All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.
	AQ-6	Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to a maximum of 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of CCR). Clear signage shall be provided for construction workers at all access points.
	AQ-7	All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.
	AQ-8	Post a publicly visible sign with the telephone number and person to contact at the Lead Agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The Air District's phone number shall also be visible to ensure compliance with applicable regulations.
	AQ-9	Continuation of existing dust control measures listed in the ALRRF Title V permit and facility dust control plan for paved and unpaved roads.

TABLE 1-3
Proposed Mitigation Measures

Section	Number	Mitigation Measure
Biological Resources	BIO-1	To avoid impacts to any nesting birds, ground disturbing activities would be scheduled outside of the breeding season (January 1 – August 31). If construction cannot be avoided during this period, a qualified biologist would conduct a survey for nesting birds no more than fourteen days prior to the start of ground disturbing activities. If no nests are present, the project activities can take place; however, if active nests are detected, the California Department of Fish and Game (CDFG) should be contacted to determine an appropriate course of action. Typically, the appropriate response may involve the establishment of a protective buffer around the nest. These protective buffers could be 50-foot to 90-foot in radius for passerine and non-passerine nests; 250-foot radius for burrowing owls; and between 200- and 500-foot radius for raptor nests.
Hydrology and Water Quality	HYD-1	WMAC will incorporate a sedimentation basin into the project design in places where peak discharges would increase substantially.
Transportation	TRA-1	To reduce the number of vehicle trips accessing the project site in the AM peak hour, a ridesharing plan to promote carpooling among employees will be implemented by the project owner.

1.9 Other Public Agencies Whose Approval May Be Required

TABLE 1-4
Other Public Agencies Whose Approval May Be Required

Agency	Permit/Approval
Alameda County Waste Management Authority and the Alameda County Source Reduction and Recycling Board (StopWaste.Org)	County Integrated Waste Management Plan, revisions
CalRecycle	Solid Waste Facility Permit (SWIS Number 01-AA-0009)
Alameda County Department of Environmental Health as the Local Enforcement Agency (LEA)	
California Regional Water Quality Control Board (Central Valley Region)	Waste Discharge Requirements Order No. R5-2009-0055
	General Industrial Storm Water Discharge Permit Number 5S01S000600
Bay Area Air Quality Management District (BAAQMD)	Plant Number A2066

CHAPTER 2

Environmental Determination

2.1 Summary of Environmental Checklist

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

☒	Aesthetics	☐	Agriculture Resources	☒	Air Quality
☒	Biological Resources	☐	Climate Change and Greenhouse Gases	☒	Cultural Resources
☒	Geology /Soils	☐	Hazards & Hazardous Materials	☒	Hydrology / Water Quality
☐	Land Use / Planning	☐	Mineral Resources	☐	Noise
☐	Population / Housing	☐	Public Services	☐	Recreation
☒	Transportation/Traffic	☐	Utilities / Service Systems	☐	Mandatory Findings of Significance

2.2 Determination

On the basis of this initial evaluation:

I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because the Project Design Features described in this analysis have been incorporated into the proposed project. A **MITIGATED NEGATIVE DECLARATION** will be prepared.

_____

Signature Date

_____

Printed Name Title

CHAPTER 3

Evaluation of Environmental Impacts (Environmental Checklist)

A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources a lead agency cites in the report. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project specific screening analysis).

All answers must take account of the whole action involved, including offsite as well as onsite, cumulative as well as project level, indirect as well as direct, and construction as well as operational impacts.

"Potentially Significant Impact" is appropriate if there is substantial evidence leading to a fair argument that an effect is significant. If there are one or more "Potentially Significant Impact" entries when the determination is made without the possibility of mitigation, then an environmental impact report (EIR) is required.

"Less Than Significant w/ Mitigation" applies where the incorporation of mitigation measures would reduce an effect from "Potentially Significant Impact" to a "Less than Significant Impact." Mitigation measures and a brief explanation of how or whether they reduce the effect to a less than significant level is provided in the text of this report.

Earlier analyses may be used where, pursuant to tiering, Program EIR, Master EIR, or other California Environmental Quality Act (CEQA) processes, an effect has been adequately analyzed in an earlier EIR or negative declaration. [Section 15063c(3)(D).]

This checklist incorporates references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document includes, where appropriate, a reference to the page or pages where the statement is substantiated. A source list is attached and other sources used or individuals contacted are cited in the discussion.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
I. AESTHETICS				
Would the project:				
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☒	☐
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☒
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	☒	☐
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☒	☐

Environmental Setting

The project site is located in an unincorporated area of eastern Alameda County, approximately 3.5 miles east of the closest city, Livermore. Interstate 580 (I-580) is located approximately 1.5 miles south of the nearest portion of the site. The project site is bounded by Altamont Pass Road to the south; open space areas and Dyer Road to the west; and open space areas partially developed with wind farms and cattle grazing to the northwest, north and east. In general, the visual character of the project area can be described as rural grazing land on rolling, treeless hills, interspersed with wind farms and some rural residential. Context photos of the site and surrounding area are included in Appendix A.

Although the ALRRF property totals approximately 2,170 acres, the majority of the site is undeveloped, split between a conservation easement and future expansion area, leaving only about 445 acres of active landfill area, within which the proposed project would be developed. The active landfill area is located within a bowl-shaped area at the center of the project site, and has limited visibility from surrounding areas.

The following potential sensitive receptors occur in the project area:

- Residences on Dyer Road, located approximately 1.8 miles west of the active area of the project site
- Recreationists at Bethany Reservoir State Park, located approximately two miles to the east
- Recreationists at Brushy Peak Regional Park, located approximately 2.5 miles to the west of the project site
- East- and westbound travelers on I-580, located approximately 1.5 miles south of the project site.

The Alameda County East County Area Plan (ECAP) contains policies designed to protect sensitive viewsheds such as scenic vistas and scenic highways (Alameda County, 2000). Relevant policies include Policy 105, which preserves major visually-sensitive ridgelines, the nearest of which is designated as the ridgelines surrounding Brushy Peak north of Livermore and west of the project site. Policy 106 restricts structures from being built on ridgelines. Policy 107 prohibits structures from projecting above major ridgelines. Policy 108 encourages development near existing site development and away from public view. Policy 215 directs development of lands around scenic highway corridors in the east county to maintain and enhance scenic values.

Impacts

Answers to Checklist Questions

Questions a and c:

The MRF complex, RAC pre-processing facility, and compost sales yard are planned for an existing disturbed area located in the northwestern portion of the active landfill area, which is bounded by a number of hills ranging in peak elevation of 1,031 feet to 1,246 feet. The proposed organic materials management facilities would be located on top of the existing waste disposal area, near the center of the landfill's active area. The MRF pad would be graded to a maximum of 1,060 feet in elevation, and the OMMA to a maximum of 1,170 feet in elevation.

The tallest proposed structures would be the MRF complex buildings, proposed to reach a maximum height of 54 feet. They would be adjacent to the existing LFG-to-LNG facility, which has structures ranging from 30 to 55 feet in height. The organic materials management facilities would not have any features that are taller than 20 feet. The proposed uses would use existing on- and offsite roads. It is anticipated that the MRF complex would require outside lighting.

The structures proposed for the MRF complex would be partially visible to residences on Dyer Road and grazing and wind farm areas to the west, north, and east because low areas between peaks allows partial views up to the proposed pad area. However, the distance (1.5 miles) and variable topography should serve to mitigate the impact of the proposed new development. In addition, the buildings will be set back from the pad edge, and will be painted and finished in earth tones and non-glare roofing materials. WMAC plans to build an earthen berm along at least a portion of the northwestern boundary of the MRF complex to provide a wind break, which would also screen views of the new industrial buildings by viewers to the west and north. Users of Bethany Reservoir State Park, I-580, and Brushy Peak Regional Park would not see the new MRF buildings because of intervening topography, including a 1,246-foot peak abutting the proposed MRF complex to the west, and numerous peaks and the existing active landfill area to the east and south.

The OMMA would be located in the existing Fill Area 1 waste disposal area, which is at the center of the project site at an approximate elevation of 1,170 feet. The RAC facility would be composed of lined cells, each approximately 150 feet by 75 feet by 15 feet deep, able to hold up to 5,000 tons of organics. The cells could extend aboveground to a height of approximately 10 to 15 feet. The CASP composting and storage piles could extend up to 20 feet high from existing grade. The OMMA would be surrounded by active disposal areas

and, farther out, rolling hills. As such, views of the proposed facilities from offsite locations are minimal. If a viewer finds a line of sight to the composting area, the piles of pre- and post-processed materials would blend with the existing facility uses and surrounding area.

Based on the location of the MRF complex and OMMA facilities on an existing landfill with surrounding rolling hills and distant visual receptors, the proposed project would not result in a substantial adverse effect on a scenic vista, substantially damage scenic resources, or substantially degrade the existing visual character of the project site. Therefore, impacts would be less than significant.

Question b:

I-580, located 2.5 miles south of the project site, is designated by the California Scenic Highway Mapping System as an Eligible State Scenic Highway-Not Officially Designated (California Scenic Highway System, 2011). No other scenic highways are located within the visual range of the project site. Travelers on I-580, heading both directions, can view a portion of the southern edge of the project site as they drive by, just west of the Grant Line Road interchange. However, the proposed new uses would not be situated in this portion of the project site. Therefore, the proposed project would not result in impacts or damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within the view shed of a state scenic highway.

Question d:

The MRF complex would require some outside lighting for operations and security. Construction-related lighting would allow extended construction periods beyond daylight hours. Construction, operations, and security lighting could be visible to residences on Dyer Road, and could result in glare. However, the impact of this lighting would be minimized by intervening topography and the distance from Dyer Road (approximately 1.5 miles). WMAC would follow BMPs in designing project lighting features to reduce light impacts offsite. These would include low-wattage light fixtures, lights aimed internally, non-glare finishes for project features, and shades on light fixtures to focus light only where needed. The OMMA will use existing lighting at the site, and is blocked from sensitive receptors. Therefore, potential impacts related to light and glare would be less than significant.

Mitigation

No mitigation measures related to aesthetic impacts are required.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
II. AGRICULTURE AND FOREST RESOURCES In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the Project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)) or timberland (as defined by Public Resources Code section 4526)?	☐	☐	☐	☒
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☒

Environmental Setting

The project site is zoned A (Agriculture) District pursuant to the Alameda County Zoning Ordinance (Alameda County, 1976). This zoning district allows agricultural land uses, and public utility and solid waste landfill uses with a CUP. The project site and surrounding properties are designated as Large Parcel Agriculture in the Alameda County ECAP (Alameda County, 2000).

The project site is not considered Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, as defined by the California Farmland Mapping and Monitoring Program (California Department of Conservation, 2008). The soils on the project site range from Grade Four-Poor to Grade Five-Very Poor in quality under the California Revised

Storie Index (Natural Resources Conservation Service, 2011). The project site does not include any land considered forest land (as defined in Public Resources Code section 12220(g)) or timberland (as defined by Public Resources Code section 4526). The project site is under a Williamson Act contract.

The Alameda County ECAP contains policies related to agricultural preservation. Relevant policies include:

- Policy 71: The County shall conserve prime soils (Class I and Class II, as defined by the USDA Soil Conservation Service Land Capability Classification and Farmland of Statewide Importance and Unique Farmland (as defined by the California Department of Conservation Farmland Mapping and Monitoring Program) outside the Urban Growth Boundary (Alameda County, 2000).

Impacts

Answers to Checklist Questions

Question a:

The project site is not designated as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (California Department of Conservation, 2008). Soils are considered poor to very poor quality (National Resources Conservation Service, 2011). Therefore, existing operations at the project site would have no impact on Prime Farmland, Unique Farmland, or Farmland of Statewide Importance. The proposed project facilities would all be located within the existing operation area. Therefore, the proposed project would not impact farmland.

Question b:

The project site is zoned A (Agriculture) District pursuant to the Alameda County Zoning Ordinance (Alameda County, 1976). This zone allows public utility and solid waste landfill uses with a CUP. The application for the proposed project includes a request for a CUP. The project site is subject to a Williamson Act contract entered into with Alameda County in 1976. The contract identifies "Sanitary Landfill Operation" as a permitted use (Environmental Science Associates, Inc., 1995). Therefore, the proposed project would not impact existing zoning for agricultural use or be in conflict with a Williamson Act contract.

Questions c and d:

The project site does not contain any forest lands as defined by Public Resources Code, and is not zoned as forest land. Therefore, the proposed project has no potential to conflict with any forest lands, result in the need to rezone forest lands, nor result in the loss of forest land or conversion of forest land to non-forest use. The proposed project would have no impact on forest land.

Question e:

The proposed project is located on an existing landfill site that does not have agriculture or forest resources, and, therefore, would not affect such resources at the project site. WMAC does not propose to develop new access roads or other offsite features that might impact surrounding agricultural lands or require conversion of farmland to non-agricultural uses or

convert forest land to non-forest uses. Therefore, the proposed project would have no impact related to conversion of farmland or forest land.

Mitigation

No mitigation measures related to agricultural and forest resources are required.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
III. AIR QUALITY				
Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☐	☒
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	☐	☒	☐
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	☐	☐	☒	☐
d) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐
e) Create objectionable odors affecting a substantial number of people?	☐	☐	☒	☐

Environmental Setting

The project is located in Alameda County within the San Francisco Bay Area Air Basin (SFBAAB). The SFBAAB is characterized by complex terrain, consisting of coastal mountain ranges, inland valleys, and bays, which distort normal wind flow patterns. The Coast Range splits, resulting in a western coast gap, Golden Gate, and an eastern coast gap, Carquinez Strait, which allow air to flow in and out of the SFBAAB and the Central Valley.

The climate is dominated by the strength and location of a semi-permanent, subtropical high-pressure cell. During the summer, the Pacific high-pressure cell is centered over the northeastern Pacific Ocean resulting in stable meteorological conditions and a steady northwesterly wind flow. Upwelling of cold ocean water from below to the surface because of the northwesterly flow produces a band of cold water off the California coast. The cool and moisture-laden air approaching the coast from the Pacific Ocean is further cooled by the presence of the cold water band resulting in condensation and the presence of fog and stratus clouds along the Northern California coast.

In the winter, the Pacific high-pressure cell weakens and shifts southward resulting in wind flow offshore, the absence of upwelling, and the occurrence of storms. Weak inversions coupled with moderate winds result in a low air pollution potential.

The project is located within the Livermore Valley. The Livermore Valley is a sheltered inland valley near the eastern border of SFBAAB. The western side of the valley is bordered by 1,000- to 1,500–foot-high hills with two gaps connecting the valley to the central SFBAAB, the Hayward Pass, and Niles Canyon. The eastern side of the valley also is bordered by 1,000- to 1,500-foot-high hills with one major passage to the San Joaquin Valley (the Altamont Pass) and several secondary passages. To the north lie the Black Hills and Mount Diablo. A northwest to southeast channel connects the Diablo Valley to the Livermore Valley. The south side of the Livermore Valley is bordered by mountains approximately 3,000 to 3,500 feet high.

The air pollution potential is high in the Livermore Valley, especially for photochemical pollutants in the summer and fall. High temperatures increase the potential for ozone to build up. The valley not only traps locally generated pollutants but can be affected by ozone and ozone precursors from San Francisco, Alameda, Contra Costa and Santa Clara counties. On northeasterly wind flow days, most common in the early fall, ozone may be carried west from the San Joaquin Valley to the Livermore Valley

Monitored ambient air concentrations near the project site have exceeded the federal and state ambient air quality standards for ozone and particulate matter less than 2.5 microns in aerodynamic diameter ($PM_{2.5}$) during the time period 2007-2009 (California Air Resources Board [CARB], 2011). Monitored particulate matter less than 10 microns in aerodynamic diameter (PM_{10}) concentrations vary, with exceedances of the state standard recorded in 2007 but no exceedances recorded in 2008 (CARB, 2011). Monitored PM_{10} concentrations have not exceeded federal standards during the time period 2007–2009 (CARB, 2011). Monitored concentrations of the remaining criteria pollutants, described below, were below federal and state standards during the time period 2007–2009 (CARB, 2011).

The site has not recorded any odor complaints over the last 3 years of operation.

Regulatory Setting

Laws and regulations, as well as plans and policies, have been adopted to address air quality. Key regulations relevant to the proposed project are summarized below.

Federal

The federal Clean Air Act (CAA) establishes the statutory framework for regulation of air quality in the United States. Pursuant to this act, the U.S. Environmental Protection Agency (EPA) has established various regulations to achieve and maintain acceptable air quality, including the adoption of National Ambient Air Quality Standards (NAAQS), mandatory state implementation plan (SIP) or maintenance plan requirements to achieve and maintain NAAQS, and emission standards for both stationary and mobile sources of air pollution. NAAQS have been established for the following air pollutants (called "criteria" pollutants): carbon monoxide (CO), ozone, nitrogen dioxide (NO_2), sulfur dioxide (SO_2), PM_{10}, $PM_{2.5}$, and lead. NAAQS represent levels established by EPA to avoid specific adverse health and welfare effects associated with each pollutant with a margin of safety. Table 3-1 summarizes the ambient air quality standards.

TABLE 3-1
Ambient Air Quality Standards

Pollutant	Averaging Time	CAAQS[a]	NAAQS[b]	
			Primary[c]	Secondary[d]
Ozone	8 hours	0.070 ppm	0.075 ppm	0.08 ppm
	1 hour	0.09 ppm	—	—
PM_{10}	Annual arithmetic mean	20 µg/m^3	—	—
	24 hours	50 µg/m^3	150 µg/m^3	150 µg/m^3
$PM_{2.5}$	Annual arithmetic mean	12 µg/m^3	15 µg/m^3	15 µg/m^3
	24 hours	35 µg/m^3	35 µg/m^3	35 µg/m^3
CO	8 hours	9.0 ppm	9 ppm	—
	1 hour	20 ppm	35 ppm	—
NO_2	Annual arithmetic mean	0.03 ppm	0.053 ppm	0.053 ppm
	1 hour	0.18 ppm	0.100 ppm	—
SO_2	24 hours	0.04 ppm	—	—
	3 hours	—	—	0.5 ppm
	1 hour	0.25 ppm	0.075 ppm[e]	—
Lead[f]	Calendar quarter	—	1.5 µg/m^3	1.5 µg/m^3
	Rolling 3-month average	—	0.15 µg/m^3	—
	30-day average	1.5 µg/m^3	—	—
Visibility-reducing Particles	8 hours	[g]	—	—
Sulfates	24 hours	25 µg/m^3	—	—
Hydrogen Sulfide	1 hour	0.03 ppm	—	—
Vinyl Chloride[e]	24 hours	0.01 ppm	—	—

[a]California standards for ozone, CO (except Lake Tahoe), SO_2 (1 hour and 24 hours), NO_2, and suspended particulate matter (PM_{10}, $PM_{2.5}$, and visibility-reducing particles) are values that are not to be exceeded. All others are not to be equaled or exceeded.

[b]National standards other than ozone, particulate matter, and those based on annual averages or annual arithmetic means are not to be exceeded more than once a year. The ozone standard is attained when the fourth-highest 8-hour concentration in a year, averaged over 3 years, is equal to or less than the standard. For PM_{10}, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m^3 is equal to or less than 1. For $PM_{2.5}$, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over 3 years, is equal to or less than the standard.

[c]National Primary Standards: The levels of air quality necessary, with an adequate margin of safety, to protect the public health.

[d]National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

[e]Final rule signed June 2, 2010. To attain this standard, the 3-year average of the 99th percentile of the daily maximum 1-hour average at each monitor within an area must not exceed 75 parts per billion.

[f]CARB has identified lead and vinyl chloride as toxic air contaminants with no threshold level of exposure for adverse health effects determined. CARB made this determination following the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

[g]In sufficient amount to produce an extinction coefficient of 0.23 per kilometer due to particles when the relative humidity is less than 70 percent.

Source: CARB 2010.

Notes:
CAAQS = California Ambient Air Quality Standards
ppm = parts per million
µg/m^3 = micrograms per cubic meter

EPA has designated counties in California as either in "attainment" or "nonattainment" for each NAAQS. A region that is meeting the air quality standard for a given pollutant is designated as being in attainment for that pollutant. If the region is not meeting the air quality standard, then it is designated as being in nonattainment for that pollutant. If a region is designated as nonattainment for a NAAQS, the federal CAA requires the state to develop a SIP to demonstrate how the standard would be attained, including the establishment of specific requirements for review and approval of new or modified stationary sources of air pollution. The portion of Alameda County where the project is located is designated as nonattainment for the federal ozone and $PM_{2.5}$ standards, and attainment/unclassified for the remaining criteria pollutants.

The Title V program was implemented under the 1990 Amendments to the CAA. The Title V program requires local and state air quality agencies to issue comprehensive operating permits to facilities that emit significant amounts of air pollutants. Title V operating permits include the requirements of all regulations that apply to operations at Title V facilities. In Alameda County, BAAQMD issues Title V permits. The ALRRF currently operates under a Title V permit, and it is assumed the ALRRF will address revisions to the Title V permit based on this project.

Title III of the CAA requires the EPA to promulgate national emissions standards for hazardous air pollutants (NESHAPs). The NESHAP may be different for major sources than for area sources of hazardous air pollutants (major sources are defined as stationary sources with potential to emit more than 10 tons per year [tpy] of any hazardous air pollutant or more than 25 tpy of any combination of hazardous air pollutants; all other sources are considered area sources). The emissions standards were promulgated in two phases. In the first phase (1992–2000), the EPA developed technology-based emission standards designed to produce the maximum emission reduction achievable. These federal standards are generally referred to as requiring the Maximum Achievable Control Technology (MACT). For area sources, the standards may be based on generally available control technology. In the second phase (2001–2008), the EPA was required to promulgate health risk–based emissions standards to address risks remaining after implementation of the technology-based NESHAP standards, where deemed necessary. The CAA also required the EPA to promulgate vehicle or fuel standards containing reasonable requirements that control toxic emissions, at a minimum to include benzene and formaldehyde. Performance criteria were established to limit mobile-source emissions of toxics, including benzene, formaldehyde, and 1,3-butadiene. In addition, Section 219 required the use of reformulated gasoline in selected U.S. cities (those with the most severe ozone nonattainment conditions) to further reduce mobile-source emissions. Currently, NESHAPs have not been established for sources such as the proposed facilities (MRF complex, and RAC and CASP systems).

State

CARB is the state agency responsible for California air quality management, including establishment of ambient air quality standards, mobile source emission standards, greenhouse gas (GHG) regulations, oversight of local air quality districts and preparation of implementation plans, including regulations for stationary sources of air pollution. California established state ambient air quality standards (CAAQS) in 1969. The California Clean Air Act (CCAA) was approved in 1988 and requires each local air district in the state to prepare an air quality plan to achieve compliance with the CAAQS. The CAAQS are

generally more stringent (except for 1-hour average NO_2 and SO_2) and include more pollutants than the NAAQS. Similar to EPA, CARB designates counties in California as in attainment or nonattainment for CAAQS. The portion of Alameda County where the ALRRF is located is designated as nonattainment for the state ozone, $PM_{2.5}$, and PM_{10} standards, and attainment/unclassified for the remaining criteria pollutants.

In addition to the ambient air quality standards for criteria pollutants, the California Toxic Air Contaminant Identification and Control Act, established in 1983, created a two-step process to identify toxic air contaminants (TAC) and control their emissions. CARB assesses the potential for human exposure to a substance, while the Office of Environmental Health Hazard Assessment evaluates the corresponding health effects. Both agencies collaborate in the preparation of a risk assessment report, which concludes whether a substance poses a significant health risk and should be identified as a TAC. The Air Toxics "Hot Spots" Information and Assessment Act (AB 2588) was enacted in September 1987. The act requires that toxic air emissions from stationary sources be quantified and compiled into an inventory and that the public be notified of significant risks posed by nearby facilities. It is assumed the ALRRF will continue complying with applicable air toxics inventory and notification requirements.

In addition to air quality regulations, it is also assumed the project would comply with CCR Title 14, Division 7, Chapter 3.1, Article 3, Compostable Materials Handling Operations and Facilities Regulatory Requirements. Specifically, the project would comply with the requirements of Section 17863.4 to have an Odor Impact Minimization Plan. It is assumed that compliance with the plan, in addition to the design of the facilities (i.e., enclosed buildings), would result in controlling odor emissions.

Local

The project is located within the local jurisdictional boundaries of the BAAQMD. BAAQMD implements air quality programs required by state and federal regulations, develops and enforces local rules and regulations, and educates business owners and residents about their role in protecting air quality. The local regulations that may be relevant to the project, as administered by the BAAQMD, include:

- Regulation 1 – General Provisions & Definitions
- Regulation 2 – Permits
- Regulation 6 – Particulate Matter
- Regulation 7 –Odorous Substances
- Regulation 8 – Organic Compounds

Under the CCAA, BAAQMD is required to develop air quality plans for nonattainment criteria pollutants within the air district.

BAAQMD Plans

BAAQMD has developed air quality plans to demonstrate attainment for both federal and state air quality standards. BAAQMD is designated as nonattainment for the federal ozone and $PM_{2.5}$ standards and must prepare a SIP to demonstrate how these standards will be attained. To demonstrate compliance for the federal ozone standard, BAAQMD developed the 2001 Ozone Plan. The 2001 Ozone Plan identifies control measures to reduce emissions in the San Francisco Air Basin. For $PM_{2.5}$, the effective date of the federal designation is

December 14, 2009, so BAAQMD has 3 years to develop the SIP to demonstrate the Bay Area will achieve the revised standard by December 14, 2014. The SIP for the new $PM_{2.5}$ standard must be submitted to EPA by December 14, 2012.

In September 2010, the BAAQMD adopted the final Bay Area 2010 Clean Air Plan (2010 CAP) (BAAQMD, 2010a). The 2010 CAP is not a SIP document; however, it serves to meet the requirements of the CCAA to implement "all feasible measures" to reduce ozone, PM, air toxics, GHGs, and establish emission control measures to be adopted or implemented by BAAQMD in the 2010 to 2012 timeframe. One of the Further Study Measures listed in the 2010 CAP, FSM-15 Composting Operations, addresses whether it is feasible to implement measures to reduce reactive organic gases (ROG) and GHG emissions from composting operations. The types of measures that may be considered are similar to those included in the South Coast Air Quality Management District (SCAQMD) Rule 1133.2, such as requiring that composting operations are conducted within an enclosure with an aeration system that achieves an 80 percent reduction in ROG emissions (BAAQMD, 2010a).

Additionally in 2010, BAAQMD released its CEQA guidance for determining a project's significance, the *Bay Area Air Quality Management District CEQA Air Quality Guidelines* (BAAQMD, 2010b). The BAAQMD CEQA Air Quality Guidelines were adopted in June 2010 (except for the risk and hazards thresholds for new receptors). The updated BAAQMD CEQA Air Quality Guidelines address recent changes to the state and federal air quality standards for ozone and particulate matter, incorporate GHG thresholds, and address exposure to TACs.

Determination of significance with respect to construction and operation emissions were based on a set of thresholds for criteria pollutant emission rates. The thresholds and methodology presented in the BAAQMD CEQA Air Quality Guidelines were used in this analysis to evaluate the potential project impacts.

Impacts

Air quality impacts were evaluated based on comparison of estimated project emissions to BAAQMD Thresholds of Significance presented in Table 3-2. Emissions were estimated for both project construction and operation. Detailed emission calculations are included in Appendix B (Air Quality Calculations). Construction emissions were estimated assuming the MRF, RAC, and CASP would be constructed consecutively over an 8-month period. Emissions were estimated using construction equipment and vehicle emission factors from URBEMIS2007 and EMFAC2007. Operation emissions were estimated for exhaust emissions from trucks and employee commute vehicles using EMFAC2007 emission factors. Fugitive dust emissions from vehicle travel onsite on paved and unpaved roads were estimated using the EPA Compilation of Air Pollutant Emission Factors (EPA, 2006 and 2011). ROG emissions from operation of the CASP were estimated using the baseline factor from the SCAQMD Rule 1133.1 Emissions from Co-Composting Operations and assuming a 95 percent control efficiency for CASP with a biofilter compared to windrows (Card and Schmidt, 2008).

TABLE 3-2
BAAQMD Thresholds of Significance

Pollutant	Average Daily Emissions (lb/day)	
	Construction	Operation*
ROG	54	54
NOX	54	54
PM10	82 (exhaust only)	82
PM2.5	54 (exhaust only)	54
PM10/PM2.5 (fugitive dust)	Best Management Practices	None
Toxics (New Source)	Compliance with Qualified Community Risk Reduction Plan OR Increased cancer risk of >10.0 in a million Increased non-cancer risk of > 1.0 Hazard Index (Chronic or Acute) Ambient $PM_{2.5}$ increase: > 0.3 µg/m^3 annual average Zone of Influence: 1,000-foot radius from property line of source or receptor	
Odors	None	5 complaints per year, averaged over 3 years

*BAAQMD has also established annual criteria pollutant thresholds for operation. It was assumed if project daily operation emissions were less than the thresholds, the annual emissions would also be less than the annual thresholds because the annual emissions are calculated based on multiplying the daily emissions by the annual days of operation.

Source: BAAQMD, 2010b

Answers to Checklist Questions

Question a:

Construction and operation of the project would result in emissions of criteria pollutants and air toxics. Construction of the project would create a short-term increase in emissions (see Table 3-3), however, the emissions would be less than the BAAQMD thresholds. Therefore, construction would be consistent with the BAAQMD air quality plans.

Operation of the project would be anticipated to generate criteria pollutant and air toxics emissions. It is assumed that fugitive dust from onsite unpaved roads would be controlled following current permit conditions at the ALRRF. Operation of the project would be consistent with the BAAQMD 2010 CAP. The proposed design for the facilities, enclosed structures, and CASP system with a biofilter, are consistent with the measures BAAQMD is considering under FSM-15 in the 2010 CAP. Furthermore, by increasing the capacity for diversion and providing a potential renewable energy source via the proposed anaerobic digestion facility, the project would help to fulfill the following state and local policies and goals:

- CalRecycle Strategic Directive 6.1 to reduce the amount of organics in the waste stream by 50 percent by 2020.

- Support AB 32, the Global Warming Solutions Act of 2006, GHG reduction measures related to the use of anaerobic digestion by helping achieve a 33 percent renewable energy mix by 2020.
- The Alameda County Waste Management Authority's (Stopwaste.org) mission statement to reach a 75 percent waste diversion goal.

The project would be consistent with the goals and policies in the ECAP for solid waste facilities and air quality (Alameda County, 2000). For example, Policy 248 and Implementation Program 90 promote the use of solid waste source reduction, recycling, composting, and environmentally-safe transformation of wastes in conjunction with existing landfills, such as the project (Alameda County, 2000). Therefore, the project would be consistent with applicable plans and would have no adverse impact.

Question b:

Construction and operation emissions were estimated for the project using the methodology described previously. Construction emissions and comparison to the BAAQMD thresholds are presented in Table 3-3. Construction of each facility would occur consecutively, so emissions were compared separately against the BAAQMD thresholds. In addition, it was assumed the project will implement the design features described below. As shown in Table 3-3, daily construction emissions for each facility would be less than BAAQMD thresholds; therefore, the air quality impact would be less than significant.

TABLE 3-3
Daily Construction Emissions

Construction Emission Source	Emissions (pounds per day)					
	NO_x	CO	ROG	SO_2	PM_{10}	$PM_{2.5}$
MRF/RAC Pre-processing Facilities	30	16	3	0.05	1.5	1.3
RAC Facility	26	16	3	0.04	1.5	1.3
CASP Facility	26	16	3	0.04	1.5	1.3
BAAQMD Thresholds (pounds per day)	54	NA	54	NA	82	54

Note: PM_{10} and $PM_{2.5}$ thresholds only apply to construction exhaust emissions.

NA = BAAQMD has not established a threshold for this pollutant.
NOx = oxides of nitrogen

Operation of the project would result in offsite emissions from truck trips, onsite exhaust and fugitive dust emissions from the trucks traveling to the proposed facilities on both paved and unpaved roads, exhaust emissions from equipment used for the proposed facilities, and ROG emissions from the CASP. The proposed facilities would provide an alternative disposal location that would result in fewer miles traveled by trucks transporting waste materials. Therefore, truck emissions were estimated for existing conditions and for the project to allow calculation of the net change in emissions associated with operation of the project.

As shown in Table 3-4, emissions would be less than the BAAQMD thresholds except for daily emissions of PM_{10} and $PM_{2.5}$. ROG emissions would be near the BAAQMD threshold

due to operation of the CASP, which contributes most of the ROG emissions. The CASP would be covered, subject to negative air to control air emissions, and emissions will be vented to a biofilter. These design features represent the control options required for compliance with SCAQMD Rule 1133.2. BAAQMD does not currently have a similar rule.

The exhaust PM_{10} and $PM_{2.5}$ emissions would be much lower than the BAAQMD thresholds, approximately 4.2 pounds per day and 3.8 pounds per day, respectively. The primary source of PM_{10} and $PM_{2.5}$ emissions presented in Table 3-4 would be fugitive dust from vehicle travel on paved and unpaved roads within the boundaries of the ALRRF. It is assumed that the onsite paved and unpaved roads would continue to be maintained in compliance with current permit conditions and the facility dust control plan. Therefore, fugitive emissions from onsite roads would not be expected to have a significant impact on air quality. In addition, it was assumed fugitive dust emissions associated with operation of the MRF and RAC pre-processing facility would be controlled because these facilities are enclosed, with watering/misting as needed to control fugitive dust emissions. Therefore, PM_{10} and $PM_{2.5}$ emissions would be anticipated to have a less-than-significant impact on air quality.

TABLE 3-4
Daily Operation Emissions

Emission Source	Emissions (pounds per day)					
	NO_x	CO	ROG	SO_2	PM_{10}	$PM_{2.5}$
Proposed Project:						
Offsite Vehicle Exhaust	130	36	7	0.25	4.6	3.7
Onsite Vehicle Exhaust	41	15	5	0.08	2.2	1.9
Onsite Vehicle Fugitive Dust	—	—	—	—	225	30
RAC/CASP Facility	35	23	49	0.04	2.3	2.1
MRF/RAC Pre-processing Facilities	16	11	2	0.02	1.4	1.3
Proposed Project Total (pounds per day)	222	85	63	0.4	236	39
Existing Conditions:						
Truck Emissions (pounds per day)	184	44	9	0.3	6.4	5.1
Net Increase (pounds per day)	37	41	53.7	0.06	229	34
BAAQMD Thresholds (pounds per day)	54	NA	54	NA	82	54

NA = BAAQMD has not established a threshold for this pollutant.
Note: It was assumed 100 percent of the biogas generated from the RAC would be combusted to generate electricity. These emissions were quantified in the assessment of GHG emissions.

Question c:

Construction of the project would result in a short-term increase in nonattainment pollutants such as PM_{10}, $PM_{2.5}$, and the ozone precursors (NOx and ROG). When BAAQMD developed the thresholds of significance for air pollutants, the emission levels for which a project's individual emissions would be cumulatively considerable were considered (BAAQMD, 2010b). Therefore, if emissions would be less than BAAQMD thresholds, the

cumulative impact would be less than significant. As discussed previously, construction emissions would be less than the BAAQMD thresholds; therefore, construction would have a less-than-significant cumulative impact on air quality. Similarly, with implementation of existing measures to control fugitive dust on onsite roads, operation emissions would be less than the BAAQMD thresholds. Therefore, operation of the project would have a less-than-significant cumulative impact on air quality.

Question d:

Construction of the project would generate emissions, such as diesel particulate matter from trucks and construction equipment. Current models and methodologies for conducting health risk assessments are associated with longer-term exposure periods of 9, 40, and 70 years, which do not correlate well with the temporary and highly variable nature of construction activities (BAAQMD, 2010b). Construction of the project facilities are anticipated to occur over an 8-month period, much less than long-term exposure periods for health risk assessments. BAAQMD has developed a health risk screening procedure for construction emissions (BAAQMD, 2010c). However, based on the size of the proposed facilities (e.g., 11-acre MRF complex) and remote location of the ALRRF from sensitive receptors, a sensitive receptor would not be located within the screening distance (range of 200 to 500 meters) where a significant impact could occur. In addition, construction emissions would be less than BAAQMD thresholds. Therefore, sensitive receptors would not be exposed to substantial pollutant concentrations during construction and the impact would be less than significant.

Operation of the project would also generate emissions such as such as diesel particulate matter from onsite equipment, such as loaders. The BAAQMD Risk and Hazard Screening Analysis Process was followed to evaluate potential risk from operation of the project (BAAQMD, 2010d). Step 1 of the process outlines steps to identify emission sources within 1,000 feet of project's fence line. The Google Earth file for Alameda County was downloaded from BAAQMD, and the ALRRF was located on the map. The ALRRF does not have emissions sources within 1,000 feet of the project fence line; therefore, the conclusion based on the screening process is that the project can assume no significant impact for risk and hazards and no further analysis is needed. In addition, daily emissions would be less than the BAAQMD thresholds with implementation of existing measures to control dust emissions on onsite roads. Therefore, sensitive receptors would not be exposed to substantial pollutant concentrations during operation and the impact would be less than significant.

Question e:

Construction of the project may result in short-term odors from construction equipment exhaust. However, due to the remote location of the project and the short-term construction period, the project would not be expected to create odors affecting a substantial number of people. Construction of the project would have a less-than-significant impact.

Operation of the project would create odorous emissions that would be controlled by the design and operation controls of the project facilities. For example, the material in the CASP will be covered and subject to negative air for air emissions and odor control purposes, and the MRF complex would be an enclosed facility. The BAAQMD threshold for odors is five

complaints per year, averaged over a 3-year period. The existing site does not have any record of odor complaints over the past 3 years. Because odors would be controlled by the design of the facilities, odor complaints associated with the MRF, RAC, or CASP facilities are anticipated to be less than five per year. In addition, the project would be required to have an Odor Impact Minimization Plan (per CCR, Title 14, Division 7, Chapter 3.1, Article 3, Section 17863.4) and comply with BAAQMD Regulation 7. Therefore, operation of the project would not create objectionable odors affecting a substantial number of people and the impact would be less than significant.

Mitigation

During construction and operation of the facilities, the following mitigation measures will be implemented:

- AQ-1: All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day during active use of these operations areas.
- AQ-2: All haul trucks transporting soil, sand, or other loose material offsite shall be covered.
- AQ-3: All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.
- AQ-4: All vehicle speeds on unpaved roads shall be limited to 15 mph.
- AQ-5: All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.
- AQ-6: Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure 13 CCR Section 2485). Clear signage shall be provided for construction workers at all access points.
- AQ-7: All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.
- AQ-8: Post a publicly visible sign with the telephone number and person to contact at the Lead Agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The Air District's phone number shall also be visible to ensure compliance with applicable regulations.
- AQ-9: Continuation of existing dust control measures listed in the ALRRF Title V permit and facility dust control plan for paved and unpaved roads.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
IV. BIOLOGICAL RESOURCES				
Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☐	☒	☐
b) Have a substantial adverse effect on any riparian, aquatic or wetland habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or US Fish and Wildlife Service?	☐	☐	☐	☒
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☐	☒
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☒	☐
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒
g) Result in conversion of oak woodlands that will have a significant effect on the environment?	☐	☐	☐	☒

Environmental Setting

The Altamont Hills are characterized by rounded hills with steep slopes that are separated by narrow valleys. Drainages around the site consist of a network of intermittent and ephemeral streams that radiate from the hills or within the narrow valleys between them. Most of the streams do not contain flow outside of the rainy season during the winter months.

The hills surrounding the project site consist of annual grassland and for many years the principal use of this region has been cattle grazing. Large, intermittent streams in the area have one or more impoundments to support this type of land use.

The East Bay Regional Parks District (EBRPD) is developing a Habitat Conservation Plan (HCP)/Natural Community Conservation Plan (NCCP) for its lands in eastern Contra Costa County and northern Alameda County (EBRPD, 2011). The HCP/NCCP study area includes the project site (ICF Jones & Stokes, 2009). However, the estimated date of completion for the EBRPD HCP/NCCP is unknown, and the project site would not be subject to the plans. An HCP/NCCP for the area known as the Altamont Pass Wind Resource Area, which includes the project site, is also in progress. However, it appears that this HCP/NCCP is in the early stages of development and scoping, and the estimated date of completion is unknown (CDFG, 2011).

Alameda County has a tree ordinance as part of its General Ordinance Code, Chapter 12.11 of Title 12. However, the ordinance only pertains to trees within the county right-of-way and has no provisions related to preservation of oak woodlands on private property (Alameda County, 2011). The ECAP encourages the preservation of oak woodlands, with Policy #127 stating "the County shall encourage the preservation of East County's oak woodland plant communities" (Alameda County, 2000).

Regulatory Setting

Federal Endangered Species Act

USFWS has jurisdiction over federally listed threatened and endangered plant and animal species. The federal Endangered Species Act (ESA) protects listed species from harm or "take" broadly defined as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect or attempt to engage in any such conduct" (USFWS, 2011). Any activity can be defined as a "take" even if it is unintentional or accidental.

California Endangered Species Act

CDFG has jurisdiction over State-listed endangered, threatened, and rare plant and animal species under the California Endangered Species Act (CESA). In addition, species proposed for listing under CESA are protected by its provisions. CDFG also maintains a list of species of special concern, defined as species that appear to be vulnerable to extinction because of declining populations, limited ranges, and/or continuing threats. Species of special concern are not afforded legal protection under CESA.

Site Survey

CH2M HILL conducted a reconnaissance-level biological site assessment on April 12, 2011. The assessment was conducted to evaluate the potential presence of special-status species, sensitive habitats, jurisdictional wetlands, and other regulated features on and in the immediate vicinity of the project site. Protocol-level special-status plant or wildlife surveys were not conducted for this survey effort. Prior to conducting the survey, available aerial photographs and historical documents for the area were reviewed, as well as available electronic records from the CDFG California Natural Diversity Database (CNDDB), California Native Plant Society (CNPS), and the USFWS species lists. The CNDDB search included results for Byron Hot Springs, Altamont, Clifton Forebay, and Midway U.S. Geological Survey (USGS) 7.5–minute quadrangle maps.

The listing of the special-status species from the CNDDB search is provided in Appendix C. Photographs taken during the site survey are provided in Appendix D.

The proposed OMMA is heavily disturbed as part of active landfill operations. Only minimal areas of standing vegetation or cover occur within these areas of the landfill. Even those areas with plant cover appear to be routinely disturbed. They are characterized by weedy (ruderal) plant cover species such as wild oats *(Avena fatua)*, little mallow *(Malva parviflora)*, ripgut brome *(Bromus diandrus)*, soft chess brome *(Bromus hordeaceus),* and mustard *(Raphanus sp.)*.

Wildlife at the site can be characterized by scavenging species that are feeding off refuse. These species include California gull *(Larus californicus)*, American crow *(Corvus brachyrhynchos)*, and common raven *(Corvus corax)*. A feral cat *(Felis catus)* was observed in one of the vegetated boarders during the pedestrian survey.

The proposed MRF and RAC pre-processing site is a previously disturbed, flattened, and compacted soil stockpile area and is surrounded by steep terraced slopes on the west, north, and east. The southern portion of this site was being used as a tire recycling facility. The northern portion of this site had minimal vegetation sprouting after the recent winter rains. The vegetation was stunted due to heavy soil disturbance and compaction. The northern portion of the MRF/RAC site is also characterized by ruderal plant species such as ripgut brome, softchess brome, bull thistle *(Cirsium vulgare*), rattail fescue *(Vulpia myuros)*, and a native lupine species *(Lupinus sp.)*. Heavy ruderal vegetation approximately one meter in height covers the terraced hill slopes surrounding the ALRRF.

Wildlife was sparse throughout the MRF and RAC pre-processing site area. However, species observations during the site visit included the common raven, savanna sparrow *(Passerculus sandwichensis)*, and tracks of raccoon *(Procyon lotor),* striped skunk *(Mephitis mephitis),* and, potentially, American badger *(Taxidea taxus)*.

Small rodent activity was also present throughout the hill slopes with visual evidence (i.e., tracks, burrows, runs and small rodent excavation). Foraging by medium-sized mammals was also evident (burrow excavation, scrapes, and tracks) throughout the adjoining hill slope to the north and west. The presence of medium-sized mammals was indicated through evidence tracks and foraging activity for raccoon, skunk, and possibly, an American badger.

The heaviest concentrations of mammal activity were observed on the northern slopes at the MRF and RAC pre-processing site. A recently excavated mammal burrow, approximately 6 inches by 6 inches in size was observed on the northeast-facing slope near the main access road. This burrow is approximately 100 feet east of the disturbed area of the proposed MRF/RAC site and approximately 250 feet northwest of the main access road (see Figure 10). This burrow appears by shape, structure, and size to have been made by either an American badger or a San Joaquin kit fox *(Vulpes macrotis mutica)*(see Appendix D, Site Photographs). Actual mammal usage at this den could not be determined by field observations.

California ground squirrels (*Spermophilus beecheyi*) and associated burrow complexes were also observed on the adjoining properties and hillsides. No ground squirrel burrows or complexes were observed on the adjacent terraced hill slopes to the RAC/MRF site.

No burrowing owls *(Athene cunicularia)* were observed on or near the proposed project site.

A single loggerhead shrike (a state species of special concern) was observed foraging along the western edge of the MRF and RAC pre-processing site; however, no suitable nesting habitat occurs on or adjacent to the project site. Prairie falcons and golden eagles occasionally fly over the site, but are not expected to forage or nest there due to the lack of suitable nest sites.

No wetlands or vernal pools were observed within the proposed construction areas, and no trees were observed in the project area.

Impacts

Answers to Checklist Questions

Questions a and d:

Potential Occurrence of Special-status Plants

The CNDDB contains records for 27 special-status plant species in the vicinity of the site. The proposed MRF and RAC pre-processing site has been heavily compacted and disturbed, the only naturalized vegetation occurs on the adjacent previously disturbed and terraced hill slopes. The OMMA is in a continuous state of disturbance and active landfill activity.

Because the existing landfill site is disturbed by ongoing landfill operations, the proposed project would not result in additional ground disturbance and, therefore, the proposed project at the MRF and RAC pre-processing and OMMA sites will not result in impacts on special-status plants.

Potential Occurrence of Special-status Wildlife

The CNDDB contains records for 31 special-status wildlife species in the general vicinity of the site. The proposed OMMA site is heavily disturbed and provides no suitable habitat for special-status species. For this reason; the proposed activities at the OMMA site will not results in adverse effects to special-status wildlife species.

The MRF and RAC pre-processing site, although heavily compacted and routinely disturbed, borders non-native ruderal grasslands and or naturalized habitats. Based on available information concerning local biological resources, San Joaquin kit fox (federally listed as endangered and state-listed threatened) and the American badger (a state species of special concern) could be expected to occur in the grassland habitats in the project vicinity (adjacent and terraced hill slopes).

A recently excavated den, described above, was observed adjacent to the proposed MRF and RAC pre-processing site (see Figure 10). San Joaquin kit fox has not been detected in the project vicinity since the 1990s (Environmental Science Associates, 2000). American badger tracks were observed during the reconnaissance survey.

No nests of avian species of special concern were noted during the field study, and no suitable nesting habitat for falcons or eagle species exists on or adjacent to the site. However, because of the observed presence of passerines, neo-tropical migrant birds, and raptors, a mitigation measure has been included to ensure active nests discovered on site are not disturbed. Additionally, BMPs related to minimizing impacts on biological resources are proposed as part of the project construction activities. Proposed BMPs related to protecting biological resources include:

- Protective barrier fencing would be erected along portion of active construction site that borders undisturbed lands. This would keep wildlife away from construction activities.
- A biological monitor would be present at project start-up to deliver a Worker Environmental Awareness Training (WEAT) to onsite construction workers. Printed WEAT materials, which would be stored onsite, would include photographs and descriptions of potentially occurring sensitive species that could be encountered during construction.
- A biological site monitor would be available on an on-call basis in the event that a sensitive species is encountered during construction. If a list species is observed, it will not be physically removed from the site under any circumstances. The listed species individual will be allowed to leave the site under its own power or an appropriate response will be developed between the client, the biological monitor, and the regulatory agencies, as appropriate.

The project site highly disturbed and part of active landfill operations. The above BMPs, combined with Mitigation Measure BIO-1, described below, would ensure that impacts on special-status wildlife would be less than significant.

Questions b and c:

The project site is disturbed. No wetlands or vernal pools, or other sensitive natural communities identified in local or regional plans, policies, or regulations, or by CDFG or USFWS were observed within the proposed construction areas. No impact.

Questions e and g:

The project site is disturbed, it does not contain sensitive habitats, and no trees were observed during the field reconnaissance. The proposed project would not conflict with any local policies or ordinances protecting biological resources or result in conversion of oak woodlands. No impact.

Question f:

No adopted HCPs, NCCPs, or other approved local, regional, or state HCPs apply to the project site. No impact.

Mitigation

BIO-1: To avoid impacts on nesting birds, ground-disturbing activities would be scheduled outside of the breeding season (January 1 to August 31). If construction cannot be avoided during this period, a qualified biologist would conduct a survey for nesting birds no more than 14 days prior to the start of ground-disturbing activities. If no nests are present, the project activities can take place; however, if active nests are detected, CDFG would be contacted to determine an appropriate course of action. Typically, the appropriate response may involve the establishment of a protective buffer around the nest. These protective buffers could be a 50-foot to 90-foot radius for passerine and non-passerine nests; a 250-foot radius for burrowing owls; and between a 200- and 500-foot radius for raptor nests.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
V. CLIMATE CHANGE AND GREENHOUSE GASES				
Would the project:				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☐	☒
b) Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☐	☒

Environmental Setting

Unlike emissions of criteria and toxic air pollutants, which have local or regional impacts, emissions of GHGs that contribute to global warming or global climate change have a broader, global impact (BAAQMD, 2010b). Global warming is a process whereby GHGs accumulating in the atmosphere contribute to an increase in the temperature of the earth's atmosphere (BAAQMD, 2010b). GHGs allow visible and ultraviolet light from the sun to pass through the atmosphere, but they prevent heat from escaping back out into space (BAAQMD, 2010b). Among the potential implications of global warming are rising sea levels, and adverse impacts on water supply, water quality, agriculture, forestry, and habitats (BAAQMD, 2010b). In addition, global warming may increase electricity demand for cooling, decrease the availability of hydroelectric power, and affect regional air quality and public health. Like most criteria and toxic air pollutants, much of the GHG production comes from fuel combustion in motor vehicles (BAAQMD, 2010b). GHG emissions can be reduced to some degree by improved coordination of land use and transportation planning on the city, county, and subregional level, and other measures to reduce automobile use (BAAQMD, 2010b). GHGs include the following pollutants (EPA, 2011):

- Carbon dioxide (CO_2) is a naturally occurring gas, and also a by-product of burning fossil fuels and biomass, as well as land-use changes, and other industrial processes. It is the principal anthropogenic GHG that affects the Earth's radiative balance.
- Methane (CH_4) is a GHG with a global warming potential approximately 20 times that of CO_2. CH_4 is produced through anaerobic (without oxygen) decomposition of waste in landfills, animal digestion, decomposition of animal wastes, production and distribution of natural gas and petroleum, coal production, and incomplete fossil fuel combustion.
- Nitrous oxide (N_2O) is a GHG with a global warming potential approximately 300 times that of CO_2. Major sources of N_2O include soil cultivation practices, especially the use of commercial and organic fertilizers, fossil fuel combustion, nitric acid production, and biomass burning.

- Hydrofluorocarbons (HFC) are compounds containing only hydrogen, fluorine, chlorine, and carbon. HFCs have been introduced as a replacement for the chlorofluorocarbons identified as ozone-depleting substances.
- Perfluorocarbons (PFC) are compounds containing only fluorine and carbon. Similar to HFCs, PFCs have been introduced as a replacement for chlorofluorocarbons. PFCs are also used in manufacturing and are emitted as byproducts of industrial processes. PFCs are powerful GHGs.
- Sulfur hexafluoride (SF_6) is a colorless gas soluble in alcohol and ether, and slightly soluble in water. It is a very powerful GHG used primarily in electrical transmission and distribution systems, as well as dielectrics in electronics.

BAAQMD prepared an estimate of year 2007 GHG emissions from direct and indirect sources within the BAAQMD's jurisdiction. BAAQMD estimates that sources within the district generated 88 million metric tons CO_2 emissions in the year 2007 (BAAQMD, 2010e). The primary source of the GHG emissions was combustion of fossil fuels (BAAQMD, 2010e). Emissions of HFCs, PFCs, or SF_6 are not expected from operation the project. Therefore, this project impact assessment evaluated emissions of CO_2, CH_4, and N_2O.

Regulatory Setting

Laws and regulations, as well as plans and policies, have been adopted to address GHG emissions. Regulations relevant to the proposed project are summarized below.

Federal

The EPA Mandatory Reporting GHG Rule became effective on December 29, 2009, and sources required to report were to begin collecting data on January 1, 2010. In general, suppliers of fossil fuels or industrial GHGs, manufacturers of vehicles and engines, and facilities that emit 25,000 metric tons or more per year of carbon dioxide equivalent (CO_2e)[2] emissions are required to submit annual reports to EPA. On June 28, 2010, reporting requirements for additional source categories (for example, industrial wastewater treatment) were finalized. Operation of the project would not generate GHG emissions in an amount that would require reporting.

In addition, the Supreme Court decision in *Massachusetts et al. v. Environmental Protection Agency et al.* (Supreme Court Case 05-1120) found that EPA has the authority to list GHGs as pollutants and to regulate emissions of GHGs under the federal CAA. On April 17, 2009, EPA found that CO_2, CH_4, N_2O, HFCs, PFCs, and SF_6 may contribute to air pollution and may endanger public health and welfare.

On May 13, 2010, the EPA issued a final rule that established addressing GHG emissions from stationary sources under the CAA permitting programs. The final rule sets thresholds for GHG emissions that define when stationary source permits under the New Source Review Prevention of Significant Deterioration and Title V Operating Permit programs are required for new and existing industrial facilities. This rule may be applicable to the project depending on the final design and anticipated GHG emissions from the proposed facilities. Because the facility currently has a Title V permit, the Tailoring Rule would apply. The first

[2] CO_2e is measure used to compare the emissions from various GHGs (for example, CH_4) based on the pollutant's global warming potential.

step of the rule, during the time period January 1, 2011 through June 30, 2011, only GHG increases of 75,000 tpy or more of total GHG, on a CO_2e basis, would need to determine the best available control technology (BACT). GHG emissions estimated for operation of the project would be less than 75,000 tpy so a BACT determination would not be required for GHG emissions.

State

AB 32 provides the framework for regulating GHG emissions in California. This law requires CARB to develop a GHG inventory, design and implement emission limits, regulations, and other measures such that statewide GHG emissions are reduced in a technologically feasible and cost-effective manner to 1990 levels by 2020. The statewide 2020 emissions limit is 427 million metric tons CO_2e (CARB, 2007). CO_2 emissions account for approximately 90 percent of the statewide GHG emissions. CH_4, N_2O, HFCs, PFCs, and SF_6 emissions account for the remainder of the statewide GHG emissions.

Part of CARB's direction under AB 32 was to develop a scoping plan that contains the main strategies California will use to reduce GHG emissions that cause climate change. The scoping plan includes a range of GHG reduction actions, which include direct regulations, alternative compliance mechanisms, monetary and non-monetary incentives, voluntary actions, market-based mechanisms such as a cap-and-trade system, and an AB 32 cost of implementation fee regulation to fund the program (CARB, 2008). The first regulation adopted by CARB pursuant to AB 32 was the regulation requiring mandatory reporting of GHG emissions. The regulation requires large industrial sources emitting more than 25,000 metric tons of CO_2 per year to report and verify their GHG emissions from combustion of both fossil fuels and biomass-derived fuels. The ALRRF currently reports GHG emissions to CARB under the General Stationary Combustion sector.

Executive Order S-21-09 requires development of a regulation, requiring the state's load-serving entities to meet a 33 percent renewable energy target by 2020. In response to the executive order, the Renewable Electricity Standard (RES) regulation was developed and is currently under review by the Office of Administrative Law. Operation of the anaerobic digestion facility could contribute to meeting the RES by providing a renewable fuel source to generate electricity for onsite use.

Local

BAAQMD established a climate protection program to reduce pollutants that contribute to global climate change and affect air quality in the SFBAAB (BAAQMD, 2010b). The climate protection program includes measures that promote energy efficiency, reduce vehicle miles traveled, and develop alternative sources of energy all of which assist in reducing emissions of GHG and in reducing air pollutants that affect the health of residents. BAAQMD also seeks to support current climate protection programs in the region and to stimulate additional efforts through public education and outreach, technical assistance to local governments and other interested parties, and promotion of collaborative efforts among stakeholders. In addition, the BAAQMD 2010 CAP includes measures to reduce GHG emissions.

Impacts

GHG impacts were evaluated based on comparison of project emissions to BAAQMD Thresholds of Significance presented in Table 3-5. GHG emissions from operation of the project were estimated as CO_2e emissions. CO_2e is measure used to compare the emissions from various GHGs (for example, CH_4) based on the pollutant's global warming potential. The detailed emission calculations are presented in Appendix B (Air Quality Calculations). GHG emissions were estimated for equipment, vehicles, combustion of biogas from the RAC, and the benefit from diverting 250 tpd from the landfill to composting and recycling. Emissions from equipment, such as loaders, were estimated using CO_2 emission factors from URBEMIS2007. URBEMIS2007 does not include emission factors for CH_4 and N_2O. Therefore, to account for the contribution of these pollutants to CO_2e emissions, the CO_2 emissions were increased by five percent to estimate the CO_2e emissions. Vehicle emissions were estimated using emission factors from the CARB Regulation for the Mandatory Reporting of Greenhouse Gases. Emissions from combustion of biogas from the RAC were estimated using the heat value and emission factors from the EPA GHG Reporting Program (40 Code of Federal Regulations Part 98 Subpart C, Tables C-1 and C-2). Finally, the GHG benefit of the project was estimated using the EPA's Waste Reduction Model (WARM) (EPA, 2010). WARM was designed to help track and voluntarily report GHG emissions reductions from several different waste management practices.

TABLE 3-5
BAAQMD Thresholds of Significance for GHG Emissions

	Average Daily Emissions (lb/day)	
Pollutant	**Construction**	**Operation**
Greenhouse gases (stationary sources)	None	10,000 metric tons/yr

Source: BAAQMD, 2010b

Answers to Checklist Questions

Question a:

Construction of the project would result in a total short-term increase in GHG emissions of 970 metric tons CO_2e. BAAQMD has not established a threshold for evaluating GHG emissions from construction. However, using the operation threshold for comparison purposes shows the construction emissions would be minimal. Due to the minor emissions estimated for construction, the impact would be less than significant.

Operation GHG emissions were estimated for equipment, vehicles, combustion of biogas from the RAC, and the benefit from diverting 250 tpd from the landfill to composting and recycling. The proposed facilities would provide an alternative disposal location that would result in fewer miles traveled by trucks transporting waste materials. Therefore, truck GHG emissions from the existing conditions and with the project were estimated to calculate the net benefit associated with operation of the project. The annual CO_2e emissions are presented in Table 3-6. Operation of the project would result in a net benefit in terms of GHG emissions due to the reduction of material entering the landfill and the reduced truck miles traveled to dispose materials. GHG emissions from combustion of biogas generated

from the RAC would need to be added to the ALRRF GHG reporting inventory. Operation of the project would have a net beneficial impact on GHG emissions.

TABLE 3-6
GHG Emissions from Project Operation

Emission Source	CO2e (metric tons per year)
Proposed Project:	
Offsite Vehicle Exhaust Emissions	5,960
Onsite Vehicle Exhaust Emissions	1,364
RAC Operation – Combustion of Biogas	12,647
RAC/CASP – Operation	460
MRF Operation	203
WARM Model Calculated Reductions	-36,140
Proposed Project Total	-15,505
Existing Conditions:	7,943
Offsite Vehicle Exhaust	
Net Emissions (Net Reduction)	-23,448

Question b:

As shown above, construction of the project would result in a minor, short-term increase in GHG emissions, while operation of the project would result in a net decrease in GHG emissions. Because the project would result in a net benefit in terms of GHG emissions, the project would be consistent with applicable plans, policies, or regulations adopted for the purpose of reducing GHG emissions. For example, combusting the biogas generated from the RAC would be a renewable source of energy, which is consistent with the goals of AB 32. Furthermore, one of the GHG mitigation measures listed for landfills in a BAAQMD study was waste separation (BAAQMD, 2008). The project would include waste separation at the MRF where MSW would be separated for recycling and composting, which would reduce waste-related GHG emissions within the SFBAAB. Construction and operation of the project would not conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing GHG emissions.

Mitigation

No mitigation measures related to climate change or GHGs are required.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
VI. CULTURAL RESOURCES				
Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in 15064.5?	☐	☐	☐	☒
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to 15064.5?	☐	☐	☐	☒
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☒	☐
d) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☐	☒	☐

Environmental Setting

A number of literature reviews and field surveys to determine the presence of historic and archaeological resources at the project site have been conducted over the last 40 years. These include surveys conducted on various portions of the project site in 1975, 1983, 1990, and 1995. A 2011 report by Pacific Legacy, Incorporated reviewed the past site surveys and included a new literature review (Pacific Legacy, Inc, 2011).

The past research identified a number of archeological sites and features on the project site. These included building foundations, mortar cups, historic debris (likely an informal dump), and farm equipment. Ten discovered resources have been formally recorded (Environmental Science Associates, 1995). However, the 2011 report by Pacific Legacy, Incorporated determined that none of the identified cultural resources were eligible for inclusion in the National Register of Historic Places (NRHP). In addition, the report stated that the identified resources in the vicinity of the project site were no longer in existence.

Relevant Alameda County ECAP policies include:

- Policy 136: The County shall identify and preserve significant archaeological and historical resources, including structures and sites which contribute to the heritage of East County.
- Policy 137: The County shall require development to be designed to avoid cultural resources or, if avoidance is determined by the County to be infeasible, to include [and] implement appropriate mitigation measures that offset the impacts.

The County also requires a background and records check of a project if a project is located within an extreme or high archaeological sensitivity zone as determined by the county. The County also requires all construction work to be suspended if any archaeological sites are

found during construction until a qualified archaeological professional can investigate the findings. The county follows CEQA Guidelines for cultural resource preservation practices (Alameda County, 2000).

The project site and its surrounding area are not located within a high archaeological sensitivity zone as defined by the County.

Impacts

Answers to Checklist Questions

Questions a and b:

All of the MRF complex and RAC pre-processing facility construction would be completed in a previously graded, flat area currently used for tire shredding and truck staging and storage. Per the findings of the 2011 Pacific Legacy, Incorporated 2011 survey review, the proposed project area is not in the vicinity of any known historical resources, as defined by 36 CFR 800.16(l)(1). Therefore, construction would not disturb the known historic resources in the vicinity and would not result in impacts on known historic resources.

Questions c and d:

The entire OMMA site overlays landfill, as such, the potential to unearth significant archaeological, historical, or human remains that were previously undiscovered is negligible. However, the MRF complex site, while graded and disturbed, has not been excavated or built upon. Therefore, there is the potential to unearth significant resources in the MRF complex and RAC pre-processing facility areas. CEQA requires certain basic measures to be completed in the event of discovery of historic or archaeological resources (including human remains), and development that involves grading in previously undeveloped areas is therefore considered to result in a potentially significant impact to archaeological and paleontological resources (CEQA Guidelines, Section 15064.5).

Pursuant to the CEQA guidelines, in the event that cultural, archaeological or paleontological resources, including human remains, are encountered during trenching for utilities or other grading activities, excavation or disturbance of the site or portions expected to overlie the resources would cease until the following procedures are completed:

- In the event of uncovered human remains the Alameda County Coroner shall be contacted to determine if cause of death must be investigated, and if determined to be of Native American origin, the Coroner shall contact the California Native American Heritage Commission, who shall in turn notify the most likely descendants, as designated by the Commission.
- If such remains are identified as Native American in origin, the most likely descendants designated by the Commission shall make recommendations to the landowner or contractor for means of treating or disposing of the remains, and associated grave goods, in an appropriate, dignified manner. If the Commission is unable to ascertain the identity of the most likely descendants, the descendent does not make a recommendation, or following mediation by the Commission of a disagreement on procedures between the landowner and the most likely descendant (s), the landowner or their representative shall rebury the remains and any associated grave goods with

appropriate dignity on the property in a location not subject to further surface disruption.

- In the event that other cultural resources are located on the site, the contractor shall contact a qualified archaeologist to inspect the site. If the archaeologist determines that potentially significant archaeological materials or human remains are encountered, the archaeologist must record, recover, retrieve, rebury and/or remove appropriate archaeological materials.
- The archaeologist must study any archaeological resources found onsite and publish data concerning these resources, and shall provide a copy of documentation of all recovered data and materials found onsite to the regional information center of the California Archaeological Inventory for inclusion in the permanent archives, and another copy shall accompany any recorded archaeological materials and data.
- Monitoring for these measures must be performed by the applicant on a continual basis during site disturbance activities. At the completion of work, the applicant shall submit a summary of findings to the Planning Director for review and for the final record.

WMAC would follow these procedures during construction activities in the MRF complex and RAC preprocessing building area, reducing the potential impacts of the project to undiscovered archeological, historical, or human remains to a less-than-significant level.

Mitigation

No mitigation measures related to Cultural Resources are required.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
VII. GEOLOGY AND SOILS				
Would the project:				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:	☐	☐	☒	☐
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☒	☐
ii) Strong seismic ground shaking?	☐	☐	☒	☐
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐
iv) Landslides?	☐	☐	☒	☐
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☐	☒
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or offsite landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☐	☒
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	☐	☐	☐	☒
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☐	☒

Environmental Setting

Regional Setting

The ALRRF is located in northeastern Alameda County, California, within the Altamont Hills of the Diablo Range. The site lies on the east side of the Altamont anticline. The Altamont Hills separate the Livermore Valley to the west from the San Joaquin Valley to the east (Geosyntec, 2009). The Diablo Range is within the eastern part of the Coast Ranges geomorphic province of California. The Coast Ranges are composed of several parallel longitudinal ranges that trend northwest-southeast exhibiting a series of valleys and mountains along the west coast of California that extend from Oregon to the Santa Ynez

River near Santa Barbara. These ranges have resulted from the folding and faulting of intra-basin sediments during Miocene to Pleistocene periods. The Diablo Range is an assemblage of anticlinal folds composed largely of Cretaceous-Jurassic age Franciscan Formation marine sedimentary rocks (Norris and Webb, 1990). The San Francisco Bay Area is considered one of the most seismically active regions in the United States. As a result, the design of structures and equipment will be in accordance with the 2010 California Building Code earthquake design requirements to withstand the ground motion of a design basis earthquake (California Building Standards Commission [CBSC], 2010).

Local Geology

Tectonically, the Diablo Range is located in the moderately active central Coast Ranges and is part of the San Andreas transform area (Geosyntech, 2009). Seismicity at the project site is primarily influenced by a series of northwest-trending faults located west of the site. These major active faults (Alquist-Priolo Earthquake Fault Zoning [EFZ]) include the Marsh Creek-–Greenville, Calaveras, Hayward, and San Andreas – the closest being the Marsh Creek–Greenville fault at 4 miles west of the site (California Geological Society [CGS], 2010). Several lesser faults are located in the project vicinity, including the Midway, Corral Hollow, and Livermore faults—the closest being the Midway fault at 2.5 miles east of the site. However, these faults have not exhibited activity in the Holocene time and none are within the Alquist-Priolo EFZ (CGS, 2010). Although the project is subject to the Alquist-Priolo Earthquake Fault Zoning Act, the site is not located within a known EFZ (or within an area identified as subject to surface rupture from active faults. No known fault, active or inactive, reaches the surface within the project site (CGS, 2010).

The proposed project site is underlain by rocks of the Panoche Formation that are composed of alternating layers of sandstone, mudstone/shale/siltstone and conglomerate (Geosyntec, 2009).

Landslide features are common in the project region, and have been mapped in the vicinity of the site. The majority of the slide features are relatively subdued, indicating that the slides are relatively old and inactive (Environmental Science Associates, 1995). In addition, this project is located on an area of the landfill has previously been disturbed and graded.

Soils in the project vicinity include Panoche Clay, derived from weathered alluvial deposits, and Pescadero Clay, derived from weathering of bedrock.

Impacts

Answers to Checklist Questions

Question a:

As discussed above, the proposed project would be located in the existing disturbed operational area of the landfill. The proposed project will not expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:(i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault (refer to Division of Mines and Geology Special Publication 42), (ii) strong seismic ground shaking, (iii) seismic-related ground failure, including liquefaction, or (iv) landslides.

The proposed project would be located in an existing disturbed area within the active landfill operations area. As discussed previously, the San Francisco Bay Area is a significantly active seismic region of the United States. As a result, the design of structures and equipment will be in accordance with the 2010 California Building Code earthquake design requirements to withstand the ground motion of a design basis earthquake (CBSC, 2010). Construction of the project to conform with the 2010 California Building Code would result in a less-than-significant impact.

Question b:

The proposed project would be located in the existing disturbed operational area of the landfill, and will not result in substantial soil erosion or the loss of topsoil during construction or operations. No impact.

Question c:

The proposed project would be located in the existing disturbed operational area of the landfill, and would not be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or offsite landslide, lateral spreading, subsidence, liquefaction or collapse. No impact.

Question d:

The proposed project would be located in the existing disturbed operational area of the landfill, therefore, the potential for native expansive soils to be present is low. The project would not be located on expansive soil and would not create substantial risks to life or property. No impact.

Question e:

The proposed project would not have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water. No impact.

Mitigation

No mitigation measures related to geology and soils are required.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
VIII. HAZARDS AND HAZARDOUS MATERIALS				
Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☐	☒
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☐	☒
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☐	☒

Environmental Setting

The proposed uses would not include any transport, acceptance, or treatment of hazardous materials. The proposed facilities would process only Class II and Class III non-hazardous solid waste as defined by California Code of Regulations, Title 27, Chapter 3, and as permitted by the existing Altamont Landfill Resource Recovery Facility Solid Waste Permit. The site is not on a list of hazardous materials sites pursuant to Government Code Section 65962.5 (California Department of Toxic Substances Control [DTSC], 2011).

Alameda County includes three public use airports: Hayward Executive Airport, Livermore Municipal Airport, and Oakland International Airport. Alameda County has established an airport land use commission, in accordance with state law, to prepare airport land use compatibility plans for all public-use airports in the county and to review land use actions, including general plans, specific plans, zoning ordinances, and airport development plans to determine whether they are consistent with airport land use compatibility policies (ESA, 2010). No private airstrips are located in the immediate vicinity of the project site (AOPA Online, 2011).

Fire protection services to the project site are provided by the Alameda County Fire Department (ACFD; 2011). The ACFD is responsible for the fire protection and emergency medical response within an approximately 150-square-mile service area. ACFD Fire Station 8, located in Livermore approximately 5 miles from the project site, is the responding station for the eastern unincorporated east county area. The California Department of Forestry is responsible for wildland fire protection on state lands, including lands bordering the facility.

No schools are located within a quarter mile of the project site (Alameda County Office of Education, 2011).

Impacts

Answers to Checklist Questions

Question a:

The proposed uses do not include routine transport, use, or disposal of hazardous materials. Therefore, they will not create a significant hazard to the public or the environment under this criterion. No impact.

Question b:

The proposed uses do not include routine transport, use or disposal of hazardous materials and would therefore not result in reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment. No impact.

Question c:

The proposed uses do not include routine transport, use or disposal of hazardous materials. In addition, no schools are located, or proposed to be located, within a quarter mile of the project site. Therefore, no impacts related to hazardous emissions related to schools are expected.

Question d:

The project site is not on the DTSC Hazardous Waste and Substances Site. Therefore, development on the site will not create a significant hazard to the public or the environment under this criterion. No impact.

Question e:

The project site is not located within an airport land use plan, or within two miles of a public airport or public use airport. Therefore, the project will not result in a safety hazard for people residing or working in the project area related to airport hazards. No impact.

Question f:

The project is not in the vicinity of a private airstrip. Therefore, the project will not result in a safety hazard for people residing or working in the project area related to private airstrip hazards. No impact.

Question g:

The proposed uses are on an existing landfill and will utilize existing access routes. They would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. No impact.

Question h:

The project site is within the service area of the ACFD. In addition, the California Department of Forestry serves wildland areas adjacent to the project site. Because the project site and surrounding areas are within fire response districts, the project would not expose people or structures to a significant risk of loss, injury or death involving wildland fires. No impact.

Mitigation

No mitigation measures related to hazards are required.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
IX. HYDROLOGY AND WATER QUALITY				
Would the project:				
a) Violate any water quality standards, conflict with water quality objectives, fail to meet waste discharge requirements, or otherwise cause significant degradation of beneficial uses of surface water bodies or groundwater, including public uses, aquatic, wetland and riparian habitat?	☐	☐	☒	☐
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☒	☐
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or offsite (i.e. within a watershed)?	☐	☐	☒	☐
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff (e.g., due to increased impervious surfaces) in a manner which would result in flooding on- or offsite (i.e. within a watershed)?	☐	☐	☒	☐
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems due to changes in runoff flow rates or volumes?	☐	☐	☒	☐
f) Result in a significant increase in pollutant discharges to receiving waters (marine, fresh, and/or wetlands) during or following construction (considering water quality parameters such as temperature, dissolved oxygen, turbidity, and typical stormwater pollutants such as heavy metals, pathogens, petroleum derivatives, synthetic organics, sediment, nutrients, oxygen-demanding substances, and trash)?	☐	☐	☒	☐
g) Result in an increase in any pollutant for which a water body is listed as impaired under Section 303(d) of the Clean Water Act?	☐	☐	☐	☒
h) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
IX. HYDROLOGY AND WATER QUALITY				
Would the project:				
i) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	☐	☐	☐	☒
j) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☐	☐	☒
k) Inundation by seiche, tsunami, or mudflow?	☐	☐	☐	☒

Environmental Setting

The following text provides an overview of the surface and groundwater supply and quality for the project area.

Climate

The regional climate is characterized by hot, dry summers and moderate winters. Climatological conditions are interpolated from the conditions at federally maintained weather stations located within 10 miles of the project site at the following stations:

- Livermore – Station Number 202, approximately 8 miles from the site.
- Tracy Pumping Plant – Station Number 390, approximately 5.3 miles from the site.

In addition, a weather station was installed at the ALRRF in August 1989 and later moved to a location meeting BAAQMD requirements in 1993.

For the 30-year period from 1971 to 2000, National Oceanographic and Atmospheric Administration (NOAA) (2001) reported a normal annual precipitation of 14.8 inches at the Livermore Weather Station and 12.51 inches at Tracy Pumping Weather Station. Annual precipitation recorded at the Altamont Landfill weather station in 1997 was 10.85 inches (Simon, 1998). Precipitation at the project site within this range is typical of the Central Valley region. Rainfall is seasonal, with approximately 90 percent of the rainfall occurring between November and April. Snowfall is not typical at this site. (Geosyntec Consultants, 2005).

Strong westerly winds from the Pacific coast are characteristic of the Altamont Pass area. Evaporation data collected for the site between 1991 and 1997 indicate a mean inferred evaporation of 65.86 inches per year (Simon, 1998). For that time period (1991 to 1997), the highest mean monthly-inferred evaporation was calculated as 10.85 inches for July and the lowest mean monthly-inferred evaporation was calculated as 1.13 inches for December (Simon, 1998).

Floodplain

As indicated by the Flood Hazard Map, the facility is not within a 100-year floodplain as identified by the Federal Emergency Management Agency (FEMA) (Geosyntec Consultants, 2005).

Surface Water Hydrology

Per Waste Discharge Requirements (WDR) Order No. R5-2009-0055, the facility is near the crest of the Altamont Hills. The regional topography is characterized by moderately to steeply rolling hills and narrow valleys that have a northwest trend. Surface water flows from the ridges down through the valleys and discharges into local drainages. These natural drainages, which are often dry, ultimately drain toward the Sacramento-San Joaquin Delta to the east or the San Francisco Bay toward the west, when surface water flow is sufficient. The drainage divide between the Central Valley Region and San Francisco Bay Region traverses the facility property. Runoff originating on the east side of the facility property drains eastward in un-named channels and ditches to Mountain House Creek, which flows to Old River in the Sacramento-San Joaquin Delta. Runoff originating on the west side of the divide flows west-southwest to channels along Dyer Road that drain into Altamont Creek, which may flow into San Francisco Bay through Arroyo Las Positas, Arroyo Mocho, Arroyo de la Laguna, and Alameda Creek near Union City.

The existing drainage facilities consist of culverts and swales. An existing 24-inch corrugated metal pipe conveys flow from the top deck to the valley on the north side of the ALRRF. The north side of the complex remains largely undeveloped and drains to natural drainage courses toward the San Francisco Bay as described above (CH2M HILL, 2009).

The existing surface water drainage control facilities were designed to accommodate a 100-year, 24-hour storm event for the Class III (unlined areas) landfill and a 1,000-year, 24-hour storm event for the Class II landfill area. Surface water from the existing landfill is directed to three storm water retention basins prior to discharge offsite in accordance with General NPDES Permit. Two basins drain towards the west and one basin towards the east (Geosyntec Consultants, 2009).

Surface water at the existing landfill is collected and diverted away from covered refuse by temporary and permanent drainage control facilities. These include perimeter ditches, drainage benches, down drains, storm drains, and drainage swales. Surface water is diverted from above the landfill to the valley below the toe, and is collected in a sedimentation basin prior to discharge toward the west.

Groundwater

Groundwater is encountered at the site at depths ranging from approximately 140 feet below ground surface (bgs) on hilltops to as little as 13 feet bgs in valley bottoms (Geosyntec Consultants, 2004). Groundwater occurs primarily in the upper weathered portions of the Panoche Formation bedrock and in the valley alluvium. Shallow groundwater at the site generally occurs as unconfined water table conditions. Deeper groundwater within the Panoche Formation bedrock may occur under confined conditions. In general, the groundwater level fluctuates approximately 2 to 6 feet seasonally.

Based on investigations conducted at the site, shallow groundwater flow is influenced by site topography (SFBRWQCB, 2009). The conceptual model for shallow groundwater flow is

a topography-driven recharge/discharge flow system, whereby groundwater is recharged predominantly on the hillsides and discharges to the local topographic low. The water table in the conceptual model coincides with the surface topography and groundwater flows from the highlands (recharge areas) toward the valleys (discharge areas). Vertical hydraulic gradients show a consistent pattern, with downward gradients measured along the ridges (recharge areas) and upward gradients are generally in the range of 0.1 to 0.6 foot per foot.

Hydraulic conductivity of the native soils and bedrock beneath the site is highly variable, but generally decreases with depth. The highest hydraulic conductivity values (up to 6.3 x 10^{-3} centimeters per second [cm/sec]) have been observed in the shallowest depth intervals. The more transmissive zones are associated with unconsolidated alluvium and the upper, more pervasively weathered portions of the underlying bedrock. Significantly lower hydraulic conductivity values (as low as 3.5 x 10^{-9} cm/sec) have been measured at depths greater than 100 feet bgs. (SFBRWQCB, 2009)

Water Quality

WMAC currently performs detection and corrective action monitoring in accordance with Title 27 as required in Monitoring and Reporting Program Order No. R5-2009-0055 for groundwater, surface water, and the unsaturated zone. Per the Waste Discharge Requirements Order No. R5-2009-0055, previous site characterization investigations indicate groundwater geochemical conditions range from very low total dissolved solids (TDS) to brackish conditions (RUST, 1994). More recent studies indicate the TDS content of groundwater generally increases with depth (LFR, 2001). Deeper groundwater TDS concentrations are greater than 1,000 mg/L (LFR, 2001). Groundwater geochemistry is primarily sodium bicarbonate to sodium chloride dominated.

Existing Landfill

The ALRRF is designed and operated to manage a variety of liquid sources as an integral part of the operation of the facility. These liquids can be present above or below the ground surface and can be natural or man-made. In addition, any storm water in contact with these liquids are collected and treated similarly. The site currently proactively manages the following liquids:

1. Leachate
2. Landfill gas condensate
3. Subdrain collection system waters
4. Truck waste water
5. Heavy equipment wash rack water
6. Internal combustion engines cooling tower water
7. Waste Water Treatment Plant (WWTP) effluent (currently the WWTP is used for storage of leachate prior to applications, i.e., dust suppression, reinjection, and application to active face as approved in WDR R5-2009-0055)

The onsite liquids management plan covers the collection, storage, handling, treatment, reuse and/or disposal of liquids by the facility. The liquids management activities

conducted by the ALRRF also includes monitoring of the various liquid sources in addition to groundwater monitoring described in the Monitoring and Reporting Program (MRP) Order No. R5-2009-0055.

The various liquids that are generated and collected may be handled in various ways as necessary for effective and compliant operations. The facility has established various treatment, storage, use, and reuse methods so that the most appropriate handling option may be taken at any given time, given the nature of the liquid to be handled and the needs of the facility. The possible handling options include dust control, irrigation, treatment, reapplication, storage ponds, evaporation, discharge offsite, shipment offsite, and destruction in the flare. (Geosyntec Consultants, 2009)

Regulatory Setting

The State Water Resources Control Board (SWRCB) and Regional Water Quality Control Board, Central Valley Region regulates point source waste discharges using National Pollutant Elimination System (NPDES) permits and WDRs. The relevant federal and state laws and regulations are discussed below:

National Pollutant Discharge Elimination System Program

The NPDES permit program was established by the Clean Water Act to regulate municipal and industrial discharges to surface waters of the United States. Federal NPDES permit regulations have been established for broad categories of discharges, including point-source municipal waste discharges and nonpoint-source storm water runoff. In California, the EPA has delegated its NPDES permitting functions to the SWRCB and RWQCBs.

NPDES Permit No. 0083763, issued June 7, 2002, was rescinded by the SWRCB in June 2007. Consistent with SWRCB objectives, leachate from the landfill and/or effluent from the ALRRF waste water treatment plant is maintained onsite and used for dust control in the lined Class II landfill areas as allowed by WDR Order Number R5-2009-0055. (Geosyntec Consultants, 2009)

RWQCB also regulates municipal and industrial stormwater discharge requirements for landfills under the NPDES program. To obtain authorization for industrial stormwater discharge, a Notice of Intent for a General Permit to Discharge Storm Water Associated with Industrial Activity was filed with the RWQCB by ALRRF in October 1992 and updated in May 1997. The RWQCB issued the General Permit to ALRRF, and ALRRF maintains a current Storm Water Pollution Prevention Plan (SWPPP) that describes how the site complies with this permit. (Geosyntec Consultants, 2009)

The SWRCB also adopted a statewide General Permit for Storm Water Discharges Associated with Construction Activity (Order No. 99-08) for construction projects that disturb one or more acres of soil. Effective July 1, 2010, all dischargers are required to obtain coverage under the updated Construction General Permit Order 2009-0009-DWQ, adopted September 2, 2009. Construction activities include clearing, grading, excavation, stockpiling, and reconstruction of existing facilities (removal or replacement). To obtain coverage, the discharger must submit a notice of intent and develop and implement a SWPPP.

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act (Division 7 of the California Water Code) established the State Water Quality Control Board and divided the state into nine regions, each overseen by a RWQCB. The RWQCBs establish water quality objectives for the purpose of protecting beneficial uses. Under the Act, the RWQCBs require persons who discharge or propose to discharge waste that could affect the quality of waters of the State to file a Report of Waste Discharge with the appropriate RWQCB. The RWQCB then issues or waives WDRs for the discharge or requires the discharger to enroll under a general permit order.

The SWRCB requires that any waste discharges to land or changes to an existing landfill facility obtain new or revised WDRs that address the facility's potential to affect groundwater. The Central Valley RWQCB is the local agency under the SWRCB that has the jurisdiction and authority to issue site-specific WDRs.

ALRRF is classified and permitted as a Class II/Class III disposal facility and is regulated under WDR Order No. R5-2009-0055. Monitoring is conducted in accordance with the Monitoring and Reporting Program Order No. R5-2009-0055 established for the site.

California Code of Regulations, Title 27 and Title 14

The permitting, siting, design, construction, operation, closure and post-closure of solid waste facilities, including landfills, are regulated by the CCR, Title 27. CCR Title 14, Division 7, Chapter 3, Article 6.0 sets forth the permitting requirements and minimum operating standards for operations and facilities that receive, store, handle, recover, transfer, or process solid waste, also known as a transfer/processing operation and facility. CCR Title 14, Division 7, Chapter 3.1 sets forth permitting requirements and minimum operating standards for compostable materials handling operations and facilities. Both regulations require control of leachate and stormwater to prevent contact with the public and not cause nuisance or degradation to waters of the state.

Impacts

Answers to Checklist Questions

Question a:

The proposed project would be required to meet state and federal requirements for material recovery facility and organics material management design, construction, and operations. These requirements would help to avoid or minimize leachate contamination by addressing the separation between wastes and groundwater (situated on the current landfill with approved liner system), requiring leachate collection and removal systems, and appropriate drainage and storm water control. By implementing mitigation measures, impacts associated with leachate generation and migration would be less than significant as further discussed below.

Construction Activities

During site grading and construction activities related to the MRF Complex and OMMA facilities, large areas of bare soil could be exposed to erosion by wind and water for extended periods of time. Soil disturbance, excavation, cutting/filling, stockpiling, and grading activities could increase erosion and sedimentation to storm drains that empty into local surface waters. Construction water quality impacts are temporary and managed

through the standard, industry-accepted best management practices, which are managed and monitored by the contractor conducting the work.

The proposed project would be required to comply with the NPDES General Construction Permit, which includes preparation of a site-specific SWPPP; preparation of hazardous material spill control and countermeasure programs; sampling, monitoring, and compliance reporting; development and adherence to a Rain Event Action Plan; adherence to numeric action levels and effluent limits for pH and turbidity; monitoring soil characteristics; training; and implementation of BMPs. Adherence to these and/or similar BMPs would substantially reduce or prevent pollutants from entering natural waters. WMAC will require construction contractors to apply and comply with the requirements of the General Construction Permit; therefore, the project would have a less-than-significant impact.

Operation of the MRF Complex

Enclosed and any open, impervious surfaces will be subject to the General Industrial Permit and SWPPP for the site. All waste will be tipped under covered areas and will not be exposed in such a way that would create non-stormwater discharges. Any leachate generated from the waste within the MRF Complex will be collected and handled either onsite or transported offsite to an appropriate facility for disposal.

RAC System

The RAC system will be constructed on the existing landfill that has an approved Class II base liner system installed. The lined portion of the landfill was constructed in stages and consists of either a 2-foot-thick compacted clay liner (permeability less than 1×10^{-7} cm/sec) or geosynthetic clay liner overlain by a 60-mil HDPE geomembrane. The leachate collection and removal system consists of 1-foot-thick gravel layer along the base and geocomposite drainage net along the side slopes. In addition, a gravel subdrain was constructed along the base and geocomposite drainage net was constructed along the lower portions of the side slopes to provide positive groundwater control (Geosyntec Consultants, 2009).

The RAC system will process organic materials in a sealed geomembrane cell with its own designated leachate control system. The geomembrane cover will be sealed by plastic welding or wedged with soil/clay in an anchor trench and will protect the organics from rain. Leachate produced from the process inside the cell will be collected and stored in storage tanks and re-circulated back into the cell. Any stormwater that falls within the cell before it is sealed would be treated as leachate. The RAC system would be designed, constructed, and operated to comply with applicable federal and state requirements through issuance of WDRs, and would have a less-than-significant impact on groundwater and surface water.

CASP System

The CASP system would also be operated on the existing landfill with an approved Class II base liner system along with the RAC system. In addition, the CASP system would be constructed on an improved surface and equipped with underground piping to collect leachate, which would be stored in a storage tank for re-use during the active compost processing or treated at the onsite wastewater treatment plant. The organic material would be covered during the active composting process, which would protect it from rainfall.

Stormwater falling within the processing areas would be treated as leachate and directed to sumps that would be pumped to storage tanks. BMPs would be employed to control stormwater in contact with finished compost storage piles including, but not limited to, use of bioswales in the vicinity of the storage piles for treatment prior to entering the site's sedimentation basin; placing straw waddles around or downslope of the storage piles to decrease sediment; and covering piles. The CASP system would be designed, constructed, and operated to comply with applicable federal and state requirements through issuance of WDRs; therefore, the project would have a less–than-significant impact on groundwater and surface water.

Question b:

Because the proposed project would be co-located with a permitted solid waste disposal facility, the volume of water required for the new operations is expected to be minor in comparison to the total volume of water used at the facility. It is anticipated that the proposed projects would rely on water available from onsite sources such as the wastewater produced from the onsite wastewater treatment plant, stormwater, high-moisture feedstocks, onsite water supply wells, or water made available through increased water efficiency. No new groundwater wells or significant increases in the production of existing wells are anticipated, therefore, this impact is considered less than significant.

Questions c through f:

The proposed organics material management facilities would be constructed on the lined portion of the current landfill with dedicated leachate control systems. Stormwater BMPs would be employed in post-processing areas to minimize the quantity and quality of run-off into the existing landfill drainage infrastructure, as such, less than significant impacts are anticipated.

The proposed MRF complex would be constructed with an impervious surface, which would increase the amount of surface run-off to the existing watershed. Stormwater controls would be installed that may include, but are not limited to, construction of a sedimentation basin, bioswales, silt fencing, improved channels, or other appropriate best management practices that would protect from erosion or siltation to on- or offsite sources, therefore, the impact is considered less than significant.

Question g:

The proposed project would be integrated into the existing ALRRF infrastructure. The ALRRF discharges are regulated under a General NPDES permit, therefore, there would be no impacts on water bodies listed as impaired under Section 303(d) of the Clean Water Act.

Questions h through j:

The project does not include housing, nor is the project located within a 100-year floodplain, therefore, there is no impact.

The facility is not located within a 100-year floodplain and is, therefore, not subject to 100-year flooding, therefore, there is no impact.

Question k:

The ALRRF is located near the crest of the Altamont Hills. In accordance with CCR Title 27, the ALRRF was sited in an area not subject to rapid geologic change or near tidal waters. The landfill is designed to prevent inundation or washout from a flood with a 1,000-year return period and is not located within the limits of any known floodplain or in an area possessing significant quantities of surface water (Geosyntec Consultants, 2009). Therefore, no impacts are considered by seiche, tsunami or inundation due to mudflow.

Mitigation

HYDRO-1: WMAC will incorporate sedimentation basin into the project design in places where peak discharges would increase substantially.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
X. LAND USE AND PLANNING				
Would the project:				
a) Physically divide an established community?	☐	☐	☐	☒
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☒
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☐	☒

Environmental Setting

The project site is located in the Altamont Hills, in an unincorporated area of Alameda County, approximately 2 miles north of I-580 and 3.5 miles east of the nearest incorporated city, Livermore. Properties adjacent to the project site are used for cattle grazing and wind power production.

The project site is a Class II and Class III[3] waste disposal facility that began operation in 1980 and currently operates pursuant to permits issued to WMAC. The current SWFP allows disposal operations and a defined disposal expansion area as approved by CUP C-5512.

The project site is zoned A (Agriculture) pursuant to the Alameda County Zoning Ordinance (Alameda County, 1976). This zoning district allows agricultural land uses, and public utility and solid waste landfill uses with a CUP. The project site and surrounding properties are designated as Large Parcel Agriculture in the Alameda County East County Area Plan (ECAP) (Alameda County, 2000).

The EBRPD is developing an HCP/NCCP for its lands in eastern Contra Costa County and northern Alameda County. The HCP/NCCP study area includes the project site (ICF Jones & Stokes, 2009). However, the estimated date of completion for the EBRPD HCP/NCCP is unknown, and the project site would not subject to the plans. A HCP/NCCP for the area known as the Altamont Pass Wind Resource Area, which includes the project site, is in progress as well. However, it appears that this HCP/NCCP is in the early stages of development and scoping, and the estimated date of completion is unknown (CDFG, 2011).

[3] Class II waste consists of all designated non-hazardous waste, Class III waste consists of only clean, non-hazardous refuse material (such as household waste) (California Code of Regulations, Title 27, Chapter 3).

Large Parcel Agriculture is defined in the ECAP as follows:

> Requires a minimum parcel size of 100 acres, except as provided in Programs 40 and 41. The maximum building intensity for non-residential buildings shall be .01 FAR (floor area ratio) but not less than 20,000 square feet. Where permitted, greenhouses shall have a maximum intensity of .025. One single family home per parcel is allowed provided that all other County standards are met for adequate road access, sewer and water facilities, building envelope location, visual protection, and public services. Residential and residential accessory buildings shall have a maximum floor space of 12,000 square feet. Additional residential units may be allowed if they are occupied by farm employees required to reside onsite. Apart from infrastructure under Policy 13, all buildings shall be located on a contiguous development envelope not to exceed 2 acres except they may be located outside the envelope if necessary for security reasons or, if structures for agricultural use, necessary for agricultural use. Subject to the provisions of the Initiative, this designation permits agricultural uses, agricultural processing facilities (for example wineries, olive presses), limited agricultural support service uses (for example animal feed facilities, silos, stables, and feed stores), secondary residential units, visitor-serving commercial facilities (by way of illustration, tasting rooms, fruit stands, bed and breakfast inns), recreational uses, public and quasi-public uses, solid waste landfills and related waste management facilities, quarries, wind farms and related facilities, utility corridors, and similar uses compatible with agriculture. Different provisions may apply in the South Livermore Valley Plan Area, or in the North Livermore Intensive Agriculture Area.

The ECAP contains a number of policies relevant to the proposed solid waste management-related land use, including:

- Policy 138: The County shall allow development and expansion of major public facilities (e.g., hospitals, research facilities, landfill sites, jails, etc.) in appropriate locations inside and outside the Urban Growth Boundary consistent with the policies and Land Use Diagram of the East County Area Plan.
- Policy 151: The County shall provide for minimum state requirements for landfill capacity. Permits for new landfills or landfill expansions shall be limited to 15 years' capacity, except to the extent a longer period is necessary to meet State standards. "Capacity" for expansions shall be determined by disposal of waste from within Alameda County and San Francisco City and County in the landfill during the year prior to filing the permit application multiplied by the permit period or by the average annual disposal of waste from within Alameda County and San Francisco in the landfill over the 5 year period preceding the application multiplied by the permit period, in either case to be adjusted proportionately by the Recycling Board's estimated percentage increase or decrease of solid waste generation in the County during the permit period. "Capacity" for new landfills shall be determined from then existing or reasonably projected contracts to use the new facility for waste generated within Alameda County and San Francisco during the permit period, again adjusted by the Recycling Board's estimated changes in solid waste generation. The County shall approve no new facility or expansion which would impede achievement of landfill diversion goals according to

the Recycling Board schedule. Nothing in this policy or the Initiative shall alter or affect the terms of the Altamont Landfill Expansion Settlement Agreement of December 5, 1999.

- Policy 152: The County shall locate future solid waste facilities and/or expand existing solid waste facilities in appropriate locations consistent with the Solid Waste Facility Siting Criteria contained in the Alameda County Integrated Waste Management Plan. Facilities shall be located outside the Urban Growth Boundary in areas that allow for compliance with all of the state minimum standards for solid waste management, and where the separation of the facility from residences and other sensitive uses is sufficient to permit adequate control of possible impacts of the solid waste facility including, but not limited to, noise levels, odor and litter nuisances, traffic congestion, and disease carrying vectors.
- Policy 248: The County shall promote use of solid waste source reduction, recycling, composting, and environmentally-safe transformation of wastes.

Impacts

Answers to Checklist Questions

Question a:

The project site is located in an unincorporated area of Alameda County, approximately 3.5 miles from the nearest incorporated city, and no unincorporated communities are located within the site vicinity. Therefore, the project will not physically divide an established community. No impact.

Question b:

The proposed project is allowed within the "A" zone as a conditionally permitted use, and is considered a compatible use under the Large Parcel Agriculture designation of the ECAP. As such it can be considered an "appropriate location" under ECAP Policy 138. In addition, it does not proposed to expand landfill capacity; rather it will provide additional opportunities for diversion of waste material through creation of compost and increased recycling capacity, consistent with the diversion goals of the Recycling Board (ECAP Policies 151 and 248). The project site meets the location criteria of the Alameda County Integrated Waste Management Plan, as it is on an existing State-permitted landfill site and where the separation of the facility from residences and other sensitive uses is sufficient to permit adequate control of possible impacts of the solid waste facility, consistent with ECAP Policy 152. Therefore, the proposed uses do not conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project adopted for the purpose of avoiding or mitigating an environmental effect. No impact.

Question c:

No HCP or NCCP is applicable to the site. Therefore, the proposed uses would not conflict with a HCP or NCCP. No impact.

Mitigation

No mitigation measures related to land use are required.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XI. MINERAL RESOURCES				
Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☒

Environmental Setting

The California Department of Conservation (CDC) Surface Mining and Reclamation Act (SMARA) program tracks aggregate resource areas of state and regional importance (CDC, 2006). The Alameda County General Plan Conservation Element lists existing quarry and other mineral resources within the county. The Alameda County ECAP contains a number of policies that recognize the regional value of the county's construction aggregate resources and ensure compatibility between quarry operations and surrounding land uses. These include protection of regionally significant construction aggregate resource sectors (Policy 157).

Impacts

Answers to Checklist Questions

Questions a and b:

The project site is not listed as an aggregate resource area of state or regional importance under SMARA (CDC, 2006). According to the Conservation Element of the Alameda County General Plan (adopted 1976, amended 1994), the closest mineral resources are the quarry operations just outside the northern edge of Livermore which is several miles away from the project site (Bonekemper, pers. comm. 2011). Therefore, the project will not result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state or of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan. No impact.

Mitigation

No mitigation measures related to mineral resources are required.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XII. NOISE				
Would the project result in:				
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☐	☒
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☐	☒
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☐	☒
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☐	☒
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

Environmental Setting

The proposed project would be located within actively used portions of the existing ALRRF. Specifically, the OMMA would be located on the landfill and the MRF complex and compost retail sales yard would be located in a current truck storage and staging area. Noise from existing ALRRF activities consists of noise from landfill operations within the property, noise from the gas collection system (flares), and noise generated by waste-haul trucks along access roads. Waste dumping operations, equipment involved in earth movement and stockpiling, and equipment and truck travel within the landfill property contribute to ambient noise levels in and around the landfill. Traffic along I-580 contributes to ambient noise levels in the general project area.

Because of the topographical features of the site, waste-haul trucks are the major source of landfill-generated ambient noise in the region. The hilly terrain, by blocking the travel of sound waves, shields nearby land uses from noise generated by operational activities within the landfill property. Noise monitoring was conducted as part of the ALRRF Expansion EIR in 1993 (RUST, 1994). A number of locations were monitored for ambient noise levels. The nearest area of sensitive receptors, the small number of homes on Dyer Road located approximately 1.8 miles west of the project site, was tested and it was determined that the

ambient noise levels were approximately 67 dBA (Environmental Science Associates, 1995). However, it was noted that noise along Dyer Road was primarily from natural sources, such as wind (RUST, 1994). No groundborne vibrations were reported during the noise survey.

The Alameda County ECAP includes the goal of minimizing East County residents' and workers' exposure to excessive noise with Policy 288 stating that the County shall endeavor to maintain acceptable noise levels throughout East County. Acceptable noise levels are listed in Section 6.60 of the Alameda County Zoning Ordinance. For residences, the maximum daytime noise level varies from 40 dB to 70 dB, depending on the duration of noise exposure.

Alameda County includes three public use airports: Hayward Executive Airport, Livermore Municipal Airport, and Oakland International Airport. Alameda County has established an airport land use commission, in accordance with state law, to prepare airport land use compatibility plans for all public-use airports in the county and to review land use actions, including general plans, specific plans, zoning ordinances, and airport development plans to determine whether they are consistent with airport land use compatibility policies (Environmental Science Associates, 2010). No private airstrips are located in the immediate vicinity of the project site (AOPA Online, 2011).

Impacts

Answers to Checklist Questions

Question a:

The construction of the MRF complex would involve grading and building activities. The equipment used for construction activities, such as scrapers and dozers, would generate noise. The surrounding hilly terrain would block noise from within the landfill property, and would shield nearby sensitive receptor locations from most construction-generated activities. Sensitive receptor locations outside the property boundary are not likely to be exposed to substantial construction-related noise effects from construction equipment or activities on the project site.

The proposed operations would use a portion of the current active landfill area, much of the same equipment, and the same truck routes as the current landfill activities. In addition, the MRF activities would be entirely within enclosed buildings, including load dumping. As noted in the 1993 noise monitoring report (RUST, 1994), noise levels at the residences on Dyer Road were primarily from natural sources. Landfill activities were comparable at that time to current activities and any additional equipment brought in for the OMMA would be few in number. Therefore, no exposure of persons to or generation of noise levels in excess of the Alameda County standards is expected as a result of this project. No impact.

Question b:

No groundborne vibration or groundborne noise at sensitive receptor points was reported as part of the 1993 ambient noise survey (RUST, 1994). Current landfill operations are comparable to operations at that time, and the proposed uses would not substantially increase noise or vibration from existing levels. Any construction activity that may include pile driving or other potentially vibratory activities would be temporary. Therefore, no

exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels would result from the proposed project. No impact.

Questions c and d:

Noise from construction activities would be attenuated to levels below county standards at sensitive receptors by distance and intervening topography. The proposed operations would use a portion of the current active landfill area, much of the same equipment, and the same truck routes as the current landfill activities. In addition, the MRF activities would be entirely within enclosed buildings, including load dumping. Therefore, the proposed project would not result in a substantial temporary, periodic, or permanent increase in ambient noise levels in the project vicinity above levels existing without the project. No impact.

Questions e and f:

The project site is not located within an airport land use plan, within two miles of a public airport or public use airport, or in the vicinity of a private airstrip. Therefore, the project would not result in exposure of people residing or working in the project area to excessive noise levels. No impact.

Mitigation

No mitigation measures related to noise are required for the proposed project.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XIII. POPULATION AND HOUSING				
Would the project:				
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	☒
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

Environmental Setting

The project site is an existing solid waste facility situated in an unincorporated area of eastern Alameda County. It does not contain housing. The nearest residences are a small number of rural homes along Dyer Road, approximately 1.8 miles west of the project site. The project site has an existing access road and infrastructure.

Impacts

Answers to Checklist Questions

Question a:

The proposed uses would require additional workers at the project site. However, the new jobs are not specialized to a degree that WMAC would need to pursue a workforce outside the Alameda County area. In addition, the additional jobs would only number two dozen permanent positions, with approximately 20 temporary construction positions, which represent a small fraction of current jobs in the project vicinity. The proposed uses would not require extension of roads or infrastructure beyond what is already available at the project site. Therefore, the project would not induce substantial population growth in an area, either directly or indirectly. No impact.

Question b:

The project site contains no housing and requires no expansion of existing access roads or infrastructure. Therefore, the proposed project would not displace substantial numbers of existing housing or people, necessitating the construction of replacement housing elsewhere. No impact.

Mitigation

No mitigation measures related to population and housing are required.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XIV. PUBLIC SERVICES				
Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:				
a) Fire protection?	☐	☐	☒	☐
b) Police protection?	☐	☐	☒	☐
c) Schools?	☐	☐	☐	☒
d) Parks?	☐	☐	☐	☒
e) Other public facilities?	☐	☐	☐	☒

Environmental Setting

The ACFD, Livermore Labs Fire Department, California Department of Fire (CDF) provides fire protection services to the project site, which is located in a Joint Response Area. The ACFD is responsible for the fire protection and emergency medical response within an approximately 150-square-mile service area. ACFD Fire Station 8, located in Livermore approximately 5 miles from the project site, is the responding station for the eastern unincorporated east county area. The California Department of Forestry is responsible for wildland fire protection on state lands, including lands bordering the facility.

The Alameda County Sheriff's Office provides police protection services for the unincorporated areas of Alameda County including the project site.

The project site is located within the Livermore Valley Joint Unified School District. The nearest school to the project site is Altamont Creek Elementary, within the city limits of Livermore, approximately 4miles to the west.

Parks in Alameda County are under the jurisdiction of EBRPD. The closest regional park to the project site is Brushy Peak, located approximately 2.5 miles west. Bethany Reservoir State Recreation Area is approximately 2 miles east of the project site. No neighborhood parks are located in the vicinity of the project site.

Impacts

Answers to Checklist Questions

Question a:

Because the project is within a fire service district and represents only a small increase in development that can be accommodated by that district, it would not result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives related to fire protection; therefore, the project would have a less-than-significant impact.

Question b:

Because the project is within a police protection service district and represents only a small increase in development that can be accommodated by that district, it would not result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives related to police protection; therefore, the project would have a less-than-significant impact.

Question c:

With no proposed residential component and a small increase in workers onsite, anticipated to come mainly from the local workforce, the proposed project would result in no impact to schools.

Question d:

With no proposed residential component and a small increase in workers onsite, anticipated to come mainly from the local workforce, the proposed project would result in no impact to parks.

Question e:

No other public facilities were identified as potentially affected by the proposed project. No impacts are anticipated to other public facilities.

Mitigation

No mitigation measures related to public services are required.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XV. RECREATION				
a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☒
b) Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	☒

Environmental Setting

Parks in Alameda County are under the jurisdiction of the EBRPD. The closest regional park to the project site is Brushy Peak, located approximately 2.5 miles west. Bethany Reservoir State Recreation Area is approximately 2 miles east of the project site. No neighborhood parks are located within the vicinity of the project site.

Impacts

Answers to Checklist Questions

Questions a and b:

The proposed project would not interfere with existing or proposed recreational facilities in the area. No adverse impact to existing neighborhood and regional parks or other recreational facilities would occur as a result of implementing the proposed uses. In addition, the proposed project does not include recreational facilities, nor does it require the construction or expansion of recreational facilities. No impact.

Mitigation

No mitigation measures related to recreation are required.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XVI. TRANSPORTATION				
Would the project:				
a) Exceed the capacity of the existing circulation system, based on an applicable measure of effectiveness (as designated in a general plan policy, ordinance, etc.), taking into account all relevant components of the circulation system, including but limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	☐	☐	☐	☒
b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	☐	☒	☐	☐
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	☐	☐	☐	☒
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☒	☐
e) Result in inadequate emergency access?	☐	☐	☒	☐
f) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?	☐	☐	☐	☒

Environmental Setting

The following roadways are anticipated to carry project-related construction traffic.

I-580

I-580 is an eight- to ten-lane, east-west highway that connects U.S. Route 101 in Marin County and I-205 and I-5 in San Joaquin County. According to traffic counts published by Caltrans in 2009, the average daily traffic volume on I-580 is 177,000 vehicles per day west of the study area and 21,000 vehicles per day east of the study area. East of the study area, most vehicles use I-205 for access to and from I-5.

I-205

I-205 is a six-lane, east-west highway that connects I-580 in Alameda County and I-5 in San Joaquin County. According to traffic counts published by the California Department of Transportation (Caltrans) in 2009, the average daily traffic volume on I-205 is 112,000 vehicles per day east of the study area (Caltrans, 2009).

Altamont Pass Road

Altamont Pass Road is a two-lane east-west roadway between Greenville Road and Grant Line Road. Altamont Pass Road is classified as a principal arterial in the California Road System (maintained by Caltrans). According to traffic counts published by the City of Livermore in 2009, the average daily traffic volume on Altamont Pass Road is 5,300 vehicles per day.

Grant Line Road

In the study area, Grant Line Road is a two-lane north-south roadway between I-580 and Altamont Pass Road. Grant Line Road has an east-west alignment east of the study area. Grant Line Road is classified as a major collector in the California Road System. Average daily vehicle traffic was not available for Grant Line Road.

Greenville Road

Greenville Road is a two- to four-lane north-south roadway through the City of Livermore that starts south of the project area and ends at Altamont Pass Road. It provides local access to the project site for trucks and employees. This roadway is classified as a minor arterial in the California Road System. According to traffic counts published by the City of Livermore in 2009, the average daily traffic volume on Greenville Road is 10,600 vehicles per day.

Southfront Road

Southfront Road is five-lane, east-west roadway between First Street and Greenville Road within Livermore. Southfront Road is classified as a collector. According to traffic counts published by the City of Livermore in 2009, the average daily traffic volume on Southfront Road is 2,300 vehicles per day.

Northfront Road

Northfront Road is five-lane, east-west roadway between Vasco Road and Greenville Road within Livermore. Northfront Road is classified as a collector. According to traffic counts published by the City of Livermore in 2009, the average daily traffic volume on Northfront Road is 6,800 vehicles per day.

Traffic Analysis

Opening year (2012) and future (2032) weekday AM and PM peak hour traffic conditions with and without the project were evaluated at six intersections and along five segments of Interstate 580 (I-580). Table 3-7 is a summary of the study area intersections. Table 3-8 is a summary of the study segments of I-580. Background traffic conditions reflect historical growth as well as approved or under construction projects that would add a significant amount of traffic to the roads in the study area. Although the Altamont Landfill and Resource Recovery Facility is not planned to operate at full capacity during the year of opening, for analysis purposes the facility is assumed to operate at capacity in both 2012 and 2032.

TABLE 3-7
Study Area Intersections

Int. #	Intersection Approach		Existing Control Type
	East-West	North-South	
1	Southfront Road	EB I-580 Ramps	AWSC
2	Southfront Road	Greenville Road	Signal
3	Northfront Road	Greenville Road	AWSC
4	Northfront Road	WB I-580 Ramps	TWSC
5	Altamont Pass Road	Carroll Road	TWSC
6	Dyer Road	Altamont Pass Road	TWSC
7	Altamont Pass Road	Altamont Landfill	TWSC
8	Altamont Pass Road	Grant Line Road	TWSC
9	WB I-580 Ramps	Grant Line Road	TWSC
10	EB I-580 Ramps	Grant Line Road	AWSC

Notes: TWSC = Two Way Stop Control
AWSC = All Way Stop Control
EB = Eastbound
WB = Westbound

TABLE 3-8
Study Area Freeway Segments

Segment #	I-580 Segment Limits		WB	EB
	Begin	End	# of Lanes	# of Lanes
1	Airway Boulevard	Vasco Road	4	4
2	Vasco Road	Greenville Road	4	5
3	Greenville Road	Carroll Road	4	4
4	Carroll Road	Grant Line Road	4	4
5	Grant Line Road	I-205	6	4

EB = Eastbound
WB = Westbound

Regulatory Setting

The ECAP includes a series of goals, policies, and programs related to transportation. Relevant policies for this project are as follows:

- Policy 183: The County shall seek to minimize traffic congestion levels throughout the East County street and highway system.
- Policy 184: The County shall seek to minimize the total number of Average Daily Traffic (ADT) trips throughout East County.

- Policy 185: The County shall seek to minimize peak hour trips by exploring new methods that would discourage peak hour commuting and single vehicle occupancy trips.
- Policy 190: The County shall require new non-residential developments in unincorporated areas to incorporate Transportation Demand Management (TDM) measures and shall require new residential developments to include site plan features that reduce traffic trips such as mixed use development and transit-oriented development projects.
- Policy 191: The County shall work with cities and the Congestion Management Agency to coordinate land use impact analyses.
- Policy 193: The County shall ensure that new development pays for roadway improvements necessary to mitigate the exceedance of traffic Level of Service standards (as described below) caused directly by the development. The County shall further ensure that new development is phased to coincide with roadway improvements so that (1) traffic volumes on intercity arterials significantly affected by the project do not exceed Level of Service D on major arterial segments within unincorporated areas, and (2) that traffic volumes on Congestion Management Program (CMP) designated roadways (e.g., Interstate Highways 580 and 680 and State Highway 84) significantly affected by the project do not exceed Level of Service E within unincorporated areas. If LOS E is exceeded, Deficiency Plans for affected roadways shall be prepared in conjunction with the Congestion Management Agency. LOS shall be determined according to Congestion Management Agency adopted methodology. The County shall encourage cities to ensure that these Levels of Service standards are also met within unincorporated areas.

Impacts

Question a:

Intersection operating conditions were evaluated using the Synchro software (version 7, build 773). Synchro is a traffic operations analysis tool that incorporates 2000 HCM methodologies. For intersections, the resulting delay is expressed using Level of Service (LOS), where LOS A represents free-flow and LOS F represents overcapacity operations. The relationship between delay and LOS is summarized in Table 3-9.

TABLE 3-9
Intersection Level of Service Criteria

LOS	Unsignalized Intersection Delay per Vehicle (seconds)	Signalized Intersection Delay Per Vehicle (seconds)
A	≤10.0	≤ 10.0
B	>10.0 and ≤15.0	>10.0 and ≤20.0
C	>15.0 and ≤25.0	>20.0 and ≤35.0
D	>25.0 and ≤35.0	>35.0 and ≤55.0
E	>35.0 and ≤50.0	>55.0 and ≤80.0
F	>50.0	>80.0

Source: Highway Capacity Manual, 2000

The 2000 HCM includes a set of criteria for assessing the performance of highway systems and the capacity of roadways by measuring the flow of traffic. For highway operations the volume-to-capacity (V/C) ratio is a general indicator of traffic flow characteristics. For highways, the traffic flow characteristics for different V/C ratios are described in Table 3-10.

TABLE 3-10
Level of Service Criteria for Highways

V/C Ratio	Level Of Service	Traffic Flow Characteristics
0.00 – 0.60	A	Free flow; insignificant delays
0.61 – 0.70	B	Stable operation; minimal delays
0.71 – 0.80	C	Stable operation; acceptable delays
0.81 – 0.90	D	Approaching unstable flow; queues develop rapidly but no excessive delays
0.91 – 1.00	E	Unstable operation; significant delays
> 1.00	F	Forced flow; jammed conditions

Source: Highway Capacity Manual, 2000

The V/C ratio and associated LOS were calculated for each freeway study segment based on vehicle count data from the Caltrans PeMS database (Caltrans, 2011).

Per Caltrans, LOS D is acceptable for planning purposes on highways and intersections that are located within the Caltrans jurisdiction. The Alameda County East Area General Plan identifies LOS D as the desired intersection operations threshold.

Opening year and future year intersection operations with the project for the AM and PM peak hours are presented in Tables 3-11 and 3-12. The operations are compared to the "without project" analysis.

In 2012, with the project, one additional intersection would not meet the LOS threshold in the AM peak hour. All intersections would continue to meet the LOS threshold with the project in the PM peak hour.

By year 2032 growth in background traffic would result in six intersections failing to meet the LOS threshold, but no new intersections would fail in the AM peak hour. In the 2032 PM peak hour, two intersections would fail to meet the LOS threshold, but none are added as a result of the project.

Opening and design year (2032) freeway operations with and without the project are presented in Tables 3-13 and 3-14. The project would account for an increase in peak hour traffic of approximately 0.5 percent. Given the daily fluctuation of vehicle volume in the study area of 7 to 14 percent, this increase would not result in a noticeable change in operations.

While there will be increases in delay due to construction traffic, the project will not cause changes that will result in traffic exceeding the capacity of the existing circulation system. Any impacts will be focused on intersections, streets, and highways and freeways. No changes to pedestrian and bicycle paths and mass transit are anticipated. Overall, because

the existing LOS on major roadways in the project vicinity would not be changed by the proposed project, the project would result in no significant impacts related to LOS.

TABLE 3-11
Opening Year (2012) Intersection Operations

Intersection	Control Type	AM Peak Hour					PM Peak Hour				
		2012		2012 With Project		New LOS E/F Intersection	2012		2012 With Project		New LOS E/F Intersection
		LOS	Delay	LOS	Delay		LOS	Delay	LOS	Delay	
Southfront Road and eastbound I-580 ramps	AWSC	B	11	B	11	—	D	26	D	27	—
Northfront Road and westbound I-580 ramps	TWSC	F	304	F	328	—	B	15	C	18	—
Southfront Road and Greenville Road	Signal	B	11	B	13	—	C	28	C	28	—
Northfront Road and Greenville Road	AWSC	F	134	F	167	—	C	25	D	31	—
Altamont Pass Road and Carroll Road	TWSC	D	32	E	38	X	B	12	B	12	—
Altamont Pass Road and Dyer Road	TWSC	C	25	D	26	—	A	10	B	11	—
Altamont Pass Road and Altamont Landfill	TWSC	C	24	D	27	—	B	11	A	9	—
Altamont Pass Road and Grant Line Road	TWSC	F	113	F	113	—	C	16	C	17	—
Grant Line Road and westbound I-580 ramps	TWSC	C	16	C	17	—	A	10	A	10	—
Grant Line Road and eastbound I-580 ramps	AWSC	A	8	A	8	—	A	9	A	9	—

Notes: AWSC = All Way Stop Controlled. Reported delay is for the average of all approaches
TWSC = Two Way Stop Controlled. Reported delay is for the approach with the highest delay

TABLE 3-12
Future Year (2032) Intersection Operations

Intersection	Control Type	AM Peak Hour					PM Peak Hour				
		2032		2032 With Project		New LOS E/F Intersection	2032		2032 With Project		New LOS E/F Intersection
		LOS	Delay	LOS	Delay		LOS	Delay	LOS	Delay	
Southfront Road and eastbound I-580 ramps	AWSC	B	14	B	15	—	F	72	F	75	—
Northfront Road and westbound I-580 ramps	TWSC	F	661	F	705	—	C	21	D	27	—
Southfront Road and Greenville Road	Signal	B	13	B	15	—	C	30	C	31	—
Northfront Road and Greenville Road	AWSC	F	282	F	324	—	F	78	F	95	—
Altamont Pass Road and Carroll Road	TWSC	F	61	F	73	—	B	13	B	14	—
Altamont Pass Road and Dyer Road	TWSC	E	39	E	41	—	B	11	B	11	—
Altamont Pass Road and Altamont Landfill	TWSC	E	41	F	82	—	B	11	B	11	—
Altamont Pass Road and Grant Line Road	TWSC	F	Err	F	Err	—	C	24	D	29	—
Grant Line Road and westbound I-580 ramps	TWSC	D	25	D	29	—	B	11	B	11	—
Grant Line Road and eastbound I-580 ramps	AWSC	A	9	A	9	—	A	10	A	10	—

Notes: AWSC = All Way Stop Controlled. Reported delay is for the average of all approaches
TWSC = Two Way Stop Controlled. Reported delay is for the approach with the highest delay
Err = delay exceeds HCM methodology

TABLE 3-13
Opening Year (2012) Freeway Operations

	AM Peak Hour (WB direction)						PM Peak Hour (EB direction)					
	2012		2012 With Project		Percent volume increase due to project	Percent Daily Volume Fluctuation[a]	2012		2012 With Project		Percent volume increase due to project	Percent Daily Volume Fluctuation[a]
Freeway Segment	**LOS**	**V/C Ratio**	**LOS**	**V/C Ratio**			**LOS**	**V/C Ratio**	**LOS**	**V/C Ratio**		
Airway Boulevard to Vasco Road	**F**	**N/A**	**F**	**N/A**	**0.4**	**16**	**F**	**N/A**	**F**	**N/A**	**0.5**	**14**
Vasco Road to Greenville Road	**F**	**N/A**	**F**	**N/A**	**0.3**	**26**	**F**	**N/A**	**F**	**N/A**	**0.3**	**30**
Greenville Road to Carroll Road	**E**	**0.99**	**E**	**0.99**	**0.0**	**15**	**E**	**0.96**	**E**	**0.96**	**0.0**	**8**
Carroll Road to Grant Line Road	D	0.83	D	0.83	0.0	15[b]	D	0.82	D	0.82	0.0	10
Grant Line Road to I-205 interchange	C	0.55	C	0.55	0.5	15[b]	D	0.82	D	0.82	0.5	10[b]

Notes:

N/A = Not applicable. Demand exceeds capacity and causes queuing in this segment

[a] Based on minimum and maximum volumes during the peak hour over the course of one month (Tuesday to Thursday only)

[b] PeMS data not available. Nearest data used as approximation

TABLE 3-14
Future Year (2032) Freeway Operations

	AM Peak Hour (WB direction)						PM Peak Hour (EB direction)					
	2032		2032 With Project		Percent Volume Increase due to Project	Percent Daily Volume Fluctuation[a]	2032		2032 With Project		Percent Volume Increase due to Project	Percent Daily Volume Fluctuation[a]
Freeway Segment	**LOS**	**V/C Ratio**	**LOS**	**V/C Ratio**			**LOS**	**V/C Ratio**	**LOS**	**V/C Ratio**		
Airway Boulevard to Vasco Road	**F**	**N/A**	**F**	**N/A**	**0.3**	**16.1**	**F**	**N/A**	**F**	**N/A**	**0.4**	**13.5**
Vasco Road to Greenville Road	**F**	**N/A**	**F**	**N/A**	**0.2**	**25.6**	**F**	**N/A**	**F**	**N/A**	**0.3**	**29.9**
Greenville Road to Carroll Road	**F**	**N/A**	**F**	**N/A**	**0.0**	**14.5**	**F**	**N/A**	**F**	**N/A**	**0.0**	**7.8**
Carroll Road to Grant Line Road	**F**	**N/A**	**F**	**N/A**	0.0	14.5[b]	**F**	**N/A**	**F**	**N/A**	0.0	10.3
Grant Line Road to I-205 interchange	C	0.70	C	0.70	0.4	14.5[b]	**F**	**N/A**	**F**	**N/A**	0.4	10.3[b]

Notes:

N/A = Not applicable. Demand exceeds capacity and causes queuing in this segment

[a] Based on minimum and maximum volumes during the peak hour over the course of one month (Tuesday to Thursday only)

[b] PeMS data not available. Nearest data used as approximation

Question b:

The only potential traffic impact identified in this analysis is during the opening year (2012) AM peak. The intersection of Altamont Pass Road and Carroll Road will operate at LOS E with the projected traffic from the full capacity of the landfill. It is projected to operate at LOS D in the 2012 AM peak without the project. This impact is based on a conservative assessment because the landfill will not be operating at full capacity in 2012. Therefore, it is likely that there will not be an impact in 2012. However, to mitigate potential impacts, as well as improve traffic operations throughout the study area, a mitigation measure of an employee ridesharing plan is included.

To reduce the number of vehicle trips accessing the project site in the AM peak hour, a ridesharing plan to promote carpooling among employees will be implemented by the project owner (MM TRA-1). This will help match those who wish to share a ride from/to the same destination. The owner will set up information on ridesharing in a common area, as well as a means to allow potential ridesharing partners to meet. With the implementation of this mitigation measure, the impact will be less-than-significant.

Question c:

No changes in air traffic patterns are anticipated, so there is no impact.

Question d:

The project will add trucks to the existing roadway system, but these trucks are consistent with vehicular traffic, particularly in the project area. Trucks will use the driveways for the project, but the design features of the site access will meet applicable safety standards. Any impacts would be less-than-significant.

Question e:

The project will add traffic to the existing roadway system, particularly during the peak periods during the construction of the project. The increase in traffic volumes may result in imperceptible changes in emergency response times, but no changes in access for these vehicles. Any impacts would be less-than-significant.

Question f:

No conflicts with alternative transportation modes or facilities are anticipated. There will be no impacts.

Mitigation

TRA-1: To reduce the number of vehicle trips accessing the project site in the AM peak hour, a ridesharing plan to promote carpooling among employees will be implemented by the project owner.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XVII. UTILITIES AND SERVICE SYSTEMS				
Would the project:				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☐	☒
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☒
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☒	☐
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☐	☒
e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☐	☒
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☒	☐
g) Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☐	☐	☒

Environmental Setting

The San Francisco Bay Regional Water Quality Control Board (SFBRWQCB) establishes standards for the generation of wastewater to and from wastewater treatment facilities, regulates the discharge of industrial pollutants into treatment facilities, and requires such facilities to meet specific standards for water discharged into San Francisco Bay and the Pacific Ocean (SFBRWQCB, 2011).

The NPDES permit program was established by the Clean Water Act to regulate municipal and industrial discharges to surface waters of the United States. Federal NPDES permit regulations have been established for broad categories of discharges, including point-source municipal waste discharges and nonpoint-source storm water runoff. In California, the EPA has delegated its NPDES permitting functions to the SWRCB and RWQCBs.

NPDES Permit No. 0083763, issued June 7, 2002, was rescinded by the SWRCB in June 2007. Consistent with SWRCB objectives, effluent from the Waste Water Treatment Plant is maintained onsite and discharged on the landfill. (Geosyntec Consultants, 2009)

The RWQCB also regulates municipal and industrial storm water discharge requirements for landfills under NPDES program. To obtain authorization for industrial storm water discharge, a Notice of Intent for a General Permit to Discharge Storm Water Associated with Industrial Activity was filed with the RWQCB by ALRRF in October 1992 and updated in May 1997. The RWQCB issued the General Permit to ALRRF, and ALRRF maintains a current SWPPP that describes how the site complies with this permit. (Geosyntec Consultants, 2009)

Lastly, the SWRCB adopted a statewide General Permit for Storm Water Discharges Associated with Construction Activity (Order No. 99-08) for construction projects that disturb one or more acres of soil. Effective July 1, 2010 all dischargers are required to obtain coverage under the updated Construction General Permit Order 2009-0009-DWQ, adopted September 2, 2009. Construction activities include clearing, grading, excavation, stockpiling, and reconstruction of existing facilities (removal or replacement). To obtain coverage, the discharger must submit a notice of intent and develop and implement a storm water pollution prevention plan.

The Porter-Cologne Water Quality Control Act (Division 7 of the California Water Code) established the State Water Board and divided the state into nine regions, each overseen by a RWQCB. The RWQCBs establish water quality objectives for the purpose of protecting beneficial uses. Under the Act, the RWQCBs require persons who discharge or propose to discharge waste that could affect the quality of waters of the State to file a Report of Waste Discharge with the appropriate RWQCB. The RWQCB then issues or waives WDRs for the discharge or requires the discharger to enroll under a general permit order.

The California Department of Resources Recycling and Recovery (CalRecycle) is responsible for ensuring that solid waste facilities in the state are operated correctly (and that closures do not result in long-term environmental hazards). CalRecycle also has responsibilities for guaranteeing the proper storage and transportation of solid wastes, by providing standards for toxic materials contained in solid waste generated by urban and industrial development. (CalRecycle, 2011a, 2011b)

The County of Alameda has adopted a Source Reduction and Recycling Element, as required by the California Integrated Waste Management Act of 1989 (AB 939). This state legislation requires the County to achieve diversion of 25 percent of 1990 baseline waste generation (e.g., through reuse, recycling, or source reduction) by 1995, and 50 percent by the year 2000 (StopWaste.org, 2011).

Impacts

Answers to Checklist Questions

Questions a, b d, and e:

The proposed project will not utilize the public wastewater treatment system, instead an onsite wastewater treatment facility will be utilized, or if needed, a small treatment facility may be developed within the MRF complex. Wastewater collected at the ALRRF is treated

to a level that allows non-potable uses following the wastewater treatment requirements of the SFBRWQCB, and then used to provide landscape irrigation and dust suppression, which results in no discharge from the site. Therefore, as the project would likely use the existing treatment facilities and system, it would not exceed wastewater treatment requirements of the SFBRWQCB. It may require the construction of a new wastewater treatment facility, or an expansion of the existing facility. However, both a new facility and an expansion of the existing facility would be contained within the existing developed area of the site and result in no new wastewater discharge. In addition, public water will not be used. Potable water needs are anticipated to be minimal, and trucked in water stored onsite will be used for activities requiring potable water. No impact.

Question c:

The proposed organics material management facilities will be constructed on the lined portion of the current landfill which are equipped with leachate collection and control systems. Stormwater BMPs will be employed in post-processing areas to minimize run-off into the existing landfill drainage infrastructure, as such, less than significant impacts are anticipated.

The proposed MRF Complex will be constructed with an impervious surface, which will increase the amount of surface run-off to the existing watershed. Storm water controls will be installed per Mitigation Measure HYD-2, that may include, but are not limited to, construction of a sedimentation basin, bioswales, silt fencing, improved channels, or other appropriate best management practice that will protect from erosion or siltation on or offsite sources, as such the impact is considered less than significant.

Question f:

The ALRRF, on which the proposed facilities will be located, would serve as the disposal facility for any solid waste generated by the proposed uses. The ALRRF has a remaining capacity of 45,720,000 cubic yards and an estimated closure date of 2029 (CalRecycle, 2011a). Construction debris will be diverted to the Davis Street Transfer Station for sorting and recycling, with a likely minor portion requiring disposal. Operational solid waste (i.e. typical worker refuse) would be minimal and would add only incrementally to the waste stream. While residual rates from the MRF Complex could reach as much as 50 percent by volume, the anticipated increase in diversion capacity afforded by the facilities would offset this "additional" waste stream, and the resulting increase, if any, to the waste stream would remain modest. Therefore, the impact of the project on the capacity of ALRRF would be less than significant.

Question g:

By increasing the capacity for diversion and providing a potential renewable energy source included in the anaerobic digestion facility proposed, the project will help to fulfill State and Local waste reduction goals. The proposed uses will comply with all federal, state, and local statutes and regulations related to solid waste. No impact.

Mitigation

No mitigation measures related to utilities and service systems are required.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
XVIII. MANDATORY FINDINGS OF SIGNIFICANCE				
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☒	☐	☐
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)	☐	☐	☐	☒
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☒	☐	☐

Discussion

Questions a and c:

This Initial Study finds that mitigation measures for the project could reduce impacts related to air quality, biological resources, hydrology and water quality, and transportation to less than signification levels.

Question b:

Properties adjacent to the project site are used for cattle grazing and wind power production and are zoned for agricultural and wind development. An expansion of the ALRRF was approved by Alameda County in 2001.

Because the proposed project would not require any offsite improvements to roads or other infrastructure, it would not encourage or induce growth or future development in the vicinity. It would not build upon any past, current, or foreseeable projects to create significant impacts to the surrounding properties. The proposed project would be built on underutilized and closed portions of the existing landfill, which would not affect or limit current operations or the approved landfill expansion. Therefore, the project would have no cumulative impacts.

CHAPTER 4

List of Preparers

Alameda County Planning Department

Waste Management of Alameda County, Inc.

CH2M HILL

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CHAPTER 5

References

Alameda County Community Development Agency. 2000. Conditional Use Permit C-5512 Altamont Landfill and Resource Recovery Facility Class II Expansion Project.

Alameda County Fire Department (ACFD). 2011. *Service Area Map.* Accessed March 24, 2011 at : http://www.acgov.org/fire/about/areamap.htm

Alameda County Office of Education. 2011. Alameda County Schools Directory 2009-2010. Accessed March 24, 2011 at http://www.acoe.org/acoe/files/Home/Directory2009-10.swf

Alameda County Sheriff's Department. 2011. Website. Accessed March 31, 2011 at http://alamedacountysheriff.org/about_us.htm

Alameda County Waste Management Authority and the Alameda County Source Reduction and Recycling Board (Stopwaste.org). 2011.Website accessed April 13, 2011 at http://www.stopwaste.org/home/index.asp?page=2

Alameda County. 1976. *Zoning Ordinance, Section 17.06.035*.

Alameda County. 2000. *East County Area Plan*. Revised 2000.

Alameda County. 2000. East County Area Specific Plan. Accessed online on February 24, 2011 at http://www.acgov.org/cda/planning/generalplans/documents/EastCountyAreaPlancombined.pdf

Alameda County. 2010. Alameda County Unincorporated Communities and Neighborhoods Map. Accessed online on February 24, 2011 at http://www.acgov.org/cda/planning/ordinance/documents/FinalUnincCommunities_Neigh.pdf

Alameda County. 2011. County of Alameda Zoning Ordinance. Accessed online on February 24, 2011 at http://library.municode.com/HTML/16425/level1/TIT17ZO.html

Alameda County. 2011. Tree Ordinance, Chapter 12.11 of Title 12 of the Alameda County General Ordinance Code. Accessed April 19, 2011, at http://www.acgov.org/pwa/ordinance_policies_tree.shtml.

Alameda County. 2011. *Zoning Ordinance, Section 6.60*. Accessed on March 29, 2011 at http://library.municode.com/html/16425/level2/TIT6HESA_CH6.60NO.html .

AOPA Online. 2011. Map of Livermore, California area public and private airports. Generated March 24, 2011 at http://www.aopa.org/airports/results?term=livermore percent2C+ca

Bay Area Air Quality Management District (BAAQMD). 2008. Greenhouse Gas Mitigation: Landfill Gas and Industrial, Institutional, and Commercial Boilers, Steam Generators and Process Heaters. April. Prepared by URS. Available at:

http://www.baaqmd.gov/Divisions/Planning-and-Research/Climate-Protection-Program/Core-District-Initiatives.aspx.

Bay Area Air Quality Management District (BAAQMD). 2010a. 2010 Clean Air Plan. September. http://www.baaqmd.gov/Divisions/Planning-and-Research/Plans/Clean-Air-Plans.aspx.

Bay Area Air Quality Management District (BAAQMD). 2010b. *CEQA Air Quality Guidelines*. June. http://www.baaqmd.gov/Divisions/Planning-and-Research/CEQA-GUIDELINES/Updated-CEQA-Guidelines.aspx.

Bay Area Air Quality Management District (BAAQMD). 2010c. *Screening Tables for Air Toxics Evaluation During Construction*. May. http://www.baaqmd.gov/Home/Divisions/Planning percent20and percent20Research/CEQA percent20GUIDELINES/Tools percent20and percent20Methodology.aspx

Bay Area Air Quality Management District (BAAQMD). 2010d. *Risk and Hazard Screening Analysis Process*. May. http://www.baaqmd.gov/Home/Divisions/Planning percent20and percent20Research/CEQA percent20GUIDELINES/Tools percent20and percent20Methodology.aspx

Bay Area Air Quality Management District (BAAQMD). 2010e. Source Inventory of Bay Area Greenhouse Gas Emissions. February. Available at: http://www.baaqmd.gov/Divisions/Planning-and-Research/Emission-Inventory-and-Air-Quality-Related/Emission-Inventory/Greenhouse-Gases.aspx.

Bonekemper, J., 2011. Associate Planner, Alameda County Planning Department. Pers. Comm. With J. Brandt, March 28, 2011.

California Air Resources Board (CARB). 2007. Staff Report: California 1990 Greenhouse Gas Emissions Level and 2020 Limit. December. Available at: http://www.arb.ca.gov/cc/inventory/1990level/1990level.htm.

California Air Resources Board (CARB). 2008. Scoping Plan. December. Available at: http://www.arb.ca.gov/cc/scopingplan/document/scopingplandocument.htm.

California Air Resources Board (CARB). 2010. Ambient Air Quality Standards. September. http://www.arb.ca.gov/research/aaqs/caaqs/caaqs.htm. Accessed April 1, 2011.

California Air Resources Board (CARB). 2011. Air Quality Data Statistics. Available at: http://www.arb.ca.gov/adam/cgi bin/db2www/adamtop4b.d2w/start

California Building Standards Commission (CBSC). 2010. *2010 California Building Code*, California Code of Regulations. Based on 2008 International Building Code.

California Department of Conservation. 2008. California Farmland Mapping and Monitoring Program. *Alameda County Prime Farmland Map, 2008*. Accessed March 23, 2011 at ftp://ftp.consrv.ca.gov/pub/dlrp/FMMP/pdf/2008/ala08.pdf

California Department of Fish and Game (CDFG). 2011. NCCP Plan Summary – Altamont Pass Wind Resource Area Website. Accessed April 19, 2011 at http://www.dfg.ca.gov/habcon/nccp/status/Altamont/.

California Department of Toxic Substances Control (DTSC). 2011. Hazardous Waste and Substances Site List. Accessed March 24, 2011 at http://www.dtsc.ca.gov/SiteCleanup/Cortese_List.cfm

California Department of Transportation (Caltrans). 2009. Traffic Counts. Accessed April, 2011 at http://www.dot.ca.gov/hq/traffops/saferesr/trafdata/index.htm

California Geological Survey (CGS). 2006. Map of Aggregate Availability in California. Accessed on March 30, 2011 at http://www.conservation.ca.gov/cgs/information/publications/ms/Documents/MS_52_map.pdf

California Geological Survey (CGS). 2007. *Special Publication 42, Interim Revision 2007, Fault Rupture Hazard Zones in California.* Accessed online. April 2001. ftp://ftp.consrv.ca.gov/pub/dmg/pubs/sp/Sp42.pdf

California Geological Survey (CGS). 2010. *2010 Fault Activity Map of California*. Compiled by C.W. Jennings and W. A. Bryant. Accessed online. April 2011. http://www.quake.ca.gov/gmaps/FAM/faultactivitymap.html

California Integrated Waste Management Board (CalRecycle). 2011. Strategic Plan. Accessed March 23, 2011 at http://www.calrecycle.ca.gov/AboutUs/StrategicPlan/

California Scenic Highway System. 2011. Website accessed 03/17/2011 at: http://www.dot.ca.gov/hq/LandArch/scenic_highways/index.htm

CalRecycle. 2010. Website accessed April 13, 2011 at http://www.calrecycle.ca.gov/AboutUs/

CalRecycle. 2011. SWIS Database (website). Accessed April 13, 2011 at http://www.calrecycle.ca.gov/SWFacilities/Directory/01-AA-0009/Detail/

Card, Thomas and Schmidt, Charles. 2008. *Organic Material Composting and Drying Focusing on Greenwaste Compost Air Emissions Data Review*. June.

CH2M HILL. 2009. *Altamont Landfill Stormwater Basin Project, Drainage Report for Proposed Materials Recovery Facility*, December.

East Bay Regional Parks District. 2011. Habitat Conservation Plan and Natural Community Conservation Plan website. Accessed March 30, 2011 at http://www.ebparks.org/hcp.

East Bay Regional Parks District. 2011. Park listing website. Accessed March 30, 2011 at http://www.ebparks.org/parks#se

Environmental Science Associates. 1995. Conditional Use Permit C-5512 Altamont Landfill and Resource Recovery Facility Class II Expansion Environmental Impact Report. Section III.C.

Environmental Science Associates. 2000. Revised Final EIR for Altamont Landfill Use Permit C-5512.

GeoSyntec Consultants. 2004. *Joint Technical Document: Altamont Landfill and Resource Recovery Facility., September 15.*

GeoSyntec Consultants. 2009. *Joint Technical Document. Altamont Landfill and Resource Recovery Facility. Alameda County, California.* Revision 5. September.

ICF Jones & Stokes. 2009. District East Counties parks HCP/NCCP Conservation Analysis Zone and Plan Area. Accessed March 30, 2011 at http://www.ebparks.org/hcp.

LFR Levine-Fricke (LFR). 2001. *Hydrogeologic Characterization Report for the Altamont Landfill and Resource Recovery Facility, Livermore, California*, May.

Norris, R. M. and Webb, R. W. 1990. *Geology of California (second edition*). John Wiley and Sons. New York. 365 pp.

Pacific Legacy, Incorporated. 2011. *Review of Cultural Resource Studies for Section 106 Compliance: Altamont Landfill Expansion Area Project,* April.

RUST. 1994. *Class II Expansion Area Site Characterization Report, Altamont Landfill and Resource Recovery Facility*, June.

SFBRWQCB. 2009. Order No. R5-2009-0055, *Waste Discharge Requirements for Waste Management of Alameda County, Inc., Altamont Landfill and Resource Recovery Facility Class II and Class III Municipal Solid Waste Landfills and Class II Surface Impoundments, Construction, Operation, and Corrective Action, Alameda County*, April 24.

SFBRWQCB. 2011. Website accessed April 13, 2011 at http://www.swrcb.ca.gov/sanfranciscobay/water_issues/programs/wastewater.shtml

Simon, R.L. 1998. Altamont Landfill Meteorological Station Annual Data Summaries for 1997, submitted to Mr. William Gilmour, Altamont Landfill, 10840 Altamont Pass Road, Livermore, California, February.

U.S. Department of Agriculture, Natural Resources Conservation Service. 2011. Web Soil Survey, *California Revised Storie Index-Alameda Area, California*. Accessed March 23, 2011, at http://websoilsurvey.nrcs.usda.gov/app/HomePage.htm

U.S. Environmental Protection Agency (EPA). 2006. AP-42, Compilation of Air Pollutant Emission Factors. Chapter 13.2.2. Volume 1. Fifth Edition.

U.S. Environmental Protection Agency (EPA). 2010. Waste Reduction Model (WARM), Version 11. August Available at: http://www.epa.gov/climatechange/wycd/waste/calculators/Warm_home.html.

U.S. Environmental Protection Agency (EPA). 2011. AP-42, Compilation of Air Pollutant Emission Factors. Chapter 13.2.1. Volume 1. Fifth Edition.

U.S. Environmental Protection Agency (EPA). 2011. Glossary of Climate Change Terms. Available at: http://www.epa.gov/climatechange/glossary.html.

U.S. Fish & Wildlife Service. 2011. ESA Basics Fact Sheet. Accessed April 19, 2011 at http://www.fws.gov/endangered/esa-library/pdf/ESA_basics.pdf

Figures

FIGURE 1
Vicinity Map
Altamont Landfill Ancillary Waste and Resource Recovery Facilities

CH2MHILL

NO.	DATE	REVISION	DSGN	DR	CHK	APVD	BY	APVD
			S YOUNG	R ALESCI				

CH2MHILL
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Sacramento, CA 95833
Phone: 916-920-0300

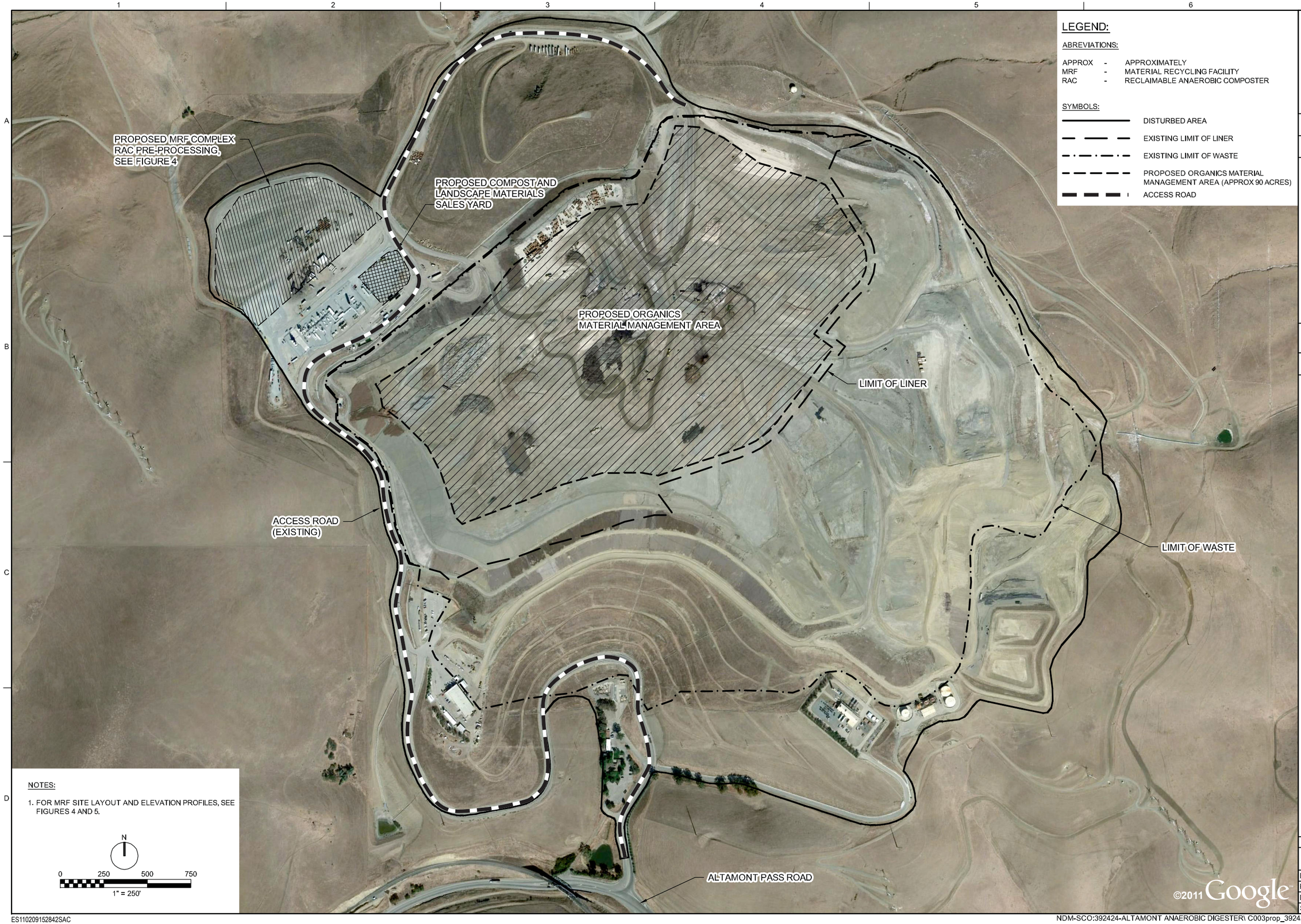
WASTE MANAGEMENT OF ALAMEDA COUNTY, INC.
ALTAMONT LANDFILL ANCILLARY
WASTE AND RESOURCE RECOVERY FACILITIES

FIGURE 2
EXISTING PROJECT SITE MAP

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"

DATE	MARCH 2011
PROJ	392424
DWG	C-02
SHEET	1 0F 1

PRELIMINARY - NOT FOR CONSTRUCTION



LEGEND:

ABREVIATIONS:

APPROX	-	APPROXIMATELY
MRF	-	MATERIAL RECYCLING FACILITY
RAC	-	RECLAIMABLE ANAEROBIC COMPOSTER

SYMBOLS:

- DISTURBED AREA
- EXISTING LIMIT OF LINER
- EXISTING LIMIT OF WASTE
- PROPOSED ORGANICS MATERIAL MANAGEMENT AREA (APPROX 90 ACRES)
- ACCESS ROAD

NOTES:

1. FOR MRF SITE LAYOUT AND ELEVATION PROFILES, SEE FIGURES 4 AND 5.

N

0 250 500 750

1" = 250'

NO.	DATE	REVISION	BY	APVD

DSGN S YOUNG DR R ALESCI CHK APVD

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Sacramento, CA 95833
Phone: 916-920-0300

WASTE MANAGEMENT OF ALAMEDA COUNTY, INC.
ALTAMONT LANDFILL ANCILLARY
WASTE AND RESOURCE RECOVERY FACILITIES

CH2MHILL

FIGURE 3
PROPOSED NEW USES

PRELIMINARY - NOT FOR CONSTRUCTION

VERIFY SCALE

BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"

DATE	MARCH 2011
PROJ	392424
DWG	C-03
SHEET	1 0F 1

ES110209152842SAC

NDM-SCO:392424-ALTAMONT ANAEROBIC DIGESTER\ C003prop_392424.dwg Mar 21, 2011 - 2:33pm

STORAGE
67'
15'
15'
RESIDUALS LOADOUT
COMMODITY LOADOUT
ORGANICS LOADOUT
200'
83'
MAINTENANCE
RAC PRE-PROCESSING
±35,000 SF
FF 1060
160'
20'
24'
20'
EMPLOYEE & VISITOR PARKING
PLANTER
WATER QUALITY TREATMENT SWALE
FUTURE EMPLOYEE & VISITOR PARKING
OFFICE
C&D MRF, OFFICE & MAINT.
±95,000 SF (MRF)
±3,000 SF (OFFICE)
±7,000 SF (MAINT.)
FF 1060
MSW MRF EXPANSION
±69,000 SF
FF 1060
200'
325'
19'
TO LANDFILL
RESIDUALS LOADOUT
PLANTER
RELOCATED TIRE SHREDDER
TIRE SHREDDING
EQUIPMENT AND BIN STORAGE
115'
NEW SCALE
SCALE
30'
POSSIBLE LNG TRUCK SCALE
LNG FACILITY
220'
GARDEN CENTER RETAIL SALES
LANDFILL BYPASS LANE
EXISTING TRUCK WHEEL WASH TO BE RELOCATED TO LANDFILL
OBSTRUCTED LINE OF SIGHT ±185'
OUTBOUND BYPASS LANE
TRUCK WHEEL WASH
OUTBOUND SCALE
INBOUND SCALE
135'
SCALE FACILITY
INBOUND SCALE
INBOUND BYPASS LANE
TEMPORARY PARKING / INSPECTION LANE
40°35'08"
GRID TRUE

CONCEPTUAL SITE PLAN - CONCEPT D

SCALE: 1"=50'

0 50 100 150

PRELIMINARY–NOT FOR CONSTRUCTION

ET environmental
Vision • Solutions • Value™

CONSULTANT:

SEAL:

CLIENT:
WM WASTE MANAGEMENT

CONCEPTUAL SITE PLAN - CONCEPT D

WASTE MANAGEMENT

ALTAMONT LANDFILL & RESOURCE RECOVERY FACILITY

ALAMEDA COUNTY, CA

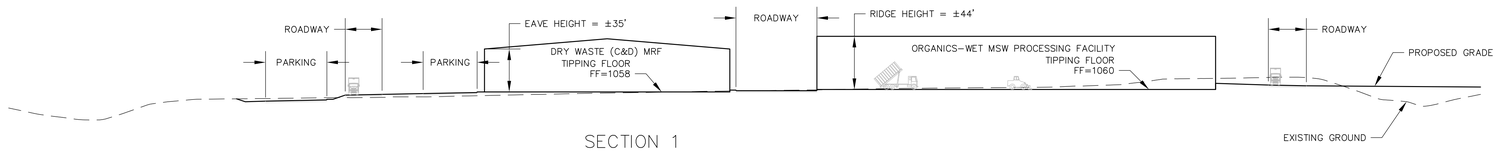
REVISIONS:

SET ISSUE:	DATE:
-	-

DATE: 04-01-2011

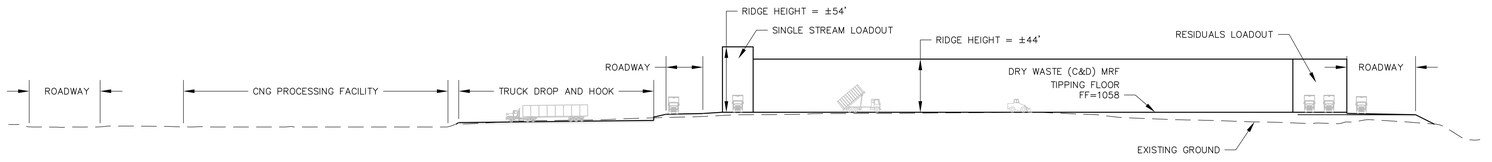
PROJECT #:	02-ET1070
DRAWN BY:	CD
CHECKED BY:	BW
APPROVED BY:	-
FILENAME:	SHEET C-1

C-1



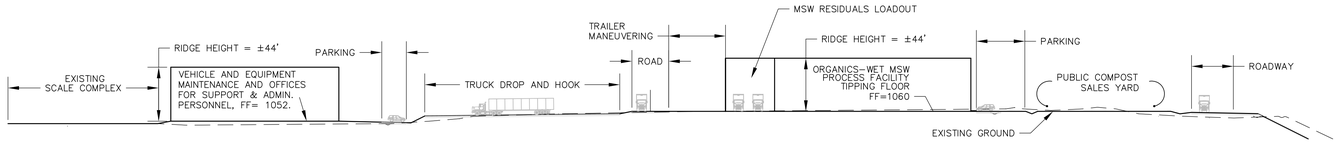
SECTION 1

SCALE: 1"=50' HORIZ.
1"=50' VERT.



SECTION 2

SCALE: 1"=50' HORIZ.
1"=50' VERT.



SECTION 3

SCALE: 1"=50' HORIZ.
1"=50' VERT.

CONCEPTUAL SECTIONS

SCALE
0 50 100 150 FEET

PRELIMINARY–NOT FOR CONSTRUCTION

REV	DATE	DESCRIPTION	DWN BY	DES BY	CHK BY	APP BY

DATE OF ISSUE
DWN BY
DES BY
CHK BY
APP BY

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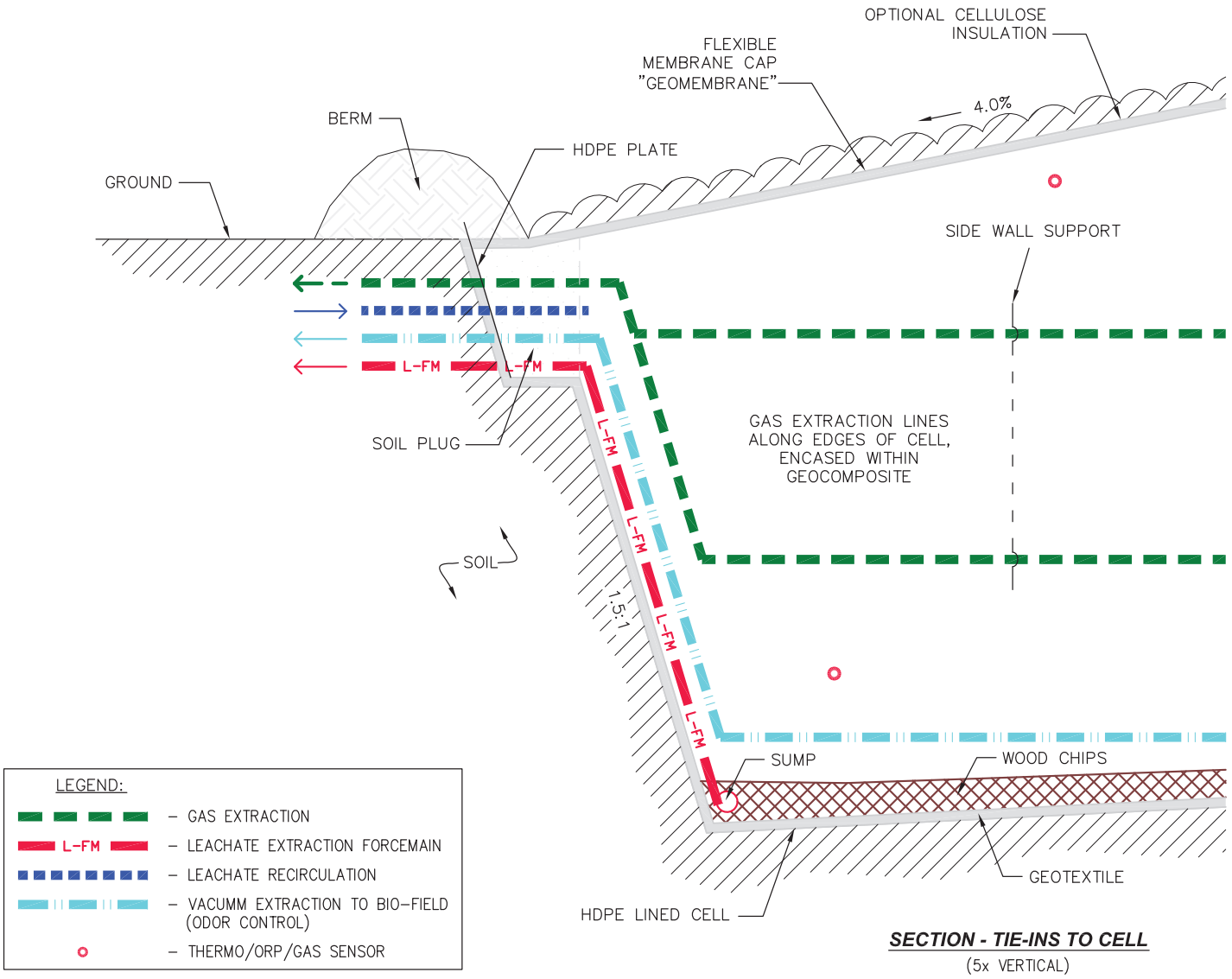
WASTE MANAGEMENT

WASTE MANAGEMENT
ALTAMONT CDI PROCESSING FACILITY
ALAMEDA COUNTY, CA

CONCEPT 5 SECTIONS – 03/14/2010

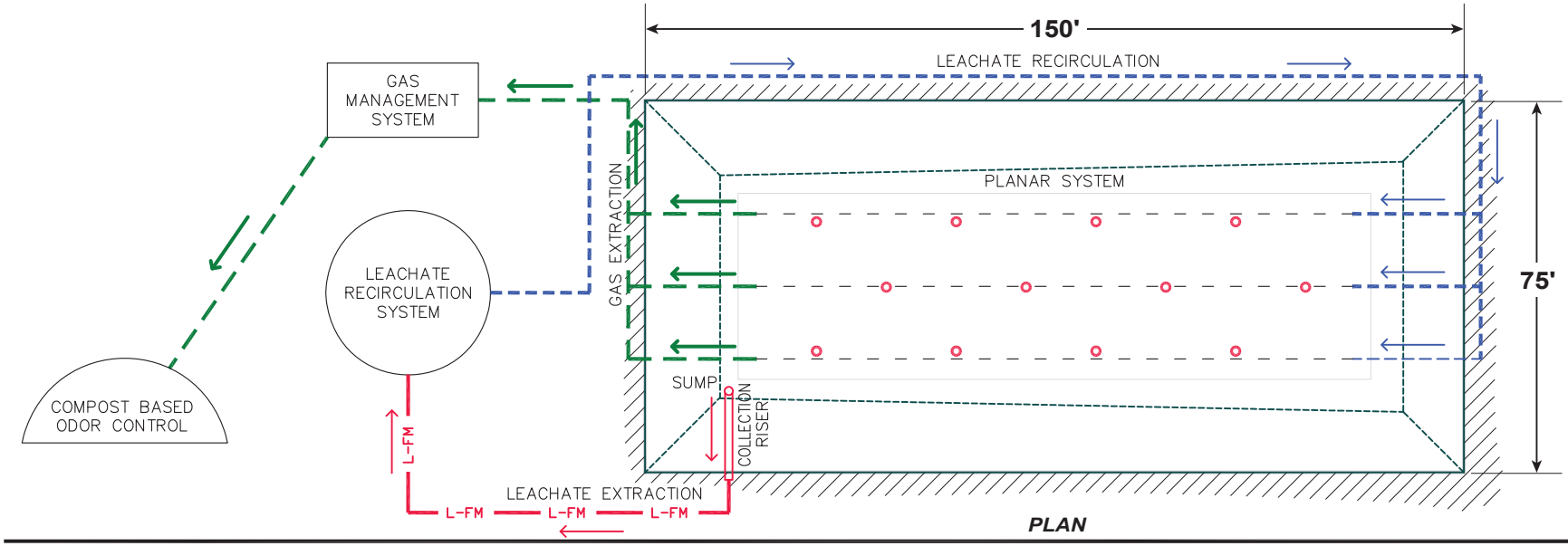
DRAWING NO.
5
PROJECT NO.



SECTION - TIE-INS TO CELL
(5x VERTICAL)

FIGURE 6
Reclaimable Anaerobic Composter Tie-in to Cell
Altamont Landfill and Resource Recovery Facility

Source: Bryan A. Stirrat and Associates, Drawing 173697DB, 06/2009.



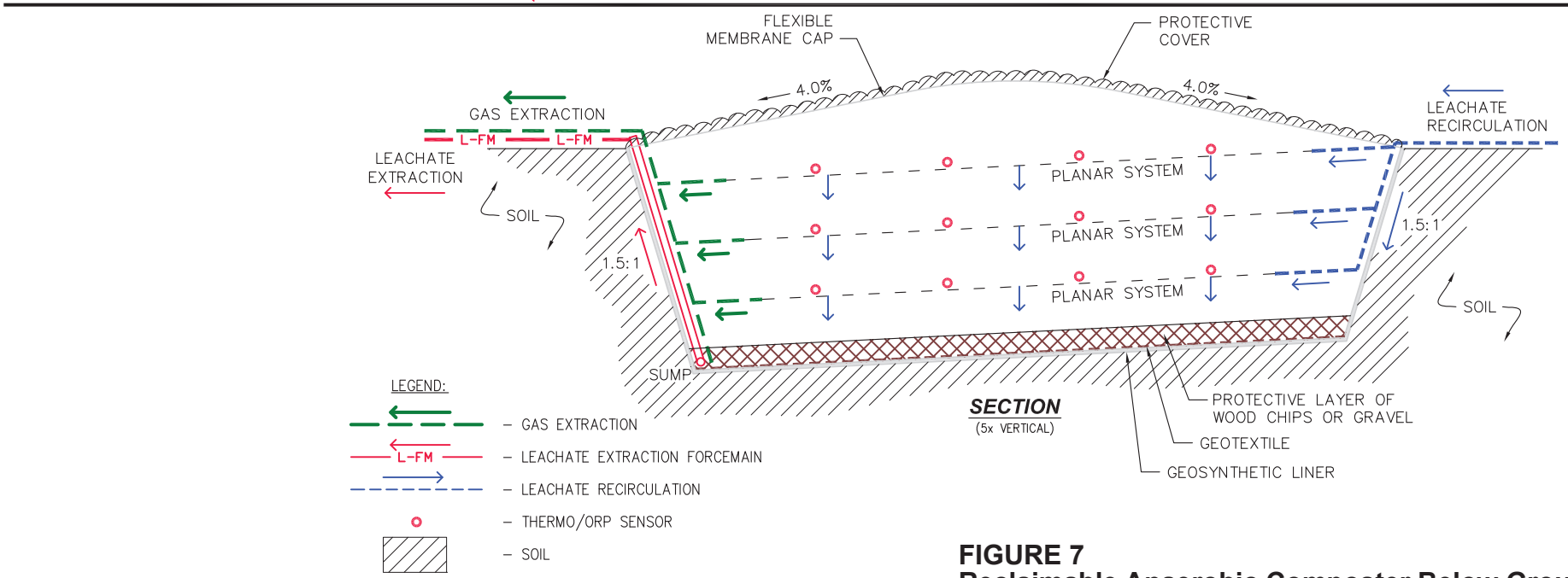


FIGURE 7
Reclaimable Anaerobic Composter Below Ground
Altamont Landfill and Resource Recovery Facility

Source: Bryan A. Stirrat and Associates, Drawing 173698DB, 06/2009.

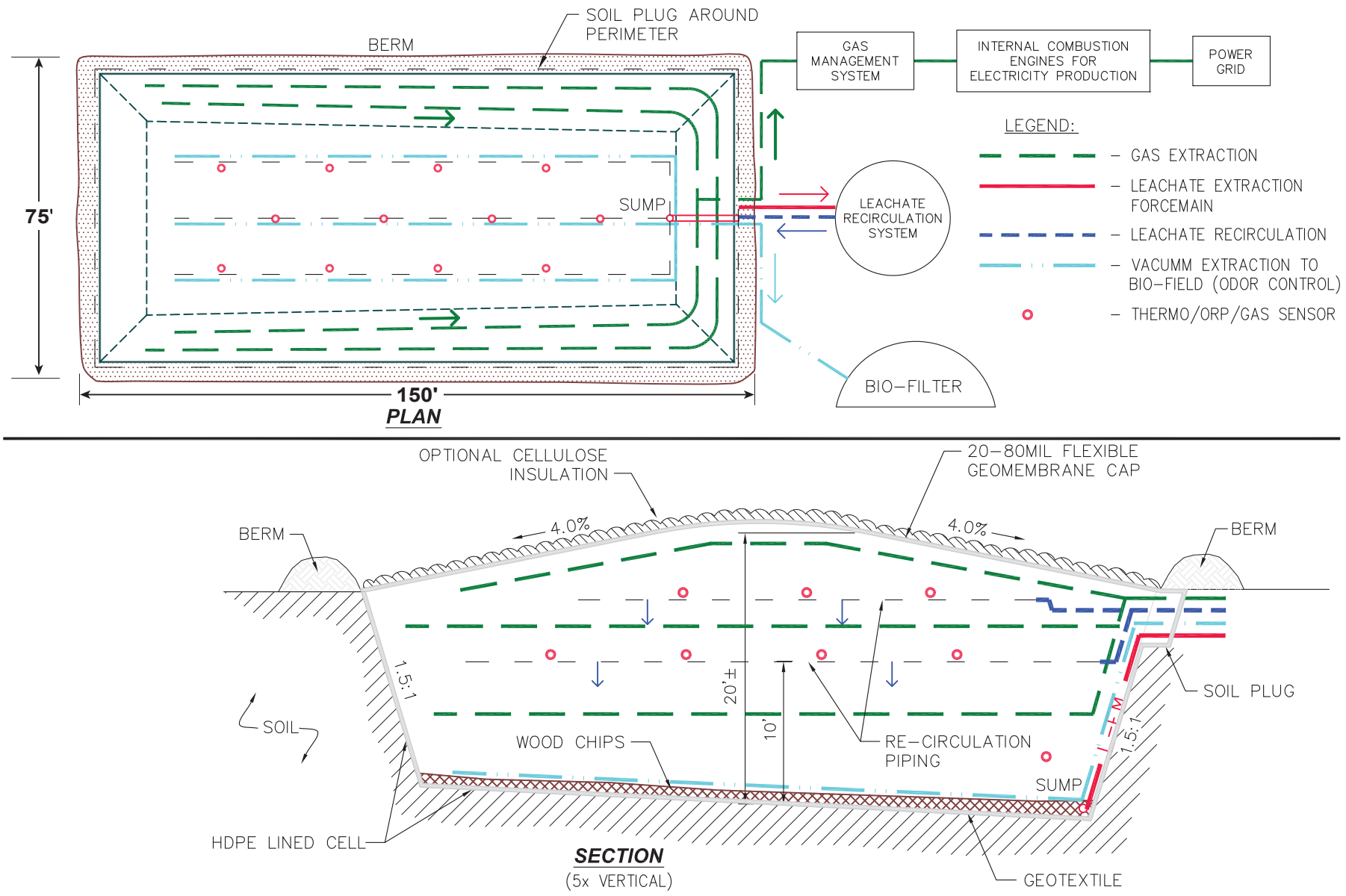


FIGURE 8
Reclaimable Anaerobic Composter Below Ground
Altamont Landfill and Resource Recovery Facility

Source: Bryan A. Stirrat and Associates, Drawing 173699DB, 06/2009.

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ALTAMONT LANDFILL ANCILLARY
WASTE AND RESOURCE RECOVERY FACILITIES

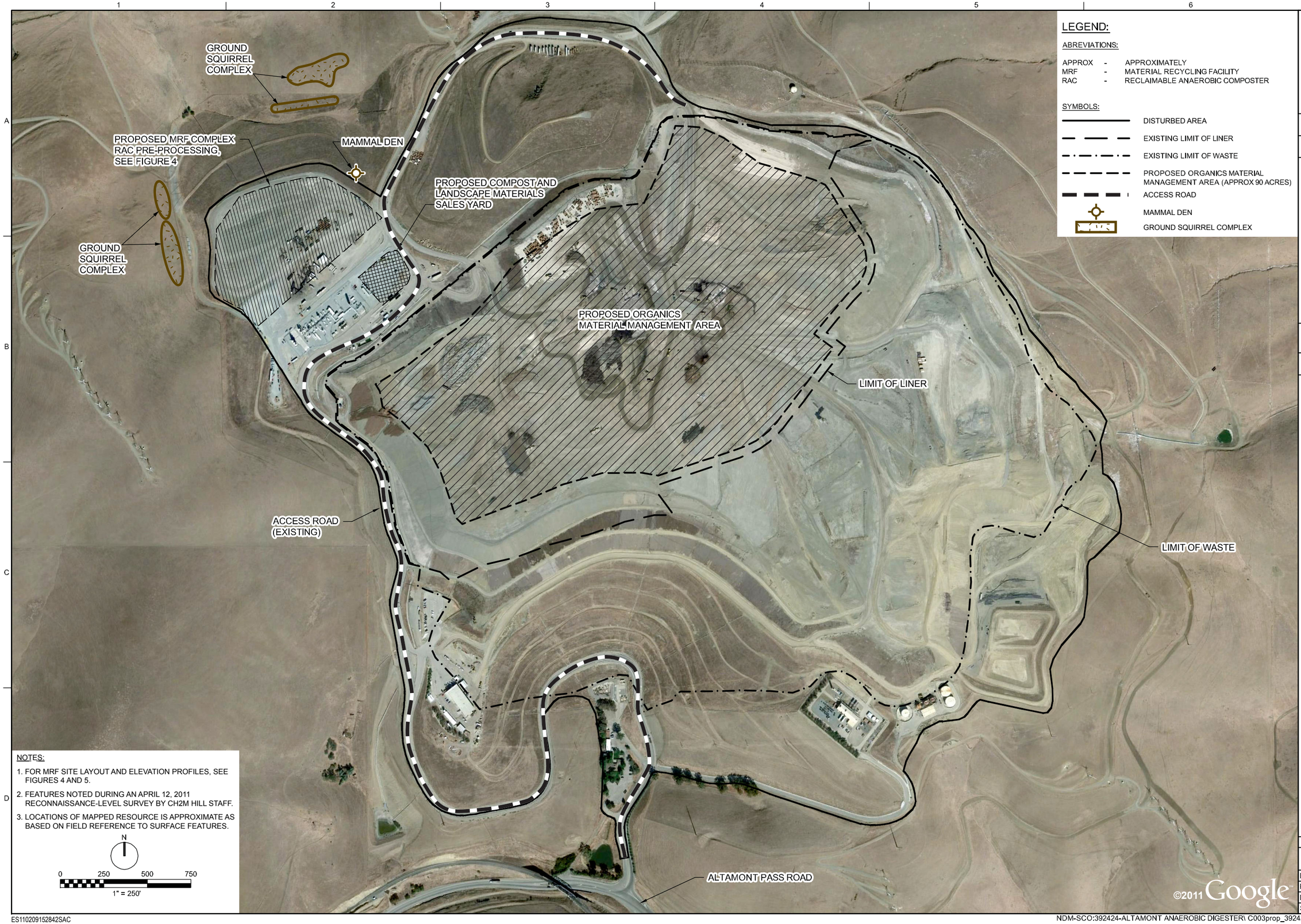
FIGURE 9
CONTEXT PHOTOS REFERENCE MAP

NO.	DATE	REVISION	BY	APVD

DSGN S YOUNG DR R ALESCI CHK APVD

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"

DATE	MARCH 2011
PROJ	392424
DWG	C-02
SHEET	1 0F 1



LEGEND:

ABREVIATIONS:

APPROX	-	APPROXIMATELY
MRF	-	MATERIAL RECYCLING FACILITY
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SYMBOLS:

- DISTURBED AREA
- EXISTING LIMIT OF LINER
- EXISTING LIMIT OF WASTE
- PROPOSED ORGANICS MATERIAL MANAGEMENT AREA (APPROX 90 ACRES)
- ACCESS ROAD
- MAMMAL DEN
- GROUND SQUIRREL COMPLEX

NOTES:

1. FOR MRF SITE LAYOUT AND ELEVATION PROFILES, SEE FIGURES 4 AND 5.
2. FEATURES NOTED DURING AN APRIL 12, 2011 RECONNAISSANCE-LEVEL SURVEY BY CH2M HILL STAFF.
3. LOCATIONS OF MAPPED RESOURCE IS APPROXIMATE AS BASED ON FIELD REFERENCE TO SURFACE FEATURES.

N

0 250 500 750

1" = 250'

NO.	DATE	REVISION	BY	APVD

DSGN S YOUNG DR R ALESCI CHK APVD

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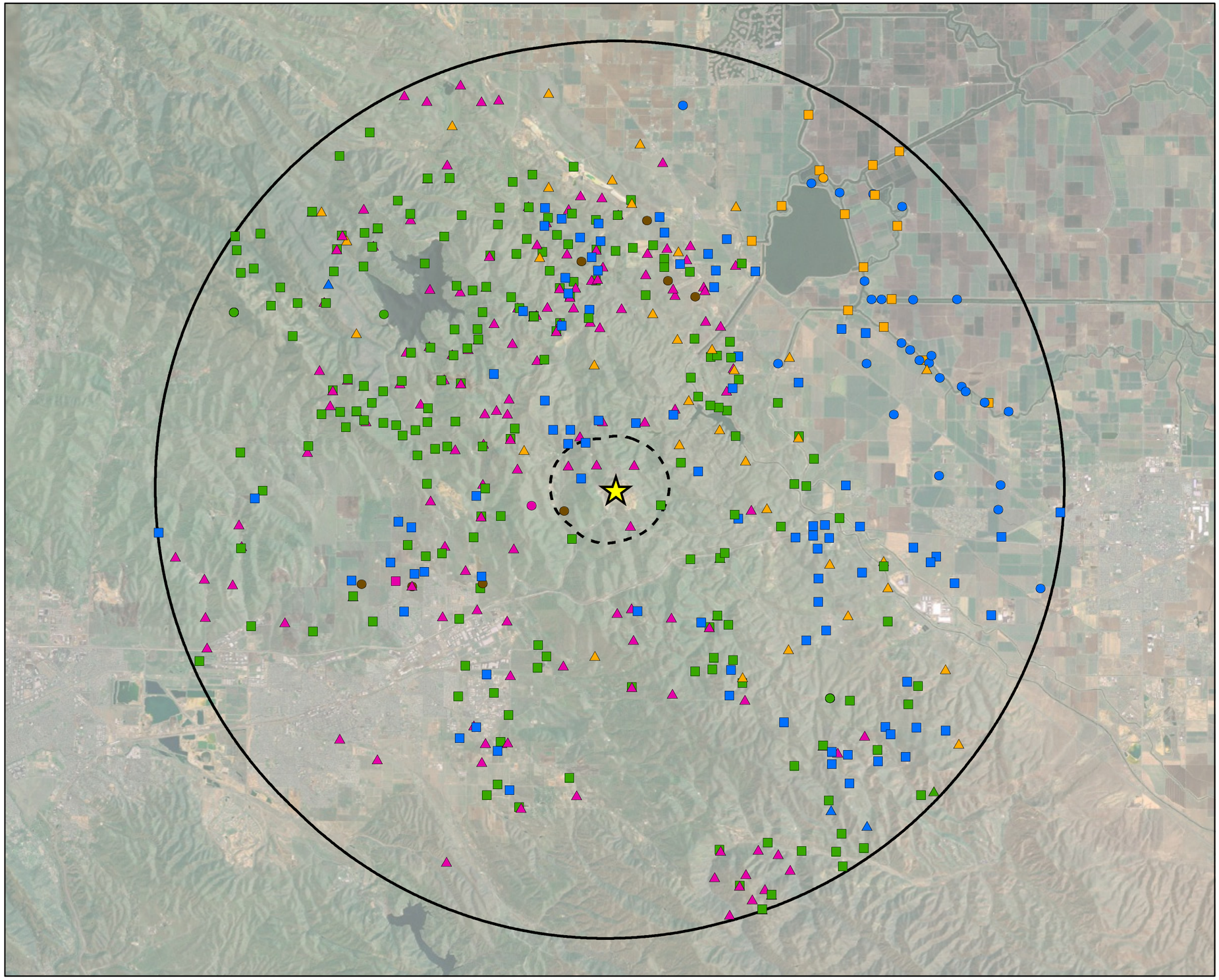
CH2MHILL

FIGURE 10
APRIL 12, 2011 RECONNAISSANCE-LEVEL
BIOLOGICAL SITE ASSESSMENT FINDINGS

VERIFY SCALE

BAR IS ONE INCH ON ORIGINAL DRAWING. 0 1"

DATE	MARCH 2011
PROJ	392424
DWG	C-03
SHEET	1 0F 1



VICINITY MAP

LEGEND

- Project Location
- 1 Mile Buffer
- 10 Mile Buffer

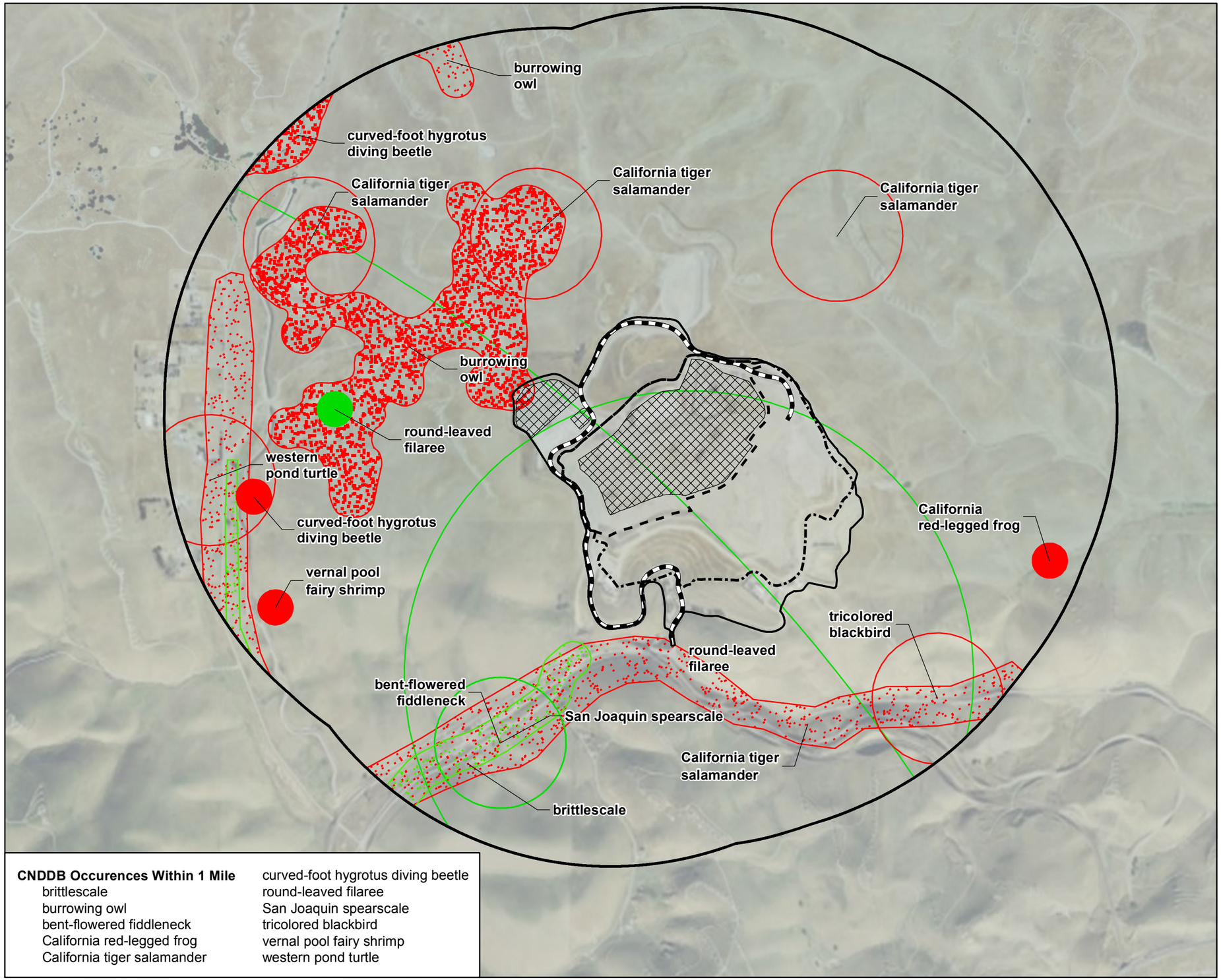
CNDDB Species

- Alameda whipsnake
- California red-legged frog
- California tiger salamander
- Delta smelt
- Mason's lilaeopsis
- San Joaquin kit fox
- Swainson's hawk
- burrowing owl
- large-flowered fiddleneck
- longhorn fairy shrimp
- palmate-bracted bird's-beak
- valley elderberry longhorn beetle
- vernal pool fairy shrimp

N

0 1 2
Miles

FIGURE 11
CNDDB occurrences within 10 miles of site boundary
Altamond Landfill Ancillary Uses



VICINITY MAP

LEGEND

CNDDB Species

- 10100 - 10200
- 10210 - 10300
- 10310 - 10400
- 10410 - 11100
- 11110 - 20200
- 20210 - 20300
- 20310 - 20400
- 20410 - 21100
- 21110 - 30200
- 30210 - 30300
- 30310 - 30400
- 30410 - 31100
- 31110 - 40200
- 40210 - 40300
- 40310 - 40400
- 40410 - 41100
- **Proposed Project Boundaries**

Site Features

- Disturbed Area
- Existing Access Road
- Existing Limit of Liner
- Existing Limit of Waste

N

0 750 1,500
Feet

CNDDB Occurences Within 1 Mile

- brittlescale
- burrowing owl
- bent-flowered fiddleneck
- California red-legged frog
- California tiger salamander
- curved-foot hygrotus diving beetle
- round-leaved filaree
- San Joaquin spearscale
- tricolored blackbird
- vernal pool fairy shrimp
- western pond turtle

FIGURE 12
CNDDB occurrences within 1 mile of site boundary
Altamond Landfill Ancillary Uses

Appendix A
Aesthetics Context Photos, Site Visit February 23, 2011

View #1- Towards southwest from main access road running along western border of the project site. Rolling terrain and wind turbines can be seen, as well as some power lines to the northwest.

Context Photos	Altamont Ancillary Uses CUP	Taken 02/23/2011

View #2- View of LFG to LNG facility, located in the northwest portion of the project site, adjacent to the proposed MRF complex area. Rolling terrain and wind turbines can be seen in the background.

Context Photos	Altamont Ancillary Uses CUP	Taken 02/23/2011

View #3- Portion of trailer storage area (north of LFG to LNG facility) proposed as the MRF area, facing west from eastern edge of proposed MRF site. Rolling terrain and wind turbines can be seen in the background.

Context Photos	Altamont Ancillary Uses CUP	Taken 02/23/2011

View #4- Scale facility in northwestern portion of site, facing southwest.

Context Photos	Altamont Ancillary Uses CUP	Taken 02/23/2011

View #5- Looking northwest from northwestern edge of proposed MRF site, with nearest residence on Dyer Rd. noted by arrow and rolling terrain and wind turbines in the fore and background.

Context Photos	Altamont Ancillary Uses CUP	Taken 02/23/2011

View #6- Looking north from northern edge of proposed MRF site. All buildings shown in foreground relate to wind farm maintenance.

Context Photos	Altamont Ancillary Uses CUP	Taken 02/23/2011

View #7- Looking northeast from eastern edge of proposed MRF site.

Context Photos	Altamont Ancillary Uses CUP	Taken 02/23/2011

View #8- Active landfill area, facing east from northeastern portion of proposed organics management area.

Context Photos	Altamont Ancillary Uses CUP	Taken 02/23/2011

View #9- Landfill area and surrounding hillsides from high point north of proposed organics management area.

Context Photos	Altamont Ancillary Uses CUP	Taken 02/23/2011

View #10- Proposed organics management area (currently bin storage and working face of landfill), from high point on north boundary of ALRRF site, facing south.

Context Photos	Altamont Ancillary Uses CUP	Taken 02/23/2011

Example transfer truck.

Context Photos	Altamont Ancillary Uses CUP	Taken 02/23/2011

Example route truck.

Context Photos	Altamont Ancillary Uses CUP	Taken 02/23/2011

Appendix B
Air Quality Calculations

ALRRF IS/ND - MRF Construction

MRF Construction

Duration: 8 months

Assume 22 days per months 176 days

Summary of Average Daily Emissions for Constructing the MRF Facility

	Average Daily Emissions (lbs per day)						Total Emissions (metric tons)	
Emission Source	**CO**	**ROG**	**NOx**	**SOx**	**PM10[1]**	**PM2.5[1]**	**CO2**	**CO2eq**
Construction Equipment	10.79	2.60	19.31	0.02	1.12	1.03	169	178
Onroad Vehicles	4.80	0.56	10.49	0.03	0.42	0.32	172	172
TOTAL	16	3	30	0.05	1.5	1.3	340	350
BAAQMD Thresholds (lb/day)	NA	54	54	NA	82	54	NA	NA

NA = Threshold not established

1. Thresholds only apply to exhaust PM10 and PM2.5 emissions.

Construction Equipment Emissions

				Total Emissions (lbs per equipment type)						Total Emissions (metric tons)	
Type	**Number**	**Hours per Day**	**Numbers of Days**	**CO**	**ROG**	**NOx**	**SOx**	**PM10**	**PM2.5**	**CO2**	**CO2eq**
Air Compressors	1	8	30	45.20	11.04	73.44	0.08	5.90	5.42	3.20	3.36
Bore/Drill Rigs	1	8	10	29.14	7.12	69.36	0.15	2.31	2.12	7.45	7.84
Cranes	1	8	30	70.17	20.15	189.00	0.18	7.08	6.51	10.07	10.60
Crushing/Processing Equipment	1	8	20	100.06	21.64	169.36	0.20	9.81	9.02	7.86	8.28
Excavators	2	8	45	293.21	56.54	422.10	0.61	24.93	22.93	22.35	23.53
Forklifts	1	8	60	46.26	8.65	64.86	0.09	3.87	3.56	3.56	3.75
Generator Sets	1	8	15	57.29	14.57	193.96	0.24	5.64	5.19	11.59	12.20
Pavers	1	8	10	28.46	8.18	48.98	0.04	4.32	3.97	1.75	1.84
Paving Equipment	2	8	10	42.99	12.37	74.17	0.08	6.55	6.03	2.66	2.80
Plate Compactors	1	8	30	2.72	0.52	3.25	0.01	0.13	0.12	0.20	0.21
Rubber Tired Loaders	1	8	60	170.28	35.52	274.40	0.28	15.74	14.48	13.06	13.74
Scrapers	2	8	15	197.46	50.68	458.23	0.48	18.12	16.67	22.15	23.32
Skid Steer Loaders	1	8	45	54.91	14.04	56.56	0.08	4.24	3.91	2.73	2.87
Trenchers	1	8	20	51.85	14.83	90.47	0.08	4.45	4.09	3.23	3.39
Welders	1	8	45	44.78	16.65	41.63	0.05	4.07	3.74	1.87	1.96
Rough Terrain Forklifts	1	8	60	130.67	33.60	211.04	0.24	18.30	16.84	8.53	8.98
Tractors/Loaders/Backhoes	2	8	60	270.41	57.83	373.37	0.50	32.81	30.19	17.84	18.78
Crawler Tractors	2	8	15	112.00	26.28	198.07	0.20	11.45	10.53	8.22	8.65
Dumpers/Tenders	2	8	75	14.78	4.54	27.99	0.05	1.43	1.32	1.58	1.66
Rollers	1	8	10	20.76	5.34	33.53	0.04	2.91	2.68	1.36	1.43
Graders	1	8	10	38.60	8.14	62.54	0.07	3.61	3.32	2.95	3.10
Water Trucks	1	8	60	76.80	28.60	263.10	0.40	9.00	8.28	14.71	15.48
Average Daily Emissions				10.79	2.60	19.31	0.02	1.12	1.03		

1. URBEMIS2007 only includes emission factors for the greenhouse gas, CO_2. In addition, emissions of CH_4 and N_2O from combustion sources would be much lower than emissions of CO_2, contributing in the range of 2 to 4 percent of the CO_2e emissions.Therefore, it was assumed that CH4 and N2O emissions account for 5 percent of the CO2e emissions so the CO2 emissions were multiplied by 100/95 to calculate CO2e emissions.

Construction Equipment Emission Factors

Type	Horsepower	Load Factor	Emission Factors (g/bhp-hr)[1]							Emission Factors (lb/hr)						
			CO	ROG	NOx	SOx	PM10	PM2.5[2]	CO2	CO	ROG	NOx	SOx	PM10	PM2.5	CO2
Air Compressors	106	0.48	1.679	0.410	2.728	0.003	0.219	0.201	261.653	0.19	0.05	0.31	0.0003	0.02	0.02	29.35
Bore/Drill Rigs	291	0.75	0.757	0.185	1.802	0.004	0.060	0.055	426.608	0.36	0.09	0.87	0.0019	0.03	0.03	205.26
Cranes	399	0.43	0.773	0.222	2.082	0.002	0.078	0.072	244.589	0.29	0.08	0.79	0.0008	0.03	0.03	92.51
Crushing/Processing Equipment	142	0.78	2.561	0.554	4.335	0.005	0.251	0.231	443.672	0.63	0.14	1.06	0.0012	0.06	0.06	108.34
Excavators	168	0.57	1.929	0.372	2.777	0.004	0.164	0.151	324.222	0.41	0.08	0.59	0.0008	0.03	0.03	68.45
Forklifts	145	0.30	1.005	0.188	1.409	0.002	0.084	0.077	170.643	0.10	0.02	0.14	0.0002	0.01	0.01	16.36
Generator Sets	310	0.74	0.944	0.240	3.196	0.004	0.093	0.086	420.920	0.48	0.12	1.62	0.0020	0.05	0.04	212.87
Pavers	100	0.62	2.603	0.748	4.479	0.004	0.395	0.363	352.663	0.36	0.10	0.61	0.0005	0.05	0.05	48.20
Paving Equipment	104	0.53	2.211	0.636	3.815	0.004	0.337	0.310	301.470	0.27	0.08	0.46	0.0005	0.04	0.04	36.63
Plate Compactors	8	0.43	1.493	0.285	1.783	0.004	0.071	0.065	244.589	0.01	0.00	0.01	0.0000	0.00	0.00	1.85
Rubber Tired Loaders	164	0.54	1.817	0.379	2.928	0.003	0.168	0.155	307.158	0.35	0.07	0.57	0.0006	0.03	0.03	59.97
Scrapers	313	0.72	1.656	0.425	3.843	0.004	0.152	0.140	409.544	0.82	0.21	1.91	0.0020	0.08	0.07	203.47
Skid Steer Loaders	44	0.55	2.859	0.731	2.945	0.004	0.221	0.203	312.846	0.15	0.04	0.16	0.0002	0.01	0.01	16.69
Trenchers	63	0.75	3.111	0.890	5.428	0.005	0.267	0.246	426.608	0.32	0.09	0.57	0.0005	0.03	0.03	44.44
Welders	45	0.45	2.786	1.036	2.590	0.003	0.253	0.233	255.965	0.12	0.05	0.12	0.0001	0.01	0.01	11.43
Rough Terrain Forklifts	93	0.60	2.213	0.569	3.574	0.004	0.310	0.285	318.534	0.27	0.07	0.44	0.0005	0.04	0.04	39.18
Tractors/Loaders/Backhoes	108	0.55	2.151	0.460	2.970	0.004	0.261	0.240	312.846	0.28	0.06	0.39	0.0005	0.03	0.03	40.97
Crawler Tractors	147	0.64	2.250	0.528	3.979	0.004	0.230	0.212	364.039	0.47	0.11	0.83	0.0008	0.05	0.04	75.50
Dumpers/Tenders	16	0.38	0.919	0.282	1.740	0.003	0.089	0.082	216.148	0.01	0.00	0.02	0.0000	0.00	0.00	2.90
Rollers	95	0.56	2.213	0.569	3.574	0.004	0.310	0.285	318.534	0.26	0.07	0.42	0.0005	0.04	0.03	37.36
Graders	174	0.61	2.062	0.435	3.341	0.004	0.193	0.178	346.974	0.48	0.10	0.78	0.0009	0.05	0.04	81.19
Water Trucks	189	0.50	0.768	0.286	2.631	0.004	0.090	0.083	324.222	0.16	0.06	0.55	0.0008	0.02	0.02	67.55

1.Emission factors from the URBEMIS2007 for Windows Users' Guide, Appendix I – Construction Equipment Emission Factors, for the year 2012.

2. SCAQMD *Particulate Matter (PM) 2.5 Significance Thresholds and Calculation Methodology*, Appendix A, for offroad diesel combustion sources, 92% of the PM10 would be PM2.5.

Vehicle Emissions

Truck Type	Fuel Type (diesel, gasoline)	Fuel Efficiency (miles per gallon)	Number per Day	Number of Days	Miles Traveled per Roundtrip - Offsite Paved Roads	Miles Traveled per Roundtrip - Onsite Unpaved Roads	Miles Traveled per Roundtrip - Onsite Paved Roads	Total Emissions (lbs per vehicle type)								Total Emissions (metric tons)			
								CO	ROG	NOx	SOx	PM10 Exhaust	PM10 Fugitive Dust	PM2.5 Exhaust	PM2.5 Fugitive Dust	CO_2	CH_4	N_2O	CO_2eq
Dump Truck	Diesel	8.5	10	60	30	1	3	100.61	21.90	424.15	0.76	14.71	306.49	11.83	14.97	23.90	0.0001	0.0001	23.94
Cement Truck	Diesel	8.5	35	20	30	1	3	117.37	25.55	494.84	0.89	17.16	357.57	13.80	17.47	27.89	0.0001	0.0001	27.92
Pick Up	Gasoline	18.1	5	120	50	1	3	114.29	2.36	9.86	0.50	2.86	311.05	1.79	16.09	15.30	0.0003	0.0002	15.36
Materials Truck (Local)	Diesel	8.5	10	90	30	1	3	150.91	32.85	636.22	1.15	22.06	459.73	17.74	22.46	35.86	0.0001	0.0001	35.89
Materials Truck (Long Haul)	Diesel	8.5	2	60	100	1	3	61.55	13.40	259.48	0.47	9.00	64.49	7.24	3.78	14.62	0.0001	0.0001	14.66
Construction Worker, Passenger Car	Gasoline	22.6	15	176	50	1	3	299.83	3.14	22.31	0.94	8.49	1,368.62	3.77	70.80	53.93	0.0003	0.0001	53.97
							Average Daily Emissions	4.80	0.56	10.49	0.03	0.42	16.30	0.32	0.83				

Fuel efficiency from the 2010 Transportation Energy Book.

ALRRF IS/ND - RAC Construction

RAC Construction

Duration: 8 months

Assume 22 days per months 176 days

Summary of Average Daily Emissions for Constructing the RAC

	Average Daily Emissions (lbs per day)						Total Emissions (metric tons)	
Emission Source	**CO**	**ROG**	**NOx**	**SOx**	**PM10[1]**	**PM2.5[1]**	**CO2**	**CO2eq**
Construction Equipment	12.40	2.85	21.21	0.03	1.25	1.15	186	196
Onroad Vehicles	3.41	0.26	4.65	0.02	0.22	0.16	114	114
TOTAL	16	3	26	0.04	1.5	1.3	300	310
BAAQMD Thresholds (lb/day)	NA	54	54	NA	82	54	NA	NA

NA = Threshold not established

1. Thresholds only apply to exhaust PM10 and PM2.5 emissions.

Construction Equipment Emissions

				Total Emissions (lbs per equipment type)						Total Emissions (metric tons)	
Type	**Number**	**Hours per Day**	**Numbers of Days**	**CO**	**ROG**	**NOx**	**SOx**	**PM10**	**PM2.5**	**CO2**	**CO2eq**
Air Compressors	1	8	30	45.20	11.04	73.44	0.08	5.90	5.42	3.20	3.36
Bore/Drill Rigs	1	8	10	29.14	7.12	69.36	0.15	2.31	2.12	7.45	7.84
Crushing/Processing Equipment	1	8	30	150.08	32.47	254.04	0.29	14.71	13.53	11.79	12.41
Excavators	3	8	60	586.42	113.09	844.21	1.22	49.86	45.87	44.71	47.06
Forklifts	1	8	60	46.26	8.65	64.86	0.09	3.87	3.56	3.56	3.75
Generator Sets	1	8	15	57.29	14.57	193.96	0.24	5.64	5.19	11.59	12.20
Pavers	1	8	10	28.46	8.18	48.98	0.04	4.32	3.97	1.75	1.84
Paving Equipment	2	8	10	42.99	12.37	74.17	0.08	6.55	6.03	2.66	2.80
Plate Compactors	1	8	30	2.72	0.52	3.25	0.01	0.13	0.12	0.20	0.21
Rubber Tired Loaders	1	8	60	170.28	35.52	274.40	0.28	15.74	14.48	13.06	13.74
Scrapers	2	8	15	197.46	50.68	458.23	0.48	18.12	16.67	22.15	23.32
Skid Steer Loaders	2	8	45	109.82	28.08	113.13	0.15	8.49	7.81	5.45	5.74
Trenchers	1	8	20	51.85	14.83	90.47	0.08	4.45	4.09	3.23	3.39
Rough Terrain Forklifts	1	8	60	130.67	33.60	211.04	0.24	18.30	16.84	8.53	8.98
Tractors/Loaders/Backhoes	2	8	60	270.41	57.83	373.37	0.50	32.81	30.19	17.84	18.78
Crawler Tractors	2	8	15	112.00	26.28	198.07	0.20	11.45	10.53	8.22	8.65
Dumpers/Tenders	2	8	75	14.78	4.54	27.99	0.05	1.43	1.32	1.58	1.66
Rollers	1	8	10	20.76	5.34	33.53	0.04	2.91	2.68	1.36	1.43
Graders	1	8	10	38.60	8.14	62.54	0.07	3.61	3.32	2.95	3.10
Water Trucks	1	8	60	76.80	28.60	263.10	0.40	9.00	8.28	14.71	15.48
Average Daily Emissions				12.40	2.85	21.21	0.03	1.25	1.15		

1. URBEMIS2007 only includes emission factors for the greenhouse gas, CO_2. In addition, emissions of CH_4 and N_2O from combustion sources would be much lower than emissions of CO_2, contributing in the range of 2 to 4 percent of the CO_2e emissions.Therefore, it was assumed that CH4 and N2O emissions account for 5 percent of the CO2e emissions so the CO2 emissions were multiplied by 100/95 to calculate CO2e emissions.

Construction Equipment Emission Factors

Type	Horsepower	Load Factor	Emission Factors (g/bhp-hr)[1]							Emission Factors (lb/hr)						
			CO	ROG	NOx	SOx	PM10	PM2.5[2]	CO2	CO	ROG	NOx	SOx	PM10	PM2.5	CO2
Air Compressors	106	0.48	1.679	0.410	2.728	0.003	0.219	0.201	261.653	0.19	0.05	0.31	0.0003	0.02	0.02	29.35
Bore/Drill Rigs	291	0.75	0.757	0.185	1.802	0.004	0.060	0.055	426.608	0.36	0.09	0.87	0.0019	0.03	0.03	205.26
Crushing/Processing Equipment	142	0.78	2.561	0.554	4.335	0.005	0.251	0.231	443.672	0.63	0.14	1.06	0.0012	0.06	0.06	108.34
Excavators	168	0.57	1.929	0.372	2.777	0.004	0.164	0.151	324.222	0.41	0.08	0.59	0.0008	0.03	0.03	68.45
Forklifts	145	0.30	1.005	0.188	1.409	0.002	0.084	0.077	170.643	0.10	0.02	0.14	0.0002	0.01	0.01	16.36
Generator Sets	310	0.74	0.944	0.240	3.196	0.004	0.093	0.086	420.920	0.48	0.12	1.62	0.0020	0.05	0.04	212.87
Pavers	100	0.62	2.603	0.748	4.479	0.004	0.395	0.363	352.663	0.36	0.10	0.61	0.0005	0.05	0.05	48.20
Paving Equipment	104	0.53	2.211	0.636	3.815	0.004	0.337	0.310	301.470	0.27	0.08	0.46	0.0005	0.04	0.04	36.63
Plate Compactors	8	0.43	1.493	0.285	1.783	0.004	0.071	0.065	244.589	0.01	0.00	0.01	0.0000	0.00	0.00	1.85
Rubber Tired Loaders	164	0.54	1.817	0.379	2.928	0.003	0.168	0.155	307.158	0.35	0.07	0.57	0.0006	0.03	0.03	59.97
Scrapers	313	0.72	1.656	0.425	3.843	0.004	0.152	0.140	409.544	0.82	0.21	1.91	0.0020	0.08	0.07	203.47
Skid Steer Loaders	44	0.55	2.859	0.731	2.945	0.004	0.221	0.203	312.846	0.15	0.04	0.16	0.0002	0.01	0.01	16.69
Trenchers	63	0.75	3.111	0.890	5.428	0.005	0.267	0.246	426.608	0.32	0.09	0.57	0.0005	0.03	0.03	44.44
Rough Terrain Forklifts	93	0.60	2.213	0.569	3.574	0.004	0.310	0.285	318.534	0.27	0.07	0.44	0.0005	0.04	0.04	39.18
Tractors/Loaders/Backhoes	108	0.55	2.151	0.460	2.970	0.004	0.261	0.240	312.846	0.28	0.06	0.39	0.0005	0.03	0.03	40.97
Crawler Tractors	147	0.64	2.250	0.528	3.979	0.004	0.230	0.212	364.039	0.47	0.11	0.83	0.0008	0.05	0.04	75.50
Dumpers/Tenders	16	0.38	0.919	0.282	1.740	0.003	0.089	0.082	216.148	0.01	0.00	0.02	0.0000	0.00	0.00	2.90
Rollers	95	0.56	2.213	0.569	3.574	0.004	0.310	0.285	318.534	0.26	0.07	0.42	0.0005	0.04	0.03	37.36
Graders	174	0.61	2.062	0.435	3.341	0.004	0.193	0.178	346.974	0.48	0.10	0.78	0.0009	0.05	0.04	81.19
Water Trucks	189	0.50	0.768	0.286	2.631	0.004	0.090	0.083	324.222	0.16	0.06	0.55	0.0008	0.02	0.02	67.55

1.Emission factors from the URBEMIS2007 for Windows Users' Guide, Appendix I – Construction Equipment Emission Factors, for the year 2012.

2. SCAQMD *Particulate Matter (PM) 2.5 Significance Thresholds and Calculation Methodology*, Appendix A, for offroad diesel combustion sources, 92% of the PM10 would be PM2.5.

Vehicle Emissions

Truck Type	Fuel Type (diesel, gasoline)	Fuel Efficiency (miles per gallon)	Number per Day	Number of Days	Miles Traveled per Roundtrip - Offsite Paved Roads	Miles Traveled per Roundtrip - Onsite Unpaved Roads	Miles Traveled per Roundtrip - Onsite Paved Roads	Total Emissions (lbs per vehicle type)								Total Emissions (metric tons)			
								CO	ROG	NOx	SOx	PM10 Exhaust	PM10 Fugitive Dust	PM2.5 Exhaust	PM2.5 Fugitive Dust	CO_2	CH_4	N_2O	CO_2eq
Dump Truck	Diesel	8.5	10	60	30	1	3	100.61	21.90	424.15	0.76	14.71	306.49	11.83	14.97	23.90	0.0001	0.0001	23.94
Cement Truck	Diesel	8.5	5	5	30	1	3	4.19	0.91	17.67	0.03	0.61	12.77	0.49	0.62	1.00	0.0001	0.0001	1.03
Pick Up	Gasoline	18.1	5	120	50	1	3	114.29	2.36	9.86	0.50	2.86	311.05	1.79	16.09	15.30	0.0003	0.0002	15.36
Materials Truck (Local)	Diesel	8.5	2	60	30	1	3	20.12	4.38	84.83	0.15	2.94	61.30	2.37	2.99	4.78	0.0001	0.0001	4.81
Materials Truck (Long Haul)	Diesel	8.5	2	60	100	1	3	61.55	13.40	259.48	0.47	9.00	64.49	7.24	3.78	14.62	0.0001	0.0001	14.66
Construction Worker, Passenger Car	Gasoline	22.6	15	176	50	1	3	299.83	3.14	22.31	0.94	8.49	1,368.62	3.77	70.80	53.93	0.0003	0.0001	53.97
							Average Daily Emissions	3.41	0.26	4.65	0.02	0.22	12.07	0.16	0.62				

Fuel efficiency from the 2010 Transportation Energy Book.

ALRRF IS/ND - CASP Construction

CASP Construction

Duration: 8 months

Assume 22 days per months 176 days

Summary of Average Daily Emissions for Constructing the CASP

	Average Daily Emissions (lbs per day)						Total Emissions (metric tons)	
Emission Source	**CO**	**ROG**	**NOx**	**SOx**	**PM10[1]**	**PM2.5[1]**	**CO2**	**CO2eq**
Construction Equipment	12.40	2.85	21.21	0.03	1.25	1.15	186	196
Onroad Vehicles	3.41	0.26	4.65	0.02	0.22	0.16	114	114
TOTAL	16	3	26	0.04	1.5	1.3	300	310
BAAQMD Thresholds (lb/day)	NA	54	54	NA	82	54	NA	NA

NA = Threshold not established

1. Thresholds only apply to exhaust PM10 and PM2.5 emissions.

Construction Equipment Emissions

				Total Emissions (lbs per equipment type)						Total Emissions (metric tons)	
Type	**Number**	**Hours per Day**	**Numbers of Days**	**CO**	**ROG**	**NOx**	**SOx**	**PM10**	**PM2.5**	**CO2**	**CO2eq**
Air Compressors	1	8	30	45.20	11.04	73.44	0.08	5.90	5.42	3.20	3.36
Bore/Drill Rigs	1	8	10	29.14	7.12	69.36	0.15	2.31	2.12	7.45	7.84
Crushing/Processing Equipment	1	8	30	150.08	32.47	254.04	0.29	14.71	13.53	11.79	12.41
Excavators	3	8	60	586.42	113.09	844.21	1.22	49.86	45.87	44.71	47.06
Forklifts	1	8	60	46.26	8.65	64.86	0.09	3.87	3.56	3.56	3.75
Generator Sets	1	8	15	57.29	14.57	193.96	0.24	5.64	5.19	11.59	12.20
Pavers	1	8	10	28.46	8.18	48.98	0.04	4.32	3.97	1.75	1.84
Paving Equipment	2	8	10	42.99	12.37	74.17	0.08	6.55	6.03	2.66	2.80
Plate Compactors	1	8	30	2.72	0.52	3.25	0.01	0.13	0.12	0.20	0.21
Rubber Tired Loaders	1	8	60	170.28	35.52	274.40	0.28	15.74	14.48	13.06	13.74
Scrapers	2	8	15	197.46	50.68	458.23	0.48	18.12	16.67	22.15	23.32
Skid Steer Loaders	2	8	45	109.82	28.08	113.13	0.15	8.49	7.81	5.45	5.74
Trenchers	1	8	20	51.85	14.83	90.47	0.08	4.45	4.09	3.23	3.39
Rough Terrain Forklifts	1	8	60	130.67	33.60	211.04	0.24	18.30	16.84	8.53	8.98
Tractors/Loaders/Backhoes	2	8	60	270.41	57.83	373.37	0.50	32.81	30.19	17.84	18.78
Crawler Tractors	2	8	15	112.00	26.28	198.07	0.20	11.45	10.53	8.22	8.65
Dumpers/Tenders	2	8	75	14.78	4.54	27.99	0.05	1.43	1.32	1.58	1.66
Rollers	1	8	10	20.76	5.34	33.53	0.04	2.91	2.68	1.36	1.43
Graders	1	8	10	38.60	8.14	62.54	0.07	3.61	3.32	2.95	3.10
Water Trucks	1	8	60	76.80	28.60	263.10	0.40	9.00	8.28	14.71	15.48
Average Daily Emissions				12.40	2.85	21.21	0.03	1.25	1.15		

1. URBEMIS2007 only includes emission factors for the greenhouse gas, CO_2. In addition, emissions of CH_4 and N_2O from combustion sources would be much lower than emissions of CO_2, contributing in the range of 2 to 4 percent of the CO_2e emissions.Therefore, it was assumed that CH4 and N2O emissions account for 5 percent of the CO2e emissions so the CO2 emissions were multiplied by 100/95 to calculate CO2e emissions.

Construction Equipment Emission Factors

Type	Horsepower	Load Factor	Emission Factors (g/bhp-hr)[1]							Emission Factors (lb/hr)						
			CO	ROG	NOx	SOx	PM10	PM2.5[2]	CO2	CO	ROG	NOx	SOx	PM10	PM2.5	CO2
Air Compressors	106	0.48	1.679	0.410	2.728	0.003	0.219	0.201	261.653	0.19	0.05	0.31	0.0003	0.02	0.02	29.35
Bore/Drill Rigs	291	0.75	0.757	0.185	1.802	0.004	0.060	0.055	426.608	0.36	0.09	0.87	0.0019	0.03	0.03	205.26
Crushing/Processing Equipment	142	0.78	2.561	0.554	4.335	0.005	0.251	0.231	443.672	0.63	0.14	1.06	0.0012	0.06	0.06	108.34
Excavators	168	0.57	1.929	0.372	2.777	0.004	0.164	0.151	324.222	0.41	0.08	0.59	0.0008	0.03	0.03	68.45
Forklifts	145	0.30	1.005	0.188	1.409	0.002	0.084	0.077	170.643	0.10	0.02	0.14	0.0002	0.01	0.01	16.36
Generator Sets	310	0.74	0.944	0.240	3.196	0.004	0.093	0.086	420.920	0.48	0.12	1.62	0.0020	0.05	0.04	212.87
Pavers	100	0.62	2.603	0.748	4.479	0.004	0.395	0.363	352.663	0.36	0.10	0.61	0.0005	0.05	0.05	48.20
Paving Equipment	104	0.53	2.211	0.636	3.815	0.004	0.337	0.310	301.470	0.27	0.08	0.46	0.0005	0.04	0.04	36.63
Plate Compactors	8	0.43	1.493	0.285	1.783	0.004	0.071	0.065	244.589	0.01	0.00	0.01	0.0000	0.00	0.00	1.85
Rubber Tired Loaders	164	0.54	1.817	0.379	2.928	0.003	0.168	0.155	307.158	0.35	0.07	0.57	0.0006	0.03	0.03	59.97
Scrapers	313	0.72	1.656	0.425	3.843	0.004	0.152	0.140	409.544	0.82	0.21	1.91	0.0020	0.08	0.07	203.47
Skid Steer Loaders	44	0.55	2.859	0.731	2.945	0.004	0.221	0.203	312.846	0.15	0.04	0.16	0.0002	0.01	0.01	16.69
Trenchers	63	0.75	3.111	0.890	5.428	0.005	0.267	0.246	426.608	0.32	0.09	0.57	0.0005	0.03	0.03	44.44
Rough Terrain Forklifts	93	0.60	2.213	0.569	3.574	0.004	0.310	0.285	318.534	0.27	0.07	0.44	0.0005	0.04	0.04	39.18
Tractors/Loaders/Backhoes	108	0.55	2.151	0.460	2.970	0.004	0.261	0.240	312.846	0.28	0.06	0.39	0.0005	0.03	0.03	40.97
Crawler Tractors	147	0.64	2.250	0.528	3.979	0.004	0.230	0.212	364.039	0.47	0.11	0.83	0.0008	0.05	0.04	75.50
Dumpers/Tenders	16	0.38	0.919	0.282	1.740	0.003	0.089	0.082	216.148	0.01	0.00	0.02	0.0000	0.00	0.00	2.90
Rollers	95	0.56	2.213	0.569	3.574	0.004	0.310	0.285	318.534	0.26	0.07	0.42	0.0005	0.04	0.03	37.36
Graders	174	0.61	2.062	0.435	3.341	0.004	0.193	0.178	346.974	0.48	0.10	0.78	0.0009	0.05	0.04	81.19
Water Trucks	189	0.50	0.768	0.286	2.631	0.004	0.090	0.083	324.222	0.16	0.06	0.55	0.0008	0.02	0.02	67.55

1.Emission factors from the URBEMIS2007 for Windows Users' Guide, Appendix I – Construction Equipment Emission Factors, for the year 2012.

2. SCAQMD *Particulate Matter (PM) 2.5 Significance Thresholds and Calculation Methodology,* Appendix A, for offroad diesel combustion sources, 92% of the PM10 would be PM2.5.

Vehicle Emissions

Truck Type	Fuel Type (diesel, gasoline)	Fuel Efficiency (miles per gallon)	Number per Day	Number of Days	Miles Traveled per Roundtrip - Offsite Paved Roads	Miles Traveled per Roundtrip - Onsite Unpaved Roads	Miles Traveled per Roundtrip - Onsite Paved Roads	Total Emissions (lbs per vehicle type)								Total Emissions (metric tons)			
								CO	ROG	NOx	SOx	PM10 Exhaust	PM10 Fugitive Dust	PM2.5 Exhaust	PM2.5 Fugitive Dust	CO_2	CH_4	N_2O	CO_2eq
Dump Truck	Diesel	8.5	10	60	30	1	3	100.61	21.90	424.15	0.76	14.71	306.49	11.83	14.97	23.90	0.0001	0.0001	23.94
Cement Truck	Diesel	8.5	5	5	30	1	3	4.19	0.91	17.67	0.03	0.61	12.77	0.49	0.62	1.00	0.0001	0.0001	1.03
Pick Up	Gasoline	18.1	5	120	50	1	3	114.29	2.36	9.86	0.50	2.86	311.05	1.79	16.09	15.30	0.0003	0.0002	15.36
Materials Truck (Local)	Diesel	8.5	2	60	30	1	3	20.12	4.38	84.83	0.15	2.94	61.30	2.37	2.99	4.78	0.0001	0.0001	4.81
Materials Truck (Long Haul)	Diesel	8.5	2	60	100	1	3	61.55	13.40	259.48	0.47	9.00	64.49	7.24	3.78	14.62	0.0001	0.0001	14.66
Construction Worker, Passenger Car	Gasoline	22.6	15	176	50	1	3	299.83	3.14	22.31	0.94	8.49	1,368.62	3.77	70.80	53.93	0.0003	0.0001	53.97
							Average Daily Emissions	3.41	0.26	4.65	0.02	0.22	12.07	0.16	0.62				

Fuel efficiency from the 2010 Transportation Energy Book.

ALRRF IS/ND - Operation Emissions Summary

Summary of Average Daily Criteria Pollutant Emissions

Emission Source	Average Daily Emissions (lbs per day)							
	CO	ROG	NOx	SOx	PM10 Exhaust	PM10 Fugitive Dust	PM2.5 Exhaust	PM2.5 Fugitive Dust
Proposed Project								
Offsite Vehicle Exhaust Emissions	35.89	6.72	129.51	0.25	4.63	-	3.67	-
Onsite Vehicle Exhaust Emissions	15.09	4.77	41.33	0.08	2.23	-	1.89	-
Onsite Vehicle Fugitive Emissions	-	-	-	-	-	225.76	-	29.92
RAC/CASP Operation	22.56	49.29	35.36	0.04	2.33	-	2.14	-
MRF Operation	11.27	2.41	15.56	0.02	1.37	-	1.26	-
Existing Conditions								
Offsite Vehicle Exhaust Emissions	43.61	9.49	183.84	0.33	6.37	-	5.13	-
Net Emissions								
Proposed Project - Existing Truck Trips	41.20	53.70	37.93	0.06	4.18	225.76	3.83	29.92
BAAQMD Thresholds (lb/day)	NA	54	54	NA	82		54	

1. The MRF and CASP facilities would be enclosed with filter systems so it was assumed these facilities would not generate fugitive dust emissions.

2. The emission estimates assume that 100% of the biogas resulting from the RAC, primarily methane, will be captured and used to generate electricity.

3. Fugitive PM10 and PM2.5 emissions represent travel on paved and unpaved within the boundaries of ALRRF. It is assumed that the paved and unpaved roads will be maintained in compliance with current permit conditions. Therefore, fugitive emissions from roads would not be expected to have a significant impact on air quality.

Summary of Annual GHG Emissions

Emission Source	Annual Emissions (metric tons per year)	
	CO2	CO2eq
Offsite Vehicle Exhaust Emissions	5,958	5,960
Onsite Vehicle Exhaust Emissions	1,363	1,364
RAC Operation - Combustion of Biogas	12,565	12,649
RAC/CASP - Operation	439	462
MRF Operation	193	203
WARM Model Calculated Reductions	NA	-36,140
Total Project		-15,502
Existing Offsite Vehicle Exhaust Emissions	7,939	7,943
Net Emissions		-23,445

The WARM Model only estimates CO2eq emissions.

ALRRF IS/ND - Operation RAC and CASP

Summary of Average Daily Emissions for Operation of the RAC and CASP

	Average Daily Emissions (lbs per day)								Emissions (metric tons/yr)	
Emission Source	CO	ROG	NOx	SOx	PM10 Exhaust	PM10 Fugitive Dust	PM2.5 Exhaust	PM2.5 Fugitive Dust	CO2	CO2eq
Equipment and Vehicle Exhaust	22.56	4.79	35.36	0.04	2.33	1.00	2.14	0.13	439	462
CASP - VOC Emissions[1]	-	44.50	-	-	-	-	-	-	-	-
RAC - Biogas Combustion[2]	-	-	-	-	-	-	-	-	12,126	12,187
TOTAL	23	49	35	0	2	1	2	0	12,565	12,649

1. The BAAQMD thresholds are based on ROG emissions, therefore, it was assumed ROG = VOC.

2. The emission estimates assume that 100% of the biogas resulting from the RAC, primarily methane, will be captured and burned to generate electricity. GHG emissions were estimated for combustion of biogas.

Equipment Exhaust Emissions

				Daily Emissions (lbs per day)						Total Emissions (metric tons)	
Type	Number	Hours per Day	Numbers of Days	CO	ROG	NOx	SOx	PM10	PM2.5	CO2	CO2eq
Grinder	1	8	260	5.00	1.08	8.47	0.01	0.49	0.45	102.21	107.59
Trackhoe	1	8	260	3.26	0.63	4.69	0.01	0.28	0.25	64.58	67.98
Loader	3	8	260	6.76	1.45	9.33	0.01	0.82	0.75	115.96	122.06
Trommel Screen	1	8	260	5.00	1.08	8.47	0.01	0.49	0.45	102.21	107.59
Windrow Turner	1	4	260	2.50	0.54	4.23	0.00	0.25	0.23	51.11	53.80
			Total	22.53	4.78	35.19	0.04	2.32	2.14	436.06	459.01

The equipment would also include a converyor that was assumed to be electrically operated.

It was assumed equipment would be operated 260 days per year.

Emission Factors

			Emission Factors (g/bhp-hr)[1]							Emission Factors (lb/hr)						
Type	Horsepower	Load Factor	CO	ROG	NOx	SOx	PM10	PM2.5[2]	CO2	CO	ROG	NOx	SOx	PM10	PM2.5	CO2
Crushing/Processing Equipment	142	0.78	2.561	0.554	4.335	0.005	0.251	0.231	443.672	0.63	0.14	1.06	0.00	0.06	0.06	108.34
Excavators	168	0.57	1.929	0.372	2.777	0.004	0.164	0.151	324.222	0.41	0.08	0.59	0.00	0.03	0.03	68.45
Tractors/Loaders/Backhoes	108	0.55	2.151	0.460	2.970	0.004	0.261	0.240	312.846	0.28	0.06	0.39	0.00	0.03	0.03	40.97

1. Emission factors from the URBEMIS2007 for Windows Users' Guide, Appendix I – Construction Equipment Emission Factors, for the year 2012.

2. SCAQMD *Particulate Matter (PM) 2.5 Significance Thresholds and Calculation Methodology,* Appendix A, for offroad diesel combustion sources, 92% of the PM10 would be PM2.5.

Onsite Vehicle Emissions

							Emissions (lbs per day)								Total Emissions (metric tons/yr)			
Truck Type	Fuel Type (diesel, gasoline)	Fuel Efficiency (miles per gallon)	Number per Day	Number of Days	Miles Traveled per Roundtrip - Onsite Unpaved Roads	Miles Traveled per Roundtrip - Onsite Paved Roads	CO	ROG	NOx	SOx	PM10 Exhaust	PM10 Fugitive Dust	PM2.5 Exhaust	PM2.5 Fugitive Dust	CO_2	CH_4	N_2O	CO_2eq
Gravel Truck	Diesel	7	2	260	1	3	0.04	0.01	0.17	0.0003	0.0058	1.00	0.0046	0.13	2.96	0.0000	0.0000	2.96

VOC Emissions from the CASP

Daily Material Tonnage	VOC Emission Factor (lb/wet ton)	Control Efficiency	ROG Emissions (lb/day)
500	1.78	95%	45

1. Emission factor is the baseline emission factor from SCAQMD Rule 1133.2 Emission Reductions from Co-Composting Operations.

2. Control efficiency based on Organic Material Composting and Drying focusing on Greenwaste Compost Air Emissions Data Review , Thomas Card and Charles Schimdt, for ASP with biofilter (June 2008).

3. The system at Altamont would include both a cover and biofilter which would be expected to control both emissions and odors from composting.

RAC Operation - GHG Emissions from Stationary Combustion of Biogas Generated

Daily Material Tonnage	Biogas Yield Rate (cubic feet/lb)	Biogas (scf/day)	Biogas High Heat Value (MMBtu/scf)	Biogas (MMBtu/day)	CO_2 Emission Factor (kg/MMBtu)	CH_4 Emission Factor (kg/MMBtu)	N_2O Emission Factor (kg/MMBtu)	CO_2 Emission Factor (metric tons/day)	CH_4 Emission Factor (metric tons/day)	N_2O Emissions (metric tons/day)	Annual CO_2eq (metric tons/year)
250	2.13	1,065,000	8.41E-04	895.67	52.07	3.20E-03	6.30E-04	46.64	0.003	0.001	12,187

Biogas Yield provided by Waste Management

High heat value and emission factors from 40 CFR Part 98 Subpart C, Tables C-1 and C-2

Calculation assumes daily tonnage for 260 days per year.

ALRRF IS/ND - Operation MRF

Summary of Average Daily Emissions for Operation of the MRF

	Average Daily Emissions (lbs per day)						Total Emissions (metric tons per year)	
Emission Source	CO	ROG	NOx	SOx	PM10	PM2.5	CO2	CO2eq
Equipment	11.27	2.41	15.56	0.02	1.37	1.26	193	203
TOTAL	11	2	16	0.02	1.4	1.3	193	203

It was assumed the equipment would be operated inside the MRF building and would also include electrically operated conveyors, sorters, and screens.

Equipment Exhaust Emissions

				Daily Emissions (lbs per day)						Total Emissions (metric tons)	
Type	Number	Hours per Day	Numbers of Days	CO	ROG	NOx	SOx	PM10	PM2.5	CO2	CO2eq
Loader	5	8	260	11.27	2.41	15.56	0.02	1.37	1.26	193.26	203.43
			Total	11.27	2.41	15.56	0.02	1.37	1.26	193.26	203.43

It was assumed equipment would be operated 260 days per year.

Emission Factors

			Emission Factors (g/bhp-hr)[1]							Emission Factors (lb/hr)						
Type	Horsepower	Load Factor	CO	ROG	NOx	SOx	PM10	PM2.5[2]	CO2	CO	ROG	NOx	SOx	PM10	PM2.5	CO2
Tractors/Loaders/Backhoes	108	0.55	2.151	0.460	2.970	0.004	0.261	0.240	312.846	0.28	0.06	0.39	0.00	0.03	0.03	40.97

1. Emission factors from the URBEMIS2007 for Windows Users' Guide, Appendix I – Construction Equipment Emission Factors, for the year 2012.

2. SCAQMD *Particulate Matter (PM) 2.5 Significance Thresholds and Calculation Methodology,* Appendix A, for offroad diesel combustion sources, 92% of the PM10 would be PM2.5.

ALRRF IS/ND - Operation Offsite Truck Emissions

Table 1. Offsite Vehicle Emission Summary

	GHG Emissions (metric tons/yr)				Criteria Pollutant Emissions (lb/day)					
Emission Source	**CO_2**	**CH_4**	**N_2O**	**CO_2eq**	**ROG**	**CO**	**NOx**	**SOx**	**PM_{10}**	**$PM_{2.5}$**
Existing Truck Trips	7,939	0.012	0.011	7,943	9.49	43.61	183.84	0.33	6.37	5.13
Proposed Project Offsite Vehicle Trips	5,958	0.008	0.008	5,960	6.72	35.89	129.51	0.25	4.63	3.67
Net Change in Emissions with Proposed Project	-1,982	-0.003	-0.003	-1,983	-3	-8	-54	-0.08	-2	-1.5

Annual GHG emissions calculated assuming truck trips occur 5 days per week, 52 weeks per year.

Table 2. Proposed Project Vehicle Emissions

	GHG Emissions (metric tons/yr)				Criteria Pollutant Emissions (lb/day)					
Emission Source	**CO_2**	**CH_4**	**N_2O**	**CO_2eq**	**ROG**	**CO**	**NOx**	**SOx**	**PM_{10}**	**$PM_{2.5}$**
RAC (High Food Content and Green Material Composting)										
1/3 from Davis Street Transfer Station	62	0.0002	0.0002	62	0.15	0.70	2.95	0.01	0.10	0.08
1/3 from direct haul of select routes	311	0.0004	0.0004	311	0.36	1.64	6.90	0.01	0.24	0.19
1/3 from other sources (in or out of Alameda County with no origin restrictions)	288	0.0004	0.0004	288	0.33	1.52	6.39	0.01	0.22	0.18
Green Material ASP Composting										
50% from Davis Street Transfer Station	184	0.0006	0.0005	184	0.45	2.05	8.66	0.02	0.30	0.24
50% from routes and or other sources with no origin restrictions	1,102	0.0012	0.0012	1,102	1.01	4.62	19.49	0.04	0.68	0.54
Dry Waste MRF, Organic/Wet MRF, Single Stream Line										
Dry Waste MRF (in service area)	1,123	0.0016	0.0015	1,123	1.29	5.92	24.95	0.04	0.87	0.70
Dry Waste MRF (out of service area)	468	0.0007	0.0006	468	0.54	2.47	10.40	0.02	0.36	0.29
Single-stream MRF (out of service area)	70	0.0001	0.0001	70	0.08	0.37	1.56	0.00	0.05	0.04
Wet MRF (in service area)	749	0.0011	0.0010	749	0.86	3.95	16.63	0.03	0.58	0.46
Wet MRF (out of service area)	1,404	0.0020	0.0019	1,404	1.61	7.40	31.19	0.06	1.08	0.87
New Employess										
RAC/ASP Composting	15.88	0.0000	0.0000	16	0.00	0.42	0.03	0.00	0.01	0.01
MRF Complex	176.25	0.0000	0.0000	176	0.05	4.67	0.35	0.01	0.13	0.06
Office/Administration Building	6.35	0.0000	0.0000	6	0.00	0.17	0.01	0.00	0.00	0.00

Table 3. Existing Truck Emissions

	GHG Emissions (metric tons/yr)				Criteria Pollutant Emissions (lb/day)					
Emission Source	**CO_2**	**CH_4**	**N_2O**	**CO_2eq**	**ROG**	**CO**	**NOx**	**SOx**	**PM_{10}**	**$PM_{2.5}$**
RAC (High Food Content and Green Material Composting)										
1/3 from Davis Street Transfer Station	123	0.0004	0.0003	123	0.30	1.37	5.79	0.01	0.20	0.16
1/3 from direct haul of select routes	311	0.0004	0.0004	311	0.36	1.64	6.90	0.01	0.24	0.19
1/3 from other sources (in or out of Alameda County with no origin restrictions)	269	0.0004	0.0004	269	0.31	1.42	5.97	0.01	0.21	0.17
Green Material ASP Composting										
50% from Davis Street Transfer Station	361	0.0011	0.0010	361	0.88	4.04	17.04	0.03	0.59	0.48
50% from routes and or other sources with no origin restrictions	1,028	0.0012	0.0011	1,029	0.94	4.32	18.19	0.03	0.63	0.51
Dry Waste MRF, Organic/Wet MRF, Single Stream Line										
Dry Waste MRF (in service area)	1,123	0.0016	0.0015	1,123	1.29	5.92	24.95	0.04	0.87	0.70
Dry Waste MRF (out of service area)	1,099	0.0016	0.0015	1,100	1.26	5.79	24.43	0.04	0.85	0.68
Single-stream MRF (out of service area)	678	0.0010	0.0009	679	0.78	3.58	15.07	0.03	0.52	0.42
Wet MRF (in service area)	749	0.0011	0.0010	749	0.86	3.95	16.63	0.03	0.58	0.46
Wet MRF (out of service area)	2,199	0.0031	0.0029	2,200	2.52	11.59	48.86	0.09	1.69	1.36

Annual GHG emissions calculated assuming truck trips occur 5 days per week, 52 weeks per year.

Table 4. Altamont Vehicle Trip - Offsite Parameters

Truck Trip Type	Daily Material Tonnage	Truck Size (tons)	Truck Type	Truck Fuel Type	Truck Fuel Efficiency (miles per gallon)	Number of Truck Trips	Existing Miles per Trip (average one-way)	Proposed Project Miles per Trip (average one-way)	Assumptions
RAC (High Food Content and Green Material Composting)									
1/3 from Davis Street Transfer Station	85	18	Transfer	Diesel	5.88	5	59	30	
1/3 from direct haul of select routes	83	4	Route/Roll-off	Diesel	2.77	21	16	16	
1/3 from other sources (in or out of Alameda County with no origin restrictions)	82	4	Route/Roll-off	Diesel	2.77	21	14	15	
Green Material ASP Composting									
50% from Davis Street Transfer Station	250	18	Transfer	Diesel	5.88	14	59	30	Same as RAC material
50% from routes and or other sources with no origin restrictions	250	4	Route	Diesel	2.20	63	14	15	Same as RAC material
Dry Waste MRF, Organic/Wet MRF, Single Stream Line									
Dry Waste MRF (in service area)	300	4	Route/Roll-off	Diesel	2.77	75	16	16	Assume C&D material may go to Altamont or Vasco Road.
Dry Waste MRF (out of service area)	100	4	Route/Roll-off	Diesel	2.77	25	47	20	Based on CalRecycles Commercial Waste Stream characterization for Tracy (1999), approximately 1.7% of their waste stream was C&D. Using 2006 tonnage from Disposal Reporting System (CalRecycle), Tracy has the potential to generate 1,500 tons per year of C&D. For air emission purposes, assume C&D material not going to local recyclers is disposed of at Foothill Sanitary Landfill.
Single-stream MRF (out of service area)	100	4	Route/Roll-off	Diesel	2.77	25	29	3	Livermore currently transfers single-stream to Davis Street.
Wet MRF (in service area)	200	4	Route/Roll-off	Diesel	2.77	50	16	16	Assume material currently goes to VASCO Road.
Wet MRF (out of service area)	200	4	Route/Roll-off	Diesel	2.77	50	47	30	
New Employees									
Facility	**Number of Employees**		**Vehicle Type**	**Fuel Type**	**Fuel Efficiency (miles per gallon)**	**Number of Trips**	**Miles per Roundtrip**		**Assumptions**
RAC/ASP Composting	10		Passenger Vehicle	Gasoline	28	10	20		Assumes one-way trip distance of 10 miles based on the "Commercial Work Based" trip distance in URBEMIS2007 for industrial land use type.
MRF Complex	111		Passenger Vehicle	Gasoline	28	111	20		
Office/Administration Building	4		Passenger Vehicle	Gasoline	28	4	20		

Sources:
Alameda County Integrated Waste Management Plan, Countywide Element, February 26, 2003
20 August 2010 Conference Call with WMAC Davis Street Team.

Addresses used for determining mileage:
(1) WMAC Davis Street Transfer Station: 2615 Davis Street, San Leandro, CA 94577
(2) Recology Grover Environmental Products: 3909 Gaffery Road, Vernalis, CA 95385
(3) Amador Valley Industries: 11875 Dublin Boulevard, Suite D167 Dublín, CA 94568 (corporate office)
(4) Republic Vasco Road Landfill: 4001 North Vasco Road, Livermore, CA
(5) WMAC Altamont Landfill: 10840 Altamont Pass Road, Livermore, CA 94551
(6) Pleasanton Transfer Station: 3110 Busch Rd., Pleasanton, CA
(7) Livermore Sanitation: 7000 National Drive, Livermore, CA 94550
(8) Tracy MRF: 30703 South MacArthur Drive, Tracy, CA 95377
(9) Foothill Sanitary Landfill: 6484 N. Waverly Road, Linden, CA

ALRRF IS/ND - Operation Onsite Truck Emissions

Table 1. Onsite Vehicle Emission Summary

	GHG Emissions (metric tons/yr)				Criteria Pollutant Emissions (lb/day)							
Emission Source	CO_2	CH_4	N_2O	CO_2eq	ROG	CO	NOx	SOx	Exhaust PM_{10}	Fugitive PM_{10}	Exhaust $PM_{2.5}$	Fugitive $PM_{2.5}$
Proposed Project Onsite Vehicle Trips	1,363	0.004	0.003	1,364	4.77	15.09	41.33	0.08	2.23	224.76	1.89	29.79

Table 2. Proposed Project Vehicle Emissions

	GHG Emissions (metric tons/yr)				Criteria Pollutant Emissions (lb/day)							
Emission Source	CO_2	CH_4	N_2O	CO_2eq	ROG	CO	NOx	SOx	Exhaust PM_{10}	Fugitive PM_{10}	Exhaust $PM_{2.5}$	Fugitive $PM_{2.5}$
RAC (High Food Content and Green Material Composting)												
1/3 from Davis Street Transfer Station	8	0.0000	0.0000	8	0.06	0.19	0.56	0.00	0.02	2.36	0.02	0.30
1/3 from direct haul of select routes	78	0.0001	0.0001	78	0.28	0.81	2.46	0.00	0.10	10.36	0.08	1.31
1/3 from other sources (in or out of Alameda County with no origin restrictions)	77	0.0001	0.0001	77	0.28	0.80	2.43	0.00	0.10	10.24	0.08	1.29
Green Material ASP Composting												
50% from Davis Street Transfer Station	24	0.0001	0.0001	24	0.19	0.54	1.65	0.00	0.07	6.94	0.06	0.88
50% from routes and or other sources with no origin restrictions	294	0.0003	0.0003	294	0.85	2.45	7.42	0.01	0.29	31.21	0.25	3.94
Dry Waste MRF, Organic/Wet MRF, Single Stream Line												
Dry Waste MRF (in service area)	281	0.0004	0.0004	281	1.02	2.94	8.90	0.02	0.35	37.46	0.30	4.73
Dry Waste MRF (out of service area)	94	0.0001	0.0001	94	0.34	0.98	2.97	0.01	0.12	12.49	0.10	1.58
Single-stream MRF (out of service area)	94	0.0001	0.0001	94	0.34	0.98	2.97	0.01	0.12	12.49	0.10	1.58
Wet MRF (in service area)	187	0.0003	0.0002	187	0.68	1.96	5.93	0.01	0.24	24.97	0.20	3.15
Wet MRF (out of service area)	187	0.0003	0.0002	187	0.68	1.96	5.93	0.01	0.24	24.97	0.20	3.15
New Employess												
RAC/ASP Composting	3	0.0002	0.0001	3	0.00	0.12	0.01	0.00	0.05	4.10	0.04	0.63
MRF Complex	35	0.0017	0.0009	36	0.03	1.30	0.09	0.00	0.52	45.54	0.44	7.00
Office/Administration Building	1	0.0001	0.0000	1	0.00	0.05	0.00	0.00	0.02	1.64	0.02	0.25

Altamont Vehicle Trip - Onsite Parameters

Truck Trip Type	Daily Material Tonnage	Truck Fuel Type	Truck Fuel Efficiency (miles per gallon)	Number of Truck Trips	Proposed Project Miles Traveled Onsite on Paved Roads	Proposed Project Miles Traveled Onsite on Unpaved Roads
RAC (High Food Content and Green Material Composting)						
1/3 from Davis Street Transfer Station	85	Diesel	5.88	5	3	1
1/3 from direct haul of select routes	83	Diesel	2.77	21	3	1
1/3 from other sources (in or out of Alameda County with no origin restrictions)	82	Diesel	2.77	21	3	1
Green Material ASP Composting						
50% from Davis Street Transfer Station	250	Diesel	5.88	14	3	1
50% from routes and or other sources with no origin restrictions	250	Diesel	2.20	63	3	1
Dry Waste MRF, Organic/Wet MRF, Single Stream Line						
Dry Waste MRF (in service area)	300	Diesel	2.77	75	3	1
Dry Waste MRF (out of service area)	100	Diesel	2.77	25	3	1
Single-stream MRF (out of service area)	100	Diesel	2.77	25	3	1
Wet MRF (in service area)	200	Diesel	2.77	50	3	1
Wet MRF (out of service area)	200	Diesel	2.77	50	3	1
New Employees						
Facility	**Number of Employees**	**Fuel Type**	**Fuel Efficiency (miles per gallon)**	**Number of Trips**	**Proposed Project Miles Traveled Onsite on Paved Roads**	**Proposed Project Miles Traveled Onsite on Unpaved Roads**
RAC/ASP Composting	10	Gasoline	28	10	3	1
MRF Complex	111	Gasoline	28	111	3	1
Office/Administration Building	4	Gasoline	28	4	3	1

ALRRF IS/ND - Operation Onsite Truck Emissions

Vehicle Emission Factors

Table 5. Greenhouse Gas Emission Factors

Vehicle Type	Vehicle Emission Factors		
	CO_2 (kg/gallon)	CH_4 (g/mile)	N_2O (g/mile)
Diesel Truck	9.96	0.0051	0.005
Gasoline Vehicle	8.55	0.0147	0.008

Emission factors are from the California Air Resources Board Regulation for the Mandatory Reporting of GHG Emissions, Appendix A, Table 7 and 8.

Table 6. Global Warming Potentials

CH_4	21
N_2O	310

Reference: Intergovernmental Panel on Climate Change, Second Assessment Report (SAR) (IPCC, 1996).

Table 7. Criteria Pollutant Emission Factors

Vehicle	Vehicle Type in EMFAC2007	Emission Factors (lb/mile)					
		ROG	CO	NOx	SOx	PM10	PM2.5
Offsite Trucks (FEL, REL, roll-off, side loader, one pass, dump, cement)	Heavy-Heavy Duty Diesel Truck	0.0011	0.0049	0.0208	0.00004	0.0007	0.0006
Onsite Trucks (FEL, REL, roll-off, side loader, one pass, dump, cement)	Heavy-Heavy Duty Diesel Truck	0.0034	0.0098	0.0297	0.0001	0.0012	0.0010
Pickup	Light-Duty Truck	0.0001	0.0035	0.0003	0.0000	0.0001	0.0001
Onsite Passenger Vehicle	Light-Duty Auto	0.0001	0.0029	0.0002	0.0000	0.0001	0.0000
Offsite Passenger Vehicle	Light-Duty Auto	0.0000	0.0021	0.0002	0.00001	0.0001	0.0000
Vehicle	**Vehicle Type in EMFAC2007**	**Emission Factors (g/mile)**					
		ROG	**CO**	**NOx**	**SOx**	**PM10**	**PM2.5**
Offsite Trucks (FEL, REL, roll-off, side loader, one pass, dump, cement)	Heavy-Heavy Duty Diesel Truck	0.487	2.237	9.431	0.017	0.327	0.263
Onsite Trucks (FEL, REL, roll-off, side loader, one pass, dump, cement)	Heavy-Heavy Duty Diesel Truck	1.549	4.447	13.459	0.025	0.535	0.454
Pickup	Light-Duty Truck	0.033	1.6	0.138	0.007	0.04	0.025
Onsite Passenger Vehicle	Light-Duty Auto	0.027	1.328	0.097	0.005	0.037	0.022
Offsite Passenger Vehicle	Light-Duty Auto	0.01	0.954	0.071	0.003	0.027	0.012

EFs from the California Air Resources Board's EMFAC 2007 model for Alameda County. It was assumed that the average offsite vehicle speed would be 35 mph and onsite vehicle speed would be 15 mph. The vehicles are assumed to be model year 2000 or newer.

Calculation of Paved Road Fugitive Emission Factors

Offsite Paved Roads

Paved Roads emission factor from AP-42, Section 13.2.1: P *aved Roads* (January 2011)

$E = k(sL)^{0.91} \times (W)^{1.02}$

where:	PM10	PM2.5	
k =	0.0022	0.00054	particle size multiplier, lb/VMT [Table 13.2-1.1]
sL =	0.06	0.06	road surface silt loading (g/m^2) [Table 13.2.1-3, for Ubiquitous Baseline Roadway with ADT 5,000 - 10,000]
W =	2.2	2.2	tons
$E_{(PM10/2.5)}$=	0.0004	0.00009	lb/mile

Onsite Paved Roads

Paved Roads emission factor from AP-42, Section 13.2.1: P *aved Roads* (January 2011)

$E = k(sL)^{0.91} \times (W)^{1.02}$

where:	PM10	PM2.5	
k =	0.0022	0.00054	particle size multiplier, lb/VMT [Table 13.2-1.1]
sL =	2	2	road surface silt loading (g/m^2) [ALRRF Application # 14814 particulate matter calculations , 2008]
W =	7.0	7.0	average truck weight, tons [weighted average of 18 ton and 4 ton trucks]
$E_{(PM10/2.5)}$=	0.0301	0.00738	lb/mile

Calculation of Unpaved Road Fugitive Emission Factors

PM10

Emission Factor [lb/mi] = 1.5 x (silt content [%] / 12)$^{0.9}$ x (average vehicle weight [tons] / 3)$^{0.45\ x}$ (365-P)/365

Reference: AP-42, Section 13.2.2, November 2006

Parameter	PM10
Average Vehicle Weight (tons)	7.0
Silt Content (%)	6.4
P, Number of days with Precip >0.01 inches	58
Emission Factor (Uncontrolled, lb/mile)	1.05
Reduction from Watering 3 times/Day	61%
Controlled Emission Factor (lb/mile)	0.41

Reference for Silt Content: ALRFF Application # 14814 particulate matter calculations, 2008

Reference for Precipitation: WRCC, Alameda, CA, http://www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca4997

Reference for Control Efficiency: URBEMIS2007, assumed watering 3 times per day as part of project design features.

PM2.5

Emission Factor [lb/mi] = 0.15 x (silt content [%] / 12)$^{0.9}$ x (average vehicle weight [tons] / 3)$^{0.45\ x}$ (365-P)/365

Reference: AP-42, Section 13.2.2, November 2006

Parameter	$PM_{2.5}$
Average Vehicle Weight (tons)	7.0
Silt Content (%)	6.4
P, Number of days with Precip >0.01 inches	58
Emission Factor (Uncontrolled, lb/mile)	0.10
Reduction from Watering 3 times/Day	61%
Controlled Emission Factor (lb/mile)	0.04

Reference for Silt Content: ALRFF Application # 14814 particulate matter calculations, 2008

Reference for Precipitation: WRCC, Alameda, CA, http://www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca4997

Reference for Control Efficiency: URBEMIS2007, assumed watering 3 times per day as part of project design features.

ALRRF IS/ND - Operation WARM Summary

GHG Emissions Analysis - Summary Report

Waste Reduction Model (WARM), Version 11, August 2010

Material	Baseline Scenario					Alternative Scenario					Change (Alt - Baseline) MTCO2E
	Tons Recycled	Tons Landfilled	Tons Combusted	Tons Composted	Total MTCO2E	Tons Recycled	Tons Landfilled	Tons Combusted	Tons Composted	Total MTCO2E	
Dimensional Lumber	200	0	0	N/A	-492	200	0	0	N/A	-492	0
Mixed Recyclables	100	40	0	N/A	-312	140	0	0	N/A	-403	-91
Mixed Organics	N/A	200	0	0	8	N/A	0	0	200	-40	-48
Mixed MSW	N/A	160	0	N/A	8	N/A	160	0	N/A	8	0
Asphalt Concrete	200	0	N/A	N/A	-17	200	0	N/A	N/A	-17	0

$MTCO_2E$ = metric tons of carbon dioxide equivalent

It was assumed construction and demolition debris would 50% wood and 50% concrete.

Emissions are in units of metric tons per day.

Appendix C
CNDDB Species List

California Department of Fish and Game
Natural Diversity Database
Selected Elements by Element Code - Portrait
Byron Hot Springs, Altamont, Clifton Court Forebay, Midway Quads

	Element Code	Scientific Name/Common Name	Federal Status	State Status	GRank	SRank	CDFG or CNPS
1	AAAAA01180	*Ambystoma californiense* California tiger salamander	Threatened	Threatened	G2G3	S2S3	SC
2	AAABF02020	*Spea hammondii* western spadefoot			G3	S3	SC
3	AAABH01022	*Rana draytonii* California red-legged frog	Threatened		G4T2T3	S2S3	SC
4	AAABH01050	*Rana boylii* foothill yellow-legged frog			G3	S2S3	SC
5	ABNKC06010	*Elanus leucurus* white-tailed kite			G5	S3	
6	ABNKC11010	*Circus cyaneus* northern harrier			G5	S3	SC
7	ABNKC12040	*Accipiter cooperii* Cooper's hawk			G5	S3	
8	ABNKC19070	*Buteo swainsoni* Swainson's hawk		Threatened	G5	S2	
9	ABNKC19120	*Buteo regalis* ferruginous hawk			G4	S3S4	
10	ABNKC22010	*Aquila chrysaetos* golden eagle			G5	S3	
11	ABNKD06090	*Falco mexicanus* prairie falcon			G5	S3	
12	ABNSB10010	*Athene cunicularia* burrowing owl			G4	S2	SC
13	ABPAT02011	*Eremophila alpestris actia* California horned lark			G5T3Q	S3	
14	ABPBR01030	*Lanius ludovicianus* loggerhead shrike			G4	S4	SC
15	ABPBXB0020	*Agelaius tricolor* tricolored blackbird			G2G3	S2	SC
16	AFCHB01040	*Hypomesus transpacificus* Delta smelt	Threatened	Endangered	G1	S1	
17	AMACC05030	*Lasiurus cinereus* hoary bat			G5	S4?	
18	AMACC10010	*Antrozous pallidus* pallid bat			G5	S3	SC
19	AMAFD01061	*Perognathus inornatus inornatus* San Joaquin pocket mouse			G4T2T3	S2S3	
20	AMAJA03041	*Vulpes macrotis mutica* San Joaquin kit fox	Endangered	Threatened	G4T2T3	S2S3	
21	AMAJF04010	*Taxidea taxus* American badger			G5	S4	SC
22	ARAAD02030	*Emys marmorata* western pond turtle			G3G4	S3	SC
23	ARACC01012	*Anniella pulchra pulchra* silvery legless lizard			G3G4T3T4Q	S3	SC

	Element Code	Scientific Name/Common Name	Federal Status	State Status	GRank	SRank	CDFG or CNPS
24	ARACF12100	*Phrynosoma blainvillii* coast horned lizard			G4G5	S3S4	SC
25	ARADB21021	*Masticophis flagellum ruddocki* San Joaquin whipsnake			G5T2T3	S2?	SC
26	ARADB21031	*Masticophis lateralis euryxanthus* Alameda whipsnake	Threatened	Threatened	G4T2	S2	
27	CTT36210CA	*Valley Sink Scrub*			G1	S1.1	
28	CTT42110CA	*Valley Needlegrass Grassland*			G3	S3.1	
29	CTT44120CA	*Northern Claypan Vernal Pool*			G1	S1.1	
30	CTT45310CA	*Alkali Meadow*			G3	S2.1	
31	CTT45320CA	*Alkali Seep*			G3	S2.1	
32	CTT52310CA	*Cismontane Alkali Marsh*			G1	S1.1	
33	CTT62100CA	*Sycamore Alluvial Woodland*			G1	S1.1	
34	ICBRA03020	*Branchinecta longiantenna* longhorn fairy shrimp	Endangered		G1	S1	
35	ICBRA03030	*Branchinecta lynchi* vernal pool fairy shrimp	Threatened		G3	S2S3	
36	ICBRA03150	*Branchinecta mesovallensis* midvalley fairy shrimp			G2	S2	
37	IICOL38030	*Hygrotus curvipes* curved-foot hygrotus diving beetle			G1	S1	
38	IICOL48011	*Desmocerus californicus dimorphus* valley elderberry longhorn beetle	Threatened		G3T2	S2	
39	PDAPI19030	*Lilaeopsis masonii* Mason's lilaeopsis		Rare	G2	S2	1B.1
40	PDAST11061	*Balsamorhiza macrolepis var. macrolepis* big-scale balsamroot			G3G4T2	S2	1B.2
41	PDAST1C011	*Blepharizonia plumosa* big tarplant			G1	S1	1B.1
42	PDAST4M020	*Helianthella castanea* Diablo helianthella			G2	S2	1B.2
43	PDAST4R0P1	*Centromadia parryi ssp. congdonii* Congdon's tarplant			G4T2	S2	1B.2
44	PDAST4R0V0	*Deinandra bacigalupii* Livermore tarplant			G1	S1.2	1B.2
45	PDAST650E0	*Madia radiata* showy golden madia			G2	S2.1	1B.1
46	PDAST8H060	*Senecio aphanactis* chaparral ragwort			G3?	S1.2	2.2
47	PDBOR01050	*Amsinckia grandiflora* large-flowered fiddleneck	Endangered	Endangered	G1	S1	1B.1
48	PDBOR01070	*Amsinckia lunaris* bent-flowered fiddleneck			G2?	S2	1B.2
49	PDBOR0V0B0	*Plagiobothrys glaber* hairless popcorn-flower			GH	SH	1A

	Element Code	Scientific Name/Common Name	Federal Status	State Status	GRank	SRank	CDFG or CNPS
50	PDBRA0M0E0	*Caulanthus lemmonii* Lemmon's jewel-flower			G2	S2.2	1B.2
51	PDBRA2R010	*Tropidocarpum capparideum* caper-fruited tropidocarpum			G1	S1.1	1B.1
52	PDCHE040B0	*Atriplex cordulata* heartscale			G2?	S2.2?	1B.2
53	PDCHE041F3	*Atriplex joaquiniana* San Joaquin spearscale			G2	S2	1B.2
54	PDCHE042L0	*Atriplex depressa* brittlescale			G2Q	S2.2	1B.2
55	PDFAB0F8R1	*Astragalus tener var. tener* alkali milk-vetch			G1T1	S1.1	1B.2
56	PDFAB400R5	*Trifolium hydrophilum* saline clover			G2?	S2.2?	1B.2
57	PDGER01070	*California macrophylla* round-leaved filaree			G2	S2	1B.1
58	PDMAL0H0R3	*Hibiscus lasiocarpos var. occidentalis* woolly rose-mallow			G4	S2.2	2.2
59	PDPAP0A0D0	*Eschscholzia rhombipetala* diamond-petaled California poppy			G1	S1.1	1B.1
60	PDRAN0B0A2	*Delphinium californicum ssp. interius* Hospital Canyon larkspur			G3T2?	S2?	1B.2
61	PDRAN0B1J0	*Delphinium recurvatum* recurved larkspur			G2	S2.2	1B.2
62	PDSCR0J0D1	*Cordylanthus mollis ssp. hispidus* hispid bird's-beak			G2T2	S2.1	1B.1
63	PDSCR0J0J0	*Cordylanthus palmatus* palmate-bracted bird's-beak	Endangered	Endangered	G1	S1.1	1B.1
64	PDSCR10050	*Limosella subulata* Delta mudwort			G4?Q	S2.1	2.1
65	PMLIL0V010	*Fritillaria agrestis* stinkbells			G3	S3.2	4.2

Appendix D
Biological Reconnaissance Photos, Site Visit April 12, 2011

#1. RAC/MRF proposed site view from eastern edge of project site, view west.

#2. Representative photo of the Terraced hill slopes on the west north and east sides of the RAC/MRF site, view north.

#3. Drainage pipe on the terraced slope adjacent to RAC/MRF site with tracks of raccoon.

#4. Potential badger den on the northern edge of the RAC/MRF site.

#5. Potential badger den adjacent to the RAC/MRF site. Approximate dimensions are 6 by 6 inches.

#6. Proposed OMMA site within current landfill activities area, view north.

#7. Eastern edge of the proposed OMMA site, view north.