the discretionary actions involved in the project. List and explain the requirements for permits or approvals from federal, state, and local agencies. Describe all major project features, including modifications to existing and any off-site improvements associated with the proposed project. Provide sufficient graphics and tables to provide a complete description of all project features. Describe the phasing plan for the project and the affect the project would have on the life of the landfill operation. Describe whether or not the project would impact MCAS flight safety and patterns

D. History of Project Changes:

Chronicle the physical changes that have been made to the project in response to environmental concerns raised during the City's review of the project.

II. Environmental Issues

The draft EIR must include a complete discussion of the existing conditions, impact analysis, significance, and mitigation for all the environmental issue sections. The EIR must represent the independent analysis of the Lead Agency; and all CEQA impact analyses must be based on the enclosed City of San Diego's "Significance Determination Guidelines." All requested technical reports must be included as the appendices to the EIR and summarized in the text of the document.

The potential for significant environmental impacts must be thoroughly analyzed and mitigation measures identified that would avoid or substantially lessen any such significant impacts. Below are key environmental issues areas that have been identified for this project. Within each issue area specific issue statements must be addressed individually. Discussion of each issue statement should include an explanation of the existing site conditions, impact analysis, significance determination, and appropriate mitigation. The impact analysis should address potential direct, indirect, and cumulative impacts that could result from implementation of the proposed project and its alternatives.

Visual Effects and Neighborhood Character

Issue 1: Would the proposed project substantially change the natural topography or other ground surface relief features?

Issue 2: Would the proposed project result in the loss, covering, or modification of any unique physical feature such as a natural canyon or hillside slope in excess of 25 percent gradient?

Issue 3: Would the proposed project affect the visual quality of the site and surrounding area, particularly with respect to views from any major roadways and public viewing areas?

Issue 4: Would the visual and landform elements be reclaimed in the final closure plans for the landfill?

The EIR should provide an evaluation of the impacts on the natural and manufactured landforms within the project boundary due to the proposed increased height of the landfill. Include the height of the proposed manufactured slopes.

The EIR should contain a visual analysis of any potential impacts to visual quality resulting from landform alterations that would be viewed by the public, such as views from State Route 52 and Interstate 805. Include visual simulations of views of the landfill from various key viewing points.

Describe the landfill Preliminary Closure and Postclosure Maintenance Plan. Discuss how this project would affect the landfill closure and extend the proposed closure date, the projected appearance after the closure plan has been implemented, including the closure plan's revegetation of the site.

Air Quality

Issue 1: Would the project result in air emissions that would substantially deteriorate ambient air quality?

Issue 2: Would the project result in the exposure of sensitive receptors to substantial pollutant concentrations?

Issue 3: Would the project create objectionable odors?

Issue 4: Would the project create dust?

Issue 5: Would the project, when considered in combination with past, current, and future projects in San Clemente Canyon, result in cumulatively significant impacts on the air quality?

The EIR should describe the project's climatological setting within the San Diego air basin, and the air basin's current attainment levels for State and Federal Ambient Air Quality Standards. It should discuss potential stationary and non-stationary air emission sources related to the project including any potential impacts related to the trapping of methane gas generated by the landfill. Discuss other proposed projects in the San Clemente Canyon area or within the boundaries of the landfill may increase cumulative impacts regarding dust and odor generation .

The EIS should also address the creation of odors and dust from expansion of the landfill. Dust suppression measures that would avoid or lessen impacts to sensitive receptors should be included in this section of the document.

Biological Resources

Issue 1: Would the project result in a reduction in the number of any unique, rare, endangered, sensitive, or fully protected species of plants or animals?

Issue 2: Would the proposed project impact important habitat or result in interference with the movement of any resident or migratory fish or wildlife species?

Issue 3: Would the project affect the long-term conservation of biological resources? Would the project impact the Multi-Habitat Planning Area (MHPA)?

A vegetation map must be included to delineate existing habitats and adjacent areas supporting sensitive species. A vegetation map with the project superimposed must also be provided. The EIR must discuss direct, indirect, and cumulative impacts related to loss of habitat, elimination of sensitive species, and disruption of foraging or breeding habitats. Significant direct and indirect impacts must be clearly identified and quantified.

Provide a history regarding the mitigation of impacts at the site and describe the mitigation measures employed via revegetation and/or off-site acquisition. Provide a description of the closure plan and the resultant biological value of the site. A biological technical report must be prepared in conformance with the City of San Diego's Biology Guidelines. Summarize the biological survey report and the results of any focused surveys in the EIR.

Water Quality

Issue 1: Would the project result in an increase in impervious surfaces or a substantial alteration of on and offsite drainage patterns affecting the rate and volume of surface runoff?

Issue 2: Would the project result in an increase in pollutant discharges to receiving waters? Would the proposal discharge identified pollutants to an already impaired water body? Would the project result in discharges into surface or ground water, or in any alteration of surface or ground water quality, including, but not limited to temperature, dissolved oxygen, or turbidity?

Issue 3: Would the project, when considered in combination with past, current, and future projects in San Clemente Canyon, result in cumulatively significant impacts on the water quality of that watershed?

Issue 4: What short-term and long-term effects would the project have on local and regional water quality? What types of Best Management Practices (BMPS) would be incorporated into the project to preclude impacts to local and regional water quality?

Water Quality is affected by sedimentation caused by erosion, by urban run-off carrying contaminants, and by direct discharge of pollutants (point-source pollution). As land is developed or redeveloped, the impervious surfaces could send an increased volume of runoff containing oils, heavy metals, pesticides, fertilizers and other contaminants (non-source pollution) into associated watersheds. Sedimentation can impede stream flow. Degradation of water quality affects the environment and public health. In addition, oxygen availability is affected by sedimentation, and this can significantly influence aquatic systems. While compliance with the City's Stormwater Standards is generally considered to preclude water quality impacts, the unique nature of this project warrants a thorough evaluation of whether or not water quality impacts could occur in spite of such

compliance. The Storm Water Standards are available online at http://www.sannet.gov/development-services/news/newslist.shtml.

Discuss the project's effect on water quality within the project area and downstream. If the project requires treatment control BMPs, submit a Water Quality Technical Report consistent with the City's Storm water standards (adopted December 2002) and discuss how the landfill's National Pollutant Discharge Elimination System Permit would regulate discharges of sediment. The report should also describe the existing landfill liner, desilting basins and leachate collection system, and the adequacy of these facilities for the proposed expansion. The report must include, but not be limited to, any additional BMPs that would be implemented, BMP maintenance schedules and maintenance costs and the responsible party for future maintenance and associated costs. The report must also address water quality, by describing the types of pollutants that would be generated, and the pollutants to be captured and treated by the BMPs. The findings in this report must be reflected within this section of the EIR.

Hydrology

Issue 1: Would the project result in direct or cumulative impacts related to increased flooding and erosion?

Hydrology is defined as the science dealing with the properties, distribution, and circulation of surface water, groundwater, and atmospheric water. The slope and shape of the watershed, soil properties, recharge area, and relief features are all watershed characteristics that influence the quality of surface flows. The increase in the amount of impervious areas increases runoff. Although the landfill footprint would not increase, the project would add to the height of the side slopes, and therefore has the potential to affect runoff volumes, which in turn could potentially result in erosion and sedimentation downstream. Increased runoff could also impact biological communities by altering existing soil-plant-water relationships. The EIR should address the project's potential for impacting the hydrology within the project area and downstream in San Clemente Canyon, and recommend measures such as drainage design to reduce runoff volumes and velocities.

Mandatory Discussion Area

In accordance with CEQA Sections 15126.2 (c) and 15127, the EIS must include a discussion of any significant irreversible environmental changes that would result from the implementation of the proposed project.

Growth Inducement

Issue 1: Would this project increase the tonnage that can be accepted on a daily or annual basis at the Miramar Landfill and thereby indirectly foster increased growth?

Address the potential for growth inducement through implementation of the proposed project. Would implementation of the project lead to an increase in tonnages that can be

accepted on a daily or annual basis at the Miramar Landfill? Landfills in the region are currently accepting waste at or near the rates permitted in their Solid Waste Facility Permits. Discuss whether or not this proposal would alleviate the existing shortfall, and how the increasing tonnages of waste documented for the region as a result of growth would be accommodated.

Cumulative Impacts

Issue 1: What are the cumulative impacts of this project in conjunction with other approved or proposed projects on the base or within the immediate area? Include a discussion of the project's cumulative impacts on air quality, water quality, hydrology, and any other applicable environmental issue areas in this section.

When this project is considered with other past, present, and reasonably foreseeable projects in this vicinity, implementation could result in environmental changes that are individually limited but cumulatively considerable. Therefore, in accordance with Section 15130 of the CEQA Guidelines, discuss potential cumulative impacts in a separate section of the EIR.

Effects Not Found to be Significant

Provide a discussion of the environmental issue areas that were determined not to be significant and describe the reasons for this determination.

New Information/Project Amendments

If the project description changes, and/or supplementary information becomes available, the environmental document may need to be expanded to include additional issue areas. This must be determined in consultation with EAS staff.

Alternatives

The EIR should place major attention on reasonable alternatives that avoid or mitigate the project's significant impacts. These alternatives should be identified and discussed in detail and should address all significant impacts. The alternatives analysis should be conducted in sufficient graphic and narrative detail to clearly assess the relative level of impacts and feasibility. See Section 15364 of the CEQA Guidelines for the CEQA definition of "feasible." Preceding the detailed alternatives analysis, provide a section entitled "Alternatives Considered but Rejected." This section should describe any preliminary alternatives that were considered by not analyzed in detail. The reason for rejection of the alternatives should be explained.

A typical EIR alternative section includes a "Reduced Project Alternative." In this case, a large height increase was originally proposed by the Environmental Services Department, but rejected by the Marine Corps because of potential interference with aircraft. The landfill is operated on Marine Corps Air Station Miramar and land uses are

determined by the base. Activities within the lease area must not interfere with military flight operations. It was determined that a 20-foot increase in the height of the landfill could be allowed. Landfills are typically engineered in 20 foot lifts, and reducing the project below the proposed height increase would be technically challenging. The alternatives that must be considered include:

A. **No Project/Development under Existing Approvals:** This alternative should describe the continued use of the approved landfill without a height increase.

B. **Reduced Development Alternative:** This alternative should include implementation of the project's proposed height increase within only the Phase I or Phase II areas of the existing West Miramar Landfill.

If, through the environmental analysis process, other alternatives become apparent that would mitigate potential impacts, these options should be discussed with EAS staff prior to including them in the EIR.

Until a screen check EIR is submitted that addresses all of the above issues, the processing timeline for the project will be held in abeyance. Contact Marilyn Mirrasoul at 619-446-5380 if you have any questions.

Sincerely,

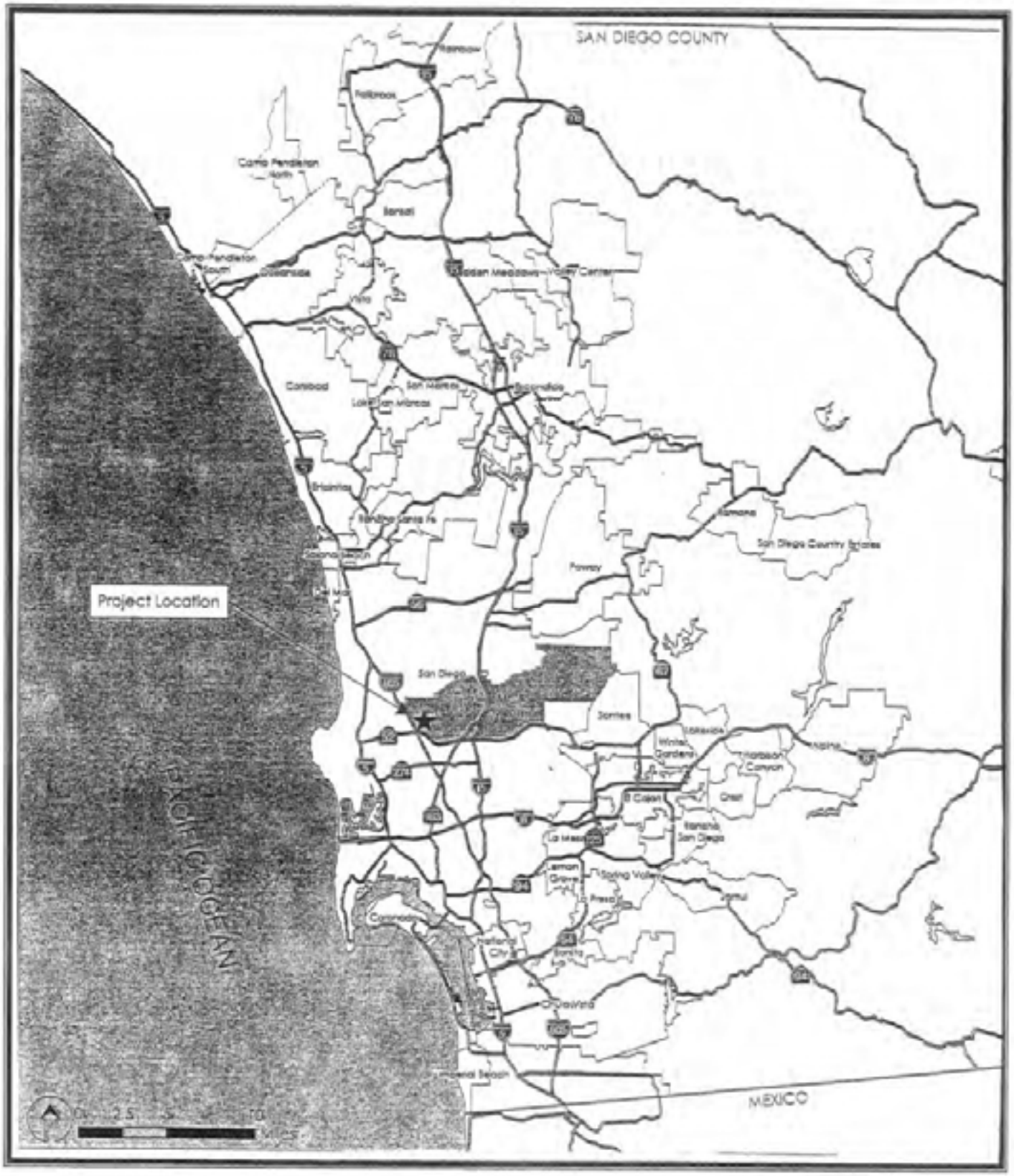
Robert J. Manis
Assistant Deputy Director
Development Services Department

RJM/mm

Attachments: Figure 1: Regional Vicinity Map
Figure 2: Vicinity Map

cc: Vicky Gallagher, Local Enforcement Agency
Bill Prinz, Local Enforcement Agency
Vena Lewis, Development Project Manager
Bill Mackey, LDR Permit Planner
Robert Negrete, LDR Engineering
Lesley Henegar, Long Range Planning
EAS Senior Planners
EAS File

JO: 372540

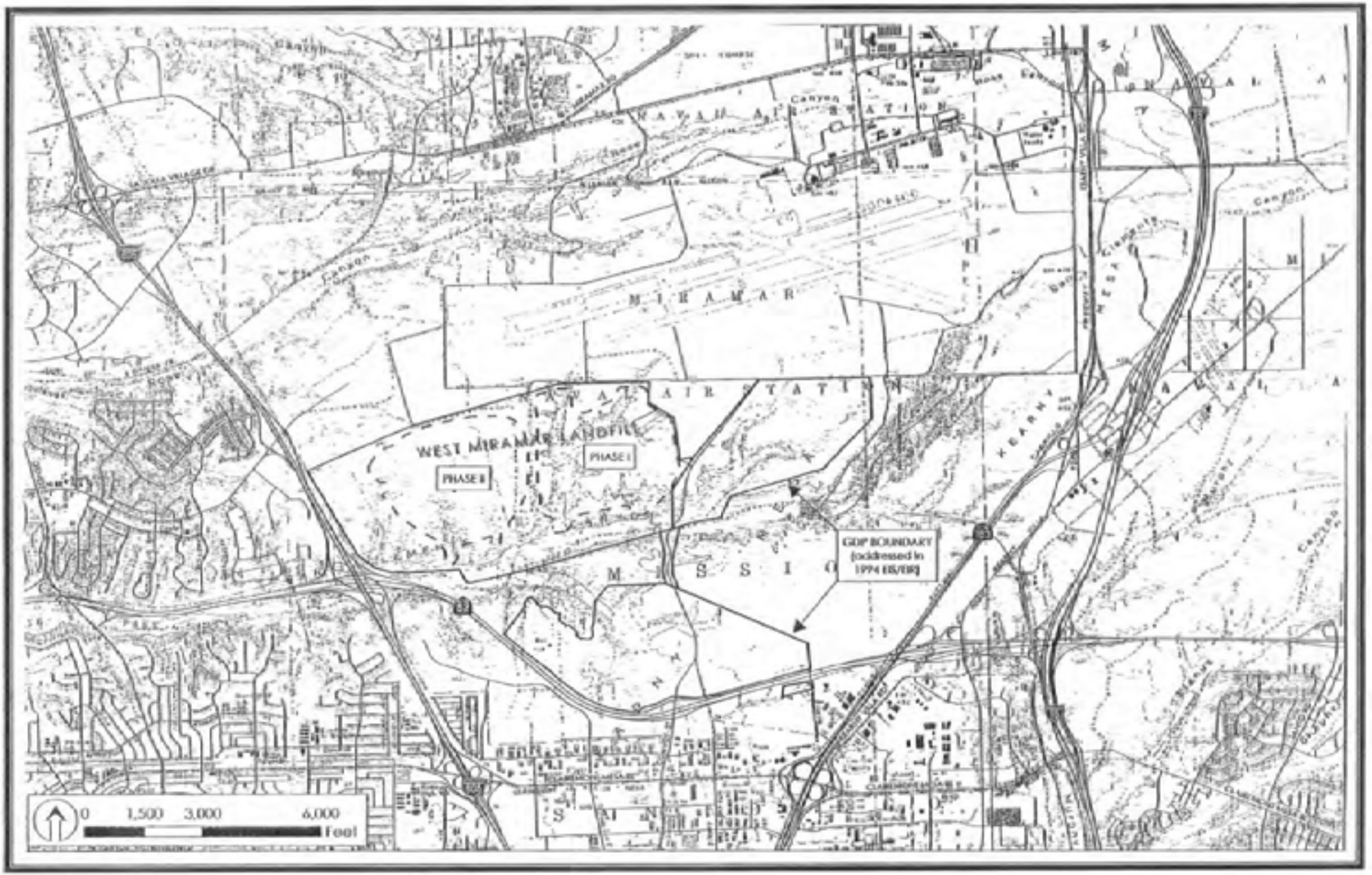


Regional Vicinity Map – Miramar Landfill Height Increase

Environmental Analysis Section Project No. 72422

CITY OF SAN DIEGO · DEVELOPMENT SERVICES

Figure 1



Vicinity Map – Miramar Landfill Height Increase
Environmental Analysis Section - Project No. 72422
CITY OF SAN DIEGO · DEVELOPMENT SERVICES

Figure
2

PUBLIC COMMENTS

SCOPING MEETING FOR
THE PROPOSED
WEST MIRAMAR LANDFILL
HEIGHT INCREASE

Attachment 2

California Integrated Waste Management Board

Margo Reid Brown, Chair
1001 I Street • Sacramento, California 95814 • (916) 341-6000
Mailing Address: P. O. Box 4025, Sacramento, CA 95812-4025
www.ciwmb.ca.gov

Dan Skopec
Secretary for Environmental Protection

Arnold Schwarzenegger
Governor

May 30, 2006

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MAY 3 0 2006
STATE CLEARING HOUSE

Ms Marilyn Mirrasoul, Associate Planner
City of San Diego
Land Development Review
Development Services
11222 First Avenue, MS 501
San Diego CA 92101-4155

Subject: **SCH No. 2006051004** – Notice of Preparation of a Draft Environmental Impact Report for the vertical expansion of West Miramar Sanitary Landfill, Solid Waste Facility Permit (SWFP) No. 37-AA-0020, San Diego County

Dear Ms Mirrasoul:

Board staff of the California Integrated Waste Management Board (CIWMB or Board) has reviewed the document cited above. Following is a description of the proposed project based on Board staff's understanding of the project as described in the Notice of Preparation. If the proposed Project Description below varies substantially from the project as understood by the Lead Agency; Board staff requests that any significant differences be clarified and included in the Draft Environmental Impact Report.

The City of San Diego, Development Services Department acting as Lead Agency is proposing a Solid Waste Facilities Permit revision to allow a 20-foot vertical increase in the height of the 239 acre Phase I and the 238 acre Phase II of the existing West Miramar Sanitary Landfill. No other changes to the existing landfill operations are proposed. The project would also require modification to the lease with the Department of Defense (Marine Corps Air Station Miramar) to allow the increase in elevation.

Current Entitlements and Proposed Entitlements

	Existing 2001 Permit	Proposed Change(s)
Permitted Area (in acres)	807 acres	
Disposal Footprint	470 acres	
Maximum Elevation	470 feet above MSL	490 feet above MSL
Permitted Capacity	56.5 million cubic yards	(to be discussed in DEIR)
Estimated Closure Date	2011	
Peak Tonnage	8,000 tons per day	
Peak Annual Tonnage	1.4 MM tons annually	
Peak Vehicle Count	2000	

BOARD STAFF'S COMMENTS

For clarity and convenience, questions and comments that Board staff is seeking a specific response to will be *italicized* so the reader can more easily locate and respond to them.

To assist Board staff's analysis and evaluation of this project, and aid in the determination of the adequacy of the Environmental Impact Report and related CEQA document(s), we request that the following comments and questions be addressed in the Draft Environmental Impact Report under preparation by the Lead Agency.

As required by Title 14 California Code of Regulations (14 CCR) Sections 15126.2, 15126.4 and 15126.6, Board staff requests that the Draft Environmental Impact Report contain detailed considerations and discussions of the significant effects, mitigation measures and alternatives for the proposed project including the alternative of "no project."

The Draft Environmental Impact Report must discuss procedures or provisions to indicate the ability of the facility to meet State Minimum Standards for environmental protection (see 27 CCR §§ 20005 et. seq. and 14 CCR §§ 17000 et. seq.). The following Internet link accesses checklists developed by Board staff as a guide to Lead Agencies in the preparation of Environmental Impact Reports for landfills: http://www.ciwmb.ca.gov/LEACentral/CEQA/disposal.htm.

Transportation/Circulation

In reviewing the Notice of Preparation as circulated, Transportation/Circulation was not listed as an Environmental Issue. Please consider revisiting this issue again. Board staff is of the understanding that there has been growth in the city and county of San Diego that may question assumptions and projections that were previously made.

Increased Design Capacity

The draft environmental document should discuss the design capacity of the landfill with the 20 foot vertical expansion. The draft environmental document should include a discussion of the leachate collection system and the landfill gas collection system and any impacts resulting from the addition weight resulting from the additional twenty feet of added waste.

Disposal Footprint

The existing Solid Waste Facilities Permit indicates that the permitted area for disposal is 470 acres, while the Notice of Preparation indicates Phase I and Phase II totaling 477 acres. *Please reconcile this difference in the draft environmental document.*

Estimated Closure Date and Peak Elevation

Please recalculate the new estimated closure date with the 20 foot vertical expansion. *Indicate what the peak elevation will be at closure – the height including final cover.*

Public Meetings

While public meetings, at this time are not required for Environmental Impact Reports and Negative Declarations, *Board staff highly recommends that a series of public meetings be held even if there is no organized group or groups opposed to the project.*

Alternative Daily Cover

Please reference any types of Alternative Daily Cover currently in use and discuss any new types of Alternative Daily Cover proposed for use.

Peak Tonnage

In the draft environmental document discuss in detail the amount of material in tons per day entering the landfill. Board staff would like to know, in addition to the material entering the landfill for disposal, the amount of material entering the landfill for beneficial purposes such as for Alternative Daily Cover; soil/contaminated soil for daily cover, material for recycling and etcetera. What will the peak daily tonnage entering the landfill for all material, excluding supplies and equipment?

Environmental Justice

Environmental Justice is not part of statue or regulations involving CEQA or the operation and evaluation of environmental documents relating to proposed projects that fall under the purview of the Board. Board members have taken a proactive stance towards environmental justice and expect that it be included and considered in projects coming before them for concurrence.

The Board has included Environmental Justice as a major component in their Strategic Plan. The Strategic Plan can be found on the Board website at http://www.ciwmb.ca.gov/BoardInfo/StrategicPlan/2001/.

In review of this Notice of Preparation, Board staff has not found any discussion or mention of environmental justice. In the draft environmental document, include a section or discussion on Environmental Justice as it pertains to this proposed project.

Acceptable Waste

Indicate in the draft environmental document the types of waste to be accepted. Discuss load checking/screening procedures. Describe procedures for handling hazardous waste and/or Household Hazardous Waste that may come in self-haul and commercial loads that are not detected through load checking. Describe policies and procedures for handling Universal Waste. Describe any "free dump" days when the peak permitted tonnage might be exceeded and the public might bring in items otherwise not normally acceptable, such as Household Hazardous Waste, e-waste, tires or batteries, as an example.

Maps and Drawings

In the draft environmental document provide accurate and to scale maps and drawings delineating the different areas of the landfill, indicating offices, waste management units, landfill gas flares/generators, processing and storage area, etcetera, indicate traffic flow and zoning and land use at least 1000 feet from the boundaries of the proposed landfill expansion.

Cumulative Impacts

It is important that the Draft Environmental Impact Report address the cumulative impacts resulting from the proposed project as well as those incremental impacts resulting from the proposed projects' implementation.

Land Use Compatibility

The draft environmental document should identify the proposed facility's surrounding land use with a description of the density of the occupancy for commercial and residential areas. The draft environmental document should be specific regarding the distance to the nearest sensitive receptor(s), both residential and commercial.

Mitigation Reporting or Monitoring Program

The Mitigation Reporting or Monitoring Program should indicate that agencies designated to enforce mitigation measures in the Mitigated Negative Declaration have reviewed the Mitigation Reporting or Monitoring Program and agreed that they have the authority and means to accomplish the designated enforcement responsibilities.

ROLE OF THE BOARD

The Board must ensure that Solid Waste Facilities meet required State Minimum Standards for the protection of public health, safety and the environment. Board staff reviews environmental documents for proposed, new or expanded Solid Waste Facilities for compliance with CEQA, enforcement of State Minimum Standards for Solid Waste Facilities, corrective action programs for facilities out of compliance with State Minimum Standards and research and development for special waste management issues.

California Environmental Quality Act Review

CEQA compliance is required for the establishment, expansion or change in operation(s) of a Solid Waste Facility requiring the issuance or revision of a Solid Waste Facilities Permit. In order for Board staff to ascertain that the Draft Environmental Impact Report is complete and adequate for our use in the Solid Waste Facilities Permit permitting process, the proposed project should be described in sufficient detail and the potential environmental impacts must be identified clearly in the environmental assessment/Initial Study Section of the Draft Environmental Impact Report.

CONCLUSION

Board staff requests copies of any subsequent or revised environmental documents in addition to the Draft and Final Environmental Impact Reports. Any subsequent or revised environmental documents should be circulated through the State Clearinghouse as required in 14 CCR §15205(a) of the CEQA Guidelines. The Board requests being noticed of the date, time and location of any public hearings regarding the project proposal at least ten days in advance.

Board staff has no further comments on the project as proposed at this time. Thank you for the opportunity to comment on this project in the early planning stages. Permitting and Inspection staff are available for any planned scoping meetings, workshops or other public meetings.

If you have any questions regarding these comments, please contact me at 916.341.6728 or e-mail me at rseamans@ciwmb.ca.gov.

Sincerely,

Raymond M. Seamans
Permitting and Inspection Branch
Environmental Review, Region 4
Permitting and Enforcement Division
California Integrated Waste Management Board

cc: Tadese Gebrehawariat
Permitting and Inspection Branch, Region 4
Permitting and Enforcement Division
California Integrated Waste Management Board

Suzanne Hambleton, Supervisor
Permitting and Inspection Branch, Region 4
Permitting and Enforcement Division
California Integrated Waste Management Board

Vicky Gallagher, Program Manager
Development Services Department
1010 Second Street, Suite 600 MS 606L
San Diego, CA 92101-4998

The attached lease will be modified to allow the West Miramar Landfill to be built to a level of 485 amsl.

ORIGINAL

DOCUMENT NO. _____

FILED OCT 02 1995

OFFICE OF THE CITY CLERK
SAN DIEGO, CALIFORNIA

GROUND LEASE

This Agreement is made and entered into this 17th day of August, 1995, by and between the City of San Diego, California, (hereinafter called the Lessee), and the United States of America, acting by and through the Department of the Navy (hereinafter called the Government) under the authority contained in 10 U.S.C. Sec. 2667.

WHEREAS, the Government is the owner of the Naval Air Station, Miramar, in the City of San Diego, California (hereinafter called the Station); and

WHEREAS, the Lessee desires to lease a portion of the Station for use by its Environmental Service Department, and the Metropolitan Wastewater Department; and

WHEREAS, the Secretary of the Navy has determined that entering into this lease would be in the public interest and will not substantially injure the interests of the United States in the property:

NOW, THEREFORE, in consideration of the mutual benefits accruing to the parties hereto and the terms, covenants, obligations, and agreements set out hereinafter, the parties hereto do hereby contract and agree as follows:

1. LEASED PROPERTY:

(a) The Government hereby leases to the Lessee a portion of the Station encompassing approximately 1400 acres of land together with all improvements thereon hereinafter called the Leased Property. The Leased Property is more particularly shown and described as Parcels 1, 2, 3, 4, and 5 in the plat and legal description in Exhibit "A", which is attached hereto and made a part hereof. This lease is subject to and will be effective upon the approval of the Assistant Secretary of the Navy (Installations & Environment).

(b) Attached hereto as Exhibit "B" is "Grant of Easement" dated July 19, 1982, whose terms and conditions are herein made part of this lease. In the event of any conflict between the provisions of the easement at Exhibit "B" and the provisions of this lease, this lease shall be the controlling document.

(c) At such time as Naval Air Station, Miramar shall be redesignated as a Marine Corps Air Station, all references to the Station shall be deemed to refer to the Marine Corps Air Station.

2. USE: In the absence of prior written approval of the Government, the sole purposes for which the Lessee shall use the Leased Property are as follows:

Parcel 1: The construction, installation, operation and maintenance of: (A) a vehicle maintenance facility for vehicles used by Lessee in its sanitary landfill operations (but no new

above-ground storage of flammable substances shall be permitted thereon); (B) field operations office used by Lessee in its sanitary landfill operations; and (C) monitoring equipment and facilities required to manage methane gas generation from the former solid waste landfill operated by Lessee on the premises, as well as ground water monitoring, for Lessee's compliance with Federal, State, and local laws, rules, ordinances and regulations governing the closure and post-closure requirements, including any corrective action required by law, of said solid waste landfill, which compliance shall be performed by Lessee at its sole cost and expense.

Parcel 2 (being the area encompassing the West Miramar Landfill): (A) The operation and maintenance of a sanitary landfill, subject to all the rules, regulations, requirements, conditions and restrictions set forth on the document attached hereto as Exhibit "B", and subject further to the restriction that Lessee shall not install, operate, maintain or conduct in or on the leased premises or any part thereof any structure, operation or activity which is an "incompatible land use" in accordance with the guidelines set forth in the Department of the Navy's Air Installation Compatible Use Zone (AICUZ) Study for Naval Air Station (or Marine Corps Air Station) Miramar as of the time of such use; and (B) the installation, operation and maintenance of monitoring equipment and facilities required to manage methane gas generation from the landfill operated by Lessee or Sublessee on the premises, as well as ground water monitoring, for Lessee's compliance with Federal, State, and local laws, rules, ordinances and regulations governing the closure, post-closure, monitoring, and/or corrective action required by law of said solid waste landfill, which compliance, closure, post-closure, corrective action required by law, and monitoring shall be performed by Lessee at its sole cost and expense.

Parcel 3: Expansion of access areas identified in West Miramar Landfill Easement.

Parcel 4: The construction, installation, operation and maintenance of: (A) a household hazardous waste transfer station for consumers to divert household hazardous waste from disposal in Lessee's sanitary landfill; (B) a recycling area to receive recyclable materials from the public and divert them from disposal in Lessee's active landfill; (C) a fee booth and weigh station facility; (D) monitoring equipment and facilities required to manage methane gas generation from the former solid waste landfill operated by Lessee on the Leased Property, as well as ground water monitoring, for Lessee's compliance with Federal, State, and local laws, rules, ordinances and regulations governing the closure and monitoring of said solid waste landfill, which compliance shall be performed by Lessee at its sole cost and expense; (E) a material recovery facility (MRF) to separate recyclable material from solid waste intended for landfill disposal, for composting and use off of the leased property (Lessee's Fiesta Island Replacement Project (FIRP) and the Northern Sludge Processing Facility (NSPF)), as such project and facility are described in Lessee's General Development Plan for Miramar Landfill, dated July 1994, and Government's

Environmental Impact Statement for Part II - Miramar Landfill, dated July 1994; (F) a public or private cogeneration plant to generate electricity using methane gas from Lessee's sludge processing activities on the Leased Property, as well as methane gas collected from former landfills operated by Lessee on the Leased Property, which compliance, closure and monitoring shall be performed by Lessee at its sole cost and expense; (G) mounding of overburden derived from Lessee's active landfill operations, shown and described in the plat and legal description in Exhibit "B", which is attached hereto and made a part hereof, provided, however, that such overburden material shall, in no event, cover more than 62.34 acres nor be mounded to a height exceeding 465 feet above mean sea level (465' MSL), including any vegetation thereon, and such overburden is subject to removal and use by Government at its sole expense and discretion in a manner not inconsistent with Lessee's use and enjoyment of the Leased Property described herein on condition that such removal shall not cause Lessee to incur any environmental liability or obligation; (H) mounding of overburden derived from construction site preparation, provided, however, that such overburden material shall not cover more than 8.6 acres, as shown in Exhibit "B", nor be mounded to a height exceeding 465' MSL including any vegetation thereon, and such overburden is subject to removal and use by Government at its sole expense and discretion in a manner not inconsistent with Lessee's use and enjoyment of the premises described herein; (I) mounding of overburden derived from construction, and site preparation, provided, however, that such overburden material shall not cover more than 7.5 acres, as shown in Exhibit "B", nor be mounded to a height exceeding 465' MSL including any vegetation thereon, and such overburden is subject to removal and use by Government at its sole expense and discretion in a manner not inconsistent with Lessee's use and enjoyment of the premises described herein; (J) haul road for maintenance vehicle or conveyor use; (K) construction, installation, operation and maintenance of an access road and appurtenances to serve the FIRP and NSPF; (L) construction, installation, operation and maintenance of the temporary central access road to the FIRP and NSPF; (M) construction, installation, operation and maintenance of a temporary construction parking area for the FIRP and NSPF.

Parcel 5: Construction, installation, operation and maintenance of monitoring equipment and facilities required to manage methane gas generation from the landfill operated by Lessee on the premises, as well as ground water monitoring, for Lessee's compliance with Federal, State, and local laws, rules, ordinances and regulations governing the closure and monitoring of said solid waste landfill, which compliance, closure, monitoring, and any corrective action as required by law shall be performed by Lessee at its sole cost and expense.

3. TERM: The term of this agreement shall be for fifty (50) years from the date herein, expiring on the 16th day of August, 2045.

4. RESERVATIONS: This Agreement and the Leased Property delivered are and shall be at all times subject to the following:

(a) Utility Rights-of-Way: Rights-of-way for sewers, pipelines, fuel lines, natural gas lines, steam lines, and conduits for telephone, light, heating and power lines as may from time to time be determined necessary by the Government, including the right to enter upon, above, below or through the surface to construct, maintain, replace, repair, enlarge or otherwise utilize the Leased Property for such purpose, without compensation or abatement of rent, provided the surface shall be restored, to the extent possible, without material interference with the operation of the Station, to the condition previously existing, and before locating any future utilities on the Leased Property, Government agrees to consult with the Lessee and minimize interference to the extent possible.

(b) Access Roads: Rights-of-Way for access roads which are apparent from a visual inspection of the Leased Property or which have been duly established or which are reserved herein.

(c) Prior Exceptions: All prior exceptions, reservations, grants, easements, leases or licenses of any kind whatsoever, as the same appear of record in the Office of the Recorder of San Diego County, or as the same appear in the official records of the Government.

(d) Inspection: Lessee has inspected the Leased Property in contemplation of occupying it for the uses permitted and agrees that:

(1) Suitability: Lessee has determined that the Leased Property, including any improvements covered by this Agreement, are suitable for Lessee's intended uses. No officer or employee of Government has made any representation or warranty with respect to the Leased Property, including improvements, nor any agreement or promise to alter or improve the same, or any item thereof, and Lessee has not relied on any such warranty or representation unless the nature and extent of such representation or warranty is described in writing and attached to this Agreement which contains all the agreements made and entered into between the Lessee and the Government.

(2) Additions and Improvements at Lessee's Expense: Any modification, improvement, addition to the Leased Property or equipment installation required by the Fire Department, Air Pollution Control Board, Regional Water Quality Control Board, Environmental Protection Agency (Federal or State), or any other Federal, State or local agency in connection with Lessee's operations shall be constructed or installed at Lessee's sole expense.

(3) Approval of Plans and Specifications: All plans and specifications for specific projects proposed by Lessee for construction and installation which are authorized in paragraph 2 (Use) shall be submitted to the Government for approval, beginning at the preliminary design stage. No construction shall commence until the Government has reviewed and approved the final plans and specifications for each to assure Government of compatibility to

Station's operations and mission only and for no other purpose. Such approvals by the Government shall be given as promptly as practicable and will not be unreasonably withheld. The Government's reasonable rejection of, or its failure to approve, any feature or element of such a plan or specification shall not form a basis for any claim against the Government for loss by, or liability of the Government to, the Lessee. Review and approval of plans and specifications by the Government are solely to assure compatibility with the Station's operations and mission, and do not limit, modify or void any warranty or indemnification provided to the Government herein by Lessee. The Government, by approving such plans and specifications, or if it fails to properly review or wrongfully approves such plans and specifications, shall not be deemed to assume or incur thereby any liability or responsibility for the subject projects nor to warrant that the projects will function as designed, that they will fulfill their intended purpose, or that they will be protective of human health, safety, or the environment. Approval of or failure to approve plans or specifications by the Government shall not be deemed to modify, satisfy or waive any performance requirements or restrictions imposed upon or agreed to by Lessee in this Lease or any other conveyance or agreement between the parties.

5. COMPENSATION:

(a) Lessee shall pay to the Government the sum of $5,822,732.00 upon this lease taking effect.

(b) Lessee agrees to make additional compensation to Government as provided in paragraph 15(c).

(c) All payments shall be made to the Government by check payable to the Treasurer of the United States at the following address: Commanding Officer, Southwest Division, Naval Facilities Engineering Command (Code 24), 1220 Pacific Highway, San Diego, California 92132-5190.

(d) Government reserves the right for all Department of the Navy installations and facilities located within or near the boundaries of the City of San Diego to dispose of wastes in any sanitary landfill owned and/or operated by the City of San Diego on Department of the Navy property including the sanitary landfill operated on Parcel 2, without limitation as to the quantity and at no cost to the Government, for the term of this Lease and any extension hereof.

6. TITLE TO IMPROVEMENTS: Title to all improvements made by Lessee shall remain in the Lessee during the term of this Agreement, including any extension thereof to which the parties may hereafter agree, and during any period irrespective of the term of this Agreement in which closure, post-closure, maintenance, monitoring, or environmental response or corrective action obligations exist or in which Lessee is required, or permitted by Federal, State, or local law, to monitor, collect or extract methane gas from landfill areas. At or prior to the expiration or earlier termination of this Agreement, the Lessee shall remove, at

its sole cost and expense, all works, structures and improvements placed on the Leased Property by Lessee provided that, subject to the approval of the Assistant Secretary of the Navy (Installations & Environment), the Government may acquire all of Lessee's right, title and interests in any or all of such works, structures and improvements in consideration for releasing Lessee from its restoration obligation under this Agreement with respect to the works, structures and improvements so acquired by the Government. As between the Government and Lessee, for purposes of allocating liability under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Section 107, 42 U.S.C. Sec. 9607, and State cleanup laws, Lessee shall be deemed both the "owner" and "operator" of each improvement, operation, or activity on the Leased Property. Lessee shall also be deemed the "owner" of, and to have arranged for the disposal of, all materials, substances, wastes, or other items transported to, stored at, disposed on, or which otherwise is located on the Leased Property.

7. LIENS: Lessee shall promptly discharge or cause to be discharged any valid lien, right in rem, claim, or demand of any kind, except one in favor of the Government, which at any time may arise or exist with respect to the Leased Property or Lessee's improvements or materials or equipment furnished, or any part thereof, and if the same shall not be promptly discharged by Lessee the Government may discharge, or cause to be discharged, the same at the expense of Lessee.

8. ACCESS:

(a) The Government shall have access to the Leased Property and to the Lessee's improvements at all times for any purpose not inconsistent with the quiet use and enjoyments thereof by Lessee including, but not limited to, the purpose of monitoring and inspection of Lessee's construction or operations, or at any time for reasons of safety, security or the national defense as determined by the Commanding Officer of the Station, or as otherwise provided in this Lease; provided, however, that in time of national emergency or threat to the Station as determined by the Commanding Officer, he may restrict access to all or any part of the Leased Property in such manner or as to such persons as he deems necessary for the duration of such emergency or threat.

(b) No public exhibitions or group tours shall be permitted anywhere on the Leased Property without the express written permission of the Commanding Officer of the Station. No public meetings, conferences or gatherings shall be held anywhere on the Leased Property at which a greater number of persons are assembled in any location or structure than would be permitted in Accident Potential Zone I under the guidelines set forth in the Department of the Navy's Air Installation Compatible Use Zone (AICUZ) Study for Naval Air Station (or Marine Corps Air Station) Miramar as of the time of such use. During any period of operation when the public has access to Lessee's facilities, Lessee shall monitor such activities by the public and ensure that no substances or materials prohibited by this Agreement are disposed of or otherwise left on

the Leased Property. This provision shall not preclude any meeting of the employees at the facility.

9. MAINTENANCE AND RESTORATION:

(a) Maintenance and Repair Performed by Lessee: Lessee shall be responsible for performing and paying for all maintenance and repairs of and to the Leased Property and all improvements thereon, including any long term operation and maintenance or corrective action costs required by any applicable Federal, State, regional, or local environmental laws. Lessee shall also be responsible for keeping the Leased Property, (including landscaping) and all works, structures and improvements thereof, whether a part of the Leased Property or made by Lessee, in a safe, clean, wholesome, sanitary and sightly condition and in conformance with all applicable present and future Federal, State, regional, municipal and other laws and regulations.

(b) Government's Option to Perform Work at Lessee's Expense: If Lessee fails to repair, maintain and keep the Leased Property and improvements as required by the terms of this Lease, the Government may give thirty (30) days written notice to Lessee to correct such default, except that no notice shall be required where, in the opinion of the Government, the failure creates a hazard to persons or property. If Lessee fails to commence curing of such default within said time or fails to proceed diligently to cure such default, or if the Government determines that a hazard to persons or property exists due to such failure, the Government may, but is not required to, enter upon the Leased Property and cause such repair or maintenance to be made, and the costs thereof, including labor, materials, equipment and administrative overhead, to be charged against the Lessee. Such charges shall be due and payable on the first of the month next following the completion of such repair or maintenance. During all such times, the duty shall be on the Lessee to assure the Leased Property are safe and Lessee shall erect barricades and warning signs to assure that workers and the public are protected from any unsafe condition.

(c) Restoration and Surrender of Leased Property:

(1) On or before expiration of the term of this Agreement, or any sooner termination thereof other than by forfeiture pursuant to subsections (a) and (b) of paragraph 10 ("Default and Termination") below, Lessee shall remove, at its sole cost and expense, all works, structures, improvements and pipelines of any kind including paving (collectively referred to as "structures") placed on the Leased Property by Lessee, except (a) such equipment as may be required for compliance by Lessee with applicable laws and regulations, which Lessee will operate, maintain and replace as long as necessary; and (b) such structures as Government may authorize in writing to be abandoned in place on such conditions as Government may require. If any structures are approved by the Government to be abandoned in place, Lessee shall remove and/or decontaminate any toxic or hazardous materials at the structure prior to such abandonment. At the Government's option, environmental monitoring equipment may be required to be left in

place by Lessee, but if such equipment then has a residual value in excess of the costs of removal, Government will reimburse Lessee therefor. Lessee shall leave the surface of the ground in a clean, level, graded and compacted condition with no excavations or holes resulting from structures removed, but Lessee shall not be required to restore Leased Property to its preconstruction topography nor to remove landfill material placed in the regular course of landfill operations except as required by Federal, State or local laws and regulations.

(2) Upon the expiration of the term of this Agreement or any sooner termination thereof, other than by forfeiture pursuant to subsections (a) and (b) of paragraph 10 ("Default and Termination") of this Agreement, Lessee shall quit and surrender possession of the Leased Property to the Government leaving all Government improvements in at least as good and usable a condition, acceptable to the Government, as the same were in at the time of the first occupation thereof by Lessee under this or any prior Agreement, lease or permit, ordinary wear and tear excepted. However, the exception for wear and tear shall not entitle Lessee to damage the paving installed by the Government on the ground, regardless of the nature of Lessee's operations on the Leased Property. If the Government terminates this Agreement pursuant to Section (a) or (b) of paragraph 10 ("Default and Termination") Lessee is also obligated to restore the Leased Property as provided above or to pay the cost of restoration if Government chooses to perform the work. Expiration or termination of this Agreement does not relieve Lessee of its closure, post-closure, environmental response, long term operation and maintenance or corrective action responsibilities under applicable Federal, State, regional, or local environmental laws or as agreed herein.

(3) Lessee may not, nor allow any third party to, handle, receive, store, or dispose of anywhere on the Leased Property any substances classified as hazardous substances or hazardous wastes under any Federal, State or local law, except as may be later authorized pursuant to paragraph 20.(a). If Lessee or any third party has handled, stored, transported, transferred, received, disposed of or otherwise placed any hazardous substance or waste on the Leased Property and such substance or waste has contaminated or threatens to contaminate the Leased Property or adjacent premises or third-party premises (including structures and environmental media), Lessee, in the manner required by Federal, State, or local law or regulation and to the extent necessary to fully protect the Government from liability or obligation in connection therewith shall at its own expense remove or remediate such hazardous substances or wastes including any contaminated media and debris at the Leased Property, adjacent premises, or third party premises. Lessee's removal, remediation, or corrective action obligations under this Agreement shall not be extinguished, nor otherwise diminished, by any subsequent amendments to Federal, State, or local law which purports to reduce Lessee's financial liability and increase Government's financial liability, or limit such financial liability for the cleanup of municipal or other solid waste landfills.

(4) If such contamination can be removed from the Leased Property as required in the preceding paragraph, Lessee shall remove and properly disposed of all contamination and contaminated environmental media and debris and shall replace such environmental media with clean fill dirt, material or water suitable to the Government in compliance with all Federal, State and local laws and regulations. If Lessee determines such contamination or contaminated media or debris are not amenable to a removal action, Lessee shall undertake all necessary remedial and/or corrective actions in conformance with any applicable Federal, State, regional or local laws and cleanup standards. Treatment or off-site disposal shall be the preferred remedy over containment. In accordance with Federal, State and local guidelines and regulations Lessee shall, at its expense, be required to perform environmental media tests and monitoring showing that the Leased Property have not been contaminated by Lessee's operations and that there has not been a release from any of Lessee's facilities on the Leased Property, prior to termination of this agreement or any portion thereof. For the purposes of this subparagraph, such contaminants do not include municipal solid waste.

(5) If Lessee contaminates or has contaminated the Leased Property or adjacent premises or third-party premises (including structures and environmental media) in any manner, it shall immediately notify the Government and shall take immediate steps to remove and/or remediate the contamination in accordance with all applicable Federal, State, and local laws and regulations and perform all required environmental media testing and monitoring at Lessee's expense. If the Leased Property, adjacent premises or premises of a third-party are contaminated by any hazardous substances or wastes, or any pollutants, contaminants, or constituents thereof, of the kind handled by Lessee, the contamination is presumed to be caused by Lessee and the burden of proving (including the burden to produce records and other evidence) contamination by someone other than Lessee, including Lessee's predecessors, shall be on Lessee.

(6) For purposes of this Agreement the term "contaminant" includes: "hazardous substances" as defined in 42 U.S.C. Sec. 9601(14); "pollution or contaminant" as defined in 42 U.S.C. Sec 9601(33); petroleum products including crude oil or any fraction thereof as defined in applicable Federal law or regulation; "solid waste" as defined in 42 U.S.C. Sec. 6903(27); and all of the above terms as defined under applicable State law. For the purposes of this Agreement, environmental media shall be defined to include soil, ground water, surface water, and air.

(7) Any tests required of Lessee by this paragraph shall be performed by a California certified testing laboratory satisfactory to the Government at Lessee's sole cost and expense. By signing this Agreement Lessee hereby irrevocably directs any such laboratory to provide the Government, upon written request from the Government, copies of all of its reports, test results, and data gathered.

(8) Lessee shall submit to the Government for review and comment any closure plan, post-closure plan, waste analysis plan, contingency plan, corrective action plan, or other plan required by Federal, State, regional or local environmental law and pertaining to Lessee's activities on the Leased Property. Representatives of the Government and Lessee agree to meet one (1) year before this Agreement terminates or one (1) year prior to the commencement of any applicable closure period required under Federal, State, or local environmental laws, whichever comes first, to develop a restoration plan. Such plan shall be prepared in writing by Lessee, with the consultation of the Government, and shall describe in detail Lessee's restoration activities and the time they will be commenced and completed. Such plan will be submitted to the Government at least six (6) months before termination of the Agreement. Lessee's failure to do so shall constitute a material breach of this Agreement.

(9) Lessee understands and agrees that it is responsible to complete restoration of the Leased Property as set forth in paragraph 9(c)(1) above including the cleaning up of any area it has contaminated before the expiration of this Agreement. If, for any reason, such restoration is not completed before such expiration, then Lessee remains responsible for and shall continue such restoration work, including closure, post-closure, and long term maintenance and monitoring, notwithstanding expiration or termination of this Agreement. Subject to approval by the Assistant Secretary of the Navy (Installations & Environment), the Lessee and Government may agree that the Government will complete the restoration work for Lessee on a reimbursable basis. If the Lessee disposes of any contaminated soil, material or groundwater, Lessee shall provide the Government with copies of all records indicating the type of material being disposed of as indicated on a Uniform Hazardous Waste Manifest or other appropriate chain of custody document, the method of transportation of the material to the disposal site and the location of the disposal site. For the purposes of this Agreement, Lessee agrees it has all environmental and financial liabilities for the landfills and will comply with all applicable Federal, State, and local statutes governing closure and post-closure maintenance; except, however, Lessee is not liable for post-closure activities of the Government on landfills that may jeopardize the integrity of previously closed sites or pose a potential threat to public health and safety or the environment.

10. DEFAULT AND TERMINATION.

(a) Upon the neglect, failure or refusal of Lessee to comply with any of the terms or conditions of this Agreement, and should Lessee fail to acknowledge in writing its obligation to cure such default within thirty (30) days after written notice and demand by Government to comply with any such item or condition, or thereafter fail to proceed diligently with such cure, Government may, at its option, declare this Agreement terminated. Thereafter, Government may recover possession of the Leased Property as provided by law. In the event Government shall determine that a breach of the terms or conditions of this Lease by Lessee has created an immediate threat to the health, safety or well-being of persons aboard the

Station, then upon written notice from Government, Lessee shall remove or abate the condition or activity causing such threat as instructed by Government, within the time stated for such action in the notice. Should Lessee fail to remove or abate such condition within a reasonable time as provided in such notice, Government may declare this Lease terminated forthwith and shall have all additional remedies provided herein in the event of breach by Lessee.

(b) Upon any termination of this Agreement by reason of Lessee's default, Lessee shall immediately surrender all rights in and to the Leased Property and all improvements. Lessee expressly agrees to compensate Government for any loss Government may suffer if the Agreement is terminated and Lessee fails to vacate the Leased Property. Upon any such termination any and all buildings, structures and improvements of any character whatsoever, erected, installed or made by Lessee on the Leased Property shall immediately ipso facto either become the property of Government free and clear of any claim of any kind or nature of Lessee or its successors, or become removable by the Government at the sole expense of Lessee, at the option of the Government.

(c) If this Agreement is terminated as set forth above, Government may enforce all of its rights and remedies under this Agreement.

11. MORTGAGE OF FACILITIES: Except as provided in paragraph 12(b), Lessee shall not: (a) engage in any financing or other transaction creating any mortgage upon the Leased Property, (b) place or suffer to be placed upon the Leased Property any lien or other encumbrance, or (c) suffer any levy or attachment to be made on the Lessee's interest in the Leased Property. Any such mortgage, encumbrance or lien shall be deemed a violation of this covenant on the date of its execution or filing of record regardless of whether or not it is foreclosed or otherwise enforced.

12. ASSIGNMENT OR SUBLETTING:

(a) Lessee shall not transfer or assign this Agreement or any interest therein nor sublet or otherwise make available to any third party any portion of the Leased Property or rights therein without the prior written consent of the Government. Under any assignment made, with or without consent, the assignee shall be deemed to have assumed all of the obligations of Lessee hereunder, but no assignment shall relieve the assignor of any of Lessee's obligations hereunder except for an extension of the Agreement term beginning after such assignment, and then only if the Government shall have consented thereto.

(b) Government understands that Lessee intends to utilize private sector contractors to finance, design, build, operate, or otherwise "privatize" certain facilities on the Leased Property, and that to effectuate such "privatization" the Lessee may be required to enter into subleases with such private sector contractors which allow the contractors to encumber their subleased

interests, subject to Government's prior written consent as described above. Government agrees to review any proposed subleases in a timely manner.

13. DISPUTES:

(a) Disputes in General:

(1) Except as otherwise provided in this Lease, any dispute concerning a question of fact arising under this Lease which is not a "claim" as defined in subparagraph (b) below shall be decided by the Commanding Officer, Southwest Division, Naval Facilities Engineering Command (after consultation with the Commander, Marine Corps Air Bases, Western Area when the Station has been redesignated as MCAS Miramar), who shall reduce his/her decision to writing and mail or otherwise furnish a copy thereof to Lessee. The decision of said Commanding Officer shall be final and conclusive unless, within thirty (30) days from the date of receipt of said decision, the Lessee mails or otherwise furnishes to the Commander, Naval Facilities Engineering Command a written appeal. The decision of the Commander, Naval Facilities Engineering Command or his authorized representative for the determination of such appeal shall be final and conclusive unless the same is proven to be fraudulent, arbitrary or capricious, or so grossly erroneous as necessarily to imply bad faith. In connection with any appeal proceeding under this clause, the Lessee shall be afforded an opportunity to be heard and to offer evidence in support of its appeal. Pending final decision of a dispute hereunder, the Lessee shall proceed diligently with the performance of this Agreement and in accordance with the decision of the Commanding Officer, Southwest Division, Naval Facilities Engineering Command.

(2) This Disputes clause does not preclude consideration of questions of law in connection with decisions on matters in dispute. Nothing in this Agreement, however, shall be construed as making final the decision of any administrative official, representative or board on a question of law.

(3) Nothing contained in this paragraph shall be deemed to limit or modify the authority of Government to require Lessee to immediately abate or remove any activity or condition which threatens the health, safety or well-being of persons aboard the Station.

(b) Claims:

(1) All disputes arising under or relating to this Lease which constitute "claims" as defined herein shall be resolved under this subparagraph (b).

(2) "Claim," as used in this subparagraph (b), means a written demand or written assertion by one of the parties hereto seeking, as a matter of right arising under and pursuant to the terms of this Lease, the payment of money in a sum certain or the interpretation of a provision of this Lease pursuant to which a party seeks such payment. A written demand or written assertion by

Lessee seeking the payment of money exceeding $50,000 is not a claim hereunder until certified as required by subparagraph (4) below.

(3) A claim by either party shall be made in writing and submitted to the Commanding Officer, Southwest Division, Naval Facilities Engineering Command for a written decision.

(4) Lessee shall provide the certification specified in subparagraph (6) below when submitting any claim:

(A) exceeding $50,000; or

(B) regardless of the amount claimed, when using arbitration conducted pursuant to 5 U.S.C. Sec. 575-580 or any other alternative means of dispute resolution (ADR) which the agency elects to handle in accordance with the Administrative Dispute Resolution Act (ADRA), provided, however, that the use of arbitration or other ADR shall require the written consent of both Government and Lessee.

(5) The certification requirement does not apply to issues in controversy that have not been submitted as a claim or part of a claim.

(6) The certification shall state as follows:

"I certify that the claim is made in good faith; that the supporting data are accurate and complete to the best of my knowledge and belief; that the amount requested accurately reflects the amount for which the Lessee believes the Government is liable; and that I am duly authorized to certify the claim on behalf of the Lessee."

(7) The certification may be executed by any person duly authorized to bind Lessee with respect to the claim.

(8) For claims by Lessee in the amount of $50,000 or less, the Commanding Officer must, if requested in writing by the Lessee, render a decision within sixty (60) days of the request. For Lessee-certified claims over $50,000, the Commanding Officer must, within sixty (60) days, decide the claim or notify the Lessee of the date by which the decision will be made.

(9) The Commanding Officer's decision shall be final unless the Lessee appeals to the Armed Service Board of Contract Appeals or the United States Court of Federal Claims under the Contract Disputes Act of 1978 as amended (41 U.S.C. Sec. 601-613).

(10) By the written mutual consent of Lessee and Government, a claim may be resolved by use of ADR. When arbitration is conducted pursuant to 5 U.S.C. Sec. 575-580, or when any other ADR procedure is employed, any claim, regardless of amount, shall be accompanied by the certification described in subparagraph (6) and executed in accordance with subparagraph (7) of this paragraph.

(11) The Government shall pay interest on any amount found due and unpaid from the later of (1) the date that the Commanding Officer receives the claim (certified, if required), or (2) the date that payment otherwise would be due, until the date of payment. Simple interest on claims shall be paid at the same rate as that fixed by the Secretary of the Treasury for claims under the Contracts Disputes Act which is applicable to the period during which the Commanding Officer receives the claim, and then at the rate fixed by the Secretary of the Treasury for each six (6) month period thereafter during the pendency of the claim.

(12) Lessee shall diligently perform all of its obligations under this Lease pending final resolution of any claim filed hereunder, and shall comply with any decision of the Commanding Officer thereon.

14. RISK OF LOSS-INSURANCE:

(a) Lessee shall bear all risk of loss of or damage to the Leased Property arising from any cause whatsoever, with or without fault by Lessee; provided, however, that Lessee's liability for any loss or damage to its property resulting from risks expressly required to be insured against under this Agreement shall not be deemed, by reason of this Agreement, to exceed the amount of insurance so required or the amount actually procured and maintained, whichever shall be the greater; provided, further, that maintenance of the required insurance shall effect no limitation on Lessee's liability with respect to any loss or damage resulting from the willful misconduct, lack of good faith, or negligence of Lessee or any of its officers, agents, servants, employees, subtenants, licensees or invitees, nor any limitation of obligations under Section 9 of the Lease. Lessee shall not have the duty to insure against loss, damage, or injury to Government equipment, machinery, aircraft, or personnel, including legal heirs of Government personnel, where the basis of such risk solely involves the negligence or willful misconduct of Government agents, officers, or employees.

(b) Lessee shall procure and maintain, at its own expense, insurance on the Leased Property in such initial amounts and types as may exceed, but shall not be less than, the minimum amounts and types specified in paragraph 14 (e) below. However, Lessee shall provide, maintain, increase, change or discontinue such insurance as the Government may from time to time require and direct; provided, Lessee's liability for loss of or damage to the Leased Property is modified accordingly.

(c) All insurance which this Agreement requires Lessee to carry on the Leased Property shall be in such form, for such amounts, for such periods of time and with such insurers as the Government may from time to time require or approve. Each policy of insurance shall contain a provision for thirty (30) days written notice to the Government prior to the making of any material change in or the cancellation of the policy. Lessee shall deliver promptly to the Government a certificate of insurance or a certified copy of each policy of insurance required by this Agreement and shall also

deliver to the Government, no later than thirty (30) days prior to the expiration of any such policy, a certificate of insurance or a certified copy of each renewal policy covering the same risks. All insurance required or carried by Lessee on any of the Leased Property shall be for the protection of the Government and Lessee against their respective risks and liabilities in connection with the Leased Property. Each policy of insurance shall name both Lessee and the United States of America (Department of the Navy) as the insured, and each policy of insurance against loss of or damage to the Leased Property shall contain a loss payable clause reading as follows:

> "Loss, if any, under this policy shall be adjusted with City of San Diego and the proceeds, at the election of the Government, shall be payable to City of San Diego; any proceeds not paid to City of San Diego shall be payable to the Treasurer of the United States."

(d) The initial minimum amounts and types of insurance which Lessee shall procure and maintain in accordance with this paragraph are the following:

Liability:
$10,000,000 per person
$10,000,000 per accident

Property Damage:
$10,000,000 per accident

(e) In the event and to the extent Lessee elects to meet its insurance obligations hereunder by self-insuring, all references to insurance in this Agreement shall refer to such self-insurance and the Lessee shall be deemed to be the insurer thereof.

(f) Lessee acknowledges that in entering this agreement, Government is relying on the opinion letter of Lessee's City Attorney dated September 30, 1994 which is attached hereto as Exhibit "D".

15. METHANE GAS FROM LANDFILLS:

(a) Lessee acknowledges its responsibility for collection and disposal of methane gas generated by solid waste landfills in performance of its obligation to close and monitor said landfills.

(b) All facilities and equipment for the collection, transportation, use and disposal of methane gas shall utilize, at the time of initial construction and significant replacement of equipment or facilities, the best available control technology (BACT) to maximize collection and minimize the release of gas to the atmosphere. Lessee shall maintain all such facilities in proper working order so as to maintain proper performance thereof.

(c) Government agrees to sell, and Lessee agrees to buy all methane gas extracted from solid waste landfills on the Leased Property, at a total maximum cost not to exceed $1.5 million.

Lessee shall make such compensation by means of annual production payments equal to two percent (2%) of the annual gross revenues derived from the sale of energy generated from landfill gas to buyers other than those situated on the Leased Property. Consistent with the total maximum cost specified above, the term during which production payments will be required shall commence at the inception of the sale of energy to off-site buyers, and shall endure until usable methane gas no longer can be produced from the landfills. Lessee makes no representation that cumulative production payments will ultimately satisfy the maximum sale price for the methane gas, and Government agrees to accept the actual cumulative value of production payments as the full sale price for the gas. The parties recognize that the maximum sale price for the methane gas and the percentage of gross revenues applicable as production payment, as provided by this subparagraph, have been agreed upon based only on a preliminary assessment of the quantity and quality of gas available, and of the off-site marketability of energy produced therefrom. Accordingly, the parties agree that said maximum sale price and the percentage of gross revenue applied as production payment may be renegotiated in good faith by the parties either when the total maximum cost is reached, or five (5) years after the execution of this Lease, whichever first occurs; provided, however, that the renegotiated maximum price, if any, shall remain reasonably attainable via the production payments.

16. MITIGATION FOR ENVIRONMENTAL IMPACTS: Lessee understands and agrees that the Leased Property shall not be used to mitigate the environmental impacts of any action or activity of Lessee. Lessee further understands and agrees that lands of the Department of the Navy outside the Leased Property are not available to Lessee for mitigation of any environmental impacts of any action or activity of Lessee, whether on or off of the Leased Property.

17. AIR QUALITY: Lessee acknowledges and understands that it is a material condition of Government's decision to enter into this Agreement that emissions of air pollutants or air contaminants arising from Lessee's past, present and future activities on the Leased Property will be attributed to the Lessee and not to the Government for purposes of all regulation. Such regulation includes, but is not limited to, all Federal, State, interstate, and local requirements (whether substantive or procedural), authority and process and sanctions respecting control and abatement of air pollution, including all permit requirements. Specifically, it is understood and agreed that, as between the Government and Lessee, no part of the Leased Property, nor any mobile, stationary or transportable unit located thereon shall be considered part of the same source, stationary source, facility, building, structure, other regulated unit, or aggregation of such regulated units as the rest of Government's property for purposes of any and all air quality regulation. If it is determined that the Station and Leased Property are part of the same source, Lessee shall, as a prerequisite to conducting or continuing its operations, obtain sufficient emission credits to offset its emissions on the Leased Property so as not to limit or otherwise jeopardize emissions from the Station. Failure of the foregoing condition at any time, for any reason, during the term of this

Agreement shall constitute a material failure of consideration to the Government and be cause for the Government, in its discretion, to terminate this Agreement, suspend Lessee's operations, and/or require Lessee to pay to Government the amount of any fee, expense, cost, fine, penalty or sanction imposed by any governmental agency or entity by reason of any air emissions resulting from Lessee's activities in, on or near the Leased Property. Lessee hereby waives all termination and/or suspension claims and costs if such termination or suspension results from a determination that the Station and Leased Property are part of the same source and Lessee is unable or otherwise fails to obtain sufficient emission credits at Lessee's cost to conduct or continue its operations on the Leased Property.

18. COMPLIANCE WITH BIOLOGICAL OPINION: Lessee acknowledges and understands that its occupancy and use of the Leased Property may affect one or more species which are listed or proposed for listing as Endangered or Threatened pursuant to the Federal Endangered Species Act, codified at 16 U.S.C. Sec.1531 *et seq.* (Act). As a material term of this Agreement, Lessee covenants and agrees with the Government that it assumes full responsibility for and will insure full compliance with the Act, including aspects of the Act that are applicable to the Government. Lessee acknowledges that it has participated in formal consultation with the U.S. Fish & Wildlife Service which has concluded with the production of Biological Opinion #1-6-94-F-37, dated September 29, 1994 (Opinion). Lessee acknowledges and understands that the Opinion contains provisions that may go beyond the minimums set by the Act. Nonetheless, Lessee covenants and agrees with Government that, to insure full compliance with the Act, Lessee will fully implement the Opinion as an obligation to be performed under this Agreement. Lessee's obligations include, but are not limited to, performance of, or compliance with, all measures, terms and conditions, conservation recommendations and any and all incidental take statement provisions included in the Opinion; and, at the request of either the Government or the U.S. Fish and Wildlife Service, participating in any future consultation(s) and implementing the terms of any superseding Biological Opinion(s). Lessee does not waive any right to challenge or appeal any Opinion but Lessee covenants and agrees that it will indemnify and defend the Government and hold it harmless from any liability arising under the Act as the result of any action or failure to act by Lessee. Failure of the Lessee to perform any of the obligations set forth in this paragraph shall be deemed a material breach of this Agreement and cause, for the Government, in its discretion, to terminate this Agreement.

19. SPECIAL USE RESTRICTIONS:

(a) Lessee understands and agrees that the location of the Leased Property on the Station, and the proximity of the intended uses of the Leased Property by Lessee under this Agreement to the operational areas and flight patterns for high performance and low flying military aircraft requires that the Leased Property be used at all times in strict accordance with special restrictions made necessary by the nature of the military mission and operations of

the Station. Lessee covenants and agrees with Government that, notwithstanding any other provision of this Agreement, it will at all times use the Leased Property so that:

(1) Lessee's activities are in compliance and conformance with the Station's Bird Air Strike Hazard (BASH) Management Plan now or hereafter in effect;

(2) All facilities in which sludge is processed or hauled are covered and use the best available control technology to prevent the release of odor such that they produce less than five (5) odor units, as defined by American Society for Testing and Materials Method E-679 Standard Practice for Determination of Odor and Taste Thresholds by a Forced-Choice Ascending Concentration Series Method of Limits (being the level at which odor is detectable), 99.5% of the hours per calendar year at a distance of one thousand feet (1000') from the exterior of any building from which odor is emitted;

(3) Any modification or changes to Lessee's use of the Leased Property from those set forth in its Miramar Landfill General Development Plan dated September 1994, are approved by Government in writing before they are implemented and are compatible with the Station's established Air Installation Compatible Use Zone plan and any future updated or amended versions then in effect. Government agrees to review and decide such proposals in a timely manner;

(4) No structure, earthen mounds, or natural plant growth on the Leased Property shall be permitted to extend above 465 MSL;

(5) There shall be no reflective glass on the exterior of any structure on the Leased Property and no interior lighting shall be visible from above the horizontal plane of any window, skylight, or opening;

(6) All exterior lighting shall be reflected downward;

(7) No dust, vapors, or particulate matter impairing visibility shall be released or emitted from the Leased Property;

(8) There shall be no open flaring of methane gas from the Leased Property;

(9) No structures, heavy equipment placement or movement, subsurface excavations or placement of refuse or soil mounding shall be allowed within 25 feet on either side of any underground fuel lines on the Leased Property without prior written approval of the Commanding Officer of the Station; and

(10) Lessee understands that electronic emissions at or near the Leased Property could be hazardous to aircraft or otherwise interfere with military operations at the Station. No equipment or device which emits or transmits electronic signals of any kind may be used at the Leased Property or in connection with Lessee's operations or activities without first obtaining the

express written permission of the Station's Frequency Manager, or such other official as the Commanding Officer of Station may designate, for use of that specific equipment or device. Equipment or devices which have been approved by Station shall be operated in such manner as to produce electronic emissions only at the frequency or frequencies specified in such written permission, and only in accordance with such other limitations (such as restrictions on the length or time of emissions or on signal strength) as are stated therein. In the event the Station shall determine at any time that any electronic emissions represent a hazard to aircraft or interfere with Station operations, Lessee will, upon notice from Station, immediately cease operating the device or equipment causing such emissions, whether or not it was previously approved;

(11) Lessee shall not permit open storage of processed bio-solids.

(b) Any breach of the provisions of this paragraph may be deemed a material breach of this Agreement.

20. ENVIRONMENTAL LAW COMPLIANCE:

(a) This Agreement is subject to 10 U.S.C. Sec. 2692, which prohibits the storage and disposal on Department of Defense (DoD) property of toxic or hazardous materials not owned by DoD. The Government's execution of this lease is therefore contingent upon obtaining the necessary statutory relief to store or dispose of non-DoD owned toxic or hazardous materials on the Leased Property.

(b) Lessee shall be solely responsible for obtaining, at its sole cost and expense, any and all permits required for its activities on the Leased Property, independent of any existing permits and shall provide complete copies thereof to Government before commencing any construction or activities pursuant to this Lease.

(c) The Government's rights under this Agreement specifically include the right to inspect, upon reasonable notice, the Leased Property and Lessee's facilities and operations thereon, for compliance with environmental, safety, and occupational health laws and regulations, whether or not the Government is responsible for enforcing them.

(d) Lessee shall comply with all applicable Federal, State, and local laws, ordinances, rules, Executive Orders and regulations pertaining to environmental protection, health, and safety and shall be solely responsible for any and all fines, penalties, and enforcement actions instituted or imposed pursuant to said laws, ordinances, rules and regulations with respect to the Leased Property or Lessee's use thereof. Lessee hereby assumes all environmental and financial liability for its activities on the Leased Property, and Lessee further agrees to defend, indemnify, and hold the Government, its officers, agents and employees, harmless from any and all claims, fines, penalties, causes of action, or other civil or administrative liability arising out of

or related to Lessee's activities on the Leased Property. Lessee shall be solely responsible to pay and shall hold Government harmless from any fee, assessment, charge or tax imposed on Lessee's activities or operations, including but not limited to the California Quarterly Solid Waste Disposal Fee and any other fee, assessment, charge or tax imposed upon or measured by the quantity or type of waste disposed on the Leased Property.

(e) Lessee shall be responsible for compliance with the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA) in connection with any construction or other action by Lessee not heretofore specifically covered in completed environmental documentation.

(f) The Lessee and the Government shall use best efforts to reduce the quantities of solid waste requiring landfill disposal under this Agreement through recycling and waste diversion as required by Federal, State, and local law and regulations.

(g) Any violation of the provisions of this paragraph shall be deemed a material breach of this Agreement.

21. SUBJECTION TO EXISTING AND FUTURE EASEMENTS AND RIGHTS OF WAY: This Agreement is subject to all outstanding easements and rights of way for location of any type of facility over, across, in and upon the Leased Property, or any portion thereof, and to the right of the Government to grant such additional easements and rights of way over, across, in and upon the Leased Property as it shall determine to be in the public interest; provided however, that any such additional easement or right of way shall be conditioned on the assumption by the Grantee thereof of liability to Lessee for such damages as Lessee shall suffer for property destroyed or property rendered unusable on account of Grantee's exercise of its rights thereunder. There is hereby reserved to the holders of such easements and rights of way as are presently outstanding or which may hereafter be granted, to any workers officially engaged in the construction, installation, maintenance, operation, repair, or replacement of facilities located thereon, and to any Federal, State or local official engaged in the official inspection thereof such reasonable rights of ingress and egress over the Leased Property as shall be necessary for the performance of their duties with regard to such facilities.

22. TERMINATION:

(a) The Government shall have the right to terminate this Agreement, or any portion thereof, at any time, without prior notice, and regardless of any lack of breach by Lessee of any of the terms and conditions of this Agreement. In the event of termination for any reason not involving a breach by Lessee of the terms and conditions of this Agreement, the Government shall make an equitable adjustment of any advance rentals paid by the Lessee consistent with the schedule of rates in Exhibit "C", and subject to the availability of Congressionally appropriated funds for excess rental payments in accounts which are legally available to the Secretary of the Navy for such use. Nothing herein shall be

construed that Congress will at a later date, appropriate funds sufficient to cover any deficiency.

(b) Lessee shall have the right to terminate this Agreement upon ninety (90) days written notice to the Government in the event of damage to or destruction of all of the improvements of the Leased Property or such a substantial portion thereof as to render the Leased Property incapable of use for the purposes for which it is leased hereunder; provided, (1) the Government either has not authorized or directed the repair, rebuilding or replacement of the improvements or has made no provision for payment for such repair, rebuilding or replacement by application of insurance proceeds or otherwise, and (2) that such damage or destruction was not occasioned by the fault or negligence of Lessee or any of its officers, agents, servants, contractors, subcontractors, employees, subtenants, licensees or invitees, or by any failure or refusal on the part of Lessee to fully perform its obligations under this Agreement. Such termination shall not include any of Lessee's obligations regarding the landfills covered by this Agreement.

23. WAIVER OF LIABILITY AND INDEMNIFICATION BY LESSEE; GOVERNMENT NONLIABILITY. WAIVER OF SUBROGATION: To the extent allowed by law, Lessee hereby waives and releases, on behalf of itself and its officers, employees, agents, servants, representatives, subtenants, licensees, invitees, contractors and subcontractors, any and all claims against Government, and its officers, agents, and employees for personal injury, death or property damage which arises out of or is alleged to arise out of an act or omission of Government in, on or affecting the Leased Property. Lessee covenants that it will indemnify the Government and hold it harmless from and against any and all liability or claims for (a) loss of or damage to any property owned by or in the custody or control of Lessee on the Leased Property, or (b) the death of or injury to any person or persons in or on the Leased Property, or which may arise out of or be attributable to the condition or state of repair of the Leased Property, Lessee's activities, operations or actions on or at the Leased Property, or Lessee's use or occupancy of the Leased Property (whether or not such death or injury shall be occasioned by the negligence or lack of diligence of Lessee or its officers, agents, servants or employees) or the furnishing of or failure or interruption of any utilities or services. Lessee agrees that it will adequately insure or self-insure itself and all of its property in or on the Leased Property and that Lessee shall require any financial assurance arrangement to provide that the entity providing such financial assurance waive any subrogation right or other claims it may have against the Government. In the event Lessee is self-insured against any loss or liability, Lessee waives subrogation against the Government in connection with any and all claims of loss or liability. Notwithstanding the other provisions of this paragraph, Lessee shall not be liable to Government for loss, injury, or damage to Government equipment, machinery, aircraft, or personnel in the event that the negligence or willful misconduct of the Government, its agents, officers, or employees is the sole or contributing cause of such loss, injury, or damage.

24. UTILITIES AND SERVICES: In the event that the Government shall furnish Lessee with any utilities and services maintained by the Government which Lessee may require in connection with its use of the Leased Property, Lessee shall pay the Government the charges therefor in addition to the cash rent required under this Agreement. Such charges and the method of payment thereof shall be determined by the appropriate supplier of such service, in accordance with applicable laws and regulations, on such basis as the appropriate supplier of such service may establish, which may include a requirement for the installation of adequate connecting and metering equipment at the sole cost and expense of Lessee. It is expressly agreed and understood that nothing herein shall be deemed to require the Government to provide any utilities or services to Lessee, and the Government in no way warrants the continued maintenance or adequacy of any utilities or services furnished by it to Lessee.

25. COVENANT AGAINST CONTINGENT FEES: Lessee warrants that no person or agency has been employed or retained to solicit or secure this Agreement upon an agreement or understanding for a commission, percentage, brokerage or contingent fee, excepting bona fide employees or bona fide established commercial agencies maintained by Lessee for the purpose of securing business. For breach or violation of this warranty, the Government shall have the right to annul this Agreement without liability or in its discretion to require Lessee to pay, in addition to the rental or consideration, the full amount of such commission, percentage, brokerage, or contingent fee.

26. OFFICIALS NOT TO BENEFIT: No Member of or Delegate to Congress, or Resident Commissioner, shall be admitted to any share or part of this Agreement, or to any benefit to arise therefrom, but this provision shall not be construed to extend to this Agreement if made with a corporation for its general benefit.

27. INTEREST:

(a) Notwithstanding any other provision of this Agreement, unless paid within thirty (30) days, all amounts that become payable by the Lessee to the Government under this Agreement shall bear simple interest from the date until paid unless paid within thirty (30) days of becoming due. The interest rate shall be the interest rate established by the Secretary of the Treasury as provided in Section 12 of the Contract Disputes Act of 1978 (P.L. 95-563), which is applicable to the period in which the amount becomes due, as provided in subparagraph (b) of this paragraph, and then at the rate applicable for each six (6) month period as fixed by the Secretary until the amount is paid.

(b) Amounts shall be due at the earliest of the following dates:

(1) The date fixed under this Agreement.

(2) The date of the first written demand for payment consistent with this Agreement, including any demand resulting from a default termination.

28. STATE AND LOCAL TAXES: In the event any taxes, assessment or similar charges are imposed by State or local authorities upon the Lessee's interest in the Leased Property, Lessee's improvements or Lessee's operations, the Lessee shall pay the same when due and payable.

29. CONSENT: Where the consent or approval of a party is required in or necessary under this Agreement, the consent or approval shall not be unreasonably withheld.

30. NO PARTNERSHIP: The parties agree that nothing herein nor shall any prior agreement between the Lessee and the Government be deemed or construed by the parties or by any third party as creating or authorizing the creation of any partnership or joint venture between Government and Lessee. It is understood and agreed that no provision of this Agreement, nor any act of the Government or Lessee hereafter, shall be deemed to create any relationship between the Government and Lessee other than that provided herein.

31. TIME OF THE ESSENCE: Time is of the essence for this Agreement and to the performance of each and every term, covenant, and condition thereof.

32. REMEDIES: The specified remedies to which the Government may resort under the terms of this Agreement are cumulative and are not intended to be exclusive of any other remedies or means of redress to which the Government may be lawfully entitled in case of any breach or threatened breach by the Lessee of any provision of this Agreement. The failure of the Government to insist in any one or more case upon the strict performance of any of the covenants of this Agreement on the part of Lessee to be performed or to exercise any option herein contained shall not be construed as a waiver or relinquishment for the future of such covenant or option.

33. GOVERNMENT RULES AND REGULATIONS: Lessee, and Lessee's employees, officers, agents, contractors and invitees, shall comply at all times with such rules and regulations regarding security, ingress, egress, safety and sanitation as may be prescribed, from time to time, by the Government.

34. LABOR PROVISION: During the term of this lease, the Lessee agrees to comply with all applicable labor provisions contained within Federal, State, and local statutes and regulations, and shall ensure that all contractors, subcontractors, and sublessees shall likewise comply.

35. ENFORCEMENT: If this Agreement or any term or provision thereof or application thereof to any person or circumstance shall to any extent be invalid or unenforceable, the remainder of this Agreement, or the application of such term or provision to persons or circumstances other than those as to which it is invalid or unenforceable, shall not be affected thereby, and each term and provision of this Agreement shall be valid and be enforced to the fullest extent permitted by law.

36. PARTIES BOUND: All of the covenants, conditions and obligations contained in this Agreement shall be binding upon and inure to the benefit of the respective successors and assigns of the Lessee to the same extent as if each successor and assign were in each case named as a party to this Agreement. Any person, corporation or other legal entity acquiring any or all of the rights, title and interest of the Lessee in the Leased Property shall thereby become liable under and be fully bound by all of the provisions of this Agreement.

37. ADMINISTRATION AND NOTICE: The local Government representative of this Agreement is Commanding Officer, Southwest Division, Naval Facilities Engineering Command. All correspondence and notices concerning this Agreement shall be directed to:

If to the Government:
Commanding Officer
Southwest Division
Naval Facilities Engineering Command
1220 Pacific Highway
San Diego, California 92132-5190

and to:
Commanding Officer
Naval Air Station, Miramar
San Diego, California 92145-5005

If to the Lessee:
The City Manager
City of San Diego
202 "C" Street
San Diego, California 92101

No notice, order, direction, determination, requirement, consent, or approval under this Agreement shall be of any effect unless in writing.

IN WITNESS WHEREOF, this Agreement has been executed by the parties hereto on the date inserted in the first paragraph.

CITY OF SAN DIEGO

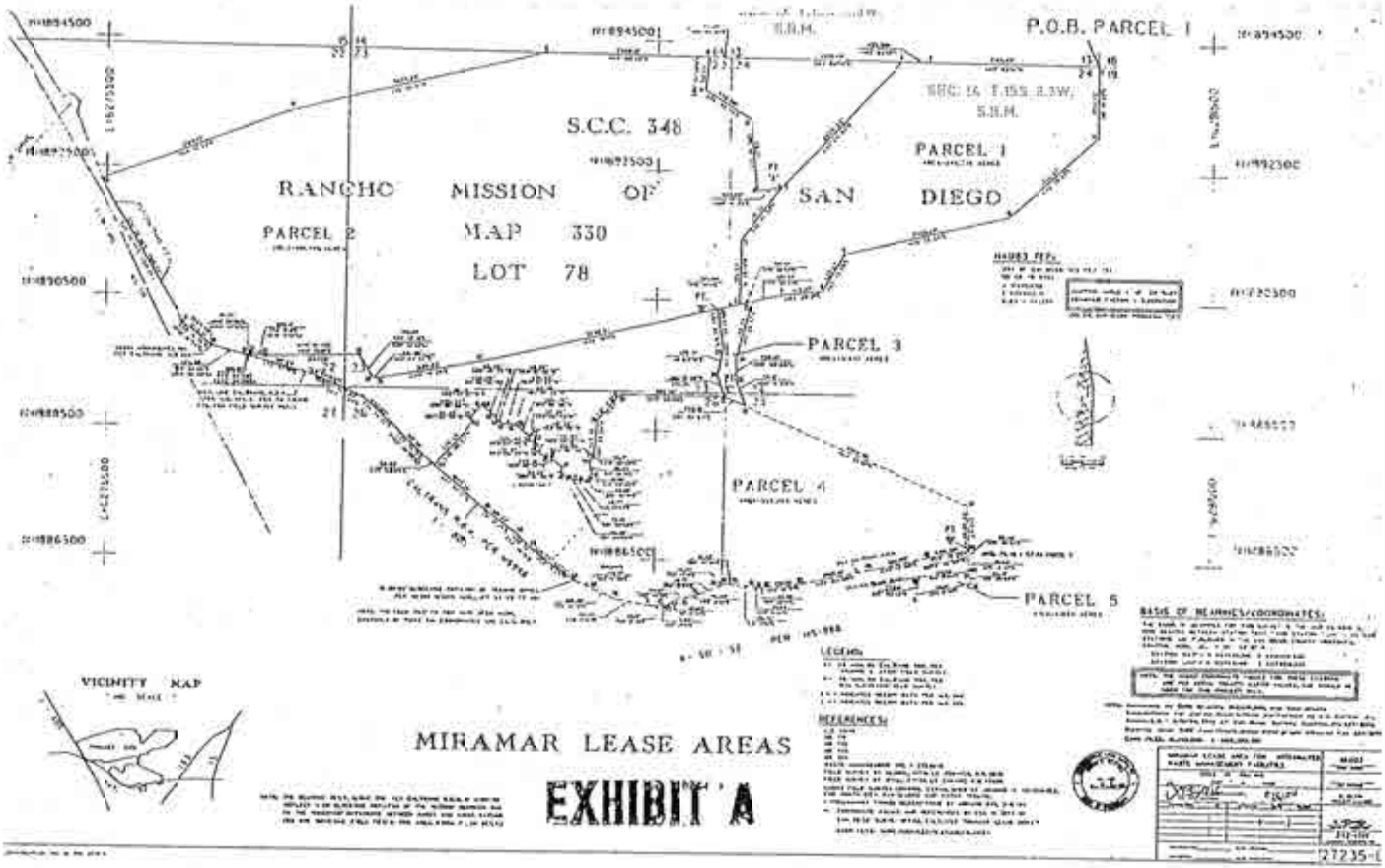
By _____

Title CITY MANAGER
(Signature effective upon ratification by the City Council of the City of San Diego)

UNITED STATES OF AMERICA
Department of the Navy

By _____

Title DASN (I&E)


P.O.B. PARCEL 1
S.B.M.
S.C.C. 348
PARCEL 1
RANCHO MISSION OF SAN DIEGO
PARCEL 2
MAP 330
LOT 78
PARCEL 3
PARCEL 4
PARCEL 5
VICINITY MAP
MIRAMAR LEASE AREAS
EXHIBIT 'A'

6247482RP00077

Clerk: mlw
Document No. 1486A

DUPLICATE

O.R. San Diego County
9/24/82 Doc # 82-295885

GRANT OF EASEMENT

THIS INDENTURE, made the 19th day of July 1982, between the United States of America, herein called the Government, acting through the Department of the Navy, represented by the Commanding Officer, Western Division, Naval Facilities Engineering Command, San Bruno, California, and the City of San Diego, herein called the Grantee:

WHEREAS, the Government owns that certain real property identified as the Naval Air Station, Miramar, California, herein called the Station, and

WHEREAS, the Grantee requires the use of certain land at the Station for a sanitary landfill, and has requested an easement for the operation and maintenance of a sanitary landfill on, in, over, and under that portion of the Station hereinafter described, and

WHEREAS, the Grantee desires to convey fee title to approximately 60.85 acres of land hereinafter described, as partial consideration for this grant of easement, and

WHEREAS, authority to accept fee title to approximately 60.85 acres has been approved by Public Law 94-107, and

WHEREAS, the Secretary of the Navy has found that this grant of easement is compatible with the military mission of the Station and the public interest;

NOW THEREFORE, this indenture witnesseth that, in partial consideration of the conveyance by Grantee to the Government of fee simple title to the land described in Exhibit "A" and shown on Exhibit "B" (E.F.D. Drawing No. A-102300), both attached hereto and made a part hereof, the Government hereby grants to Grantee and its assigns, for a term of twenty-five (25) years commencing 27 July 1982, and ending 26 July 2007, an easement for the operation and maintenance of a sanitary landfill on, in, over, and under the land legally described in Exhibit "C" and shown on Exhibit "D" (E.F.D. Drawing Nos. C-102481, C-102482, C-102483), both attached hereto and made a part hereof.

THIS EASEMENT is granted upon the following terms and conditions, acceptance of which is acknowledged by execution by the City of San Diego:

1. Grantee shall permit all Department of the Navy Stations and/or Activities located within or near the boundaries of the City of San Diego to dispose of wastes in the sanitary landfill at no cost to the Government for the term of this easement. This waiver of fees shall not apply to other solid waste disposal facilities operated by the City of San Diego.

2. The only wastes which will be permitted to be accepted at the sanitary landfill are Group II wastes as so defined by the State of California Solid Waste Management Board.

EXHIBIT B

DOCUMENT NO. R-256573-3
FILED JUN 14 1982

1

Doc 02.0567 P/A
Code _____ File _____
Encl Atty Gen Opinion of FEB 15 1983

3. The Government owns and reserves all rights to recover methane gases produced from the completed landfill areas. Recovery will be coordinated with ongoing landfill operations.

4. Grantee shall:

a. Prepare a Sanitary Landfill Master Plan for the Land described in Exhibit "C".

b. Submit a revegetation plan to the Commanding Officer, Western Division, Naval Facilities Engineering Command for his review and approval. The revegetation plan may be updated and/or amended subject to the review and approval of the Commanding Officer, Naval Air Station, Miramar. If revegetation is deemed by the Government to be inadequate, particularly in terms of preventing soil erosion, the Grantee may be required to perform corrective measures including repeating the soil preparation and reseeding.

c. Provide an environmental fence acceptable to the Navy within the landfill area to protect two major vernal pool areas from vehicular and pedestrian traffic.

d. Transplant individuals of the barrel cactus (Ferocactus viridescens), that will otherwise be lost as a result of the landfill project.

e. Establish a 50 foot wide "buffer" zone over the Navy fuel pipeline as shown on Exhibit "D". In this buffer zone, no structures shall be installed, no heavy equipment allowed, no subsurface excavations made, and no refuse deposited without the written permission of the Station.

f. Provide and maintain, in conformance with the Sanitary Landfill Master Plan, adequate drainage facilities to handle surface runoff water, prevent ponding of water and erosion upon the landfill and upon adjacent property. Grantee shall undertake any necessary controls to prevent leachate.

g. Protect and safeguard water wells 23 P 1 and 23 P 2 located in San Clemente Canyon and shown on Exhibit "D".

h. Be permitted to earth fill the finger canyon areas on the Station located between the landfill easement and the runway, such use to be documented under a separate agreement. Grantee shall relocate all roads, fences, and utilities to Government's specifications as established by the Public Works Officer of the Station.

i. Install and maintain a:

(1) Gate, at a location mutually acceptable to Station and Grantee, to facilitate the transporting of wastes to the landfill for disposal. Grantee shall install and maintain a road from the gate to the nearest landfill service road.

(2) Fence on the outside boundary of the sanitary landfill; size, type and exact location of the fence to be determined by the Public Works Officer of the Station. All roads within the sanitary landfill not utilized for access to landfill operations shall be barricaded or fenced to prevent encroachment by the public.

j. Obtain, at its own expense, all permits necessary to develop and operate a sanitary landfill on that area of the Station granted by this easement, and operate the landfill in accordance with the terms and conditions of those permits.

k. Maintain the premises and the sanitary landfill in good condition at all times and promptly make all repairs necessary to preserve the condition of the premises and continued operation and maintenance of the sanitary landfill.

l. Take all reasonable precautions to prevent fires. There shall be no burning on the sanitary landfill. In the event of a brush fire south of the Station's runways in West Miramar, Grantee will make heavy equipment such as bulldozers and water trucks available to the senior Navy fire fighting official in charge.

m. Temporarily cease sanitary landfill operations within twenty-four (24) hours after receipt of either a verbal or written request from the Commanding Officer, Naval Air Station, Miramar advising of an operational or emergency impact interfering with Station's defense mission. Grantee shall not resume sanitary landfill operations until the Government gives written notice authorizing the resumption of such operations. Station will minimize any cessation of landfill operations and, insofar as possible, will cordon off only the immediate impact area.

n. Procure and maintain or, to extent that any work is performed on the premises by non-governmental persons or organizations, the grantee shall require such persons or organizations to procure and maintain the following minimum amounts and types of insurance covering its use of the lands described in Exhibit "C":

Bodily Injury Liability $300,000 per person
$500,000 per accident

Property Damage Liability $100,000 per occurrence

The United States of America shall be named as an additional insured on all such policies. All such policies shall specify that the insured shall have no right of subrogation against the United States for payments of any premiums or deductibles thereunder and such insurance policies shall be assumed by, be for the account of, and be at the insurers sole risk.

Procurement of insurance will not be required in the event Grantee provides evidence to the Government that it is self-insured for the minimum amounts stipulated above.

5. Grantee may:

a. Continue use of Mercury Street access as shown on Exhibit "D" until an alternate access road is designed and constructed. Once the new access road is constructed, the Mercury Street access will terminate.

b. Establish, in conformance with the Sanitary Landfill Master Plan, a limited administrative and maintenance area to support Grantee's landfill operations. Any proposed expansion of this area shall be submitted to the Commanding Officer, Western Division, Naval Facilities Engineering Command for his review and approval prior to any construction.

c. Operate a voluntary recycling center in the administrative area during the hours the landfill is open to the public.

d. Excavate dirt from the area covered by this easement for the purpose of providing the final topsoil cover for the North Miramar sanitary landfill.

6. Additional specifications relative to landfill operations, maintenance, and environmental considerations are set forth in Attachment One to Land Exchange Agreement N6247482RP00V23 dated 14 June, 1982.

7. All work in connection with the construction, installation, operation, repair, and replacement of the sanitary landfill shall be done without cost or expense to the Government, except as provided herein, in accordance with plans previously approved by the Commanding Officer of the Western Division, Naval Facilities Engineering Command.

8. Grantee recognizes the increased potential hazards to flight operations at the Station resulting from the presence of sea gulls on the sanitary landfill premises particularly during the months of November through February. Landfill operations may be conducted during these months provided the methods employed by Grantee to eliminate the sea gull hazard are satisfactory to the Commanding Officer of the Station.

9. Grantee releases, remises, and forever discharges the United States of America, its officers, agents, and employees of and from any and all causes of action, trespasses, injuries, damages, and demands whatsoever in law or in equity arising out of or connected with Grantee's use and operation of the sanitary landfill authorized hereby, excepting any such causes of action, trespasses, injuries, damages, or demands caused by the negligent or intentional acts or omissions of the United States of America, its officers, agents or employees.

To the extent that any work is performed on the premises by non-governmental persons or organizations the grantee shall require such persons or organizations to:

a. Pay the United States the full value for all damages to lands or other property of the United States caused by him or his employees, contractors, or employees of the contractors, and

b. Indemnify, save and hold harmless and defend the United States against all fines, claims, damages, law suits, judgments and expenses arising out of or from any omission or activity in connection with activities under this easement.

10. Grantee's exercise of its rights hereunder shall at all times be subject to such reasonable rules and regulations as may be prescribed by the Government to prevent interference with Government activities at the Station.

11. In the event sanitary landfill capacity remains at the end of the term of this easement, Grantee may, at its option, by written notification to the Contracting Officer, at least six (6) months prior to the expiration of the easement, extend the term of this easement for two additional periods of five years each. In consideration for the extension of the term, Grantee shall continue the waiver of landfill disposal fees as described in paragraph 1 above. Upon the expiration of this easement Grantee shall remove itself and its property from the premises and surrender the possession thereof to the Government. In the event the Government shall terminate this easement, Grantee shall be allowed reasonable time, as determined by the Commanding Officer of the Station, but in no event less than sixty (60) days from receipt of notice of termination, in which to remove all its property from and terminate its operations on the premises. During such period prior to surrender, all obligations assumed by Grantee shall remain in full force and effect.

12. Before the expiration or prior termination of this easement, Grantee shall take all necessary action to leave the premises in a clean and orderly condition. All slopes shall be dressed, property drainage provided, and fences removed to the satisfaction of the Commanding Officer of the Station. In the event the Government shall terminate this easement, Grantee shall have a minimum of sixty (60) days from the receipt of the notice of termination to accomplish these actions.

13. During the term of this easement, Grantee shall have the right, at its own expense, to install such machinery or equipment, make such minor improvements and additions, and to attach such removable fixtures in or upon the premises as may be required for its use of the premises as a sanitary landfill, and to remove same at any time prior to the expiration or termination of this easement. In the event of termination of this easement by the Government, Grantee may remove such items within sixty (60) days from the receipt of the notice of termination. All property not removed shall be deemed abandoned by the Grantee and may be used or disposed of by the Government in any manner whatsoever without any liability to account to Grantee therefore, but such abandonment shall in no way reduce any obligation of Grantee for restoration under paragraph 12 above.

14. This easement may be terminated by the Government at any time prior to the term hereof or any extended term:

a. Upon the failure by the Grantee to comply with the terms and conditions of this easement; or

b. Upon abandonment of the rights herein, or nonuse of such rights for two consecutive years.

The Government recognizes the importance of the sanitary landfill to the health, safety, and welfare of the citizens of San Diego, and will exercise this section only for good and significant cause and after reasonable time for Grantee to correct any deficiencies in operations.

15. The Commanding Officer, Western Division, Naval Facilities Engineering Command, has designated the Director of the Real Estate Division to act as

Contracting Officer. All correspondence concerning this easement shall be directed to:

Director, Real Estate Division (Code 24)
Western Division, Naval Facilities Engineering Command
P.O. Box 727
San Bruno, California 94066

Government shall notify Grantee in writing of any change in the designated Contracting Officer and/or his address.

16. Notices to be given by the Government to the Grantee may be personally served upon Grantee by serving the City Manager, or any person hereafter authorized in writing to receive such notice, or may be served by certified letter directed to:

City Manager
City of San Diego
202 "C" Street M99A
San Diego, California 92101

Grantee shall notify Government in writing of any change in the Grantee's designated representative and/or address.

IN WITNESS WHEREOF, the Government has caused this instrument to be executed on the day and year written first above.

UNITED STATES OF AMERICA

By _____
WARREN K. BRANSCUM
Director, Real Estate Division
Western Division
Naval Facilities Engineering Command
For and on behalf of the United States
of America, Department of the Navy

IN WITNESS WHEREOF, this Grant of Easement is accepted by the City of San Diego acting through its City Manager pursuant to Resolution No. dated authorizing such acceptance.

The City of San Diego

By _____
City Manager

R-256573

N6247482RP00077

State of California)
)SS
County of San Mateo)

On this 19th day of July in the year 1982, before me, Beverly J. Freitas, a Notary Public in and for said County and State, personally appeared WARREN K. BRANSCUM, known to me to be the Director, Real Estate Division, whose name is subscribed to the within instrument and acknowledge that he executed the same on behalf of the United States of America in accordance with authority granted to him.

OFFICIAL SEAL
BEVERLY J. FREITAS
NOTARY PUBLIC - CALIFORNIA
SAN MATEO COUNTY
My Comm. Expires Feb. 7, 1986

Beverly J. Freitas
Notary Public in and for said
County and State

N6247482RP00077

SAN DIEGO CITY PARCEL
FOR EXCHANGE WITH U.S. NAVY
LANDFILL AREA
AT NAS MIRAMAR, CA

All that land belonging to the City of San Diego being a portion of:

H.L. Barrow's subdivision of the north half of the southeast quarter of section 9 and lots 4, 5, 6 and 11 in said section 9, all in Township 15 South, Range 3 West, San Bernardino Meridian, in the City of San Diego, County of San Diego, State of California, according to the map thereof no. 704, filed in the Office of the County Recorder of San Diego County, March 4, 1892, described as follows:

COMMENCING for a point of reference at a found standard monument with punched brass cap in the centerline of Miramar Road as shown on Map #10031 filed with the County Recorder of said county, said monument also shown on Record of Survey No. 8742 filed in the Office of the County Recorder on June 18, 1981, said standard monument having California State Coordinates of y = 259,320.243 feet, and x = 1,710,133.938 feet, Zone 6;

(1) thence along the centerline of said Miramar Road, North 80° 34' 54" East, 805.77 feet to the southwesterly corner of said land belonging to the City of San Diego, said southwesterly corner being the TRUE POINT OF BEGINNING;

1. Thence along the westerly boundary line of said lands belonging to the City of San Diego, North 35° 29' 37" West, 736.59 feet;

2. Thence continuing along said westerly boundary line, North 12° 26' 16" West, 1259.73 feet to the northerly boundary line of Lot 14 of said H.L. Barrow subdivision and the northerly boundary of City of San Diego lands;

3. Thence along said northerly line to and along the northerly line of Lot 11 of said subdivision, South 89° 23' 52" East, 1453.21 feet to the centerline of Road Survey No. 304 known as Old Miramar Road, on file in the Office of the County Recorder and Surveyor of said county;

4. Thence along said centerline and said northerly line, South 54° 02' 29" East, 303.48 feet to a tangent curve to the right having a radius of 1700.00 feet through a central angle of 27° 26' 47" for an arc distance of 814.35 feet;

5. Thence leaving said centerline and said northerly line of said City of San Diego lands and along the southeasterly and easterly boundary of said City of San Diego lands, South 59° 41' 19" West, 596.36 feet to the east boundary line of Lot 7 of said H.L. Barrow subdivision;

6. Thence along said southeasterly and easterly boundary line of City of San Diego lands and said east boundary line of Lot 7, South 00° 55' 36" West, 554.99 feet to the centerline of said Miramar Road, said centerline being the southerly boundary of said City of San Diego lands;

EXHIBIT "A"

7. Thence along said centerline and said southe. / boundary line, South 80° 34' 50" West, 1101.49 feet to the TRUE POINT OF BEGINNING.

The bearings and distances herein described are based on the California State Coordinate System, Zone 6 and are derived from said Record of Survey 8724 and in accordance with the Adjudicated line per S.C.C. No. 267298, dated October 10, 1968.

Reserving unto the Grantor herein an easement for Street and General Utility purposes, together with all appurtenances and incidents thereto through, over, under, upon, along, and across those portions of the above-described land lying within Road Survey No. 304 known as Old Miramar Road and Miramar Road, all as shown on Department of the Navy, Naval Facilities Engineering Command Drawing No. A-102300 attached hereto and made a part hereof.

This deed is subject to an existing easement granted to the San Diego Gas & Electric Company, recorded April 5, 1956 as Recorder's File No. 46458, Official Records of the San Diego County Recorder.

LEGAL DESCRIPTION	
WRITTEN	APPROVED
CHECKED	
PROVED	DATE 4/26/72

LEGAL DESCRIPTION - WEST MIRAMAR
SANITARY LANDFILL LEASE & ACCESS ROAD EASEMENT

All that portion of Lot 78, Rancho Mission of San Diego, according to partition map thereof on file in the Office of the County Clerk of said County in Superior Court Action No. 348, entitled Juan M. Luco, et al, vs. Commercial Bank of San Diego, et al, more particularly described as follows:

PARCEL 1

Commencing at the common corner of Sections 13, 18, 19 and 24, T15S, R3W according to United States Government Survey thereof; thence North 89°03'14" West, 2,473.89 feet; thence North 89°02'14" West, 2,896.49 feet to the Southwest corner of said Section 13; thence North 89°00'19" West, 310.00 feet to the TRUE POINT OF BEGINNING; thence continuing North 89°00'19" West, 2,380.06 feet; thence South 75°56'21" West, 722.60 feet to a point hereby set aside and designated Point "A" for purposes of this description; thence South 01°13'14" West, 1,537.98 feet; thence South 0°50'29" West, 1,572.96 feet; thence South 06°44'08" West, 1,503.23 feet; thence North 76°19'44" East, 3,866.83 feet; thence North 01°20'14" East, 986.07 feet to a point hereby set out and designated as Point "B" for purposes of this description; thence North 35°06'04" East, 1,010.24 feet; thence South 80°16'35" West, 353.52 feet; thence North 05°47'48" West, 1,131.27 feet; thence North 56°05'44" West, 770.00 feet; thence North 05°54'35" East, 518.74 feet, returning to the TRUE POINT OF BEGINNING.

354.870Ac.

PARCEL 2

Beginning at Point "A" as set aside and designated in Parcel 1 above; thence South 75°56'21" West, 3,156.94 feet; thence South 68°12'49" West, 2,916.91 feet to a point of intersection with the Northeasterly line of Interstate 805 as said Highway is located and established as of the date of the instrument; thence along said Northeasterly line of Interstate 805, South 28°36'43" East, 2,501.24 feet; thence South 50°16'44" East, 554.67 feet; thence South 74°00'55" East, 561.84 feet; thence leaving said Northeasterly line of Interstate 805, South 80°16'08" East, 1,895.47 feet; thence North 79°46'28" East, 1,530.33 feet; thence North 06°44'08" East, 1,503.23 feet; thence North 00°50'29" East, 1,572.96 feet; thence North 01°13'14" East, 1,537.98 feet, returning to the Point of Beginning.

453.085Ac.

PARCEL 3 - Access Road Easement

A strip of land 52.00 feet in width lying 26.00 feet on each side of the following described centerline:

Commencing at Point "B" as set aside and designated in Parcel 1 above; thence North 35°06'04" East, 290.73 feet to the TRUE POINT OF BEGINNING; thence South 14°59'52" East, 71.53 feet to the beginning of a tangent 900-foot radius curve concave Westerly; thence Southerly along the arc of said curve through a central angle of 21°37'03" a distance of 339.57 feet; thence tangent to said curve South 06°37'11" West, 698.31 feet to the beginning of a tangent 900-foot radius curve concave Westerly; thence Southerly along the arc of said curve through a central angle of 07°22'50" a distance of 115.93 feet; thence tangent to said curve South 14°00'01" West, 805.14 feet to the beginning of a tangent 900-foot radius curve concave Easterly; thence Southerly along the arc of said curve through a central angle of 36°46'04" a distance of 577.65 feet; thence tangent to said curve South 22°46'03" East, 459.26 feet to a point hereby set out and designated as Point "C" for purposes of this description, said point also being the point of termination for the above-described strip of land.

3.662Ac

PARCEL 4 - Access Road Easement

A strip of land 52.00 feet wide lying 26.00 feet on each side of the following described centerline:

Commencing at Point "C" set out and designated in Parcel 3 above; thence North 67°13'57" East, 60.00 feet; thence South 22°46'03" East, 600.00 feet to the TRUE POINT OF BEGINNING; thence continuing South 22°46'03" East, 254.17 feet to the beginning of a tangent 900-foot radius curve concave Westerly; thence Southerly along the arc of said curve through a central angle of ~~66°00'35"~~ correct Δ=56°29'52" a distance of ~~1,039.84~~ 887.46 feet; thence tangent to said curve South 33°43'49" West, 806.22 feet to the beginning of a tangent 900-foot radius curve concave Easterly; thence Southerly along the arc of said curve through a central angle of 28°52'03" a distance of 453.45 feet; thence tangent to said curve, South 04°51'46" West, 805.23 feet to the beginning of a tangent 1,600-foot radius curve concave Westerly; thence Southerly along the arc of said curve through a central angle of 02°31'05" a distance of 70.30 feet to a terminal intersection with the existing centerline of Convoy Street as said street is located and established on the date of this instrument.

3.912 Ac

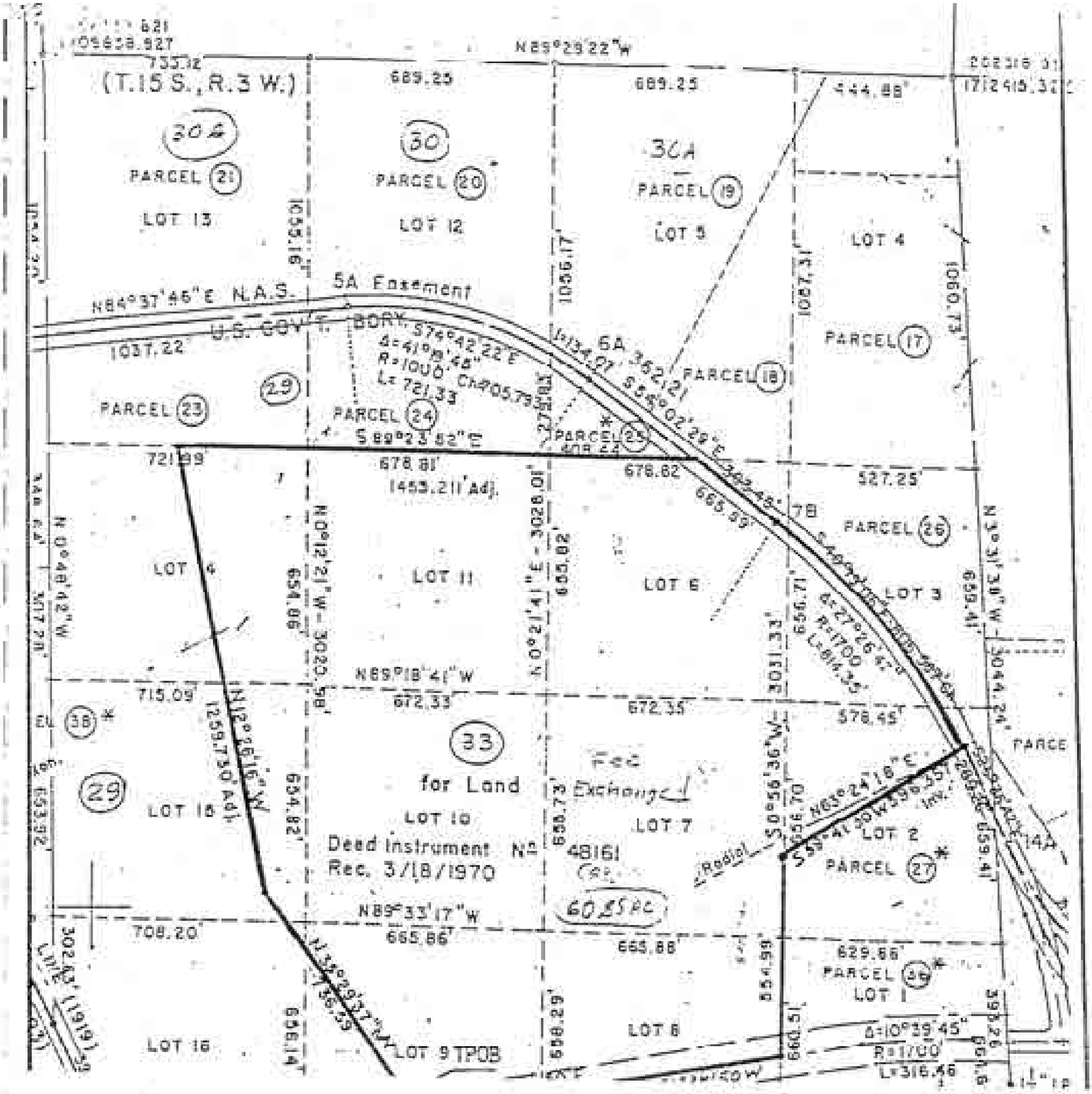
PARCEL 5 - Weigh Station Easement

Beginning at Point "C" set out in Parcel 1 above; thence North 67°13'57" East, 156.00 feet; thence South 22°46'03" East, 600.00 feet; thence South 67°13'57" West, 202.00 feet; thence North 22°46'03" West, 600.00 feet; thence North 67°15'57" East, 46.00 feet returning to the Point of Beginning.

2.782Ac

APPROVED BY CADASTRAL 4/30/82 M. McKinney Signature

Job 15309/Dwg. 17849-1-D/GLENN/ed/2-10-82


(T.15 S., R.3 W.)
N 89°29'22" W
689.25
689.25
30A
30
30A
PARCEL 21
PARCEL 20
PARCEL 19
LOT 13
LOT 12
LOT 5
LOT 4
1055.16'
1056.17'
1057.31'
1060.73'
N 84°37'46" E N.A.S.
5A Easement
U.S. GOV'T. BDRY.
1037.22'
S 74°42'22" E
R=1000
L=721.33
6A
362.21
PARCEL 18
PARCEL 17
PARCEL 23
29
PARCEL 24
PARCEL 25
S 89°23'52" E
721.99'
678.81'
1453.211' Adj.
676.62'
527.25'
7B
PARCEL 26
LOT 14
LOT 11
LOT 6
LOT 3
N 0°12'21" W - 3020.58'
N 0°21'41" E - 3028.01'
N 89°18'41" W
715.09'
672.33'
672.35'
576.45'
33
for Land
Fed Exchange
LOT 18
LOT 10
LOT 7
LOT 2
Deed Instrument No 48161
Rec. 3/18/1970
1259.730' Adj.
N 63°24'18" E
PARCEL 27
60.25 AC
N 89°33'17" W
708.20'
665.86'
665.88'
629.66'
PARCEL 39
LOT 1
LOT 16
LOT 9 TPOB
LOT 8
R=1700
L=316.46

MIRAMAR LEASE AREAS FOR
INTEGRATED WASTE MANAGEMENT FACILITIES

Being those portions of Lot 78 of, Partition of Rancho Mission of San Diego, in the County of San Diego, State of California according to Map No. 330 filed in the office of the County Clerk of said County, January 14, 1886, made in action entitled Juan, et al, vs. Commercial Bank of San Diego, et al, under Superior Court Case No.348, more particularly described as follows:

PARCEL 1

Beginning at the common corner of Sections 13, 18, 19, and 24, Township 15 South, Range 3 West, of the San Bernardino Meridian according to the United States Government Survey; thence along the North line of said section 24 North 89°03'16" West 2413.89 feet; thence continuing along said North line North 89°02'17" West 425.00 feet; thence South 41°24'51" West 2,619.35 feet to a point designated herein as Point "A"; thence South 35°06'02" West 1,010.25 feet; thence South 01°20'14" West, 986.07 feet; thence North 76°23'57" East 621.39 feet; thence North 83°20'21" East 613.37 feet; thence North 27°43'20" East 629.64 feet; thence North 75°55'34" East 2,458.50 feet; thence North 45°20'22" East 1,796.57 feet; thence North 00°19'59" East 1,094.43 feet to the point of beginning.

(Said parcel of land contains 249.725 acres more or less)

PARCEL 2

Beginning at Point "A" as described in Parcel 1 herein; thence South 80°16'35" West 353.52 feet; thence North 5°47'48" West 1,131.27 feet; thence North 56°05'45" West 770.00 feet; thence North 5°54'23" East 518.69 feet to a point on the northerly line of Section 23 as described in said Parcel 1; thence along said section line North 89°00'28" West 2,380.12 feet; thence leaving said section line South 75°56'14" West 3879.28 feet; thence South

68°12'22" West 2917.12 feet to an angle point on the easterly line of the State of California Department of Transportation (Caltrans) right-of-way (State Route 11-SD-805) as shown on Caltrans monumentation map Miscellaneous Survey No. 726(M.S.726); thence along said easterly line South 28°36'16" East 2,501.27 feet (South 28°36'58" East 2,501.28 feet per M.S.726); thence South 50°16'36" East 554.51 feet (South 50°16'58" East 554.40 feet per M.S.726) to the beginning of monumentation mapping for the northerly line of Caltrans right-of-way (State Route 11-SD-52) as shown on M.S.988; thence leaving said easterly line of (State Route 11-SD-805) along the northerly line of said Caltrans right-of-way (State Route 11-SD-52) South 73°58'06" East 474.98 feet (South 73°58'20" East per M.S.988) to the most easterly point of the Monardella Mitigation Site as delineated on said M.S.988; thence leaving said northerly right-of-way line along the northerly line of said mitigation site North 80°58'05" East (North 80°57'51" East per M.S.988) 110.94 feet; thence South 78°31'21" East (South 78°31'35" East per M.S.988) 200.81 feet; thence North 88°37'01" East 1,387.20 feet (North 88°36'47" East per M.S.988); thence South 30°42'19" East (South 30°42'33" East per M.S.988) 402.29 feet; thence leaving the northerly line of said mitigation site South 80°24'03" East 53.98 feet; thence North 79°46'28" East 1,530.33 feet; thence North 76°19'14" East 3,540.93 feet to a point designated herein as Point "B"; thence continuing along said last course North 76°19'14" West 326.00 feet; thence North 1°20'14" East 986.07 feet; thence North 35°06'02" East 1,010.25 feet to the point of beginning.

(Said parcel of land contains 801.445 acres more of less)

PARCEL 3

Beginning at Point "B" as described in Parcel 2 herein; thence South 9°02'16" East 597.85 feet; thence South 11°02'18" West 420.41 feet; thence South 16°51'36" East 338.36 feet to a point designated herein as Point "C"; thence South 64°56'54" East 345.15 feet; thence North 20°16'59" West 416.11 feet; thence North 0°00'00" East 350.10 feet; thence North 14°26'22" East 881.88 feet; thence South 76°22'57" West 188.42 feet; thence South 76°19'14" West, 326.00 feet to the point of beginning.

(Said parcel of land contains 9.847 acres more or less)

PARCEL 4

Beginning at Point "C" as described in Parcel 3 herein; thence North 89°50'06" West 1,513.85 feet; thence South 41°31'31" West 511.04 feet; thence South 4°29'56" West 569.70 feet; thence South 40°00'00" West, 94.71 feet; thence South 7°55'19" East, 216.59 feet; thence South 40°00'00" West 111.90 feet; thence South 82°30'01" West 83.99 feet; thence North 68°39'24" West 62.44 feet; thence South 89°50'33" West 99.26 feet; thence North 50°00'00" West 145.28 feet; thence North 2°06'06" East 99.31 feet; thence North 50°00'00" West 245.96 feet; thence South 84°58'42" West 64.56 feet; thence North 53°59'57" West 182.03 feet; thence North 19°59'57" West 75.94 feet; thence North 13°24'41" East 125.83 feet; thence North 50°00'00" West, 50.58 feet; thence South 74°39'19" West, 67.28 feet; thence North 50°00'00" West 220.75 feet; thence North 59°11'45" West 65.96 feet; thence North 84°41'34" West 175.73; thence North 50°00'00" West 86.30 feet; thence North 30°00'15" West 82.44 feet; thence North 50°00'00" West 195.91 feet; thence North 89°27'31" West 40.22 feet; thence South 40°00'00" West 195.98 feet; thence South 7°36'31" East 94.97 feet; thence South 40°00'00" West 870.69 feet to a point on the northerly line of the State of California Department of Transportation (CalTrans) right-of-way (State Route 11-SD-52) as shown on Caltrans monumentation map Miscellaneous Survey No. 988 (M.S.988); thence along said northerly line South 47°52'05" East 1049.62 feet (South 47°52'10" East per M.S.988); thence South 51°21'05" East 501.22 feet (South 51°21'10" East 501.22 feet per M.S.988); thence South 43°46'15" East 400.78 feet (South 43°46'20" East per M.S.988); thence South 53°19'55" East (South 53°19'58" East per M.S.988) 762.36 feet; thence South 63°46'30" East 284.78 (South 63°46'35" East 284.88 feet per M.S.988); thence South 65°58'33" East (South 65°58'38" East per M.S.988) 382.89 feet; thence South 79°17'24" East (South 79°17'29" East per M.S.988) 485.05 feet; thence North 88°13'38" East (North 88°13'33" East per M.S.988) 193.19 feet; thence North 82°29'51" East (North 82°29'46" East per M.S.988) 96.65 feet; thence North 51°19'37" East (North 51°19'32" East per M.S.988) 132.62 feet; thence North 82°49'51" East (North 82°49'46" East per M.S.988) 166.54 feet; thence North 73°21'22" East (North 73°11'17" East per M.S.988) 195.60 feet; thence North 65°39'57" East (North 65°39'52" East per M.S.988) 312.73 feet; thence North 68°47'31" East (North 68°47'26" East per M.S.988) 102.80 feet; thence South 83°38'38" East (South 83°38'43" East per M.S.988) 115.47 feet; thence South 86°14'12" East (South 86°14'17" East per M.S.988) 291.46 feet; thence South 78°15'34" East 98.69 feet (South 78°15'39" East per M.S.988); thence North 88°22'14" East (North 88°22'09" East per

M.S.988) 97.49 feet; thence North 82°45'34" East (North 82°45'29" East per M.S.988) 490.34 feet; thence North 77°03'50" East (North 77°03'45" East per M.S.988) 1000.01 feet; thence North 76°42'50" East (North 76°42'45" East per M.S.988) 900.00 feet; thence North 77°46'55" East (North 77°46'50" East per M.S.988) 600.00 feet to a point designated herein as Point "D"; thence leaving said northerly right-of-way line North 3°02'08" West 672.67 feet; thence North 64°55'10" West 3,566.06 feet; thence North 64°56'54" East 345.15 feet to the point of beginning.

(Said parcel of land contains 359.336 acres more or less)

PARCEL 5

Beginning at Point "D" as described in Parcel 4 herein; thence South 3°02'08" East, 317.65 feet to a point on the southerly line of Caltrans right-of-way (11-SD-52) as shown on M.S.988, said point being the TRUE POINT OF BEGINNING; thence along said southerly line South 75°41'44" West (South 75°39'24" West) 39.69 feet; thence South 82°17'00" West (South 82°17'12" West) 691.03 feet; thence leaving said southerly line South 10°03'42" West 278.81 feet; thence North 77°12'59" East 813.14 feet; thence North 6°05'27" West 198.31 feet to the TRUE POINT OF BEGINNING.

(Said parcel of land contains 4.024 acres more or less)

THIS LEGAL DESCRIPTION WAS PREPARED
BY ME OR UNDER MY DIRECTION:

LeRoy C. Hennes 9-12-94

LEROY C. HENNES, DEPUTY CITY ENGINEER

L.S. 4804

W.O. No. 118802

DWG. No. 27235-D

PROFESSIONAL LAND SURVEYOR
LEROY C. HENNES
No. 4804
Exp. 9-30-96
STATE OF CALIFORNIA

PAGE 4 OF 4 PAGES

EARLY CANCELLATION REFUND SCHEDULE

Projected Lease Payments - FIRP/NSPF/MRF

Assumptions:
Year 1 market rent: $298,440
Lease term (years): 50
Discount Rate: 9.0%

(payment in advance)

Year	Rent	PWF	Present Worth
1	$298,440	1.0000	$298,440
2	298,440	0.9174	273,798
3	298,440	0.8417	251,191
4	298,440	0.7722	230,450
5	298,440	0.7084	211,422
6	298,440	0.6499	193,956
7	298,440	0.5963	177,950
8	298,440	0.5470	163,257
9	298,440	0.5019	149,777
10	298,440	0.4604	137,410
11	298,440	0.4224	126,064
12	298,440	0.3875	115,655
13	298,440	0.3555	106,106
14	298,440	0.3262	97,345
15	298,440	0.2992	89,307
16	298,440	0.2745	81,933
17	298,440	0.2519	75,166
18	298,440	0.2311	68,961
19	298,440	0.2120	63,267
20	298,440	0.1945	58,043
21	298,440	0.1784	53,251
22	298,440	0.1637	48,854
23	298,440	0.1502	44,820
24	298,440	0.1378	41,119
25	298,440	0.1264	37,724
26	298,440	0.1160	34,609
27	298,440	0.1064	31,752
28	298,440	0.0976	29,130
29	298,440	0.0895	26,725
30	298,440	0.0822	24,518
31	298,440	0.0754	22,494
32	298,440	0.0691	20,639
33	298,440	0.0634	18,933
34	298,440	0.0582	17,369
35	298,440	0.0534	15,935
36	298,440	0.0490	14,619
37	298,440	0.0449	13,412
38	298,440	0.0412	12,305
39	298,440	0.0378	11,289
40	298,440	0.0347	10,357
41	298,440	0.0318	9,502
42	298,440	0.0292	8,717
43	298,440	0.0268	7,997
44	298,440	0.0246	7,337
45	298,440	0.0226	6,731
46	298,440	0.0207	6,175
47	298,440	0.0190	5,665
48	298,440	0.0174	5,198
49	298,440	0.0160	4,769
50	298,440	0.0147	4,375
			$5,445,811

Projected Lease Payments - Other Areas

Assumptions:
Year 1 market rent: $188,906
Lease term (years): 50
Discount Rate: 9.0%

(payment in advance)

Year	Rent	PWF	Present Worth
1	$188,906	1.0000	$188,906
2	188,906	0.9174	173,308
3	188,906	0.8417	158,998
4	188,906	0.7722	145,870
5	188,906	0.7084	133,826
6	188,906	0.6499	122,779
7	188,906	0.5963	112,639
8	188,906	0.5470	103,338
9	188,906	0.5019	94,806
10	188,906	0.4604	86,978
11	188,906	0.4224	79,796
12	188,906	0.3875	73,207
13	188,906	0.3555	67,163
14	188,906	0.3262	61,617
15	188,906	0.2992	56,529
16	188,906	0.2745	51,862
17	188,906	0.2519	47,580
18	188,906	0.2311	43,651
19	188,906	0.2120	40,047
20	188,906	0.1945	36,740
21	188,906	0.1784	33,707
22	188,906	0.1637	30,924
23	188,906	0.1502	28,370
24	188,906	0.1378	26,028
25	188,906	0.1264	23,879
26	188,906	0.1160	21,907
27	188,906	0.1064	20,096
28	188,906	0.0976	18,439
29	188,906	0.0895	16,910
30	188,906	0.0822	15,519
31	188,906	0.0754	14,236
32	188,906	0.0691	13,062
33	188,906	0.0634	11,984
34	188,906	0.0582	10,994
35	188,906	0.0534	10,087
36	188,906	0.0490	9,254
37	188,906	0.0449	8,490
38	188,906	0.0412	7,789
39	188,906	0.0378	7,145
40	188,906	0.0347	6,556
41	188,906	0.0318	6,014
42	188,906	0.0292	5,518
43	188,906	0.0268	5,062
44	188,906	0.0246	4,644
45	188,906	0.0226	4,261
46	188,906	0.0207	3,909
47	188,906	0.0190	3,586
48	188,906	0.0174	3,290
49	188,906	0.0160	3,018
50	188,906	0.0147	2,769
			$2,257,093

Summary (payment in advance)

FIRP/NSPF/MRF	$3,568,831
Other Areas	$2,257,093
Pipeline easements	$177,268
	$6,000,192

In the event of cancellation prior to the contract term of 50 years, the above schedule shall be used to calculate the refund to the City of pre-paid rent for the unused term. The "Years" column shall represent the number of years remaining in the lease at time of cancellation and the refund shall be the sum of the values in the present worth column for the number of years remaining.

Example No.1: 45 years have passed, 5 years remain at time of cancellation of FIRP/NSPF/MRF area: Sum of years 1-5 ($298,440...$211,422) = $1,285,501. Example No. 2: 49 years have passed, 1 year remains; = $298,440.

EXHIBIT C

OFFICE OF
THE CITY ATTORNEY
CITY OF SAN DIEGO
John W. Witt
CITY ATTORNEY

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DEPUTY CITY ATTORNEY

September 30, 1994

United States of America
Department of the Navy
NAS Miramar
c/o Ronald G. Ress, Esq.
Counsel to the Commander
MCAS, Western Areas
MCAS El Toro (AQ2)
Santa Ana, CA. 92709

Dear Mr. Ress:

City of San Diego Ground Lease
with United States for lease
at Naval Air Station Miramar

This will acknowledge our review of the City of San Diego's obligations under the proposed ground lease of property at the Miramar Naval Air Station and our analysis whether such obligations are either general obligations or special obligations.

After a review of all applicable authority, it is the opinion of this office that the obligations under the proposed lease of property at Miramar Naval Air Station, including hazardous waste removal and property restoration obligations, will be the general obligations of the City of San Diego and will be backed by its full faith and credit.

We recognize and consent to the use of this opinion as an exhibit to the lease and this opinion is further set forth in our Memorandum of Law No. 94-80, dated September 29, 1994.

Sincerely yours,

JOHN W. WITT, City Attorney

By Frederick M. Ortlieb
Frederick M. Ortlieb
Deputy City Attorney

FMO:mb:825

EXHIBIT D

FINAL REPORT

WEST MIRAMAR LANDFILL VERTICAL EXPANSION

TECHNICAL EVALUATION OF POTENTIAL IMPACTS RELATED TO AIR QUALITY

Prepared for

City of San Diego
Environmental Services Department
9601 Ridgehaven Court, Suite 210
San Diego, CA 92123-1636

March 19, 2007

URS

2020 East First Street, Suite 400
Santa Ana, California 92705

TABLE OF CONTENTS

LIST OF TABLES AND FIGURES

LIST OF ACRONYMS

AMSL	above mean sea level
AQIA	Air Quality Impact Analysis
BACT	Best Available Control Technology
CO	carbon monoxide
EIS/EIR	Environmental Impact Statement/Environmental Impact Report
EPA	U.S. Environmental Protection Agency
g/mol	Molecular Weight of Compound
HIA	Acute Hazard Index
HIC	Chronic Hazard Index
lb/day	pounds per day
LFG	Landfill Gas
lb/MMBTU	pounds per Million British Thermal Units
m^3/Mg	cubic meter per megagram
Mg	megagram
MICR	Maximum Individual Cancer Risk
mph	miles per hour
MSW	Municipal Solid Waste
NSR	New Source Review
NMOC	non-methane organic compounds
NO_x	oxides of nitrogen
NSPS	New Source Performance Standards
NSR	New Source Review
PM	particulate matter
PM_{10}	particulate matter less than 10 microns in diameter
ppmv	parts per million by volume
PTE	potential to emit
ROG	Reactive Organic Compound
SCFM	standard cubic feet per minute
SDCAPCD	San Diego County Air Pollution Control District
SHRA	Screening Health Risk Assessment
SO_x	oxides of sulfur
TAC	Toxic Air Contaminant
TOG	Total Organic Gas
VOC	Volatile Organic Compound
WML	West Miramar Landfill

EXECUTIVE SUMMARY

The City of San Diego is proposing a 15 to 20 foot vertical expansion of Phases I and II of West Miramar Landfill (WML). An Environmental Impact Report/ Environmental Impact Statement is being prepared for this proposed height expansion. The potential air quality impacts of the proposed project were evaluated. The findings are summarized below.

- The proposed vertical expansion project is expected to increase the active life of the landfill by approximately five years.
- The maximum increase in landfill gas (LFG) generation from the WML is projected to be approximately 1,360 standard cubic feet per minute (SCFM).
- With the proposed vertical expansion implemented, the maximum projected LFG generation rate for the entire Miramar Landfill in 2017 would increase by approximately 1,200 SCFM compared to the baseline case (e.g., without WML expansion) in 2012.
- Emissions of criteria pollutant and toxic air contaminants were calculated based on the maximum projected LFG generated for both baseline and expansion cases for WML and for the entire landfill. In general, conservative emission calculation methods and factors were used to estimate the emissions.
- The incremental change in criteria pollutant emissions for all pollutants was determined to be below the established regulatory thresholds for a major modification and below the applicable thresholds that trigger an Air Quality Impact Analysis.
- New Source Review and Best Available Control Technology would be triggered as a result of the proposed expansion. Emission offsets would not be required.
- A screening health risk assessment was performed based on the maximum projected incremental LFG generation rate increase resulting from the vertical landfill expansion.
- The Maximum Individual Cancer Risk, Chronic Hazard Index, and Acute Hazard Index were shown to be well below regulatory thresholds established for both permitting and public notification purposes.
- A modification of the Title V permit for WML will be required to increase the current permitted height limit.
- No additional odors or other public nuisance problems are expected as a result of this proposed expansion.

1.0 INTRODUCTION

The City of San Diego is proposing a 15 to 20 foot vertical expansion of Phases I and II of West Miramar Landfill (WML). An Environmental Impact Report/ Environmental Impact Statement (EIS/EIR) is being prepared for this proposed height expansion. This report evaluates the air quality impacts associated with the proposed project. The analyses and results presented in this report will be summarized in the main body of the EIR/EIS.

2.0 PROPOSED PROJECT

To increase the waste disposal capacity of the existing, permitted WML (Phases I and II), the City of San Diego is proposing to increase the permitted landfill height 15 to 20 feet above the currently-approved landfill elevations, thus allowing landfill operations to continue at the site for an additional five years. No other changes from the existing, approved landfill plan, including horizontal expansion or changes in daily throughput are proposed.

2.1 BACKGROUND

The City of San Diego has been operating sanitary landfills on the Marine Corps Air Station Miramar (previously Naval Air Station Miramar) since 1959. These non-hazardous landfills were developed in four phases. Phase I began with the South Miramar Landfill commencing operation in 1959 and completing disposal operations in 1973. The North Miramar Landfill was in operation from 1973 through 1983 and is now being managed and monitored as an inactive landfill. Phase I of WML began operation in 1983 and was near elevation in 1993. Phase II has been in operation since 1993 and without the proposed height increase is expected to reach its capacity by approximately 2012.

The WML lies within an unzoned area, which is part federal land designated as a military base. The land surrounding WML is currently used primarily for open space, aircraft operations, and industrial and commercial uses. The site is near the residential community of University City and the Marion Bear Regional Park, a continuation of the San Clemente Canyon on the west. The community of Kearny Mesa lies south of the landfill, immediately south of SR-52. Appendix A contains the Solid Waste Facility Permit 37-AA-0020 for WML. Table 2-1 summarizes the facility and operational data for WML.

Table 2-1. West Miramar Landfill Facility Information

Permitted Disposal Areas, Acres	Permitted Maximum Elevation, Feet Mean Sea Level	Permitted Maximum Rate of Disposal, Tons Daily/Annual	Average Rate of Daily Waste Receipt Tons/Cubic Yards	Permitted Waste Type	Current Remaining Capacity, Cubic Yards/Tons (As of May 2002)	Remaining Site Life
807	470	8,000/ 1,400,000 tons	3,500/5,469 (1 cubic yard = 0.64 tons)	Class III Landfill (i.e., lined and accepting domestic and commercial solid waste, but not hazardous materials.	21,618,249/ 13,835,679	Approximately seven years (i.e., capacity will be reached in 2012)

2.2 PROPOSED HEIGHT INCREASE PROJECT

The current height limit of 465 feet above mean sea level (AMSL) to 470 feet AMSL was included in the Department of Navy 1996 lease agreement with the City of San Diego to ensure that landfill operations did not interfere with flight operations at what was then Naval Air Station Miramar. The Base has subsequently been realigned as a Marine Corps Base. The Environmental Services Department approached the Marine Corps in 2004 to discuss the possibility of a height increase. The Base evaluated

the proposal, ultimately determining that up to a 20-foot height increase could be allowed without interfering with flight operations.

The proposed height increase would provide the capacity for an additional 10,624,000 cubic yards, or 6,799,360 tons of Municipal Solid Waste (MSW) at Miramar Landfill (based on an estimated final refuse density of 0.64 ton/cubic yard). As a result, it is anticipated that the operating life of Miramar Landfill would be extended approximately five years beyond the currently anticipated closure year of 2012.

The proposed height increase would affect the currently permitted maximum elevation of 470 feet AMSL; it would have no effect on any other landfill configuration or operating parameter, including the following:

- Horizontal footprint of WML;
- Maximum daily or annual rate of disposal; and
- Daily or annual vehicle traffic to WML.

However, the expansion would extend emissions due to vehicular traffic to the site by five years. Additionally, the vertical expansion would require a modification of the facility's Solid Waste Permit, as well as the facility's air quality permit, both of which limit the landfill elevation to 470 feet.

3.0 AIR QUALITY OVERVIEW

3.1 REGIONAL METEOROLOGY/CLIMATE

Meteorological and climatological conditions influence ambient air quality. The climate of San Diego County is characterized by warm, dry summers and mild winters and is dominated by a semi-permanent high-pressure cell located over the Pacific Ocean. This high-pressure cell maintains clear skies for much of the year. It also drives the dominant onshore circulation and helps create two types of temperature inversions—subsidence and radiation—that contribute to local air quality degradation.

Subsidence inversions occur during warmer months, as descending air associated with the Pacific high-pressure cell comes into contact with cool marine air. The boundary between the two layers of air represents a temperature inversion that traps pollutants below it. Radiation inversions typically develop on winter nights with low wind speeds, when air near the ground cools by radiation and the air aloft remains warm. A shallow inversion layer that can trap pollutants is formed between the two layers.

In San Diego, the normal daily maximum temperature is 77.8°F in August, and the normal daily minimum temperature is 48.9°F in December, according to the 1998 "Climate Data Summary" provided by Western Regional Climate Center. The normal precipitation in San Diego is 9.90 inches annually, occurring primarily from November through March. The prevailing wind direction is from the west-northwest, with an annual mean speed of seven miles per hour (mph). Climatological data for San Diego are summarized in Table 3-1.

Table 3-1. Climatological Data Summary San Diego, California

Month	Temperature (°F)			Precipitation (inches)	Wind	
	Normal Daily Maximum	Normal Daily Minimum	Normal Monthly	Normal Monthly	Mean Speed (miles per hour)	Prevailing Direction
Jan	65.9	48.9	57.4	1.80	6.0	NE
Feb	66.5	50.7	58.6	1.53	6.6	WNW
Mar	66.3	52.8	59.6	1.77	7.5	WNW
Apr	68.4	55.6	62.0	0.79	7.8	WNW
May	69.1	59.1	64.1	0.19	7.9	WNW
June	71.6	61.9	66.8	0.07	7.8	SSW
July	76.2	65.7	71.0	0.02	7.5	WNW
Aug	77.8	67.3	72.6	0.10	7.4	WNW
Sept	77.1	65.6	71.4	0.24	7.1	NW
Oct	74.6	60.9	67.7	0.37	6.5	WNW
Nov	69.9	53.9	62.0	1.45	5.9	NE
Dec	66.1	48.8	57.4	1.57	5.6	NE
Annual Mean	70.8	57.6	64.2	9.90	7.0	WNW

Source: Western Regional Climate Center, 1998

3.2 EXISTING AIR QUALITY

From an air quality standpoint, WML operates under the jurisdiction of the San Diego County Air Pollution Control District (SDCAPCD). In 2003, SDCAPCD demonstrated attainment with the federal one-hour ozone standards and was redesignated as an attainment area. SDCAPCD, however, is in nonattainment with the federal 8-hour ozone standards, the state one-hour ozone standards, and the state particulate matter less than microns in diameter (PM_{10}) standards. Table 3-2 presents San Diego Air Basin's federal and state designations. Appendix B contains the federal and state ambient air quality standards.

Table 3-2. San Diego's Air Quality Designations

Pollutant	Federal Designation	State Designation
Ozone (one hour)	Attainment	Nonattainment
Ozone (eight hour)	Nonattainment	No state standard
PM_{10}	Unclassifiable	Nonattainment
Particulate matter less than 2.5 microns in diameter ($PM_{2.5}$)	Attainment	Nonattainment
Carbon Monoxide	Attainment	Attainment
Nitrogen Dioxide	Attainment	Attainment
Sulfur Dioxide	Attainment	Attainment
Lead	Attainment	Attainment
Sulfates	No federal standard	Attainment
Hydrogen Sulfide	No federal standard	Unclassified
Visibility	No federal standard	Unclassified

3.3 APPLICABLE RULES, REGULATIONS, POLICIES, GUIDELINES

WML Phase I and Phase II operations are permitted through SDCAPCD Permit Number 971254. A copy of the permit is provided in Appendix C. This permit covers non-hazardous waste landfill operations that include quarrying, municipal waste disposal, waste compaction, cover material application, and haul road activities. Landfill gas (LFG) recovery and control operations (i.e., cogeneration facility and flares) are conducted by independent companies under lease agreements with the City of San Diego. These activities are permitted separately. The following are the key federal and local air quality requirements that are applicable to WML operations.

3.3.1 Title V Operating Permit Program

Title V of the 1990 Clean Air Act Amendments mandates that all major stationary sources obtain an operating permit that encompasses all the applicable requirements for the emission units operated at the stationary source. Major sources are defined as those that have potential to emit (PTE) above a certain threshold.

At the federal level, Title V requirements are codified in 40 Code of Federal Regulations Part 70 (57 *Federal Register* 32250, 21 July 1992). In SDCAPCD, Regulation XIV, *Title V Operating Permits*, implements Title V. SDCAPCD defines a major source as one that emits or has the PTE one or more air contaminants in amounts equal to or greater than any of the following emission rates:

- 10 tons per year of any federal hazardous air pollutant, including fugitive emissions;
- 25 tons per year of any combination of federal hazardous air pollutants, including fugitive emissions; or
- 100 tons per year or more of any regulated air pollutant, excluding fugitive emission of any such pollutant (except for certain categories of sources defined in the rule.

WML exceeds the major source threshold for volatile organic compounds (VOCs) and as such is subject to Title V permitting requirements. A Title V permit has been issued for the facility. The proposed expansion project would require a modification of the Title V permit to increase the permitted landfill height.

3.3.2 New Source Performance Standard Subpart WWW- Standards of Performance for New Stationary Sources and Guidelines for Control of Existing Sources: Municipal Solid Waste Landfills

The operation of WML is subject to the requirements of New Source Performance Standards (NSPS) Subpart WWW for MSW Landfills. On March 12, 1996, the U.S. Environmental Protection Agency (EPA) issued a final regulation that controls emissions of a variety of air pollutants from new and existing large MSW landfills. The regulation included an NSPS that applied to new, modified, and reconstructed landfills, as well as emission guidelines that applied to existing landfills. The regulation requires installation of gas collection and control systems for new and existing landfills designed to hold 2.5 million megagrams and 2.5 million cubic meters or more of waste that emit greater than or equal to 50 megagrams per year of non-methane organic compounds (NMOCs). The gas control systems must reduce landfill emissions by 98 percent. On June 16, 1998 EPA published a direct final rule in the *Federal Register* that amended the promulgated regulation. The direct final rule amendments modified definitions and clarified the timing of a landfill's permit obligations.

3.3.3 SDCAPCD Rule 59.1, Municipal Solid Waste Landfills

SDCAPCD Rule 59.1 implements and enforces NSPS Subpart WWW locally. This rule applies to existing municipal solid waste landfills with a design capacity greater than 2.75 million tons (i.e., 2.5 million megagrams) or greater than 3.27 million cubic yards (i.e., 2.5 million cubic meters) in volume units, or with uncontrolled non-methane organic compound emissions less than 55 tons per year (i.e., 50 megagrams per year). Rule 59.1 requires the landfill owner/operator to:

- Install an emissions collection system;
- Install an emissions control system;
- Operate the collection system so that the methane concentration is less than 500 parts per million by volume (ppmv) above background at the surface of landfill;

- Not allow any gas leaks along the landfill gas transfer path, which result in a concentration of 1375 ppmv or more, at a distance of 0.5 inches from the transfer path;
- Not allow leachate and/or condensate from the landfill to reach any surface where NMOCs can be evaporated into the atmosphere; and
- Comply with all other specified operational standards and monitoring requirements.

Rule 59.1 requires landfill owners and operators to submit a design capacity report and, for large landfills with a design capacity of 2.5 million megagrams and 2.5 million cubic meters or more of waste, requires submittal of an NMOC emission rate report. The City of San Diego submitted the Design Capacity Report to SDCAPCD on September 11, 1998.

3.3.4 SDCAPCD Rule 51, Nuisance

This rule stipulates that a person shall not discharge from any source whatsoever such quantities of air contaminants or other material that cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property. Rule 51 provides the regulatory mechanism for SDCAPCD to control and enforce landfill odor requirements.

3.3.5 SDCAPCD Rule 20.3, New Source Review

This regulation sets forth pre-construction review requirements for new, modified, or relocated major source facilities to ensure that the operation of such facilities does not interfere with progress in attainment of the national ambient air quality standards, and that future economic growth within the SDCAPCD is not unnecessarily restricted. The specific air quality goal of this regulation is to achieve no net increases from new or modified permitted sources of nonattainment air contaminants or their precursors. As a major source of emissions, WML is subject to SDCAPCD New Source Review (NSR) Rule 20.3. SDCAPCD Rule 20.1 defines the relevant terms and conditions that pertain to NSR.

3.3.6 SDCAPCD Rule 1200, Toxic Air Contaminants New Source Review

This rule applies to any new, relocated, or modified emission unit, which may increase emissions of toxic air contaminants (TACs). This rule authorizes SDCAPCD to deny an Authority to Construct or Permit to Operate unless the increase in maximum incremental cancer risk at every receptor location is equal to or less than one in one million or less than 10 in one million, depending on whether the emission unit is equipped with Toxics Best Available Control Technology (BACT).

4.0 EMISSIONS CALCULATIONS

Emissions from landfill operations include criteria pollutants such as particulate matter (PM) and VOCs, as well as TACs. Active sites perform activities that produce PM emissions including, but not limited to: cover material quarrying, soil screening, rock crushing, open cover material storage piles, haul roads, solid waste compaction, cover application, composting, and green waste recycling. LFGs containing methane, carbon dioxide, hydrogen sulfide, and a wide variety of organic compounds are released from the decomposition of waste at all sites. The quantity of pollutants emitted to the atmosphere depends on the amount of LFG generated and the efficiency of the landfill collection system. The quantity of LFG generated depends primarily on the size, age, and moisture content of each disposal site. Additionally, combustion byproducts are emitted from landfills equipped with flares and energy recovery systems.

4.1 LANDFILL GAS GENERATION RATE

To estimate uncontrolled emissions of the various compounds present in LFG, total LFG emissions must first be estimated. Several models and estimation techniques are available for calculating LFG generation rates. For this project the LFG generation rates were estimated based on the EPA Office of Research and Development Landfill Gas Emissions Model, LandGEM Version 3.2, dated May 2005. LandGEM is based on a first-order decomposition rate equation for quantifying emissions from the decomposition of landfilled waste in MSW landfills. Model defaults are based on empirical data from U.S. landfills. Field test data can also be used in place of model defaults when available. LandGEM uses the following equation to calculate methane generation rates:

$$Q_{CH_4} = \sum_{i=1}^{n} \sum_{j=0.1}^{1} kL_o = \left[\frac{Mi}{10}\right] e^{-kt_{ij}}$$

Where:

$\mathbf{Q_{CH4}}$ = annual methane generation in the year of the calculation *(m^3/year*)

i = 1-year time increment

n = (year of the calculation) - (initial year of waste acceptance)

j = 0.1-year time increment

k = methane generation rate (*$year^{-1}$*)

$\mathbf{L_o}$ = potential methane generation capacity (cubic meter per megagram [*m^3/Mg]*)

$\mathbf{M_i}$ = mass of waste accepted in the i^{th} year (megagram [Mg])

$\mathbf{t_{ij}}$ = age of the j^{th} section of waste mass M_i accepted in the i^{th} year (*decimal years*, e.g., 3.2 years)

4.1.1 Application of LandGEM Landfill Gas Emissions Model to Miramar Landfill

LandGEM Version 3.2 model was used to project the LFG generation rates for the baseline and project scenarios. To project the LFG generation rate for the project, it was assumed that the 20-foot height increase would increase the active life of the landfill by five years. Historical site-specific disposal rates,

presented in Tables 4-1 and 4-2, were used as the $\mathbf{M_i}$ (i.e., mass of waste accepted in the i^{th} year) input to LandGEM model for South Miramar, North Miramar, and WML Phases I and II.

Table 4-1. Historical North and South Miramar Landfill Refuse Acceptance Rates, Tons

Phase	Fiscal Year	Tons	Running Total per Phase
South Miramar	1960	192,300	192,300
	1961	192,300	384,600
	1962	192,300	576,900
	1963	192,300	769,200
	1964	192,300	961,500
	1965	192,300	1,153,800
	1966	192,300	1,346,100
	1967	192,300	1,538,400
	1968	192,300	1,730,700
	1969	192,300	1,923,000
	1970	192,300	2,115,300
	1971	192,300	2,307,600
	1972	192,300	2,499,900
North Miramar	1973	400,000	400,000
	1974	680,000	1,080,000
	1975	675,000	1,755,000
	1976	680,000	2,435,000
	1977	675,000	3,110,000
	1978	680,000	3,790,000
	1979	675,000	4,465,000
	1980	680,000	5,145,000
	1981	675,000	5,820,000
	1982	680,000	6,500,000
	1983	400,000	6,900,000

Table 4-2. Historical West Miramar Landfill Refuse Acceptance Rates, Ton

Phase	Fiscal Year	Tons	Running Total per Phase
West Miramar Phase I	1983	367,840	367,840
	1984	1,172,000	1,539,840
	1985	1,336,000	2,875,840
	1986	1,378,000	4,253,840
	1987	1,395,000	5,648,840
	1988	1,511,000	7,159,840
	1989	1,548,174	8,708,014
	1990	1,475,521	10,183,535
	1991	1,478,007	11,661,542
	1992	1,481,986	13,143,528
West Miramar Phase II	1993	1,374,678	1,374,678
	1994	1,348,870	2,723,548
	1995	1,394,469	4,118,017
	1996	1,369,931	5,487,948
	1997	1,466,030	6,953,978
	1998	1,348,236	8,302,214
	1999	1,293,913	9,596,127
	2000	1,256,509	10,852,636
	2001	1,308,458	12,161,094
	2002	1,325,708	13,486,802
	2003	1,379,101	14,865,903
	2004	1,475,773	14,962,575
Total for Miramar Landfill (1993-2003), tons			**37,506,003**

Several default values are included in the LandGEM model for potential methane generation capacity of the waste, L_o. The default values include 100 m^3/Mg, which is also the default factor presented in Section 2.4 of the EPA AP-42 document, and 170 m^3/Mg, which is stated as the Clean Air Act Conventional value in the LandGEM model. In the absence of site-specific data, the average of the above two numbers (i.e., 135 m^3/Mg) was estimated as the potential methane generation capacity for the entire Miramar landfill. A value of 0.02 was estimated for methane generation rate constant, k, which is consistent with EPA default value and SDCAPCD Emission Calculations Procedures (11/04) for dry landfills (i.e., < 25 inches of rain per year).

An LFG methane content of 50% was estimated for the entire Miramar Landfill. Based on March through August 2005 gas collection data presented in Appendix D, the average methane content for Miramar Landfill is 46.5%, which is close to the estimated 50 percent.

4.1.2 Projected Landfill Gas Generation Rates – Baseline and Project

Baseline and project LFG generation rates were estimated for the entire Miramar Landfill, as well as for WML only. Table 4-3 presents the LFG generation rates for the baseline and vertical expansion scenarios for the entire Miramar Landfill and for WML. The projected LFG generation rates for the baseline and project for the entire Miramar Landfill are approximately 11,571 and 12,788 standard cubic feet per minute (SCFM) reached in years 2012 and 2017, respectively. For WML, the projected LFG generation rates for the baseline and project are approximately 10,070 and 11,430 SCFM in years 2012 and 2017, respectively. Figures 4-1 and 4-2 present the projected LFG generation rates in SCFM for the Miramar Landfill and for each phase, respectively. The highlights present the projected values for 2005, 2012 and 2017.

Table 4-3. Calculated LFG Generation Rates

	Total Landfill Gas, SCFM					
Year	South Miramar	North Miramar	West Miramar (without Expansion)	West Miramar (with Expansion)	Total (without Expansion)	Total (With Expansion)
1960	0	0	0	0	0.00	0.00
1961	62.86	0	0	0	62.86	62.86
1962	124.48	0	0	0	124.48	124.48
1963	184.87	0	0	0	184.87	184.87
1964	244.07	0	0	0	244.07	244.07
1965	302.10	0	0	0	302.10	302.10
1966	358.98	0	0	0	358.98	358.98
1967	414.73	0	0	0	414.73	414.73
1968	469.38	0	0	0	469.38	469.38
1969	522.95	0	0	0	522.95	522.95
1970	575.46	0	0	0	575.46	575.46
1971	626.92	0	0	0	626.92	626.92
1972	677.37	0	0	0	677.37	677.37
1973	726.82	0.00	0	0	726.82	726.82
1974	712.43	130.76	0	0	843.18	843.18
1975	698.32	350.45	0	0	1048.77	1048.77
1976	684.49	564.17	0	0	1248.66	1248.66
1977	670.94	775.28	0	0	1446.22	1446.22
1978	657.65	980.58	0	0	1638.23	1638.23
1979	644.63	1183.45	0	0	1828.08	1828.08
1980	631.87	1380.67	0	0	2012.53	2012.53
1981	619.35	1575.61	0	0	2194.97	2194.97
1982	607.09	1765.07	0	0	2372.16	2372.16
1983	595.07	1952.40	0	0	2547.47	2547.47
1984	583.29	2044.50	120.24	120.24	2748.03	2748.03
1985	571.74	2004.02	500.98	500.98	3076.73	3076.73
1986	560.41	1964.33	927.79	927.79	3452.53	3452.53
1987	549.32	1925.44	1359.87	1359.87	3834.63	3834.63
1988	538.44	1887.31	1788.96	1788.96	4214.71	4214.71
1989	527.78	1849.94	2247.47	2247.47	4625.18	4625.18
1990	517.33	1813.31	2709.05	2709.05	5039.68	5039.68

	Total Landfill Gas, SCFM					
Year	South Miramar	North Miramar	West Miramar (without Expansion)	West Miramar (with Expansion)	Total (without Expansion)	Total (With Expansion)
1991	507.08	1777.40	3137.74	3137.74	5422.23	5422.23
1992	497.04	1742.21	3558.76	3558.76	5798.01	5798.01
1993	487.20	1707.71	3972.74	3972.74	6167.65	6167.65
1994	477.55	1673.89	4343.44	4343.44	6494.89	6494.89
1995	468.10	1640.75	4698.37	4698.37	6807.22	6807.22
1996	458.83	1608.26	5061.18	5061.18	7128.26	7128.26
1997	449.74	1576.41	5408.78	5408.78	7434.93	7434.93
1998	440.84	1545.20	5780.91	5780.91	7766.95	7766.95
1999	432.11	1514.60	6107.17	6107.17	8053.88	8053.88
2000	423.55	1484.61	6409.20	6409.20	8317.37	8317.37
2001	415.17	1455.21	6693.04	6693.04	8563.41	8563.41
2002	406.94	1426.40	6988.23	6988.23	8821.57	8821.57
2003	398.89	1398.15	7283.21	7283.21	9080.26	9080.26
2004	390.99	1370.47	7589.81	7589.81	9351.27	9351.27
2005	383.25	1343.33	7921.94	7921.94	9648.52	9648.52
2006	375.66	1316.73	8247.49	8247.49	9939.88	9939.88
2007	368.22	1290.66	8566.60	8566.60	10225.48	10225.48
2008	360.93	1265.10	8879.39	8879.39	10505.42	10505.42
2009	353.78	1240.05	9185.98	9185.98	10779.81	10779.81
2010	346.78	1215.50	9486.50	9486.50	11048.78	11048.78
2011	339.91	1191.43	9781.08	9781.08	11312.41	11312.41
2012	333.18	1167.84	10069.82	10069.82	11570.83	11570.83
2013	326.58	1144.71	9870.42	10352.84	11341.71	11824.13
2014	320.11	1122.04	9674.97	10630.26	11117.13	12072.41
2015	313.78	1099.83	9483.40	10902.18	10897.00	12315.78
2016	307.56	1078.05	9295.61	11168.72	10681.22	12554.33
2017	301.47	1056.70	9111.55	11429.98	10469.72	12788.16
2018	295.50	1035.78	8931.13	11203.65	10262.41	12534.93
2019	289.65	1015.27	8754.28	10981.81	10059.20	12286.72
2020	283.92	995.16	8580.93	10764.35	9860.01	12043.43
2021	278.29	975.46	8411.02	10551.20	9664.77	11804.96
2022	272.78	956.14	8244.47	10342.27	9473.39	11571.20
2023	267.38	937.21	8081.22	10137.48	9285.81	11342.08
2024	262.09	918.65	7921.20	9936.75	9101.94	11117.49
2025	256.90	900.46	7764.35	9739.99	8921.71	10897.35
2026	251.81	882.63	7610.60	9547.12	8745.05	10681.57
2027	246.82	865.15	7459.90	9358.08	8571.88	10470.06
2028	241.94	848.02	7312.19	9172.78	8402.15	10262.74
2029	237.15	831.23	7167.40	8991.14	8235.77	10059.52
2030	232.45	814.77	7025.47	8813.11	8072.69	9860.33
2031	227.85	798.64	6886.36	8638.59	7912.84	9665.08
2032	223.34	782.82	6750.00	8467.54	7756.16	9473.70
2033	218.91	767.32	6616.34	8299.87	7602.58	9286.11
2034	214.58	752.13	6485.33	8135.52	7452.04	9102.23
2035	210.33	737.24	6356.91	7974.43	7304.48	8921.99

	Total Landfill Gas, SCFM					
Year	South Miramar	North Miramar	West Miramar (without Expansion)	West Miramar (with Expansion)	Total (without Expansion)	Total (With Expansion)
2036	206.17	722.64	6231.04	7816.52	7159.84	8745.33
2037	202.08	708.33	6107.65	7661.75	7018.06	8572.16
2038	198.08	694.30	5986.71	7510.03	6879.10	8402.42
2039	194.16	680.55	5868.17	7361.32	6742.88	8236.04
2040	190.31	667.08	5751.97	7215.56	6609.36	8072.95
2041	186.55	653.87	5638.07	7072.68	6478.49	7913.10
2042	182.85	640.92	5526.43	6932.63	6350.21	7756.41
2043	179.23	628.23	5417.00	6795.36	6224.46	7602.82
2044	175.68	615.79	5309.74	6660.80	6101.21	7452.28
2045	172.20	603.60	5204.60	6528.91	5980.40	7304.71
2046	168.79	591.65	5101.54	6399.63	5861.98	7160.07
2047	165.45	579.93	5000.52	6272.91	5745.90	7018.29
2048	162.18	568.45	4901.51	6148.69	5632.13	6879.32
2049	158.96	557.19	4804.45	6026.94	5520.60	6743.10
2050	155.82	546.16	4709.31	5907.60	5411.29	6609.58
2051	152.73	535.34	4616.06	5790.62	5304.14	6478.70
2052	149.71	524.74	4524.66	5675.96	5199.11	6350.41
2053	146.74	514.35	4435.07	5563.57	5096.16	6224.66
2054	143.84	504.17	4347.25	5453.40	4995.25	6101.41
2055	140.99	494.18	4261.16	5345.42	4896.34	5980.59
2056	138.20	484.40	4176.79	5239.57	4799.38	5862.17
2057	135.46	474.81	4094.08	5135.82	4704.35	5746.09
2058	132.78	465.41	4013.01	5034.13	4611.20	5632.31
2059	130.15	456.19	3933.55	4934.44	4519.89	5520.78
2060	127.57	447.16	3855.66	4836.73	4430.39	5411.46
2061	125.05	438.30	3779.31	4740.96	4342.66	5304.31
2062	122.57	429.62	3704.48	4647.08	4256.67	5199.28
2063	120.14	421.12	3631.12	4555.07	4172.38	5096.32
2064	117.76	412.78	3559.22	4464.87	4089.76	4995.41
2065	115.43	404.60	3488.75	4376.46	4008.78	4896.49
2066	113.15	396.59	3419.66	4289.80	3929.40	4799.54
2067	110.91	388.74	3351.95	4204.86	3851.59	4704.50
2068	108.71	381.04	3285.58	4121.59	3775.33	4611.34
2069	106.56	373.50	3220.52	4039.98	3700.57	4520.03
2070	104.45	366.10	3156.75	3959.98	3627.30	4430.53
2071	102.38	358.85	3094.24	3881.57	3555.47	4342.80
2072	100.35	351.75	3032.97	3804.71	3485.07	4256.81
2073	98.36	344.78	2972.91	3729.37	3416.06	4172.52
2074	96.42	337.95	2914.05	3655.53	3348.42	4089.90
2075	94.51	331.26	2856.34	3583.14	3282.11	4008.91
2076	92.64	324.70	2799.78	3512.19	3217.12	3929.53
2077	90.80	318.27	2744.35	3442.64	3153.42	3851.72
2078	89.00	311.97	2690.00	3374.48	3090.98	3775.45
2079	87.24	305.79	2636.74	3307.66	3029.77	3700.69
2080	85.51	299.74	2584.53	3242.16	2969.78	3627.41

	Total Landfill Gas, SCFM					
Year	South Miramar	North Miramar	West Miramar (without Expansion)	West Miramar (with Expansion)	Total (without Expansion)	Total (With Expansion)
2081	83.82	293.80	2533.35	3177.96	2910.97	3555.58
2082	82.16	287.98	2483.19	3115.03	2853.33	3485.18
2083	80.53	282.28	2434.02	3053.35	2796.83	3416.17
2084	78.94	276.69	2385.82	2992.89	2741.45	3348.52
2085	77.38	271.21	2338.58	2933.63	2687.17	3282.22

Figure 4-1. Projected Landfill Gas Generation Rate, Entire Miramar Landfill, SCFM

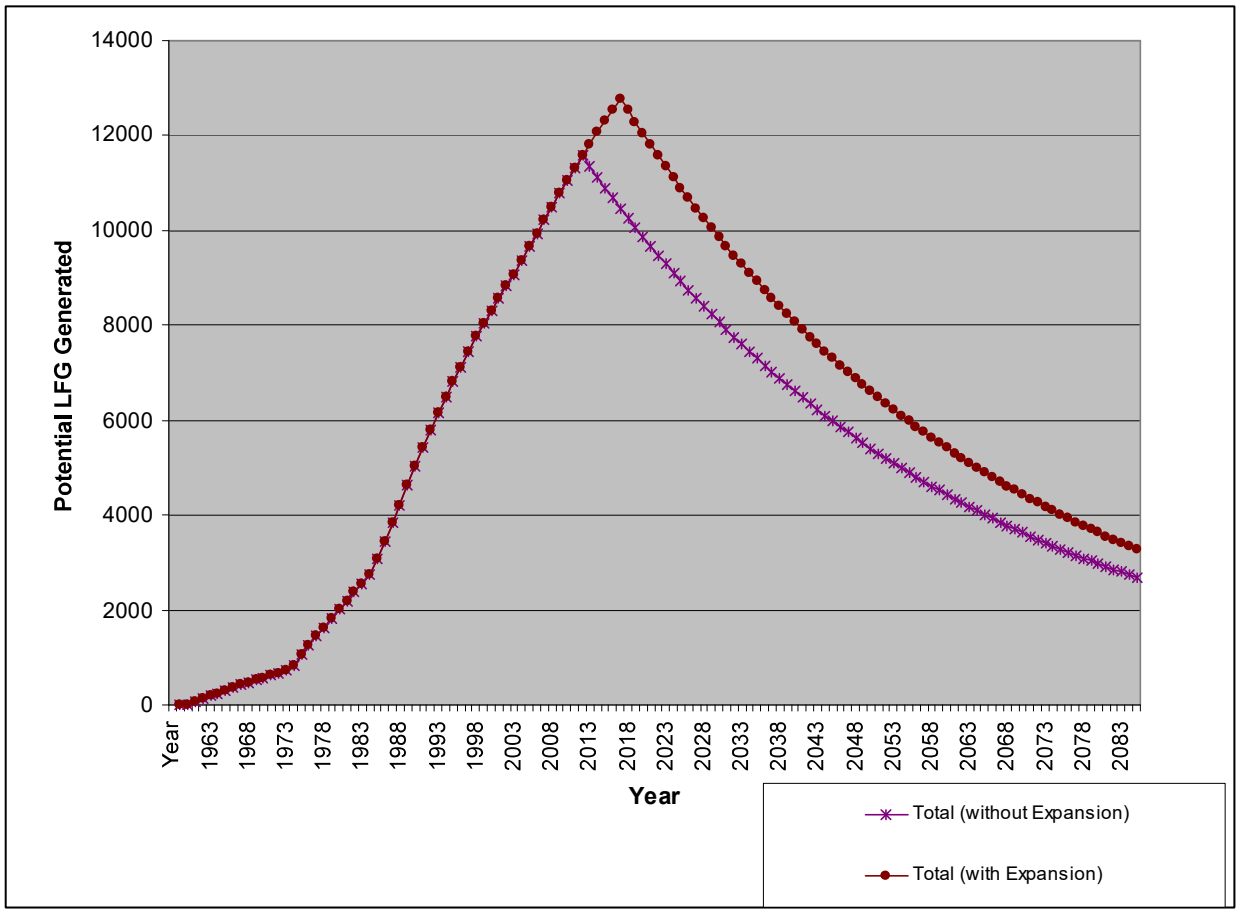
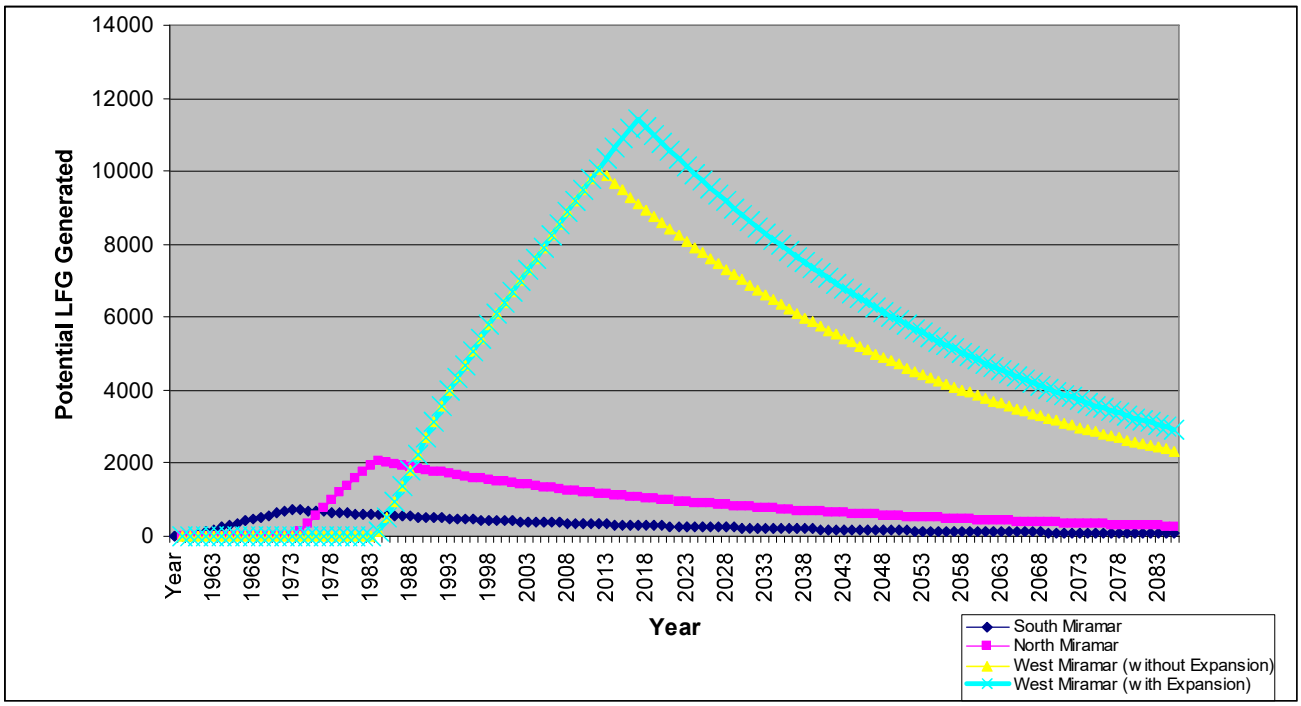


Figure 4-2. Projected Landfill Gas Generation Rate for each Phase of Miramar Landfill, SCFM



4.1.3 Discussion of Projected Landfill Gas Generation for 2005

As shown in Table 4-3, the projected LFG generation rate in 2005 for the entire Miramar Landfill is approximately 9,649 SCFM. Based on LFG collection data collected in March through August 2005, the average LFG collected from Miramar Landfill is approximately 4,564 SCFM (please see Appendix D), resulting in approximately 5,085 SCFM of fugitive emissions emitted from the surface of the Miramar Landfill. The flat disposal areas of South, North and WML are approximately 188, 193, and 477 acres, respectively, for a total of 858 acres. Therefore, the potential fugitive emissions rate for the Miramar Landfill is approximately 5.9 SCFM per acre, which compares well with SDCAPCD estimate of fugitive emission rate of 2-5 SCFM/acre for compliant landfills, especially considering that this emission rate is likely conservative, since the mounded surface area of the landfill is slightly greater than the flat surface area, and the LFG generation rate is likely overestimated.

4.2 Particulate Matter Emissions

The following activities contribute to PM emissions from Miramar Landfill operations:

- Vehicle traffic on unpaved roads;
- Vehicle traffic on paved roads;
- Cover material quarry operation; and
- Cover material application.

The proposed vertical expansion project is expected to result in no significant change in quarry operation or cover material application. Furthermore, vehicle traffic on paved roads would not change as a result of the proposed vertical height increase. The vertical height increase, however, does result in an increase of

approximately 48 feet, roundtrip, of distance traveled on unpaved roads due to a higher slope. This increase in distance would be more than offset by a shorter haul distance of approximately 1.6 miles roundtrip, anticipated as a result of placing waste in WML Phase I. Therefore, the net PM emissions would decrease as a result of the proposed height increase project.

4.3 OFF-SITE VEHICULAR EMISSIONS

The proposed WML height increase project would not increase the daily or annual off-site vehicle traffic to and from the Miramar Landfill. However, since the proposed height increase would extend the active life of the landfill by five years, off-site vehicular emissions associated with the Miramar Landfill operations would continue five years longer than they would in the baseline scenario. These PM emissions would be present in San Diego County regardless of whether the proposed WML height increase project is implemented, since once the Miramar Landfill closes, the vehicular traffic and the emissions will be transferred to another facility within the County. Therefore, no increase in overall off-site vehicular emissions related to landfill operations is expected as part of the WML proposed height; rather, the PM emissions would be shifted to or from another location. Generally, off-site vehicular emissions are expected to decrease as the use of transfer stations becomes increasingly economical because of fuel prices.

4.4 FUGITIVE AND COMBUSTION EMISSION ESTIMATION METHODOLOGY

Anaerobic decomposition of landfill waste generates LFG composed primarily of methane and carbon dioxide. This gas may also contain hydrogen sulfide and a wide variety of trace organic constituents including many chlorinated compounds.

Flare emissions consist of oxides of nitrogen (NO_x), oxides of sulfur (SO_x), carbon monoxide (CO), PM_{10}, Reactive Organic Compound (ROG), and Total Organic Gas (TOG) as well as trace TACs. According to SDCAPCD, source testing of flares in San Diego County has shown fairly consistent criteria pollutant emission factors calculated in units of pounds (lb)/Million British Thermal Units (MMBTU).

4.4.1 Assumptions and Factors Used

The following steps were completed and assumptions used to estimate fugitive emissions of LFG and the emissions associated with flaring of the LFG.

- Emissions were calculated based on the projected LFG generation rates for the entire Miramar Landfill and for WML. In each case, emissions for both baseline and vertical expansion scenarios were calculated.
- Based on operational data, it was estimated that 4,564 SCFM of LFG is collected from the entire Miramar Landfill. Operators estimate that approximately 3,800 SCFM is collected from WML Phases I and II. The permitted flares are currently not used unless the cogeneration facility is not operational. For example, in the period of March through August 2005, an average of approximately 219 SCFM of LFG was flared. The current scenario was assumed as baseline for the purpose of emission calculations. It was assumed that the current LFG collection and destruction scenario remains unchanged in 2012.

- For the post project scenario, it was assumed that the excess LFG generated (i.e., approximately 1,360 SCFM) would be captured and directed to the flares. In this scenario, the fugitive emissions from the surface of the landfill would remain unchanged and the flare emissions would increase compared to the baseline scenario. This excess amount is believed to be within the permitted capacity of the current flare stations.
- EPA's AP-42 default values for the composition of typical LFG were used. According to SDCAPCD Emission Calculations Procedures (11/04), these values closely agree with average results obtained from San Diego county landfills. The default compositions are presented in Table 4-4 below.
- EPA's AP-42 default flare destruction efficiencies, presented in Table 4-4, were used to calculate emissions from the flare.
- EPA's AP-42 default emission factors were used to estimate emissions of criteria pollutants from flaring of LFG. These emission factors are presented in Table 4-5.
- A NMOC value of 3393 ppmv as methane was used based on the 1997 source test of the Miramar Landfill flares. This value was calculated by adjusting the measured concentration (i.e., 2533 ppmv at 37.3%) to 50% methane concentration.
- The emission factor for formaldehyde (i.e., 7.5E-02 pounds per million standard cubic feet) was based on EPA's AP-42, Table 1.4-3 (7/98). The emission factor is equal to 1.5E-04 lb/MMBTU based on the LFG BTU content of 500 BTU per cubic foot.
- No site-specific data are available for inorganic constituents of LFG. Furthermore, SDCAPCD does not provide any default values for inorganic constituents. As such, no emission calculations or potential impacts have been calculated. Emissions of inorganic compounds from the Miramar Landfill are expected to be insignificant.

Table 4-4. Default LFG Composition of Toxic Compound, Molecular Weight and Flare Destruction Efficiency

Compounds	Molecular Weight (molecular weight of compound [g/mol])	Concentration in LFG (ppmv)	Flare Destruction Efficiency
Acetone	58.08	7.010	99.2%
Acrylonitrile	53.06	6.33	99.2%
Benzene	78.11	1.91	99.2%
Carbon Disulfide	76.13	0.58	99.2%
Carbon Monoxide	28.01	141	99.2%
Carbonyl Sulfide	60.07	0.49	99.2%
Chlorobenzene	112.56	0.25	98.0%
Chloroethane (Ethyl Chloride)	64.52	1.25	98.0%
Chloroform	119.39	0.03	98.0%
Ethyl Benzene	106.16	4.61	99.2%
Ethylene Dichloride (1,2-Dichloroethane)	98.96	0.41	98.0%
Ethylidene Dichloride (1,1-Dichloroethane)	98.97	2.35	98.0%
Fluorocarbons (chlorinated)	137.38	0.76	98.0%
Hexane	86.18	6.57	99.2%
Hydrogen Sulfide	34.08	35.5	99.2%
Methyl Chloroform (1,1,1-Trichloroethane)	133.41	0.48	98.0%
Methylene Chloride (Dichloromethane)	84.94	14.3	98.0%

Compounds	Molecular Weight (molecular weight of compound [g/mol])	Concentration in LFG (ppmv)	Flare Destruction Efficiency
Methyl Ethyl Ketone (2-Butanone)	72.11	7.09	99.2%
Methyl Isobutyl Ketone	100.16	1.87	99.2%
Perchloroethylene (Tetrachloroethylene)	165.83	3.73	98.0%
Toluene	92.13	39.3	99.2%
Trichloroethylene	131.40	2.82	98.0%
Vinyl Chloride	62.50	7.34	98.0%
Xylene(s)	106.16	12.1	99.2%
Nonmethane Organic Cmpds (as hexane)	86.18	595	99.2%
Total Organic Cmpds (including methane)	86.18	500,000	99.2%

Table 4-5. Default LFG Flare Emission Factors

Emission Factor/Variable	Default Value
NO_x	0.08 lb/ MMBTU
CO	0.003 lb/MMBTU
PM_{10}	0.02 lb/MMBTU
ROG	0.01 lb/MMBTU
TOG	0.01 lb/MMBTU
SO_x	0.030 lb/MMBTU
Average LFG BTU content	450 - 550 BTU/ft^3

4.4.2 Equations

The following equations were used to estimate fugitive emissions from the landfill operations:

LFG to landfill surface (ton/yr) *= (Molecular Weight of Compound [g/gmol]) * (Concentration of Compound[ppm]/1,000,000) * (LFG to Landfill Surface [cfm]) * (525,600 min/yr) * (1ton/2000lb) * (1lb/453.6g) * (1gmol/26.09L) * (28.32L/1cf)*

Emissions in LFG to flare (ton/yr) *= (Molecular Weight of Compound[g/mol]) * (Concentration of Compound[ppm]/1,000,000) * (LFG to Flare [cfm]) * (525,600 min/yr)*(1ton/2000lb) * (1lb/453.6g) * (1mol/26.09L) * (28.32L/1cf)*

Emissions in LFG from flare (ton/yr) *= (LFG Emissions To Flare [tons/yr]) * (1 - Destruction Efficiency of Flare)*

4.5 EMISSION INCREASE

SDCAPCD Rule 20.1 states that emission increases from a modified project or emission unit shall be calculated as the project's or emission unit's post-project PTE minus the project's or emission unit's pre-project PTE. If an emission unit's pre-project actual emissions are less than 80% of the emission unit's PTE, then the emission unit's pre-project PTE shall be the same as the unit's actual emissions. In the case of the Miramar Landfill, the VOC PTE was calculated following the above procedures and assumptions for year 2004. The results are summarized in Table 4-6 below.

Table 4-6. Comparison of 2004 VOC PTE and Actual Emissions for Miramar Landfill

Pollutant	2004 PTE, Ton/yr	2004 Actual Emissions, Ton/yr*	Ratio of Actual Emissions to PTE
VOC	160	151.9	94.7

*Reference: SDCAPCD 2004 Inventory for Miramar Landfill, dated August 18, 2004.

The comparison of actual and PTE emissions shows that emission increases for Miramar Landfill may be estimated as the post project PTE minus the pre-project PTE.

4.6 CRITERIA POLLUTANT EMISSIONS

Tables 4-7 and 4-8 summarize the criteria pollutants for the baseline and project scenarios for the entire Miramar Landfill and for WML. The shading highlights the incremental increase in hourly, daily and annual emissions due to the proposed vertical expansion project. Detailed emission calculations are presented in Appendix E.

Table 4-7. Criteria Pollutant Emission Summary- Entire Miramar Landfill

Pollutant	Baseline (pounds per day [lb/day])	Project (lb/day)	Incremental Emissions (lb/day)	Baseline (tons/year)	Project (tons/year)	Incremental Emissions (tons/year)	Incremental Emissions (lb/hour)
Total Project Emissions							
CO	95.86	98.62	2.76	17.49	18.00	0.50	0.12
NO_x	12.61	82.73	70.12	2.30	15.10	12.80	2.92
PM_{10}	3.15	20.68	17.53	0.58	3.77	3.20	0.73
SO_x	4.73	31.02	26.29	0.86	1.89	1.02	0.23
VOC	1286.48	1297.03	10.55	234.78	236.71	1.93	0.44
Flare							
CO	0.50	3.26	2.76	0.09	0.59	0.50	0.12
NO_x	12.61	82.73	70.12	2.30	15.10	12.80	2.92
PM_{10}	3.15	20.68	17.53	0.58	3.77	3.20	0.73
SO_x	4.73	31.02	26.29	0.86	1.89	1.02	0.23
VOC	1.90	12.45	10.55	0.35	2.27	1.93	0.44
Landfill Surface							
CO	95.36	95.36	0.00	17.40	17.40	0.00	0.00
NO_x	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PM_{10}	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SO_x	0.00	0.00	0.00	0.00	0.00	0.00	0.00
VOC	1284.58	1284.58	0.00	234.44	234.44	0.00	0.00

Table 4-8. Criteria Pollutant Emission Summary- West Miramar Landfill

Pollutant	Baseline (lb/day)	Project (lb/day)	Incremental Emissions (lb/day)	Baseline (tons/year)	Project (tons/year)	Incremental Emissions (tons/year)	Incremental Emissions (lb/hour)
Total Project Emissions							
CO	85.83	88.91	3.09	15.66	16.23	0.56	0.13
NO_x	12.61	90.96	78.35	2.30	16.60	14.30	3.26
PM_{10}	3.15	22.74	19.59	0.58	4.15	3.57	0.82
SO_x	4.73	34.11	29.38	0.86	2.08	1.21	0.28
VOC	1151.36	1162.94	11.58	210.12	212.24	2.11	0.48
Flare							
CO	0.50	3.58	3.09	0.09	0.65	0.56	0.13
NO_x	12.61	90.96	78.35	2.30	16.60	14.30	3.26
PM_{10}	3.15	22.74	19.59	0.58	4.15	3.57	0.82
SO_x	4.73	34.11	29.38	0.86	2.08	1.21	0.28
VOC	1.90	13.48	11.58	0.35	2.46	2.11	0.48
Landfill Surface							
CO	85.33	85.33	0.00	15.57	15.57	0.00	0.00
NO_x	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PM_{10}	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SO_x	0.00	0.00	0.00	0.00	0.00	0.00	0.00
VOC	1149.46	1149.46	0.00	209.78	209.78	0.00	0.00

4.7 TOXIC AIR CONTAMINANT EMISSIONS

Table 4-9 summarizes the TAC emissions from the landfill surface and the flare for the entire Miramar Landfill. Table 4-10 summarizes the TAC emissions from the landfill surface and the flare for the WML. Table 4-11 presents the total incremental change in TAC emissions that would result from the vertical landfill expansion for the entire Miramar Landfill. Table 4-12 presents the total incremental change in TAC emissions that would result from the vertical landfill expansion for the WML. Detailed emission calculations are presented in Appendix E.

Table 4-9. TAC Emissions from Landfill Surface and Flare – Entire Miramar Landfill

TAC	Emissions in LFG from Landfill Surface			Emissions in LFG from the Flare		
	Baseline (lb/yr)	Project (lb/yr)	Incremental (lb/year)	Baseline (lb/yr)	Project (lb/yr)	Incremental (lb/year)
Acetone	3588.2	3588.2	0.0	0.9	5.9	5.0
Acrylonitrile	2960.0	2960.0	0.0	0.7	4.9	4.1
Benzene	1314.8	1314.8	0.0	0.3	2.2	1.8
Carbon Disulfide	389.1	389.1	0.0	0.1	0.6	0.5
Carbon Monoxide	34806.1	34806.1	0.0	8.7	57.1	48.4
Carbonyl Sulfide	259.4	259.4	0.0	0.1	0.4	0.4
Chlorobenzene	248.0	248.0	0.0	0.2	1.0	0.9
Chloroethane (Ethyl Chloride)	710.8	710.8	0.0	0.4	2.9	2.5
Chloroform	31.6	31.6	0.0	0.0	0.1	0.1
Ethyl Benzene	4313.1	4313.1	0.0	1.1	7.1	6.0
Ethylene Dichloride (1,2-Dichloroethane)	357.6	357.6	0.0	0.2	1.5	1.2
Ethylidene Dichloride (1,1-Dichloroethane)	2049.7	2049.7	0.0	1.3	8.4	7.1
Fluorocarbons (chlorinated)	920.2	920.2	0.0	0.6	3.8	3.2
Hexane	4989.9	4989.9	0.0	1.2	8.2	6.9
Hydrogen Sulfide	10662.3	10662.3	0.0	2.7	17.5	14.8
Methyl Chloroform (1,1,1-Trichloroethane)	564.4	564.4	0.0	0.4	2.3	2.0
Methylene Chloride (Dichloromethane)	10704.6	10704.6	0.0	6.7	43.9	37.2
Methyl Ethyl Ketone (2-Butanone)	4505.7	4505.7	0.0	1.1	7.4	6.3
Methyl Isobutyl Ketone	1650.7	1650.7	0.0	0.4	2.7	2.3
Perchloroethylene (Tetrachloroethylene)	5451.2	5451.2	0.0	3.4	22.3	18.9
Toluene	31909.3	31909.3	0.0	8.0	52.3	44.3
Trichloroethylene	3265.6	3265.6	0.0	2.0	13.4	11.3
Vinyl Chloride	4043.0	4043.0	0.0	2.5	16.6	14.0
Xylene(s)	11320.6	11320.6	0.0	2.8	18.6	15.7
Hydrochloric Acid	0.0	0.0	0.0	709.1	4650.8	3941.6
Formaldehyde	0.0	0.0	0.0	8.6	56.6	48.0

Table 4-10. TAC Emissions from Landfill Surface and Flare – West Miramar Landfill

TAC	Emissions in LFG from Landfill Surface			Emissions in LFG from the Flare		
	Baseline (lb/yr)	Project (lb/yr)	Incremental (lb/year)	Baseline (lb/yr)	Project (lb/yr)	Incremental (lb/year)
Acetone	3210.8	3210.8	0.0	0.9	6.5	5.6
Acrylonitrile	2648.7	2648.7	0.0	0.7	5.3	4.6
Benzene	1176.5	1176.5	0.0	0.3	2.4	2.0
Carbon Disulfide	348.2	348.2	0.0	0.1	0.7	0.6
Carbon Monoxide	31145.0	31145.0	0.0	8.7	62.8	54.1
Carbonyl Sulfide	232.1	232.1	0.0	0.1	0.5	0.4
Chlorobenzene	221.9	221.9	0.0	0.2	1.1	1.0
Chloroethane (Ethyl Chloride)	636.0	636.0	0.0	0.4	3.2	2.8
Chloroform	28.2	28.2	0.0	0.0	0.1	0.1
Ethyl Benzene	3859.4	3859.4	0.0	1.1	7.8	6.7
Ethylene Dichloride (1,2-Dichloroethane)	320.0	320.0	0.0	0.2	1.6	1.4
Ethylidene Dichloride (1,1-Dichloroethane)	1834.1	1834.1	0.0	1.3	9.2	8.0
Fluorocarbons (chlorinated)	823.4	823.4	0.0	0.6	4.1	3.6
Hexane	4465.1	4465.1	0.0	1.2	9.0	7.7
Hydrogen Sulfide	9540.8	9540.8	0.0	2.7	19.2	16.6
Methyl Chloroform (1,1,1-Trichloroethane)	505.0	505.0	0.0	0.4	2.5	2.2
Methylene Chloride (Dichloromethane)	9578.7	9578.7	0.0	6.7	48.3	41.6
Methyl Ethyl Ketone (2-Butanone)	4031.8	4031.8	0.0	1.1	8.1	7.0
Methyl Isobutyl Ketone	1477.0	1477.0	0.0	0.4	3.0	2.6
Perchloroethylene (Tetrachloroethylene)	4877.8	4877.8	0.0	3.4	24.6	21.2
Toluene	28552.9	28552.9	0.0	8.0	57.5	49.6
Trichloroethylene	2922.1	2922.1	0.0	2.0	14.7	12.7
Vinyl Chloride	3617.7	3617.7	0.0	2.5	18.2	15.7
Xylene(s)	10129.8	10129.8	0.0	2.8	20.4	17.6
Hydrochloric Acid	0.0	0.0	0.0	709.1	5113.3	4404.1
Formaldehyde	0.0	0.0	0.0	8.6	62.3	53.6

Table 4-11. Total Incremental Change in TAC Emissions- Entire Miramar Landfill

TAC	Total		
	Baseline (lb/yr)	Project (lb/yr)	Incremental (lb/year)
Acetone	3589.1	3594.1	5.0
Acrylonitrile	2960.8	2964.9	4.1
Benzene	1315.1	1317.0	1.8
Carbon Disulfide	389.2	389.8	0.5
Carbon Monoxide	34814.8	34863.2	48.4
Carbonyl Sulfide	259.5	259.8	0.4
Chlorobenzene	248.2	249.0	0.9
Chloroethane (Ethyl Chloride)	711.2	713.7	2.5
Chloroform	31.6	31.7	0.1
Ethyl Benzene	4314.1	4320.1	6.0
Ethylene Dichloride (1,2-Dichloroethane)	357.8	359.0	1.2
Ethylidene Dichloride (1,1-Dichloroethane)	2051.0	2058.1	7.1
Fluorocarbons (chlorinated)	920.7	923.9	3.2
Hexane	4991.2	4998.1	6.9
Hydrogen Sulfide	10665.0	10679.8	14.8
Methyl Chloroform (1,1,1-Trichloroethane)	564.7	566.7	2.0
Methylene Chloride (Dichloromethane)	10711.3	10748.5	37.2
Methyl Ethyl Ketone (2-Butanone)	4506.9	4513.1	6.3
Methyl Isobutyl Ketone	1651.1	1653.4	2.3
Perchloroethylene (Tetrachloroethylene)	5454.6	5473.6	18.9
Toluene	31917.2	31961.6	44.3
Trichloroethylene	3267.7	3279.0	11.3
Vinyl Chloride	4045.5	4059.5	14.0
Xylene(s)	11323.4	11339.2	15.7
Hydrochloric Acid	709.1	4650.8	3941.6
Formaldehyde	8.6	56.6	48.0

Table 4-12. Total Incremental Change in TAC Emissions- West Miramar Landfill

TAC	Total		
	Baseline (lb/yr)	Project (lb/yr)	Incremental (lb/year)
Acetone	3211.7	3217.2	5.6
Acrylonitrile	2649.4	2654.0	4.6
Benzene	1176.8	1178.9	2.0
Carbon Disulfide	348.3	348.9	0.6
Carbon Monoxide	31153.7	31207.8	54.1
Carbonyl Sulfide	232.2	232.6	0.4
Chlorobenzene	222.1	223.0	1.0
Chloroethane (Ethyl Chloride)	636.4	639.2	2.8
Chloroform	28.3	28.4	0.1
Ethyl Benzene	3860.5	3867.2	6.7
Ethylene Dichloride (1,2-Dichloroethane)	320.2	321.6	1.4
Ethylidene Dichloride (1,1-Dichloroethane)	1835.4	1843.4	8.0
Fluorocarbons (chlorinated)	823.9	827.5	3.6
Hexane	4466.3	4474.1	7.7
Hydrogen Sulfide	9543.5	9560.0	16.6
Methyl Chloroform (1,1,1-Trichloroethane)	505.3	507.5	2.2
Methylene Chloride (Dichloromethane)	9585.3	9626.9	41.6
Methyl Ethyl Ketone (2-Butanone)	4032.9	4039.9	7.0
Methyl Isobutyl Ketone	1477.5	1480.0	2.6
Perchloroethylene (Tetrachloroethylene)	4881.3	4902.4	21.2
Toluene	28560.9	28610.4	49.6
Trichloroethylene	2924.2	2936.9	12.7
Vinyl Chloride	3620.2	3635.9	15.7
Xylene(s)	10132.7	10150.3	17.6
Hydrochloric Acid	709.1	5113.3	4404.1
Formaldehyde	8.6	62.3	53.6

5.0 SCREENING HEALTH RISK ASSESSMENT

A Screening Health Risk Assessment (SHRA) using SCREEN3 was performed to estimate the potential health risks from the proposed vertical expansion of WML. Appendix F contains the SCREEN3 procedures. The modeling output files and detailed SHRA results are contained in Appendix G. To perform the Tier III SHRA, the following information was used:

1. The maximum incremental increase in annual emissions of carcinogens and non-cancer chronic TACs (i.e., those corresponding to Year 2017 for the proposed expansion scenario and highlighted in Table 4-3) to determine the Maximum Individual Cancer Risk (MICR) and Chronic Hazard Index (HIC) values.
2. The maximum incremental increase in hourly emissions of carcinogens and non-cancer chronic TACs for source to determine the Acute Hazard Index (HIA) value.
3. The distance to the closest off-site residential receptor.
4. The distance to the closest off-site commercial receptor.
5. A stack height of 38 feet and a diameter of 11.5 feet for the flare.
6. An exhaust flow rate of 18,175 SCFM for the flare.

Distances to nearest residential and commercial receptors were determined using Geographic Information System data. Distances were calculated based on a straight-line distance between the two locations. The nearest receptor locations are summarized in Table 5-1 below calculated from the center of the landfill. Appendix H presents a map of WML with location of nearest residential and commercial receptors shown. As Table 5-1 shows, the nearest receptors to the Miramar Landfill are over one half mile away (calculated from the center of the landfill). Distances from the edge of WML Phase II to nearest residential and commercial locations are approximately 2,327 and 2,178 ft, respectively (i.e., 710 and 664 meters, respectively). Typically, potential health impacts due to emissions from a facility tend to decease significantly at distances greater than 1000 meters (approximately 3,281 ft or 0.62 mile).

Table 5-1. Distances to Nearest Receptors

Receptor Type	South Miramar	North Miramar	WML Phase I	WML Phase II	Flare Station	Overall Landfill
Nearest residence, ft	3,707 (.72 mile)	10,476	7,622	4,919	10,464	5,688
Nearest business, ft	3,205 (0.61 mile)	6,546	7,509	4,380	7,702	5,136
Nearest Schools (K-12), ft	5,458	12,134	8,601	6,580	11,189	7,375
Nearest Hospital, ft	24,004	26,824	20,479	19,480	21,152	24,085
Nearest Day-Care Facility, ft	16,960	12,136	12,946	14,686	11,854	14,941

** Source data are from the Southern California Association of Governments.

Table 5-2 summarizes the maximum calculated MICR, HIC, and HIA values.

Table 5-2. Screening Health Risk Assessment Summary

Receptor	Analysis Results at Receptor Distance of 1000 Meters	Analysis Results at Receptor Distance of 600 Meters	Permitting Threshold Value
Maximum Individual Cancer Risk – Residential, $MICR_{residential}$	0.12×10^{-6}	0.24×10^{-6}	10.00×10^{-6}
Maximum Individual Cancer Risk – Commercial, $MICR_{commercial}$	0.017×10^{-6}	0.034×10^{-6}	10.00×10^{-6}
Maximum Chronic Hazard Index, $HIC_{maximum}$	0.03	0.06	1.0
Maximum Acute Hazard Index, $HIA_{maximum}$	0.015	0.029	1.0

6.0 EMISSION IMPACT ANALYSIS

6.1 COMPARISON OF EMISSIONS TO APPLICABLE REGULATORY THRESHOLDS

The proposed vertical expansion of WML would increase the landfill's annual LFG generation rate. As a result, the annual, daily, and hourly emissions of fugitive LFG and the emissions from the flares would increase. The purpose of an Air Quality Impact Analysis (AQIA) is to ensure that current air quality attainment status or the progress toward meeting attainment is not adversely affected by potential emissions from the proposed project. The SDCAPCD NSR rules are developed and implemented to prevent new or modified emission sources from negatively impacting the region's progress toward maintaining or achieving attainment. The following sections compare the emissions from the proposed expansion project to applicable NSR thresholds.

6.1.1 Major Stationary Source/Major Modification

WML is a major source of VOCs. As such, SDCAPCD NSR Rule 20.3 applies to the facility's operations. SDCAPCD Rule 20.1 (c)(33) defines a major modification as a physical or operational change which results, or may result, in a contemporaneous emissions increase at an existing major stationary source, which source is major for the pollutant for which there is a contemporaneous emissions increase, equal to or greater than any of the emission rates listed in Table 6-1.

Table 6-1. Major Modification

Pollutant	Major Modification Threshold (tons/yr)	Maximum Proposed Increase, Entire Miramar Landfill (tons/yr)	Maximum Proposed Increase, WML (tons/yr)
CO	100	0.50	0.56
NO_x	25	12.80	14.30
PM_{10}	15	3.20	3.57
SO_x	40	1.02	1.21
VOC	25	1.93	2.11

A comparison of the proposed increases presented in Table 6-1 to the major modification thresholds indicates that the proposed expansion would not constitute a major modification of a major source under current SDCAPCD rules.

6.1.2 Best Available Control Technology

SDCAPCD Rule 20.3 requires that any new or modified emission unit which has any increase in its PTE PM_{10}, NO_x, VOCs, or SO_x and which unit has a post-project PTE 10 lb/day or more of PM_{10}, NO_x, VOCs or SO_x shall be equipped with BACT for each such air contaminant. Table 6-2 presents the post expansion project daily PTE for these pollutants.

Table 6-2. Post Project Daily PTE and BACT Applicability

Pollutant	Proposed Post project PTE, lb/day, Entire Miramar Landfill	Proposed Post project PTE, lb/day, WML
CO	98.62	88.91
NO_x	82.73	90.96
PM_{10}	20.68	22.74
SO_x	31.02	34.11
VOC	1297.03	1162.94

Note: daily emissions represent only fugitive emissions from the landfill surface and combustion emissions from flares.

As shown, the proposed expansion project would trigger BACT requirements. It should be noted that the majority of emission increases are due to combustion of LFG in the flares, which are permitted separately than the WML operations.

6.1.3 Air Quality Impact Analysis

SDCAPCD Rule 20.3 requires an AQIA for any new or modified emission unit, excluding area fugitive emissions of PM_{10}, which result in an emission increase greater than or equal to thresholds presented in Table 6-3. The proposed increases are well below the applicable thresholds for requiring an AQIA.

Table 6-3. Potential to Emit Criteria Pollutant Emission Summary and Comparison With the SDCAPCD AQIA Thresholds

Pollutant	Incremental Emissions (lb/day)	Incremental Emissions (tons/year)	Incremental Emissions (lb/hour)	SDCAPCD AQIA Threshold	SDCAPCD AQIA Threshold	SDCAPCD AQIA Threshold	Exceed Threshold?
Total Project Emissions				(lb/day)	(tons/year)	(lb/hr)	
CO	3.09	0.56	0.13	550	100	100	No
NO_x	78.35	14.30	3.26	250	40	25	No
PM_{10}	19.59	3.57	0.82	100	15	-	No
SO_x	29.38	1.21	0.28	250	40	25	No
VOC	11.58	2.11	0.48	-	-	-	NA

6.1.4 Emission Offsets

SDCAPCD Rule 20.3 requires NO_x and VOC emission increases from a new, modified, relocated or replacement emission unit or project which increases constitute a new major source or major modification of a major stationary source shall be offset at a ratio of 1.2 to 1.0, on a pollutant-specific basis. Since the proposed project does not constitute a major modification of a major source, emission offset requirements are not triggered.

6.1.5 Screening Health Risk Assessment

Table 6-4 summarizes the maximum calculated MICR, HIC, and HIA values. All values are below the applicable thresholds.

Table 6-4. Screening Health Risk Assessment Summary

Receptor	Analysis Results	Permitting Threshold Value
Maximum Individual Cancer Risk – Residential, MICRresidential	0.12×10^{-6}	10.00x10-6
Maximum Individual Cancer Risk – Commercial, MICRcommercial	0.017×10^{-6}	10.00x10-6
Maximum Chronic Hazard Index, HICmaximum	0.03	1.0
Maximum Acute Hazard Index, HIAmaximum	0.015	1.0
Note: Values are presented for a receptor distance of 1000 meters.		

The results show that the potential health risks caused by the maximum potential emissions associated with the proposed project do not exceed any of the applicable Rule 1200 thresholds.

6.2 Potential Cumulative Air Quality Impacts

The proposed WML height increase project will not result in any increase to fugitive emissions from the landfill surface as additional LFG control will be put in place to capture the LFG generated. Furthermore, the existing flares have the capacity and are permitted to handle the increase in flare throughput anticipated as part of this proposed expansion. Therefore, this project is not expected to result in any significant air quality impacts. As such, potential cumulative air quality impacts are negligible.

6.3 Conformance with State Implementation Plan

The proposed WML expansion project will not result in any significant increase to fugitive or combustion emissions from the facility beyond the currently permitted levels. As such, the project would be in conformance with the State Implementation Plan.

6.4 Odors

Active landfill operations consist of activities that can contribute to odor and other public nuisance. These activities include contaminated waste transport, unloading operations, compaction activities, fugitive gas releases, leachate evaporation, green waste shredding, green waste storage, and green waste composting. The current level of odors associated with WML is typical of active landfills in San Diego County. Good waste management and cover maintenance practices are the primary methods of preventing odors that may cause public nuisance. These management practices are in place at the Miramar Landfill and are effective in minimizing odor, as evident by only one WML-related odor complaint received by SDCAPCD since 2004. As presented in Appendix I, this odor complaint was investigated by SDCAPCD staff, but could not be validated. The proposed height increase project will require these waste management practices to continue over a longer period of time. However, since the proposed expansion

does not include increased daily waste disposal, the specific daily odor control measures would remain unchanged. No additional odor or other public nuisance issues are expected as part of the proposed expansion.

Appendix A

Solid Waste Facility Permit 37-AA-0020

SOLID WASTE FACILITY PERMIT

Facility Number:
37-AA-0020

1. Name and Street Address of Facility:

West Miramar Sanitary Landfill
5180 Convoy Street
San Diego, CA 92111

2. Name and Mailing Address of Operator:

City of San Diego
Environmental Services Department
Refuse Disposal Division
9601 Ridgehaven Court
San Diego, CA 92123-1636

3. Name and Mailing Address of Owner:

United States of America
Marine Corps Air Station-Miramar
45249 Miramar Way
San Diego, CA 92145-5196

4. Specifications:

a. Permitted Operations:

☒ Solid Waste Disposal Site
☐ Transfer/Processing Facility (MRF)
☐ Composting Facility (Green Material)
☐ Transformation Facility
☐ Other: _____

b. Permitted Hours of Operation: Dawn to Dusk (See LEA Condition a of Section 17)

c. Permitted Maximum Tonnage: 8,000 Tons per Day (See LEA Condition b of Section 17)

d. Permitted Traffic Volume: 2,000 Vehicles per Day (See LEA Condition c of Section 17)

e. Key Design Parameters:

	Total	Disposal	Transfer/Processing	Composting	Transformation
Permitted Area (in acres)	807	470	N/A	N/A	N/A
Design Capacity (cubic yds)		56,500,000	N/A	N/A	N/A
Max. Elevation (Ft. MSL)		470			
Max. Depth (Ft. MSL)		237			
Estimated Closure Year		2011			

Upon a significant change in design or operation from that described herein, this permit is subject to revocation or suspension. The attached permit findings and conditions are integral parts of this permit and supersede the conditions of any previously issued solid waste facility permit.

5. Approval:

Approving Officer Signature

6. Enforcement Agency Name and Address:

City of San Diego
Solid Waste Local Enforcement Agency
1222 First Avenue, MS 501
San Diego, CA 92101-4155

7. Date Received by CIWMB:

8. CIWMB Concurrence Date:

9. Permit Issued Date:

10. Permit Review Due Date:

11. Owner/Operator Transfer Date:
N/A

SOLID WASTE FACILITY PERMIT

Facility Number:
37-AA-0020

12. Legal Description of Facility:

The legal description of this facility is contained in page B. 1-4 of the Report of Disposal Site Information dated March 2000, Sixth Revision.

13. Findings:

a. This permit is consistent with the San Diego County Integrated Waste Management Plan, which was approved by the CIWMB on June 25, 1997. The location of the facility is identified in the Countywide Siting Element, pursuant to Public Resources Code (PRC), Section 50001(a).

b. This permit is consistent with the standards adopted by the CIWMB, pursuant to PRC 44010.

c. The LEA has determined that the design and operation of the facility is in compliance with the State Minimum Standards for Solid waste handling and disposal based on a review of the March 2000 Report of Facility Information.

d. The design and operation of the facility is consistent with the State Minimum Standards for Solid Waste Handling and Disposal as determined by the enforcement agency, pursuant to PRC 44009.

e. A Negative Declaration was filed with the State Clearinghouse (SCH #2001051036) and Certified by the City of San Diego on July 20, 2001. The Negative Declaration describes and supports the revision to the permitted traffic volume that will be authorized by the issuance of this permit. A Notice of Determination was filed with the San Diego County Clerk on July 23, 2001 and the State Clearinghouse on July 25, 2001.

14. Prohibitions/Restrictions:

The operator is prohibited from accepting the following wastes:

Hazardous, radioactive, medical (as defined in Chapter 6.1, Division 20 of the Health and Safety Code), liquid, designated, or other wastes requiring special treatment or handling, except as identified in the Report of Facility Information and approved amendments thereto and as approved by the LEA, the California Regional Water Quality Control Board and other federal, state, and local agencies.

Sewage sludge may be accepted as specified in the most current Waste Discharge Requirements issued by the California Regional Water Quality Control Board.

15. The following documents describe and/or restrict the operation of this facility:

	Date		Date
Report of Disposal Site Information	March 2000	Preliminary Closure and Postclosure Maintenance Plan	November 13, 1996
Waste Discharge Requirements Order No. 87-54	June 15, 1987	Closure Financial Assurance Documentation	Aug. 21, 2001
APCD Permit to Operate #960630	Feb. 1, 2001	Operating Liability Certification	July 25, 1995
Negative Declaration (SCH #96021056)	June 5, 1996	Conditional Use Permit	July 20, 1981

SOLID WASTE FACILITY PERMIT

Facility Number:
37-AA-0020

16. Self Monitoring:

Results of all self monitoring programs will be reported as follows:

Program	Reporting Frequency
Tonnage Records: The operator shall maintain, and keep current, all records used to determine daily and annual tonnage.	Quarterly (see Conditions b & d of Section 17)
Traffic Records: The operator shall maintain and keep current, a record of all vehicles hauling solid waste to the facility.	Quarterly (see Conditions c & d of Section 17)
Remaining Capacity: The operator shall prepare and submit a report regarding the remaining capacity at the site.	Annually (End of Fiscal Year)

17. LEA Conditions:

a) Without prior written or verbal approval from the LEA to allow otherwise, waste may be accepted only during the hours described in the most current RFI.

b) Maximum permitted per year is based on any consecutive 12-month period. At the time of the inspection, compliance with this condition will be evaluated based on the 12-month prior to the inspection date. Tonnage records for the previous 12-month period shall be provided by the LEA at the conclusion of any inspection or upon request during normal business hours. The maximum annual permitted tonnage shall not exceed 1,400,000 tons per year.

c) Maximum permitted traffic volume is based on the number of vehicles hauling waste to the facility. The maximum permitted traffic volume shall not exceed 1,800 vehicles per day until a fourth fee booth and scale have been constructed and is operational. When the operator has verified that this condition has been met the operator may receive up to 2,000 waste hauling vehicles per day, as indicated on page 1 of this permit, with written approval from the LEA.

d) A revision of the SWFP shall be necessary prior to allowing more than 2,000 waste hauling vehicles per day to enter the facility.

e) Tonnage and traffic records shall be submitted to the LEA by mail on a quarterly basis and summarized on a form provided by the LEA for that purpose. The reporting periods and the due dates are: January through March, due May 1; April through June, due August 1; July through September, due November 1; and October through December, due February 1.

f) The operator shall submit to unannounced inspections during permitted hours of operation. Such inspections may occur before the start or after the end of waste deposition activities.

g) The operator shall maintain a complete copy of this SWFP, Report of Facility Information and Operating Criteria available at the site at all times.

h) No significant change in design or operation of this facility shall take place without prior application and approval by the LEA.

i) Additional information related to compliance with this permit or information concerning the design and operation of this facility shall be furnished to LEA upon request.

j) The SWFP is subject to review by the LEA and may be suspended, revoked or revised at any time for sufficient cause.

Appendix B

Federal and State Ambient Air Quality Standards

Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards [1]		Federal Standards [2]		
		Concentration [3]	Method [4]	Primary [3,5]	Secondary [3,6]	Method [7]
Ozone (O_3)	1 Hour	0.09 ppm (180 µg/m^3)	Ultraviolet Photometry	0.12 ppm (235 µg/m^3)[8]	Same as Primary Standard	Ultraviolet Photometry
	8 Hour	0.070 ppm (137 µg/m^3)*		0.08 ppm (157 µg/m^3)[8]		
Respirable Particulate Matter (PM10)	24 Hour	50 µg/m^3	Gravimetric or Beta Attenuation	150 µg/m^3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 µg/m^3		50 µg/m^3		
Fine Particulate Matter (PM2.5)	24 Hour	No Separate State Standard		65 µg/m^3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	12 µg/m^3	Gravimetric or Beta Attenuation	15 µg/m^3		
Carbon Monoxide (CO)	8 Hour	9.0 ppm (10mg/m^3)	Non-Dispersive Infrared Photometry (NDIR)	9 ppm (10 mg/m^3)	None	Non-Dispersive Infrared Photometry (NDIR)
	1 Hour	20 ppm (23 mg/m^3)		35 ppm (40 mg/m^3)		
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m^3)		—	—	—
Nitrogen Dioxide (NO_2)	Annual Arithmetic Mean	—	Gas Phase Chemiluminescence	0.053 ppm (100 µg/m^3)	Same as Primary Standard	Gas Phase Chemiluminescence
	1 Hour	0.25 ppm (470 µg/m^3)		—		
Sulfur Dioxide (SO_2)	Annual Arithmetic Mean	—	Ultraviolet Fluorescence	0.030 ppm (80 µg/m^3)	—	Spectrophotometry (Pararosaniline Method)
	24 Hour	0.04 ppm (105 µg/m^3)		0.14 ppm (365 µg/m^3)	—	
	3 Hour	—		—	0.5 ppm (1300 µg/m^3)	
	1 Hour	0.25 ppm (655 µg/m^3)		—	—	—
Lead[9]	30 Day Average	1.5 µg/m^3	Atomic Absorption	—	—	—
	Calendar Quarter	—		1.5 µg/m^3	Same as Primary Standard	High Volume Sampler and Atomic Absorption
Visibility Reducing Particles	8 Hour	Extinction coefficient of 0.23 per kilometer — visibility of ten miles or more (0.07 — 30 miles or more for Lake Tahoe) due to particles when relative humidity is less than 70 percent. Method: Beta Attenuation and Transmittance through Filter Tape.		**No Federal Standards**		
Sulfates	24 Hour	25 µg/m^3	Ion Chromatography			
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m^3)	Ultraviolet Fluorescence			
Vinyl Chloride[9]	24 Hour	0.01 ppm (26 µg/m^3)	Gas Chromatography			

*This concentration was approved by the Air Resources Board on April 28, 2005 and is expected to become effective in early 2006.

See footnotes on next page …

California Air Resources Board (5/6/05)

1. California standards for ozone, carbon monoxide (except Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, suspended particulate matter—PM10, PM2.5, and visibility reducing particles, are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

2. National standards (other than ozone, particulate matter, and those based on annual averages or annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest eight hour concentration in a year, averaged over three years, is equal to or less than the standard. For PM10, the 24 hour standard is attained when the expected number of days per calender year with a 24-hour average concentration above 150 $\mu g/m^3$ is equal to or less than one. For PM2.5, the 24 hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact U.S. EPA for further clarification and current federal policies.

3. Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

4. Any equivalent procedure which can be shown to the satisfaction of the ARB to give equivalent results at or near the level of the air quality standard may be used.

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

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

7. Reference method as described by the EPA. An “equivalent method” of measurement may be used but must have a “consistent relationship to the reference method” and must be approved by the EPA.

8. New federal 8-hour ozone and fine particulate matter standards were promulgated by U.S. EPA on July 18,1997. Contact U.S. EPA for further clarification and current federal policies.

9. The ARB has identified lead and vinyl chloride as 'toxic air contaminants' with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

California Air Resources Board (7/9/03)

Appendix C

SDCAPCD Permits to Operate 971254

CONTROL NO.
255400

COUNTY OF SAN DIEGO, AIR POLLUTION CONTROL DISTRICT
9150 CHESAPEAKE DRIVE, SAN DIEGO, CA 92123-1096
(858)650-4700 FAX(858)650-4659

PERMIT NO
971254
EXPIRES
FEBRUARY 2006

PERMIT TO OPERATE

THE FOLLOWING IS HEREBY GRANTED A PERMIT TO OPERATE THE ARTICLE, MACHINE, EQUIPMENT OR CONTRIVANCE DESCRIBED BELOW. THIS PERMIT IS NOT TRANSFERABLE TO A NEW OWNER NOR IS IT VALID FOR OPERATION OF THE EQUIPMENT AT ANOTHER LOCATION, EXCEPT AS SPECIFIED. THIS PERMIT TO OPERATE OR A COPY MUST BE POSTED ON OR WITHIN 25 FEET OF THE OF THE EQUIPMENT, OR READILY AVAILABLE, ON THE OPERATING PREMISES.

PERMITTEE
SAN DIEGO CITY OF ENV SERVICES DEPT
COLLECTION SERVICES DIVISION
8353 MIRAMAR PL
SAN DIEGO CA 92121-0000

EQUIPMENT ADDRESS
SAN DIEGO CITY OF MIRAMAR LANDFILL
5180 CONVOY ST
SAN DIEGO CA 92111-0000

EQUIPMENT DESCRIPTION
AN ACTIVE NON-HAZARDOUS WASTE LANDFILL OPERATION THAT INCLUDES QUARRYING, MUNICIPAL WASTE DISPOSAL, WASTE COMPACTION, COVER MATERIAL APPLICATION, AND HAUL ROAD ACTIVITIES. 971254 RMS 6/98

Sector#:18 ID#:88196C PO#:971254 BEC#:11180
Fee Schedules: 48A01

EVERY PERSON WHO OWNS OR OPERATES THIS EQUIPMENT IS REQUIRED TO COMPLY WITH THE CONDITIONS LISTED BELOW AND ALL APPLICABLE REQUIREMENTS AND DISTRICT RULES, INCLUDING BUT NOT LIMITED TO RULE(S) 59, NSPS SUBPART WWW.

FAILURE TO OPERATE IN COMPLIANCE IS A MISDEMEANOR SUBJECT TO CIVIL AND CRIMINAL PENALTIES.

A. FEDERALLY-ENFORCEABLE AND DISTRICT-ENFORCEABLE CONDITIONS

1. THE PERMITTEE SHALL COMPLY WITH THE FOLLOWING APPLICABLE REQUIREMENT:
   40 CFR 60 SUBPART WWW.
   RULE(S):1421.

2. THE COLLECTED LANDFILL GAS TEMPERATURE SHALL BE MAINTAINED AT LESS THAN 55 DEG. C AT EACH WELL AND THE OXYGEN LEVEL SHALL BE LESS THAN OR EQUAL TO 5 PERCENT.
   RULE(S):NSPS SUBPART WWW.

3. TEMPERATURE GAUGE MAINTENANCE AND CALIBRATION RECORDS SHALL BE MAINTAINED FOR AT LEAST FIVE YEARS AND MADE AVAILABLE TO THE DISTRICT UPON REQUEST.
   RULE(S):NSPS SUBPART WWW.

4. THE PERMITTEE SHALL MAINTAIN A NEGATIVE PRESSURE WITHIN EACH GAS EXTRACTION WELL. AN OPERATING PRESSURE GAUGE WITH AN ACCURACY OF 1 PERCENT OF THE PRESSURE MEASURED SHALL BE PROVIDED TO THE DISTRICT UPON REQUEST FOR VERI-

PERMIT TO OPERATE

FYING THE PRESSURE. THE PRESSURE GAUGE SHALL BE MAINTAINED AND CALIBRATED IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS.
RULE(S):NSPS SUBPART WWW.

5. THE PERMITTEE SHALL ROUTE ALL THE COLLECTED LANDFILL GAS TO THE LANDFILL GAS DESTRUCTION SYSTEM.
RULE(S):NSPS SUBPART WWW.

6. THE LANDFILL GAS DESTRUCTION SYSTEM SHALL BE OPERATED TO REDUCE NON-METHANE ORGANIC COMPOUNDS (NMOCS) BY 98 WEIGHT PERCENT OR REDUCE THE NMOC OUTLET CONCENTRATION TO LESS THAN 20 PPMV, DRY BASIS AS HEXANE AT 3 PERCENT OXYGEN.
RULE(S):NSPS SUBPART WWW.

7. THE PERMITTEE SHALL IMPLEMENT A PROGRAM TO MONITOR FOR LANDFILL COVER INTEGRITY AS REQUIRED IN 40 CFR PART 60.753 (D) AND IMPLEMENT COVER REPAIRS AS NECESSARY ON A MONTHLY BASIS.
RULE(S):NSPS SUBPART WWW.

8. THE PERMITTEE SHALL ON A MONTHLY BASIS MONITOR OR CONDUCT TESTING TO VERIFY COMPLIANCE AS FOLLOWS:
MONITOR THE COVER INTEGRITY, VISUALLY INSPECT THE BYPASS VALVE TO ENSURE THAT IT IS CLOSED, AND MEASURE THE GAGE PRESSURE AND MONITOR THE TEMPERATURE AND NITROGEN OR OXYGEN CONTENT AT EACH WELL HEAD. THE NITROGEN LEVEL SHALL BE DETERMINED USING EPA METHOD 3C, OR THE OXYGEN LEVEL SHALL BE DETERMINED USING EPA METHOD 3A EXCEPT THAT; 1) THE SPAN SHALL BE SET SO THE REGULATORY LIMIT IS BETWEEN 20 AND 50 PERCENT OF THE SPAN; 2) A DATA RECORDER IS NOT REQUIRED; 3) ONLY TWO CALIBRATION GASES ARE REQUIRED, A ZERO AND A SPAN, AND AMBIENT AIR MAY BE USED AS THE SPAN; 4) A CALIBRATION ERROR CHECK IS NOT REQUIRED; AND 5) THE ALLOWABLE SAMPLE BIAS, ZERO DRIFT AND CALIBRATION DRIFT ARE +/- 10 PERCENT.
RULE(S):NSPS SUBPART WWW.

9. THE METHANE CONCENTRATION AT THE LANDFILL SURFACE SHALL BE MAINTAINED AT LESS THAN 500 PPM ABOVE BACKGROUND. THE PERMITTEE SHALL MONITOR SURFACE CONCENTRATIONS OF METHANE AT DISCRETE SAMPLING POINTS ALONG THE ENTIRE PERIMETER OF THE COLLECTION AREA AND ALONG A PATTERN THAT TRAVERSES THE LANDFILL AT 30 METER INTERVALS FOR EACH COLLECTION AREA ON A QUARTERLY BASIS USING AN ORGANIC VAPOR ANALYZER, FLAME IONIZATION DETECTOR OR OTHER PORTABLE MONITOR MEETING THE SPECIFICATIONS PROVIDED IN 40 CFR PART 60.755 (D).
SURFACE EMISSION MONITORING SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 4.3.1 OF EPA METHOD 21 EXCEPT THAT THE PROBE INLET SHALL BE PLACED WITHIN 5 TO 10 CENTIMETERS OF THE GROUND. THE CALIBRATION PROCEDURES PROVIDED IN SECTION 4.2 OF EPA METHOD 21 SHALL BE FOLLOWED IMMEDIATELY BEFORE COMMENCING A SURFACE MONITORING SURVEY, AND THE CALIBRATION GAS SHALL BE

PERMIT TO OPERATE

METHANE DILUTED TO A NOMINAL CONCENTRATION OF 500 PPM. ANY READING OF 500 PPM OR MORE ABOVE BACKGROUND AT ANY LOCATION SHALL BE RECORDED AS A
RULE(S):NSPS SUBPART WWW.

10. CONT. FROM ABOVE
MONITORED EXCEEDANCE. THE BACKGROUND CONCENTRATION SHALL BE DETERMINED BY MOVING THE PROBE INLET UPWIND AND DOWNWIND OUTSIDE THE BOUNDARY OF THE LANDFILL AT A DISTANCE OF AT LEAST 30 METERS FROM THE PERIMETER WELLS. A MONITORED EXCEEDANCE IS NOT A VIOLATION OF THE ABOVE REQUIREMENT AS LONG AS THE FOLLOWING SPECIFIED ACTIONS ARE TAKEN:
A) THE LOCATION OF EACH MONITORED EXCEEDANCE SHALL BE MARKED AND THE LOCATION RECORDED.
B) COVER MAINTENANCE OR ADJUSTMENTS TO THE VACUUM OF THE ADJACENT WELLS TO INCREASE THE GAS COLLECTION IN THE VICINITY OF EACH EXCEEDANCE SHALL BE MADE AND THE LOCATION SHALL BE RE-MONITORED WITHIN 10 CALENDAR DAYS OF DETECTING THE EXCEEDANCE; AND
C) IF THE RE-MONITORING OF THE LOCATION SHOWS A SECOND EXCEEDANCE, ADDITIONAL CORRECTIVE ACTION SHALL BE TAKEN AND THE LOCATION SHALL BE MONITORED AGAIN WITHIN 10 DAYS OF THE SECOND EXCEEDANCE. IF THE RE-MONITORING SHOWS
RULE(S):NSPS SUBPART WWW.

11. CONT. FROM ABOVE
A THIRD EXCEEDANCE FROM THE SAME LOCATION, THE ACTION SPECIFIED IN SECTION E OF THE CONDITION SHALL BE TAKEN.
D) ANY LOCATION THAT INITIALLY SHOWED AN EXCEEDANCE BUT HAS A METHANE CONCENTRATION LESS THAN 500 PPM ABOVE BACKGROUND AT THE 10-DAY RE-MONITORING SPECIFIED IN SECTION B OR C OF THIS CONDITION SHALL BE RE-MONITORED 1 MONTH FROM THE INTITIAL EXCEEDANCE. IF THE 1-MONTH RE-MONITORING SHOWS A CONCENTRATION <500 PPM ABOVE BACKGROUND, NO FURTHER MONITORING IS REQUIRED UNTIL THE NEXT QUARTERLY MONITORING PERIOD. IF THE 1-MONTH RE-MONITORING SHOWS AN EXCEEDANCE, THE ACTIONS SPECIFIED IN SECTION C OR D OF THIS CONDITION SHALL BE TAKEN.
E) FOR ANY LOCATION WHERE MONITORED METHANE CONCENTRATION EQUALS OR EXCEEDS 500 PPM ABOVE BACKGROUND THREE TIMES WITHIN A QUARTERLY PERIOD, A NEW WELL OR OTHER COLLECTIONS DEVICE SHALL BE INSTALLED WITHIN 120 CALENDAR DAYS OF THE INITIAL EXCEEDANCE. AN ALTERNATIVE REMEDY TO THE EXCEEDANCE
RULE(S):NSPS SUBPART WWW.

12. AND A CORRESPONDING TIME LINE FOR INSTALLATION MAY BE SUBMITTED TO THE DISTRICT FOR APPROVAL.
RULE(S):NSPS SUBPART WWW.

13. THE PERMITTEE SHALL MAINTAIN THE FOLLOWING RECORDS:
A) RECORDS OF THE MAXIMUM DESIGN CAPACITY, THE CURRENT AMOUNT OF SOLID WASTE IN PLACE, THE YEAR-BY-YEAR WASTE ACCEPTANCE RATE;

PERMIT TO OPERATE

B) PLOT MAP WITH EXISTING AND PLANNED WELLS IN THE GAS COLLECTION SYSTEM;
C) INSTALLATION DATE AND LOCATION OF ALL NEWLY INSTALLED WELLS;
D) DESCRIPTION, LOCATION, AMOUNT, AND PLACEMENT DATE OF ALL NONDEGRADABLE REFUSE INCLUDING ASBESTOS AND DEMOLITION REFUSE PLACE IN LANDFILL AREAS WHICH ARE EXCLUDED FROM LANDFILL GAS COLLECTION AND CONTROL AS PROVIDED BY 40 CFR PART 60.759(A)(3)(II); AND
E) RECORD OF MAXIMUM EXPECTED GAS FLOW, ETC. FROM THE INITIAL PERFORMANCE TEST.
RULE(S):NSPS SUBPART WWW.

14. THE PERMITTEE SHALL RECORD ALL VALUES WHICH EXCEED THE OPERATION STANDARDS SPECIFIED IN 40 CFR PART 60.753, AND SHALL INCLUDE THE OPERATING VALUE FROM THE NEXT SUBSEQUENT MONITORING PERIOD AND THE LOCATION OF EACH EXCEEDANCE.
RULE(S):NSPS SUBPART WWW.

15. IN THE EVENT THAT THE GAS COLLECTION SYSTEM OR THE GAS COMBUSTION DEVICE IS INOPERABLE, THE GAS MOVER SYSTEM SHALL BE SHUT DOWN AND ALL VALVES IN THE COLLECTION SYSTEM AND GAS COMBUSTION DEVICE CONTRIBUTING TO VENTING OF THE GAS TO THE ATMOSPHERE SHALL BE CLOSED WITHIN 1 HOUR OR THE LANDFILL GAS VENTED TO THE FLARE. THIS PROVISION DOES NOT APPLY TO THE GAS COMBUSTION DEVICE DURING PERIODS OF START-UP, SHUTDOWN, OR MALFUNCTION, PROVIDED THAT THE DURATION OF START-UP, SHUTDOWN, OR MALFUNCTION SHALL NOT EXCEED 1 HOUR.
RULE(S):NSPS SUBPART WWW.

16. IF THE GAS COLLECTION SYSTEM IS EQUIPPED WITH A VALVE TO BYPASS THE GAS TURBINE, THIS BYPASS VALVE MUST BE IN A CLOSED POSITION WITH A CAR-SEAL OR A LOCK-AND-KEY TYPE OF CONFIGURATION.
RULE(S):NSPS SUBPART WWW.

17. THE PERMITTEE SHALL MAINTAIN, READILY ACCESSIBLE RECORDS FOR THE LIFE OF THE CONTROL EQUIPMENT, THE CONTROL DEVICE VENDOR SPECIFICATIONS, AND THE FOLLOWING DATA AS MEASURED DURING THE INITIAL PERFORMANCE TEST OR COMPLIANCE DETERMINATION:
THE MAXIMUM EXPECTED GAS GENERATION FLOW RATE AS CALCULATED IN 40 CFR PART 60.755(A)(1); AND THE DENSITY OF WELLS, HORIZONTAL COLLECTORS, SURFACE COLLECTORS, OR OTHER GAS EXTRACTION DEVICES DETERMINED USING THE PROCEDURES SPECIFIED IN 40 CFR PART 60.759 (A)(1).
RULE(S):NSPS SUBPART WWW.

18. THE PERMITTEE SHALL SUBMIT AN ANNUAL REPORT DUE NO LATER THAN JUNE 30, WITH THE FOLLOWING REQUIRED INFORMATION:
A) THE VALUE AND LENGTH OF TIME FOR EXCEEDANCES OF APPLICABLE PARAMETERS MONITORED AS REQUIRED IN 40 CFR PART 60.753; AND B) A DESCRIPTION AND THE

PERMIT TO OPERATE

DURATION OF ALL PERIODS WHEN THE GAS STREAM IS DIVERTED FROM ALL COMBUSTION DEVICES; AND C) A DESCRIPTION AND THE DURATION OF ALL PERIODS WHEN ALL COMBUSTION DEVICES WERE NOT OPERATING FOR ANY PERIOD EXCEEDING 1 HOUR AND THE LENGTH OF TIME ALL COMBUSTION DEVICES WERE NOT OPERATING; AND D) ALL PERIODS WHEN THE COLLECTION SYSTEM WAS NOT OPERATING IN EXCESS OF FIVE DAYS; AND E) THE LOCATION AND CONCENTRATION OF EACH EXCEEDANCE OF THE SURFACE METHANE CONCENTRATION LIMIT AS MONITORED; AND F) THE DATE OF INSTALLATION AND THE LOCATION OF EACH WELL OR COLLECTION SYSTEM EXPANSION ADDED PURSUANT TO 40 CFR PART 60.755. IN ADDITION TO THE ABOVE, THE INITIAL REPORT SHALL INCLUDE: G) THE MOST RECENT PERFORMANCE TEST RESULTS; AND H) A DIAGRAM OF THE COLLECTION SYSTEM SHOWING COLLECTION SYSTEM
RULE(S):NSPS SUBPART WWW.

19. CONT. FROM ABOVE
POSITIONING INCLUDING ALL WELLS, HORIZONTAL COLLECTORS, SURFACE COLLECTORS, OR OTHER GAS EXTRACTION DEVICES, INCLUDING THE LOCATIONS OF ANY AREAS EXCLUDED FROM COLLECTION AND THE PROPOSED SITES FOR THE FUTURE COLLECTION SYSTEM EXPANSION; AND I) THE DATA UPON WHICH THE SUFFICIENT DENSITY OF WELLS, HORIZONTAL COLLECTORS, SURFACE COLLECTORS , OR OTHER GAS EXTRACTION DEVICES AND THE GAS MOVER EQUIPMENT SIZING ARE BASED; AND J) THE DOCUMENTATION OF THE PRESENCE OF ASBESTOS OR NONDEGRADABLE MATERIAL FOR EACH AREA FROM WHICH COLLECTION WELLS HAVE BEEN EXCLUDED BASED ON THE PRESENCE OF ASBESTOS OR NONDEGRADABLE MATERIAL; AND
RULE(S):NSPS SUBPART WWW.

20. CONT. FROM ABOVE
K) THE SUM OF GAS GENERATION FLOW RATES FOR ALL AREAS FROM WHICH COLLECTION WELLS HAVE BEEN EXCLUDED BASED ON NONPRODUCTIVITY AND THE CALCULATIONS OF GAS GENERATION FLOW RATE FOR EACH EXCLUDED AREA; AND
L) THE PROVISIONS FOR INCREASING GAS MOVER EQUIPMENT CAPACITY WITH INCREASED GAS GENERATION FLOW RATE, IF THE PRESENT GAS MOVER EQUIPMENT IS INADEQUATE TO MOVE THE MAXIMUM FLOW RATE EXPECTED OVER THE LIFE OF THE THE LANDFILL; AND
M) THE PROVISIONS FOR THE CONTROL OF OFF-SITE MIGRATION.
RULE(S):NSPS SUBPART WWW.

21. THE PERMITTEE SHALL SUBMIT AN EQUIPMENT REMOVAL REPORT TO THE DISTRICT 30 DAYS PRIOR TO REMOVAL OR CESSATION OF OPERATION OF THE LANDFILL GAS CONTROL EQUIPMENT. THE EQUIPMENT REMOVAL REPORT SHALL CONTAIN THE FOLLOWING:
A) A COPY OF THE CLOSURE REPORT FOR THE LANDFILL; AND
B) A COPY OF THE INITIAL PERFORMANCE TEST REPORT DEMONSTRATING THAT THE 15 YEAR MINIMUM CONTROL PERIOD HAS EXPIRED; AND
C) DATED COPIES OF THREE SUCCESSIVE ANNUAL NMOC EMISSION RATE REPORTS DEMONSTRATING THAT THE LANDFILL IS NO LONGER PRODUCING 50 MEGAGRAMS OR

PERMIT TO OPERATE

GREATER OF NMOC PER YEAR.
RULE(S):NSPS SUBPART WWW.

22. THE ACTIVE WASTE DISPOSAL OPERATION SHALL NOT EXCEED THE MAXIMUM ELEVATION (470 FT MSL) AND SIZE (807 ACRES) LIMITS SPECIFIED IN THE INTEGRATED WASTE MANAGEMENT BOARD PERMIT NUMBER 37-AA-0020. THESE LIMITS ARE EQUIVALENT TO A DESIGN CAPACITY OF APPROXIMATELY 75,200,000 CUBIC YARDS.
RULE(S):NSR.

23. THERE SHALL BE NO RELEASE OF DUST FROM ANY PART OF THE LANDFILL, ASSOCIATED LANDFILL OPERATIONS, OR ON-SITE EQUIPMENT WHICH EXCEED THE APPLICABLE VISIBLE EMISSION STANDARDS SPECIFIED IN THE DISTRICT RULES AND AND REGULATIONS.
RULE(S):50.

24. THERE SHALL BE NO RELEASE OF ODORS FROM ANY PART OF THE LANDFILL, ASSOCIATED OPERATIONS, OR ON-SITE EQUIPMENT WHICH EXCEED THE APPLICABLE PUBLIC NUISANCE STANDARDS SPECIFIED IN THE DISTRICT RULES AND REGULATIONS.
RULE(S):51.

25. THE LANDFILL, LANDFILL COVER, LINERS, ANY ASSOCIATED LANDFILL GAS COLLECTION AND CONTROL EQUIPMENT, AND ANY OTHER CONTRIVANCES USED TO CONFINE, CAPTURE OR CONTROL LANDFILL GAS, LEACHATE OR CONDENSATE SHALL BE OPERATED AND MAINTAINED IN COMPLIANCE WITH THE APPLICABLE REQUIREMENTS OF DISTRICT RULE 59 AND ANY OTHER APPLICABLE DISTRICT RULES AND REGULATIONS.
RULE(S):59.

26. THERE SHALL BE NO RELEASE OF LEACHATE OR CONDENSATE FROM ANY PART OF THE LANDFILL COVER WHICH RESULTS IN THE DISCHARGE OF ODORS, TOXIC AIR CONTAMINANTS, OR REACTIVE ORGANIC COMPOUNDS TO THE ATMOSPHERE.
RULE(S):59.

B. DISTRICT-ONLY--ENFORCEABLE CONDITIONS

27. THIS AIR POLLUTION CONTROL DISTRICT PERMIT DOES NOT RELIEVE THE HOLDER FROM OBTAINING PERMITS OR AUTHORIZATIONS REQUIRED BY OTHER GOVERNMENTAL AGENCIES.

28. THE PERMITTEE, SHALL UPON DETERMINATION OF APPLICABILITY AND WRITTEN NOTIFICATION BY THE DISTRICT, COMPLY WITH ALL APPLICABLE REQUIREMENTS OF THE AIR TOXICS 'HOT SPOTS' INFORMATION AND ASSESSMENT ACT (CALIFORNIA HEALTH AND SAFETY CODE SECTION 44300 ET.SEQ.).

Appendix D

Gas Collection Data for Miramar Landfill

MIRAMAR LFG COLLECTION SYSTEM
MONTHLY PRODUCTION REPORT

Mar-05 Reporting Date 4/1/2005

NORTH BLOWER FLARE STATION DATA								
			PREVIOUS READING					
			TIME			3/1/2005 0630		
READING TIME	4/1/2005 0630							
REPORTING TIME (HRS)	744.0							
RUNTIME (HRS) Flare A	527.4		SUBTOTAL LFG TO DATE					
RUNTIME (HRS) Flare B	675.9							
RUNTIME (HRS) CO-GEN	744.0		Flare A			46.567	MM CF	
TOTAL LFG TO DATE			Flare B			26.912	MM CF	
To Flare A	49.213	MM CF	Miramar Plant Conveyance Line			2294.308	MM CF	
To Flare B	50.179	MM CF	Subtotal			2367.787	MM CF	
To Miramar Plant Con. Line	2389.094	MM CF	ACTUAL TOTALIZER READINGS					
SubTotal LFG over period	120.698	**MM CF**	Flare A	Totalizer reset		2.646	MM CF	
Total LFG	2488.485	MM CF	Flare B	Totalizier reset		23.267	MM CF	
AVERAGE CH4 %	46.2%		Miramar Plant Conveyance Line			1654.208	MMCF	

SOUTH BLOWER FLARE STATION DATA							
			PREVIOUS READING				
			TIME			3/1/2005 0700	
READING TIME	4/1/2005 0700		SUBTOTAL LFG TO DATE				
REPORTING TIME (HRS)	744.0		To Flare			823.264	MM CF
RUNTIME (HRS)TO Flare	408.0		To Conveyance Line			1407.154	MM CF
RUNTIME (HRS) TO COG	336.0		Subtotal (To Fl & Cog)			1211.571	MM CF
TOTAL LFG TO DATE			ACTUAL TOTALIZER READING				
To Flare	831.287	MM CF	SBFS	Last Month		1472.582	MMCF
To Conveyance Line	1413.761	MM CF	SBFS	This Month		1487.212	MMCF
Subtotal	2245.048	MM CF		This Month to Flare		8.023	
AVERAGE CH4 %	45.9%			This Month to Cogen		6.607	
Subtotal LFG Over Period	14.630	MM CF	Total gallons of condensate removed for month				41,000

MIRAMAR PLANT DATA							
READING TIME	4/1/2005 0700		DIGESTER GAS TOTALIZER READING				
REPORTING TIME (HRS)	744.0		MBC	Last Month		294.505	MMCF
Cogen RUN TIME (HRS)	744.0		MBC	This Month		303.979	MMCF
Digester RUN TIME (HRS)	744.0			Total for month		9.474	
LFG AVERAGE CH4 %	46.1%						
Digester AVERAGE CH4 %	58.6%						
Subtotal LFG over period	101.393	MM CF	Does not include digester gas.				

NORTH CITY PLANT DATA							
READING TIME	4/1/2005 0630		PREVIOUS READING				
REPORTING TIME (HRS)	744.0		TIME			3/1/2005 0630	
RUN TIME (HRS)	744.0		SUBTOTAL LFG TO DATE				
AVERAGE CH4 %	47.7%		To North City			3963.874	MM CF
Subtotal LFG over period	70.769	MM CF					
Total LFG to Date	4034.643		ACTUAL TOTALIZER READING				
			North City	Last Month		4005.038	MMCF
			North City	This Month		4075.807	MMCF

PERIOD SUMMARY							
	FLARE A	FLARE B	MIRAMAR	N. CITY	SBFS	Digester	TOTAL
TO. LFG (MMSCF)	2.65	23.27	101.39	70.77	14.63	9.47	207.55
TOTAL BTU's (MM BTU)	1236.97	10878.23	47303.03	34161.90	6795.75	5618.36	99198.49
AVG. BTU (MM BTU/HR)	1.66	14.62	63.58	45.92	9.13	7.55	133.33
AVG. LFG (SCFM)	59.27	521.21	2271.35	1585.33	327.73	212.23	4649.38
% CAPACITY	2%	16%	NA	NA	NA	NA	
% AVAILABILITY	71%	91%	100%	100%	45%	100%	
AVERAGE CH4 %	46.2%	46.2%	46.1%	47.7%	45.9%	58.6%	

Prepared By Jim Vollmer * BTU's based on 1012 BTU/cubic foot of methane

Date 4/1/2005

MIRAMAR LFG COLLECTION SYSTEM
MONTHLY PRODUCTION REPORT

Apr-05 Reporting Date 5/2/2005

NORTH BLOWER FLARE STATION DATA								
			PREVIOUS READING					
			TIME			4/1/2005 0630		
READING TIME	5/2/2005 0630							
REPORTING TIME (HRS)	744.0							
RUNTIME (HRS) Flare A	744.0		SUBTOTAL LFG TO DATE					
RUNTIME (HRS) Flare B	744.0							
RUNTIME (HRS) CO-GEN	744.0		Flare A			49.213	MM CF	
TOTAL LFG TO DATE			Flare B			50.179	MM CF	
To Flare A	51.938	MM CF	Miramar Plant Conveyance Line			2389.094	MM CF	
To Flare B	65.482	MM CF	Subtotal			2488.486	MM CF	
To Miramar Plant Con. Line	2494.924	MM CF	ACTUAL TOTALIZER READINGS					
SubTotal LFG over period	123.858	**MM CF**	Flare A			5.371	MM CF	
Total LFG	2612.344	MM CF	Flare B			38.570	MM CF	
AVERAGE CH4 %	46.3%		Miramar Plant Conveyance Line			1760.038	MMCF	

SOUTH BLOWER FLARE STATION DATA							
			PREVIOUS READING				
			TIME			4/1/2005 0700	
READING TIME	5/2/2005 0700		SUBTOTAL LFG TO DATE				
REPORTING TIME (HRS)	744.0		To Flare			831.289	MM CF
RUNTIME (HRS)TO Flare	0.0		To Conveyance Line			1413.761	MM CF
RUNTIME (HRS) TO COG	744.0		Subtotal (To Fl & Cog)			1211.571	MM CF
TOTAL LFG TO DATE			**ACTUAL TOTALIZER READING**				
To Flare	831.289	MM CF	SBFS	Last Month		1487.212	MMCF
To Conveyance Line	1427.939	MM CF	SBFS	This Month		1501.390	MMCF
Subtotal	2259.228	MM CF		This Month to Flare		0.000	
AVERAGE CH4 %	44.0%			This Month to Cogen		14.178	
Subtotal LFG Over Period	14.178	MM CF	Total gallons of condensate removed for month				36,000

MIRAMAR PLANT DATA							
READING TIME	5/2/2005 0700		**DIGESTER GAS TOTALIZER READING**				
REPORTING TIME (HRS)	744.0		MBC	Last Month		303.979	MMCF
Cogen RUN TIME (HRS)	744.0		MBC	This Month		307.575	MMCF
Digester RUN TIME (HRS)	744.0			Total for month		3.596	
LFG AVERAGE CH4 %	46.1%						
Digester AVERAGE CH4 %	59.4%						
Subtotal LFG over period	120.008	MM CF	Does not include digester gas.				

NORTH CITY PLANT DATA							
READING TIME	5/2/2005 0630		PREVIOUS READING				
REPORTING TIME (HRS)	744.0		TIME			4/1/2005 0630	
RUN TIME (HRS)	744.0		SUBTOTAL LFG TO DATE				
AVERAGE CH4 %	49.0%		To North City			4034.643	MM CF
Subtotal LFG over period	67.246	MM CF					
Total LFG to Date	4101.889		**ACTUAL TOTALIZER READING**				
			North City	Last Month		4075.807	MMCF
			North City	This Month		4143.053	MMCF

PERIOD SUMMARY							
	FLARE A	**FLARE B**	**MIRAMAR**	**N. CITY**	**SBFS**	**Digester**	**TOTAL**
TO. LFG (MMSCF)	2.73	15.30	120.01	67.25	14.18	3.60	208.88
TOTAL BTU's (MM BTU)	1276.89	7170.53	55987.41	33346.15	6313.18	2161.52	99942.50
AVG. BTU (MM BTU/HR)	1.72	9.64	75.25	44.82	8.49	2.91	134.33
AVG. LFG (SCFM)	61.05	342.82	2688.34	1506.42	317.61	80.55	4679.18
% CAPACITY	2%	11%	NA	NA	NA	NA	
% AVAILABILITY	100%	100%	100%	100%	100%	100%	
AVERAGE CH4 %	46.3%	46.3%	46.1%	49.0%	44.0%	59.4%	

Prepared By Jim Vollmer * BTU's based on 1012 BTU/cubic foot of methane

Date 5/2/2005

MIRAMAR LFG COLLECTION SYSTEM
MONTHLY PRODUCTION REPORT

May-05 Reporting Date 6/1/2005

NORTH BLOWER FLARE STATION DATA									
			PREVIOUS READING						
			TIME			5/2/2005 0630			
READING TIME	6/1/2005 0630								
REPORTING TIME (HRS)	720.0								
RUNTIME (HRS) Flare A	720.0		SUBTOTAL LFG TO DATE						
RUNTIME (HRS) Flare B	720.0								
RUNTIME (HRS) CO-GEN	720.0		Flare A			51.938	MM CF		
TOTAL LFG TO DATE			Flare B			65.482	MM CF		
To Flare A	59.585	MM CF	Miramar Plant Conveyance Line			2494.924	MM CF		
To Flare B	66.626	MM CF	Subtotal			2612.344	MM CF		
To Miramar Plant Con. Line	2605.133	MM CF	ACTUAL TOTALIZER READINGS						
SubTotal LFG over period	118.999	**MM CF**	Flare A			13.018	MM CF		
Total LFG	2731.343	MM CF	Flare B			39.714	MM CF		
AVERAGE CH4 %	47.2%		Miramar Plant Conveyance Line			1870.247	MMCF		

SOUTH BLOWER FLARE STATION DATA									
			PREVIOUS READING						
			TIME			5/2/2005 0700			
READING TIME	6/1/2005 0700		SUBTOTAL LFG TO DATE						
REPORTING TIME (HRS)	720.0		To Flare			831.289	MM CF		
RUNTIME (HRS)TO Flare	0.0		To Conveyance Line			1427.939	MM CF		
RUNTIME (HRS) TO COG	720.0		Subtotal (To Fl & Cog)			1211.571	MM CF		
TOTAL LFG TO DATE			ACTUAL TOTALIZER READING						
To Flare	831.289	MM CF	SBFS	Last Month		1501.390	MMCF		
To Conveyance Line	1440.819	MM CF	SBFS	This Month		1514.270	MMCF		
Subtotal	2272.108	MM CF		This Month to Flare		0.000			
AVERAGE CH4 %	44.4%			This Month to Cogen		12.880			
Subtotal LFG Over Period	12.880	MM CF	Total gallons of condensate removed for month					36,000	

MIRAMAR PLANT DATA							
READING TIME	6/1/2005 0700		DIGESTER GAS TOTALIZER READING				
REPORTING TIME (HRS)	720.0		MBC	Last Month		307.575	MMCF
Cogen RUN TIME (HRS)	720.0		MBC	This Month		307.575	MMCF
Digester RUN TIME (HRS)	720.0			Total for month		0.000	
LFG AVERAGE CH4 %	46.7%						
Digester AVERAGE CH4 %							
Subtotal LFG over period	123.089	MM CF	Does not include digester gas.				

NORTH CITY PLANT DATA							
READING TIME	6/1/2005 0630		PREVIOUS READING				
REPORTING TIME (HRS)	720.0		TIME			5/2/2005 0630	
RUN TIME (HRS)	720.0		SUBTOTAL LFG TO DATE				
AVERAGE CH4 %	49.0%		To North City			4101.889	MM CF
Subtotal LFG over period	66.866	MM CF					
Total LFG to Date	4168.755		ACTUAL TOTALIZER READING				
			North City	Last Month		4143.053	MMCF
			North City	This Month		4209.919	MMCF

PERIOD SUMMARY							
	FLARE A	FLARE B	MIRAMAR	N. CITY	SBFS	Digester	TOTAL
TO. LFG (MMSCF)	7.65	1.14	123.09	66.87	12.88	0.00	198.75
TOTAL BTU's (MM BTU)	3652.77	546.21	58172.25	33157.67	5787.34	0.00	95528.91
AVG. BTU (MM BTU/HR)	5.07	0.76	80.79	46.05	8.04	0.00	132.68
AVG. LFG (SCFM)	177.02	26.47	2849.28	1547.83	298.15	-0.01	4600.59
% CAPACITY	6%	1%	NA	NA	NA	NA	
% AVAILABILITY	100%	100%	100%	100%	100%	100%	
AVERAGE CH4 %	47.2%	47.2%	46.7%	49.0%	44.4%	0.0%	

Prepared By Jim Vollmer * BTU's based on 1012 BTU/cubic foot of methane

Date 6/1/2005

MIRAMAR LFG COLLECTION SYSTEM
MONTHLY PRODUCTION REPORT

Jun-05 Reporting Date 7/1/2005

NORTH BLOWER FLARE STATION DATA								
			PREVIOUS READING					
			TIME			6/1/2005 0630		
READING TIME	7/1/2005 0630							
REPORTING TIME (HRS)	720.0							
RUNTIME (HRS) Flare A	720.0		SUBTOTAL LFG TO DATE					
RUNTIME (HRS) Flare B	720.0							
RUNTIME (HRS) CO-GEN	720.0		Flare A			59.585	MM CF	
TOTAL LFG TO DATE			Flare B			66.626	MM CF	
To Flare A	79.819	MM CF	Miramar Plant Conveyance Line			2605.133	MM CF	
To Flare B	67.885	MM CF	Subtotal			2731.344	MM CF	
To Miramar Plant Con. Line	2705.901	MM CF	ACTUAL TOTALIZER READINGS					
SubTotal LFG over period	122.260	**MM CF**	Flare A			33.252	MM CF	
Total LFG	2853.604	MM CF	Flare B			40.973	MM CF	
AVERAGE CH4 %	47.5%		Miramar Plant Conveyance Line			1971.015	MMCF	

SOUTH BLOWER FLARE STATION DATA							
			PREVIOUS READING				
			TIME			6/1/2005 0700	
READING TIME	7/1/2005 0700		SUBTOTAL LFG TO DATE				
REPORTING TIME (HRS)	720.0		To Flare			831.289	MM CF
RUNTIME (HRS)TO Flare	5.8		To Conveyance Line			1440.819	MM CF
RUNTIME (HRS) TO COG	720.0		Subtotal (To Fl & Cog)			1211.571	MM CF
TOTAL LFG TO DATE			ACTUAL TOTALIZER READING				
To Flare	831.397	MM CF	SBFS	Last Month		1514.270	MMCF
To Conveyance Line	1454.275	MM CF	SBFS	This Month		1527.726	MMCF
Subtotal	2285.672	MM CF		This Month to Flare		0.108	
AVERAGE CH4 %	44.0%			This Month to Cogen		13.456	
Subtotal LFG Over Period	13.456	MM CF	Total gallons of condensate removed for month				38,000

MIRAMAR PLANT DATA							
READING TIME	7/1/2005 0700		DIGESTER GAS TOTALIZER READING				
REPORTING TIME (HRS)	720.0		MBC	Last Month		307.575	MMCF
Cogen RUN TIME (HRS)	720.0		MBC	This Month		314.216	MMCF
Digester RUN TIME (HRS)	720.0			Total for month		6.641	
LFG AVERAGE CH4 %	46.6%						
Digester AVERAGE CH4 %	59.3%						
Subtotal LFG over period	114.224	MM CF	Does not include digester gas.				

NORTH CITY PLANT DATA							
READING TIME	7/1/2005 0630		PREVIOUS READING				
REPORTING TIME (HRS)	720.0		TIME			6/1/2005 0630	
RUN TIME (HRS)	717.8		SUBTOTAL LFG TO DATE				
AVERAGE CH4 %	47.6%		To North City			4168.755	MM CF
Subtotal LFG over period	69.945	MM CF					
Total LFG to Date	4238.700		ACTUAL TOTALIZER READING				
			North City	Last Month		4209.919	MMCF
			North City	This Month		4279.864	MMCF

PERIOD SUMMARY							
	FLARE A	FLARE B	MIRAMAR	N. CITY	SBFS	Digester	TOTAL
TO. LFG (MMSCF)	20.23	1.26	114.22	69.94	13.46	6.64	212.30
TOTAL BTU's (MM BTU)	9726.26	604.96	53867.03	33693.24	5991.69	3985.37	101876.86
AVG. BTU (MM BTU/HR)	13.51	0.84	74.82	46.80	8.32	5.54	141.50
AVG. LFG (SCFM)	468.37	29.13	2644.07	1624.05	311.48	153.73	4919.35
% CAPACITY	15%	1%	NA	NA	NA	NA	
% AVAILABILITY	100%	100%	100%	100%	100%	100%	
AVERAGE CH4 %	47.5%	47.5%	46.6%	47.6%	44.0%	59.3%	

Prepared By Jim Vollmer * BTU's based on 1012 BTU/cubic foot of methane

Date 7/1/2005

MIRAMAR LFG COLLECTION SYSTEM
MONTHLY PRODUCTION REPORT

Jul-05 Reporting Date 8/1/2005

NORTH BLOWER FLARE STATION DATA									
			PREVIOUS READING						
			TIME			7/1/2005 0630			
READING TIME	8/1/2005 0630								
REPORTING TIME (HRS)	744.0								
RUNTIME (HRS) Flare A	673.5		**SUBTOTAL LFG TO DATE**						
RUNTIME (HRS) Flare B	673.5								
RUNTIME (HRS) CO-GEN	720.0		Flare A			79.819	MM CF		
TOTAL LFG TO DATE			Flare B			67.885	MM CF		
To Flare A	103.304	MM CF	Miramar Plant Conveyance Line			2705.901	MM CF		
To Flare B	69.353	MM CF	Subtotal			2853.605	MM CF		
To Miramar Plant Con. Line	2810.319	MM CF	**ACTUAL TOTALIZER READINGS**						
SubTotal LFG over period	129.371	**MM CF**	Flare A			56.737	MM CF		
Total LFG	2982.976	MM CF	Flare B			42.441	MM CF		
AVERAGE CH4 %	46.4%		Miramar Plant Conveyance Line			2075.433	MMCF		

SOUTH BLOWER FLARE STATION DATA									
			PREVIOUS READING						
			TIME			7/1/2005 0700			
READING TIME	8/1/2005 0700		SUBTOTAL LFG TO DATE						
REPORTING TIME (HRS)	744.0		To Flare			831.397	MM CF		
RUNTIME (HRS)TO Flare	70.0		To Conveyance Line			1454.275	MM CF		
RUNTIME (HRS) TO COG	674.0		Subtotal (To Fl & Cog)			1211.571	MM CF		
TOTAL LFG TO DATE			**ACTUAL TOTALIZER READING**						
To Flare	832.719	MM CF	SBFS	Last Month		1527.726	MMCF		
To Conveyance Line	1467.007	MM CF	SBFS	This Month		1541.780	MMCF		
Subtotal	2299.726	MM CF		This Month to Flare		1.322			
AVERAGE CH4 %	43.5%			This Month to Cogen		12.732			
Subtotal LFG Over Period	14.054	MM CF	Total gallons of condensate removed for month					33,000	

MIRAMAR PLANT DATA							
READING TIME	8/1/2005 0700		**DIGESTER GAS TOTALIZER READING**				
REPORTING TIME (HRS)	744.0		MBC	Last Month		314.216	MMCF
Cogen RUN TIME (HRS)	744.0		MBC	This Month		324.660	MMCF
Digester RUN TIME (HRS)	744.0			Total for month		10.444	
LFG AVERAGE CH4 %	45.5%						
Digester AVERAGE CH4 %	59.2%						
Subtotal LFG over period	117.150	MM CF	Does not include digester gas.				

NORTH CITY PLANT DATA							
READING TIME	8/1/2005 0630		**PREVIOUS READING**				
REPORTING TIME (HRS)	744.0		TIME			7/1/2005 0630	
RUN TIME (HRS)	718.5		SUBTOTAL LFG TO DATE				
AVERAGE CH4 %	47.5%		To North City			4238.700	MM CF
Subtotal LFG over period	64.671	MM CF					
Total LFG to Date	4303.371		**ACTUAL TOTALIZER READING**				
			North City	Last Month		4279.864	MMCF
			North City	This Month		4344.535	MMCF

PERIOD SUMMARY							
	FLARE A	**FLARE B**	**MIRAMAR**	**N. CITY**	**SBFS**	**Digester**	**TOTAL**
TO. LFG (MMSCF)	23.48	1.47	117.15	64.67	14.05	10.44	217.22
TOTAL BTU's (MM BTU)	11027.60	689.53	53942.77	31087.19	6186.85	6256.87	103003.95
AVG. BTU (MM BTU/HR)	14.82	0.93	72.50	41.78	8.32	8.41	138.45
AVG. LFG (SCFM)	526.09	32.90	2624.32	1500.13	314.83	233.95	4917.39
% CAPACITY	16%	1%	NA	NA	NA	NA	
% AVAILABILITY	91%	91%	100%	97%	91%	100%	
AVERAGE CH4 %	46.4%	46.4%	45.5%	47.5%	43.5%	59.2%	

Prepared By Jim Vollmer * BTU's based on 1012 BTU/cubic foot of methane

Date 8/1/2005

Appendix E

Detailed Emission Calculations

Miramar Landfill
Landfill Gas Emissions - Landfill Surface and Flares
Operating Time: 24 hours per day, and 365 days per year.

COMPOUNDS	Molecular Weight (g/mol)	Concentration of TACs in LFG (ppmv)	Number of Moles of Cl for chlorinated TACs	Cons * No. Moles for chlorinated TACs (ppmv)	Baseline Emissions in LFG to Flares (tons/yr)	Project Emissions in LFG to Flares (tons/yr)	Flare Destruction Efficiency	Baseline Emissions in LFG from Landfill		Project Emissions in LFG from Landfill		Incremental LFG Emissions from Landfill	Baseline Emissions in LFG from Flares		Project Emissions in LFG from Flares		Incremental LFG Emissions from Flare
								(tons/yr)	(lb/day)	(tons/yr)	(lb/day)	(lb/day)	(tons/yr)	(lb/day)	(tons/yr)	(lb/day)	(lb/day)
TACs (1)																	
Acetone	58.08	7.010			0.056	0.368	99.20%	1.79E+00	9.83E+00	1.79E+00	9.83E+00	0.00E+00	4.49E-04	2.46E-03	2.94E-03	1.61E-02	1.3663E-02
Acrylonitrile	53.06	6.33			0.046	0.303	99.20%	1.48E+00	8.11E+00	1.48E+00	8.11E+00	0.00E+00	3.70E-04	2.03E-03	2.43E-03	1.33E-02	1.13E-02
Benzene	78.11	1.91			0.021	0.135	99.20%	6.57E-01	3.60E+00	6.57E-01	3.60E+00	0.00E+00	1.64E-04	9.01E-04	1.08E-03	5.91E-03	5.01E-03
Carbon Disulfide	76.13	0.58			0.006	0.040	99.20%	1.95E-01	1.07E+00	1.95E-01	1.07E+00	0.00E+00	4.87E-05	2.67E-04	3.19E-04	1.75E-03	1.48E-03
Carbon Monoxide	28.01	141			0.544	3.567	99.20%	1.74E+01	9.54E+01	1.74E+01	9.54E+01	0.00E+00	4.35E-03	2.38E-02	2.85E-02	1.56E-01	1.33E-01
Carbonyl Sulfide	60.07	0.49			0.004	0.027	99.20%	1.30E-01	7.11E-01	1.30E-01	7.11E-01	0.00E+00	3.24E-05	1.78E-04	2.13E-04	1.17E-03	9.88E-04
Chlorobenzene	112.56	0.25	1	0.250	0.004	0.025	98.00%	1.24E-01	6.79E-01	1.24E-01	6.79E-01	0.00E+00	7.75E-05	4.25E-04	5.08E-04	2.79E-03	2.36E-03
Chloroethane (Ethyl Chloride)	64.52	1.25	1	1.250	0.011	0.073	98.00%	3.55E-01	1.95E+00	3.55E-01	1.95E+00	0.00E+00	2.22E-04	1.22E-03	1.46E-03	7.98E-03	6.77E-03
Chloroform	119.39	0.03	1	0.030	0.000	0.003	98.00%	1.58E-02	8.65E-02	1.58E-02	8.65E-02	0.00E+00	9.87E-06	5.41E-05	6.47E-05	3.55E-04	3.00E-04
Ethyl Benzene	106.16	4.61			0.067	0.442	99.20%	2.16E+00	1.18E+01	2.16E+00	1.18E+01	0.00E+00	5.39E-04	2.95E-03	3.54E-03	1.94E-02	1.64E-02
Ethylene Dichloride (1,2-Dichloroethane)	98.96	0.41	2	0.820	0.006	0.037	98.00%	1.79E-01	9.80E-01	1.79E-01	9.80E-01	0.00E+00	1.12E-04	6.12E-04	7.33E-04	4.02E-03	3.40E-03
Ethylidene Dichloride (1,1-Dichloroethane)	98.97	2.35	2	4.700	0.032	0.210	98.00%	1.02E+00	5.62E+00	1.02E+00	5.62E+00	0.00E+00	6.41E-04	3.51E-03	4.20E-03	2.30E-02	1.95E-02
Fluorocarbons (chlorinated)	137.38	0.76	1	0.760	0.014	0.094	98.00%	4.60E-01	2.52E+00	4.60E-01	2.52E+00	0.00E+00	2.88E-04	1.58E-03	1.89E-03	1.03E-02	8.76E-03
Hexane	86.18	6.57			0.078	0.511	99.20%	2.49E+00	1.37E+01	2.49E+00	1.37E+01	0.00E+00	6.24E-04	3.42E-03	4.09E-03	2.24E-02	1.90E-02
Hydrogen Sulfide	34.08	35.5			0.167	1.093	99.20%	5.33E+00	2.92E+01	5.33E+00	2.92E+01	0.00E+00	1.33E-03	7.30E-03	8.74E-03	4.79E-02	4.06E-02
Methyl Chloroform (1,1,1-Trichloroethane)	133.41	0.48	3	1.440	0.009	0.058	98.00%	2.82E-01	1.55E+00	2.82E-01	1.55E+00	0.00E+00	1.76E-04	9.67E-04	1.16E-03	6.34E-03	5.37E-03
Methylene Chloride (Dichloromethane)	84.94	14.3	2	28.600	0.167	1.097	98.00%	5.35E+00	2.93E+01	5.35E+00	2.93E+01	0.00E+00	3.35E-03	1.83E-02	2.19E-02	1.20E-01	1.02E-01
Methyl Ethyl Ketone (2-Butanone)	72.11	7.09			0.070	0.462	99.20%	2.25E+00	1.23E+01	2.25E+00	1.23E+01	0.00E+00	5.63E-04	3.09E-03	3.69E-03	2.02E-02	1.72E-02
Methyl Isobutyl Ketone	100.16	1.87			0.026	0.169	99.20%	8.25E-01	4.52E+00	8.25E-01	4.52E+00	0.00E+00	2.06E-04	1.13E-03	1.35E-03	7.42E-03	6.29E-03
Perchloroethylene (Tetrachloroethylene)	165.83	3.73	4	14.920	0.085	0.559	98.00%	2.73E+00	1.49E+01	2.73E+00	1.49E+01	0.00E+00	1.70E-03	9.34E-03	1.12E-02	6.12E-02	5.19E-02
Toluene	92.13	39.3			0.499	3.271	99.20%	1.60E+01	8.74E+01	1.60E+01	8.74E+01	0.00E+00	3.99E-03	2.19E-02	2.62E-02	1.43E-01	1.22E-01
Trichloroethylene	131.40	2.82	3	8.460	0.051	0.335	98.00%	1.63E+00	8.95E+00	1.63E+00	8.95E+00	0.00E+00	1.02E-03	5.59E-03	6.69E-03	3.67E-02	3.11E-02
Vinyl Chloride	62.50	7.34	1	7.340	0.063	0.414	98.00%	2.02E+00	1.11E+01	2.02E+00	1.11E+01	0.00E+00	1.26E-03	6.92E-03	8.29E-03	4.54E-02	3.85E-02
Xylene(s)	106.16	12.1			0.177	1.160	99.20%	5.66E+00	3.10E+01	5.66E+00	3.10E+01	0.00E+00	1.42E-03	7.76E-03	9.28E-03	5.09E-02	4.31E-02
Nonmethane Organic Cmpds (as methane)	16	3,393			7.477	49.037	99.20%	2.39E+02	1.31E+03	2.39E+02	1.31E+03	0.00E+00	5.98E-02	3.28E-01	3.92E-01	2.15E+00	1.82E+00
Total Organic Cmpds (including methane)	86.18	500,000.00			5934.609	38922.495	99.20%	1.90E+05	1.04E+06	1.90E+05	1.04E+06	0.00E+00	4.75E+01	2.60E+02	3.11E+02	1.71E+03	1.45E+03
Criteria Air Pollutants and Combustion By Products																	
Total Non-Methane Organics (NMOCs) as methane	16	3,393			7.477	49.037	99.20%	2.39E+02	1.31E+03	2.39E+02	1.31E+03	0.00E+00	5.98E-02	3.28E-01	3.92E-01	2.15E+00	1.82E+00
VOCs	16	3,325			7.327	48.057	99.20%	2.34E+02	1.28E+03	2.34E+02	1.28E+03	0.00E+00	5.86E-02	3.21E-01	3.84E-01	2.11E+00	1.79E+00
Hydrochloric Acid (HCl)	36.45			68.570	0.355	2.325	0.00%						3.55E-01	1.94E+00	2.33E+00	1.27E+01	1.08E+01

	Emission Factor		Baseline Emissions from Flares		Project Emissions from Flares		Incremental LFG Emissions from Flare
	(lb/MM Btu LFG)	LFG Btu content (Btu/ft3)	(tons/yr)	(lb/day)	(tons/yr)	(lb/day)	(lb/day)
Nitrogen Oxides (NOx)	8.00E-02	5.00E+02	2.30E+00	1.26E+01	1.51E+01	8.27E+01	7.01E+01
Carbon Monoxide (CO)	3.00E-03	5.00E+02	8.63E-02	4.73E-01	5.66E-01	3.10E+00	2.63E+00
Particulates (PM_{10})	2.00E-02	5.00E+02	5.76E-01	3.15E+00	3.77E+00	2.07E+01	1.75E+01
Sulfur Oxide (SOx)	3.00E-02	5.00E+02	8.63E-01	4.73E+00	5.66E+00	3.10E+01	2.63E+01
VOC	1.00E-02	5.00E+02	2.88E-01	1.58E+00	1.89E+00	1.03E+01	8.76E+00
Formaldehyde	1.50E-04	5.00E+02	4.32E-03	2.37E-02	2.83E-02	1.55E-01	1.31E-01

Notes:

(1) List of TACs are from SDCAPCD Emission Calculation Procedures "DEFAULT VALUES - LANDFILL GAS COMPOSITION", Last Modified: October 2, 1998, APCD Website

(2) Concentrations of the TACs in LFG are based on AP-42, Section 2.4. and SDCAPCD Emission Calculation Procedures

(3) The destruction efficiencies for TACs are AP-42 defaults, Table 2.4-3, NMOC = 99.2% and Halogenated Species = 98.0%.

(4) NMOC value of 3393 ppmv as methane is based on the 1997 source test of the Miramar Landfill flares (2533 ppmv at 37.3%)

(5) Emission factors for CO, NOx, SOx, ROG, and PM_{10} are based on the SDCAPCD Emission Calculation Procedures (SDCAPCD 1999).

(6) Emission factor (7.5E-02 lb/MMscf) for formaldehyde from AP-42, Table 1.4-3 (7/98). The emission factor is equal to 1.5E-04 lb/MM Btu based on the LFG Btu content of 500 Btu/cf.

Variables:

MODEL INPUT VARIABLES:	(Baseline)			
Maximum LFG generation rate		11,571	scfm	
Capture efficiency of LFG		39.4%		
Total captured LFG		4,564	scfm	
LFG to landfill surface		7,007	scfm	
LFG to Flare		219	scfm	Based on gas collection data
LFG to Cogen engines		4,345	scfm	Based on gas collection data

MODEL INPUT VARIABLES:	(Project)			
Maximum LFG generation rate		12,788	scfm	
Capture efficiency of LFG		45.2%		
Total captured LFG		5,781	scfm	
LFG to landfill surface		7,007	scfm	
LFG to Flare		1,436	scfm	
LFG to Cogen engines		4,345	scfm	Based on gas collection data

Note: LFG to flares based on 80% LFG collection efficiency and existing engines running at design capacity.

EXAMPLE CALCULATIONS

(TACs)

Emissions in LFG to landfill surface = (Molecular Weight of Compound [g/gmol])*(Concentration of Compound[ppm]/1,000,000)*(LFG to Landfill Surface [cfm])
(525,600 min/yr)(1ton/2000lb)*(1lb/453.6g)*(1gmol/26.09L)*(28.32L/1cf)

Emissions in LFG to flare = (Molecular Weight of Compound[g/mol])*(Concentration of Compound[ppm]/1,000,000)*(LFG to Flare [cfm])
(525,600 min/yr)(1ton/2000lb)*(1lb/453.6g)*(1mol/26.09L)*(28.32L/1cf)

Emissions in LFG from flare = (LFG Emissions To Flare [tons/yr])*(1 - Destruction Efficiency of Flare)

(NO_x, $SO_{x\ ROG}$, PM, CO, & Formaldehyde)

Total Combustion Emissions from the Flare = (LFG to Flare scfm)*(Emission Factor lb/MM Btu) * (Btu content Btu/cf) *(1/2000 ton/lb)*(5256000 min/yr)

HCL Emissions from the Flare = 1.03 * (Molecular Weight of Compound[g/mol])*(Concentration of Total Chloride [ppm]/1000000)*(LFG to Landfill Surface [cfm])
(525,600 min/yr)(1ton/2000lb)*(1lb/453.6g)*(1mol/26.09L)*(28.32L/1cf)

West Miramar Landfill
Landfill Gas Emissions - Landfill Surface and Flares
Operating Time: 24 hours per day, and 365 days per year.

COMPOUNDS	Molecular Weight (g/mol)	Concentration of TACs in LFG (ppmv)	Number of Moles of Cl for chlorinated TACs	Cons * No. Moles for chlorinated TACs (ppmv)	Baseline Emissions in LFG to Flares (tons/yr)	Project Emissions in LFG to Flares (tons/yr)	Flare Destruction Efficiency	Baseline Emissions in LFG from Landfill (tons/yr)	Baseline Emissions in LFG from Landfill (lb/day)	Project Emissions in LFG from Landfill (tons/yr)	Project Emissions in LFG from Landfill (lb/day)	Incremental LFG Emissions from Landfill (lb/day)	Baseline Emissions in LFG from Flares (tons/yr)	Baseline Emissions in LFG from Flares (lb/day)	Project Emissions in LFG from Flares (tons/yr)	Project Emissions in LFG from Flares (lb/day)	Incremental LFG Emissions from Flare (lb/day)
TACs (1)																	
Acetone	58.08	7.010			0.056	0.404	99.20%	1.61E+00	8.80E+00	1.61E+00	8.80E+00	0.00E+00	4.49E-04	2.46E-03	3.23E-03	1.77E-02	1.5267E-02
Acrylonitrile	53.06	6.33			0.046	0.334	99.20%	1.32E+00	7.26E+00	1.32E+00	7.26E+00	0.00E+00	3.70E-04	2.03E-03	2.67E-03	1.46E-02	1.26E-02
Benzene	78.11	1.91			0.021	0.148	99.20%	5.88E-01	3.22E+00	5.88E-01	3.22E+00	0.00E+00	1.64E-04	9.01E-04	1.19E-03	6.49E-03	5.59E-03
Carbon Disulfide	76.13	0.58			0.006	0.044	99.20%	1.74E-01	9.54E-01	1.74E-01	9.54E-01	0.00E+00	4.87E-05	2.67E-04	3.51E-04	1.92E-03	1.66E-03
Carbon Monoxide	28.01	141			0.544	3.922	99.20%	1.56E+01	8.53E+01	1.56E+01	8.53E+01	0.00E+00	4.35E-03	2.38E-02	3.14E-02	1.72E-01	1.48E-01
Carbonyl Sulfide	60.07	0.49			0.004	0.029	99.20%	1.16E-01	6.36E-01	1.16E-01	6.36E-01	0.00E+00	3.24E-05	1.78E-04	2.34E-04	1.28E-03	1.10E-03
Chlorobenzene	112.56	0.25	1	0.250	0.004	0.028	98.00%	1.11E-01	6.08E-01	1.11E-01	6.08E-01	0.00E+00	7.75E-05	4.25E-04	5.59E-04	3.06E-03	2.64E-03
Chloroethane (Ethyl Chloride)	64.52	1.25	1	1.250	0.011	0.080	98.00%	3.18E-01	1.74E+00	3.18E-01	1.74E+00	0.00E+00	2.22E-04	1.22E-03	1.60E-03	8.78E-03	7.56E-03
Chloroform	119.39	0.03	1	0.030	0.000	0.004	98.00%	1.41E-02	7.74E-02	1.41E-02	7.74E-02	0.00E+00	9.87E-06	5.41E-05	7.11E-05	3.90E-04	3.36E-04
Ethyl Benzene	106.16	4.61			0.067	0.486	99.20%	1.93E+00	1.06E+01	1.93E+00	1.06E+01	0.00E+00	5.39E-04	2.95E-03	3.89E-03	2.13E-02	1.84E-02
Ethylene Dichloride (1,2-Dichloroethane)	98.96	0.41	2	0.820	0.006	0.040	98.00%	1.60E-01	8.77E-01	1.60E-01	8.77E-01	0.00E+00	1.12E-04	6.12E-04	8.06E-04	4.42E-03	3.80E-03
Ethylidene Dichloride (1,1-Dichloroethane)	98.97	2.35	2	4.700	0.032	0.231	98.00%	9.17E-01	5.02E+00	9.17E-01	5.02E+00	0.00E+00	6.41E-04	3.51E-03	4.62E-03	2.53E-02	2.18E-02
Fluorocarbons (chlorinated)	137.38	0.76	1	0.760	0.014	0.104	98.00%	4.12E-01	2.26E+00	4.12E-01	2.26E+00	0.00E+00	2.88E-04	1.58E-03	2.07E-03	1.14E-02	9.79E-03
Hexane	86.18	6.57			0.078	0.562	99.20%	2.23E+00	1.22E+01	2.23E+00	1.22E+01	0.00E+00	6.24E-04	3.42E-03	4.50E-03	2.46E-02	2.12E-02
Hydrogen Sulfide	34.08	35.5			0.167	1.202	99.20%	4.77E+00	2.61E+01	4.77E+00	2.61E+01	0.00E+00	1.33E-03	7.30E-03	9.61E-03	5.27E-02	4.54E-02
Methyl Chloroform (1,1,1-Trichloroethane)	133.41	0.48	3	1.440	0.009	0.064	98.00%	2.52E-01	1.38E+00	2.52E-01	1.38E+00	0.00E+00	1.76E-04	9.67E-04	1.27E-03	6.97E-03	6.00E-03
Methylene Chloride (Dichloromethane)	84.94	14.3	2	28.600	0.167	1.206	98.00%	4.79E+00	2.62E+01	4.79E+00	2.62E+01	0.00E+00	3.35E-03	1.83E-02	2.41E-02	1.32E-01	1.14E-01
Methyl Ethyl Ketone (2-Butanone)	72.11	7.09			0.070	0.508	99.20%	2.02E+00	1.10E+01	2.02E+00	1.10E+01	0.00E+00	5.63E-04	3.09E-03	4.06E-03	2.23E-02	1.92E-02
Methyl Isobutyl Ketone	100.16	1.87			0.026	0.186	99.20%	7.39E-01	4.05E+00	7.39E-01	4.05E+00	0.00E+00	2.06E-04	1.13E-03	1.49E-03	8.15E-03	7.02E-03
Perchloroethylene (Tetrachloroethylene)	165.83	3.73	4	14.920	0.085	0.614	98.00%	2.44E+00	1.34E+01	2.44E+00	1.34E+01	0.00E+00	1.70E-03	9.34E-03	1.23E-02	6.73E-02	5.80E-02
Toluene	92.13	39.3			0.499	3.596	99.20%	1.43E+01	7.82E+01	1.43E+01	7.82E+01	0.00E+00	3.99E-03	2.19E-02	2.88E-02	1.58E-01	1.36E-01
Trichloroethylene	131.40	2.82	3	8.460	0.051	0.368	98.00%	1.46E+00	8.01E+00	1.46E+00	8.01E+00	0.00E+00	1.02E-03	5.59E-03	7.36E-03	4.03E-02	3.47E-02
Vinyl Chloride	62.50	7.34	1	7.340	0.063	0.456	98.00%	1.81E+00	9.91E+00	1.81E+00	9.91E+00	0.00E+00	1.26E-03	6.92E-03	9.11E-03	4.99E-02	4.30E-02
Xylene(s)	106.16	12.1			0.177	1.276	99.20%	5.06E+00	2.78E+01	5.06E+00	2.78E+01	0.00E+00	1.42E-03	7.76E-03	1.02E-02	5.59E-02	4.82E-02
Nonmethane Organic Cmpds (as methane)	16	3,393			7.477	53.914	99.20%	2.14E+02	1.17E+03	2.14E+02	1.17E+03	0.00E+00	5.98E-02	3.28E-01	4.31E-01	2.36E+00	2.04E+00
Total Organic Cmpds (including methane)	86.18	500,000.00			5934.609	42793.281	99.20%	1.70E+05	9.31E+05	1.70E+05	9.31E+05	0.00E+00	4.75E+01	2.60E+02	3.42E+02	1.88E+03	1.62E+03
Criteria Air Pollutants and Combustion By Products																	
Total Non-Methane Organics (NMOCs) as methane	16	3,393			7.477	53.914	99.20%	2.14E+02	1.17E+03	2.14E+02	1.17E+03	0.00E+00	5.98E-02	3.28E-01	4.31E-01	2.36E+00	2.04E+00
VOCs	16	3,325			7.327	52.836	99.20%	2.10E+02	1.15E+03	2.10E+02	1.15E+03	0.00E+00	5.86E-02	3.21E-01	4.23E-01	2.32E+00	1.99E+00
Hydrochloric Acid (HCl)	36.45			68.570	0.355	2.557	0.00%						3.55E-01	1.94E+00	2.56E+00	1.40E+01	1.21E+01

	Emission Factor (lb/MM Btu LFG)	Emission Factor LFG Btu content (Btu/ft3)	Baseline Emissions from Flares (tons/yr)	Baseline Emissions from Flares (lb/day)	Project Emissions from Flares (tons/yr)	Project Emissions from Flares (lb/day)	Incremental LFG Emissions from Flare (lb/day)
Nitrogen Oxides (NOx)	8.00E-02	5.00E+02	2.30E+00	1.26E+01	1.66E+01	9.10E+01	7.83E+01
Carbon Monoxide (CO)	3.00E-03	5.00E+02	8.63E-02	4.73E-01	6.23E-01	3.41E+00	2.94E+00
Particulates (PM_{10})	2.00E-02	5.00E+02	5.76E-01	3.15E+00	4.15E+00	2.27E+01	1.96E+01
Sulfur Oxide (SOx)	3.00E-02	5.00E+02	8.63E-01	4.73E+00	6.23E+00	3.41E+01	2.94E+01
VOC	1.00E-02	5.00E+02	2.88E-01	1.58E+00	2.08E+00	1.14E+01	9.79E+00
Formaldehyde	1.50E-04	5.00E+02	4.32E-03	2.37E-02	3.11E-02	1.71E-01	1.47E-01

Notes:

(1) List of TACs are from SDCAPCD Emission Calculation Procedures "DEFAULT VALUES - LANDFILL GAS COMPOSITION", Last Modified: October 2, 1998, APCD Website

(2) Concentrations of the TACs in LFG are based on AP-42, Section 2.4. and SDCAPCD Emission Calculation Procedures

(3) The destruction efficiencies for TACs are AP-42 defaults, Table 2.4-3, NMOC = 99.2% and Halogenated Species = 98.0%.

(4) NMOC value of 3393 ppmv as methane is based on the 1997 source test of the Miramar Landfill flares (2533 ppmv at 37.3%)

(5) Emission factors for CO, NOx, SOx, ROG, and PM_{10} are based on the SDCAPCD Emission Calculation Procedures (SDCAPCD 1999).

(6) Emission factor (7.5E-02 lb/MMscf) for formaldehyde from AP-42, Table 1.4-3 (7/98). The emission factor is equal to 1.5E-04 lb/MM Btu based on the LFG Btu content of 500 Btu/cf.

Variables:

MODEL INPUT VARIABLES:	(Baseline)			
Maximum LFG generation rate		10,070	scfm	
Capture efficiency of LFG		37.7%		
Total captured LFG		3,800	scfm	
LFG to landfill surface		6,270	scfm	
LFG to Flare		219	scfm	Based on gas collection data
LFG to Cogen engines		3,581	scfm	Based on gas collection data

MODEL INPUT VARIABLES:	(Project)			
Maximum LFG generation rate		11,430	scfm	
Capture efficiency of LFG		45.1%		
Total captured LFG		5,160	scfm	
LFG to landfill surface		6,270	scfm	
LFG to Flare		1,579	scfm	
LFG to Cogen engines		3,581	scfm	Based on gas collection data

Note: LFG to flares based on 80% LFG collection efficiency and existing engines running at design capacity.

EXAMPLE CALCULATIONS

(TACs)

Emissions in LFG to landfill surface = (Molecular Weight of Compound [g/gmol])*(Concentration of Compound[ppm]/1,000,000)*(LFG to Landfill Surface [cfm])
(525,600 min/yr)(1ton/2000lb)*(1lb/453.6g)*(1gmol/26.09L)*(28.32L/1cf)

Emissions in LFG to flare = (Molecular Weight of Compound[g/mol])*(Concentration of Compound[ppm]/1,000,000)*(LFG to Flare [cfm])
(525,600 min/yr)(1ton/2000lb)*(1lb/453.6g)*(1mol/26.09L)*(28.32L/1cf)

Emissions in LFG from flare = (LFG Emissions To Flare [tons/yr])*(1 - Destruction Efficiency of Flare)

(NO_x, SO_x, ROG, PM, CO, & Formaldehyde)

Total Combustion Emissions from the Flare = (LFG to Flare scfm)*(Emission Factor lb/MM Btu) * (Btu content Btu/cf) *(1/2000 ton/lb)*(5256000 min/yr)

HCL Emissions from the Flare = 1.03 * (Molecular Weight of Compound[g/mol])*(Concentration of Total Chloride [ppm]/1000000)*(LFG to Landfill Surface [cfm])
(525,600 min/yr)(1ton/2000lb)*(1lb/453.6g)*(1mol/26.09L)*(28.32L/1cf)

Appendix F

SCREEN 3 Procedures

Colorado Department of Public Health and Environment

SCREEN3 Stationary Source Modeling Guidance

January 1, 2002 | Air Pollution Control Division / Technical Services Program

1. Introduction

Although the U.S. EPA's SCREEN3 air quality model may be used for several purposes, the guidance in this document is primarily intended to support screening-level air quality modeling analyses (compliance demonstrations) for Colorado and National Ambient Air Quality Standards (CAAQS and NAAQS). While this guidance is particularly intended for anyone conducting screening-level modeling for new minor sources or minor modifications, it could be applicable in some major source permitting situations. Permit applicants for new major sources or major modifications should refer to the *Colorado Modeling Guideline* and applicable regulations for additional modeling and/or analysis requirements.

For general modeling guidance and procedures, refer to the U.S. EPA's *Guideline on Air Quality Models* (Appendix W of 40 CFR Part 51) and the *Colorado Modeling Guideline*.

SCREEN3 is the recommended tool to calculate screening-level impact estimates for stationary sources. For help using the model, refer to the SCREEN3 Model User's Guide (EPA-454/B-95-004) and the related U.S. EPA guidance document: "Screening Procedures for Estimating the Air Quality Impact of Stationary Sources, Revised" (EPA-454/R-92-019).

In addition to the documents cited above, the U.S. EPA modeling clearinghouse contains documents and memos that help clarify U.S. EPA's guidance. U.S. EPA also has useful tutorials on modeling. Although the SCREEN tutorial is for the older SCREEN2 model, it is still helpful.

This is only a guidance document. It has been published in accordance with §25-6.5-102, C.R.S. It does not have the force and effect of a rule and is not intended to supersede statutory/regulatory requirements or recommendations of the U.S. EPA. U.S. EPA models and guidance are available on the Internet at: http://www.epa.gov/scram001.

2. Model Applicability

SCREEN3 is a single source model. It is not a multi-source model. Nevertheless, the impacts from multiple SCREEN3 model runs can be summed to conservatively estimate the impact from several sources. Section 2.2 – Merged Parameters for Multiple Stacks – in the U.S. EPA screening procedures document provides a method for modeling several sources that emit the same pollutant from several stacks with similar parameters. Nevertheless, in some situations, the source configuration or setting may be too complex to model with a simple tool like SCREEN3. Thus, it is not always possible to model a source with SCREEN3. In some cases, a refined model like ISCST3 should be used.

3. Concentration Estimates from SCREEN3

In simple terrain areas, SCREEN3 calculates 1-hour concentration estimates. Before comparing the modeled impact to the modeling significance levels or ambient air quality standards, the 1-hour concentration estimates should be converted to the averaging period of each applicable standards. In complex terrain, the model provides 24-hour concentration values. For more about converting concentration values from one averaging period to another, see section 11.

4. General Procedures for Compliance Demonstrations with Ambient Air Quality Standards

If a modeling analysis is warranted (see section 2 of the *Colorado Modeling Guideline*), the Division usually recommends that a *significant impact analysis* be conducted to help determine the scope of the modeling analysis.

If the estimated impact from the new source or modification is above the modeling significance levels in ***Table 1***, a compliance demonstration with the Colorado and National Ambient Air Quality Standards (CAAQS and NAAQS) is triggered. If the impact is below, the impact is considered to be insignificant and further air quality analysis is not usually warranted (i.e., it is not necessary to add a background concentration or to determine if there are any nearby sources that should be accounted for in the analysis).

Table 1. Modeling significance levels to determine if a source will have a significant impact on ambient air quality standards.

Pollutant	Averaging Period				
	Annual	**24-hr**	**8-hr**	**3-hr**	**1-hr**
Carbon Monoxide (CO)	a	a	500μg/m^3	a	2,000μg/m^3
Nitrogen Dioxide (NO_2)	1 μg/m^3	a	a	a	a
Sulfur Dioxide ($SO_{2)}$	1 μg/m^3	5 μg/m^3	a	25 μg/m^3	a
Particulate Matter <10 μm (PM-10)	1 μg/m^3	5 μg/m^3	a	a	a
a A modeling significance level has not been defined for this averaging period.					

A compliance demonstration with standards is sometimes referred to as the *full impact analysis* or the *cumulative impact analysis*. A full or cumulative *air quality impact analysis* involves a more comprehensive assessment of air quality impacts. It is discussed in section 4 of the *Colorado Modeling Guideline*.

If the impact from the new source or modification is significant and a CAAQS and NAAQS modeling analysis is warranted, use the procedures in Section 4.1 of the *Colorado Modeling Guideline*. In addition, refer to section 4.5.6 in EPA's "Screening Procedures for Estimating the Air Quality Impact of Stationary Sources, Revised" for additional recommendations about screening-level modeling in multi-source areas.

The overall impact estimate in a compliance demonstration should account for the source under review plus existing air pollution levels at the locations (receptors) where the source has a significant impact. This can be done in several ways. In general, the compliance demonstration for standards should include:

1) the estimated (i.e., modeled) impact for the new source or modification (see section 4.1.3 in the *Colorado Modeling Guideline*);

2) an estimate of existing air quality levels within the probably area of influence of the new source or modification; at a minimum, a monitored background concentration is used (see section 4.1.5 in the *Colorado Modeling Guideline*). In some cases, there may be existing refined modeling in the area or at the source under review. If so, the historic modeling results can sometimes be used to account for existing sources at the facility and/or nearby sources. In some cases, it is necessary to model additional sources, such as:

(a) existing sources at the facility under review (see section 4.1.4 in the *Colorado Modeling Guideline*);

(b) existing ***nearby*** and ***other background*** sources (see section 4.1.4 in the *Colorado Modeling Guideline*);

(c) proposed nearby sources (this includes those which have received PSD permits but are not yet in operation and others that have submitted *complete* PSD applications to a reviewing agency, but have not yet been issued permits; it may also include any large new ***minor sources*** that have received permits, but are not yet in operation).

5. Emission Rates

For the source under review (and for nearby sources), the emission rates used in the CAAQS and NAAQS compliance demonstration modeling should be based on federally enforceable emission limits, design capacity, controlled potential-to-emit, or similar allowable emission rates. This is a federal requirement in Appendix W of 40 CFR Part 51. For a more detailed explanation, see secions 4.1.3 and 4.1.4 in the *Colorado Modeling Guideline*.

While the emission rates entered into SCREEN3 are in units of grams per second, the emission rate entered into the model may be varied depending on the averaging period of interest. The emission rate entered into SCREEN3 should represent the maximum allowable emission rate allowed under the permit for the applicable averaging period. If there are no short-term emission limits, the modeled emission rate should reflect the design capacity or controlled potential-to-emit.

The usual procedure is to model the allowable short-term emission rate to determine if the source will comply with short-term (≤ 24-hours) and long-term (annual) standards. If compliance is shown with both standards, the analysis is complete; however, if compliance is not shown with the long-term standard, for example, the gram per second emission rate in SCREEN3 may be changed to reflect the allowable long-term emission rate.

6. Receptors

For SCREEN3 modeling, the receptor grid should be designed to locate the maximum concentration (see section 2.4.5 in the "SCREEN3 Model User's Guide"). When appropriate, the APCD recommends using the "automated distance array option" so that the model's iteration routine can locate the maximum value. For example, place the first receptor distance at the nearest fence line distance from the source (e.g., 10 meters); place the second receptor distance at a sufficiently large distance to find the maximum (e.g., 10,000 meters).

It is usually recommended that the receptor height be set to 0 meters (e.g., ground-level). Flagpole receptors (e.g., receptors located above ground-level) should be considered only in situations where there may be exposure concerns above ground-level. For example, if there is reason to believe the plume will impact a nearby apartment balcony, it might be appropriate to use flagpole receptors.

For the compliance demonstration, only those receptors in ambient air (i.e., receptors at or beyond the fence line or other physical barrier that prevents access by the public) need to be considered.

Refer to the secton 6.3 of the *Colorado Modeling Guideline* for additional guidance on receptor networks.

7. Building Downwash

If a stack is within a buildings “area of influence” (e.g., a distance of five times the lesser of the building’s height or maximum projected width), the stack might be influenced by the wake of the building. If so, it’s necessary to obtain or estimate building dimensions (e.g., height, width, and length) to run SCREEN3. Sources subject to aerodynamic turbulence induced by nearby buildings and structures should use the building downwash options in SCREEN3**.** Refer to EPA's SCREEN2 tutorial for example modeling exercises for sources with building downwash. As discussed in section 9, it is not necessary to enter terrain elevations when the building downwash options are used in SCREEN3.

8. Selection of Meteorology

In general, follow the recommendations in the SCREEN3 Model User's Guide and use the "full meteorology" option. The exception to this is for sources that have or will have operating schedule restrictions. For example, if a sand and gravel plant only operates from 8am to 5pm and there are or will be permit conditions restricting operation to these hours, then SCREEN3 may be run by stability class. That is, run SCREEN3 with A, B, C, and D stability classes, but exclude those classes (E and F) that occur only at night.

9. Complex Terrain

Sources located in complex terrain (terrain above release height) should consider using the terrain options in SCREEN3 to estimate impacts on nearby elevated terrain; however, if it is expected that the maximum impact will be controlled by building downwash and not by nearby terrain, it may not be necessary to use the terrain options in SCREEN3.

Refer to EPA's SCREEN tutorial for example modeling exercises for sources in complex terrain. Terrain elevations near the source may be obtained from 7.5 minute USGS topographic maps in hardcopy form or as Digital Raster Graphics (DRG) images. Digital Elevation Model (DEM) data may also be used to determine elevations. Refer to the *Colorado Modeling Guideline* for additional discussion regarding elevation data for receptors.

The complex terrain algorithms in SCREEN3 are for point sources, not area sources. Thus, it is not necessary to use the complex terrain options in SCREEN3 for area source modeling. In addition, the complex terrain algorithms in SCREEN3 are for elevated plumes. It should also be emphasized that SCREEN3 "will not consider building downwash effects in either the VALLEY or the simple terrain component of the complex terrain screening procedure, even if the building downwash option is selected." (ref: "SCREEN3 Model User's Guide"). Thus, if impact estimates are appropriate for both complex terrain and building downwash scenarios, two separate SCREEN3 runs must be performed; one for complex terrain and one for building downwash.

As stated in the SCREEN3 tutorial, SCREEN3 generates a message indicating the final stable plume height, the distance to final rise, and instructions on how to select complex terrain locations for modeling in order to identify the worst-case impacts. The worst impact will generally occur at the nearest location where the stable plume actually impacts on the terrain. This is found by locating the nearest location where the terrain elevation is at or above the final plume height. For terrain locations closer than the distance to final rise, the plume may impact on the terrain at a lower elevation.

10. Conversion of NO_x to NO_2

When modeling NOx emissions from combustion sources, the estimated NOx concentration may be multiplied by 0.75 to obtain the nitrogen dioxide (NO_2) concentration.[1] The other methods allowed under federal rules are generally intended for refined-level modeling, not screening-level modeling. Thus, if use of the 0.75 ratio is not sufficient to show compliance with standards, it is usually recommended that a refined-level model be used.

[1] Most of the NOx emissions from combustion sources are emitted in the form of nitric oxide (NO), not nitrogen dioxide (NO_2). While some of the NO is converted to NO_2 by thermal reactions caused by the relatively high temperatures during the combustion process, it is usually assumed that about 90% of the NOx is emitted to the atmosphere as NO where it can be transformed into NO_2. When the NO plume mixes with ambient air, atmospheric chemical reactions occur. For example, NO reacts with ozone (O_3) to form NO_2. This is usually the primary mechanism for converting NO to NO_2 in rural areas. In urban areas, other reactions such as those with hydrocarbon oxidation products (e.g., hydroperoxyl (HO_2) and alkyl peroxy (RO_2) free radicals) can be important. The U.S. EPA recommends using a national default NO_2:NOx ratio of 0.75 (as calculated using the Ambient Ratio Method (Chu, S. and Meyer, E. L. *Use of Ambient Ratios to Estimate Impact of NOx Sources on Annual NOx Concentration*. Air & Waster Management Association, June 1991)) to estimate how much of the estimated NOx concentration exists as NO_2 in ambient air. The Division has reviewed the ratio in Colorado and believes it provides a conservative estimation (overestimation) of actual NO_2 impacts from stationary sources of NOx in Colorado. Thus, it is reasonable to use in screening-level modeling analyses.

11. Multiplying Factors

The SCREEN3 model generates 1-hour concentration estimates (unless the complex terrain mode is being used, in which case it also generates a 24-hour estimate). Initially, the 1-hour average estimates may be compared directly to ambient air standards. If compliance is NOT shown for a given averaging period, the 1-hour averages may be converted to a longer averaging period using the guidance below.

POINT SOURCES AND FLARES

For "points" and "flares," use the U.S. EPA multiplying factors shown in Table 2 to convert 1-hour concentration estimates from SCREEN3 to other averaging periods.

Table 2. "POINT" source multiplying factors to convert 1-hour average concentration estimates from the SCREEN3 model to longer averaging periods.

Averaging Period	EPA Multiplying Factor for POINT Sources[a]
3 hours	0.9
8 hours	0.7
24 hours	0.4
annual	0.08

[a] "Screening Procedures for Estimating the Air Quality Impact of Stationary Sources, Revised," EPA-454/R-92-019, page 4-16).

VOLUME SOURCES

EPA has not developed multiplying factors for "volume" sources. Follow the recommendations in the first paragraph under "AREA SOURCES."

AREA SOURCES

EPA has not developed multiplying factors for "area" sources. For fugitive sources modeled with the "area" source algorithm in SCREEN3, EPA guidance recommends that the maximum 1-hour concentration be conservatively assumed to apply to averaging periods out to 24-hours. In many cases, it's reasonable to assume that the compliance demonstration for the 24-hour NAAQS is protective of the annual NAAQS; but there

may be situations where this assumption is not valid. Thus, professional judgement must be used to decide if this assumption is valid. If compliance with the annual PM standard is believed to be issue (e.g., if there is a high annual background concentration), then refined modeling (e.g., ISC3) may be necessary.

The APCD realizes that, in most cases, it is very conservative to assume that 1-hour average concentration estimates are the same as 24-hour estimates. This is particularly true for sources where mechanical turbulence is important (e.g., haul roads). Thus, the APCD has developed 24-hour and annual multiplying factors for "area" sources that operate only during daytime hours (e.g., 7am to 5pm). The APCD has not yet developed such factors for sources that operate 24-hours per day.

The Colorado multiplying factors in *Table 3* may be used provided that the criteria in the table's footnotes are met. These multiplying factors are based on ISCST3 runs using Denver Stapleton Airport and Pueblo Airport meteorological data.

Table 3 "AREA" source multiplying factors to convert 1-hour average concentration estimates from the SCREEN3 model to longer averaging periods.

Averaging Period	Colorado Multiplying Factor for AREA Sources[a]
24 hours	0.15
annual	0.03

a The "area" source must meet the following criteria for these factors to be valid:

1. Sources modeled as "area" sources must have a significant degree of mechanically generated turbulence (e.g., sand and gravel operations, haul roads).
2. The facility must operate only during the daytime (e.g., 7am to 5pm).
3. The factors are NOT intended for new sources or modifications subject to PSD rules.

12. Modeling Methodology for "Fugitive" Particulate Matter Sources

Professional judgement must be used on a case-by-case basis to decide which sources at a facility should be modeled as "area" sources. For example, if the facility consists of an elevated point source (e.g., 10 meter tall stack) for which stack parameters can be estimated, haul roads, wind erosion, and near-ground-level quarrying activities, it would be appropriate to run the SCREEN3 model twice. The first SCREEN3 run would model emissions from the elevated point source as a "point" source. The second run would model the "fugitive" sources as an "area" source using the procedure below. Initially the maximum impact from each run of SCREEN3 could be added to calculate the cumulative impact. If this fails to show compliance, the estimates from each run may be superimposed (i.e., add concentration estimates on a receptor-by-receptor basis).

The following screening procedure is ***applicable for modeling fugitive sources of particulate matter*** (e.g., near-ground-level sources at sand and gravel plants):

1. ***Model the maximum daily and annual emission rates.***[2] The controlled potential-to-emit (design capacity) should be modeled unless the applicant is willing to accept lower emission rates as permit conditions. The short-term emission rate should reflect activities that are allowed to occur during a maximum production day. If there are several different emission scenarios of concern and it's not obvious which would be controlling, it may be appropriate to perform several SCREEN3 runs that look at different operating scenarios

2. Using professional judgement***, determine the dimensions of one or more SCREEN3 area sources*** to represent the regions where emissions occur. In most cases, it is acceptable to use a single ***area*** source. For example, it may be reasonable to base the dimensions of the ***area*** source on the total disturbed area for a daily or annual period, as appropriate. The total disturbed area for annual NAAQS modeling may be larger than the area used for short-term NAAQS modeling when appropriate.

3. Divide the total emission rate (in units of grams per second) by the area (in units of m^2) of the "area source" to ***calculate the emission rate in units of grams per second per meter squared***.

[2] Use the maximum "daily" production rate for short-term NAAQS modeling (e.g., 24hr PM10 NAAQS), if available. Use the "annual" production rate for annual NAAQS modeling.

4. ***Assume a release height of 10 meters in SCREEN3***.[3] This release height is intended to account for mechanical turbulence, the presence of on-site berms or pits, and similar factors that influence the dispersion of particulate matter from "fugitive" sources.

5. ***Use the "full meteorology" option*** in SCREEN3.

6. ***Assume simple terrain***.

7. ***Use 100 meter or finer receptor spacing out to a distance of at least 1000 meters*** (i.e., make sure the maximum impact is included in the receptor network). It is recommended that the "automated distance array option" in SCREEN3 be used. [NOTE: Remember that the receptor distances in SCREEN3 are measured from the ***center*** of the rectangular area, not from the edge. This may be important in determining which receptors are located in "ambient air."]

8. ***Refer to the section on "MULTIPLYING FACTORS"*** for recommendations on how to convert 1-hour SCREEN3 estimates to the longer averaging times.

9. ***Add a suitable background concentration*** to account for "nearby" and "other" background sources. Be sure to also include the concentration estimates from any other runs of SCREEN3 that were performed for other sources at or near the facility.

10. ***If the cumulative impact fails to show compliance with ambient air standards, refinements to the SCREEN3 modeling may be possible***, for example:

    - If the facility operates only during the day, the modeling can be redone using PG Stability Classes A, B, C, D (i.e., separate runs of SCREEN3 using PG classes 1, 2, 3, and 4). That is, exclude stable conditions (E and F) that can only occur at night. This normally results in lower estimates. This is ONLY acceptable for sources that do not operate at night.
    - It may also be helpful to revisit the emission rate(s) used in SCREEN3 to make sure that the modeled emission rates reflect activities that could realistically occur during a maximum production day.

[3] The use of a 10 meter release height for "area" sources is allowed without justification ONLY for SCREEN3 modeling using the procedure above. It is NOT a general recommendation for all SCREEN3 modeling or for refined (e.g., ISC3) modeling. That is, the APCD generally recommends that release heights should be determined and justified on a case-by-case basis. The 10 meter release height recommended in the procedure above was determined by comparing estimates from refined ISC3 runs (with variable release heights for haul roads and similar near-ground-level sources) to results from SCREEN3 runs at various release heights. The comparison found that use of a 10 meter release height in SCREEN3 estimated impacts similar to, but more conservative than ISC3 runs where release heights had been determined on a source-by-source basis (e.g., hauls roads were modeled as volume sources with a release height of 2 meters and a sigma-z of 3 meters).

Appendix G

Modeling Output Files and Detailed SHRA Results

06/22/05
22:31:26

```
 ***  SCREEN3 MODEL RUN  ***
 *** VERSION DATED 96043 ***

West Miramar Landfill Flare

SIMPLE TERRAIN INPUTS:
   SOURCE TYPE              =        POINT
   EMISSION RATE (G/S)      =      1.00000
   STACK HEIGHT (M)         =      11.5800
   STK INSIDE DIAM (M)      =       3.5100
   STK EXIT VELOCITY (M/S)=          .8865
   STK GAS EXIT TEMP (K)    =     298.0000
   AMBIENT AIR TEMP (K)     =     293.0000
   RECEPTOR HEIGHT (M)      =         .0000
   URBAN/RURAL OPTION       =        URBAN
   BUILDING HEIGHT (M)      =         .0000
   MIN HORIZ BLDG DIM (M)   =         .0000
   MAX HORIZ BLDG DIM (M)   =         .0000

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.
THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

   STACK EXIT VELOCITY WAS CALCULATED FROM
   VOLUME FLOW RATE =   18175.000     (ACFM)

BUOY. FLUX =     .449 M**4/S**3;  MOM. FLUX =    2.380 M**4/S**2.

*** FULL METEOROLOGY ***

**********************************
*** SCREEN AUTOMATED DISTANCES ***
**********************************

*** TERRAIN HEIGHT OF    0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***

  DIST     CONC              U10M   USTK  MIX HT   PLUME   SIGMA   SIGMA
   (M)   (UG/M**3)   STAB  (M/S)  (M/S)    (M)   HT (M)   Y (M)   Z (M)  DWASH
-------  ----------  ----  -----  -----  ------  ------  ------  ------  -----
     1.    .0000        1    1.0    1.0   320.0   18.64     .52     .48    NO
   100.   615.5         4    1.5    1.6   480.0   12.60   15.84   13.96    NO
   200.   288.9         4    1.0    1.0   320.0   18.38   30.96   27.39    NO
   300.   215.9         6    1.0    1.0 10000.0   25.62   31.63   20.63    NO
   400.   175.0         6    1.0    1.0 10000.0   25.62   41.20   25.85    NO
   500.   138.7         6    1.0    1.0 10000.0   25.62   50.49   30.70    NO
   600.   111.5         6    1.0    1.0 10000.0   25.62   59.51   35.23    NO
   700.   91.57         6    1.0    1.0 10000.0   25.62   68.27   39.47    NO
   800.   76.71         6    1.0    1.0 10000.0   25.62   76.78   43.48    NO
   900.   65.41         6    1.0    1.0 10000.0   25.62   85.06   47.27    NO
  1000.   56.64         6    1.0    1.0 10000.0   25.62   93.12   50.88    NO

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND     1. M:
    11.   2710.         4    15.0   15.6  4800.0    2.21    1.92    1.68    NO

 DWASH=   MEANS NO CALC MADE (CONC = 0.0)
 DWASH=NO MEANS NO BUILDING DOWNWASH USED
 DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED
 DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED
 DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3*LB

     ****************************************
     *** SUMMARY OF SCREEN MODEL RESULTS ***
     ****************************************

 CALCULATION         MAX CONC    DIST TO   TERRAIN
  PROCEDURE         (UG/M**3)    MAX (M)    HT (M)
--------------     -----------   -------   -------
SIMPLE TERRAIN       2710.          11.        0.

**************************************************
** REMEMBER TO INCLUDE BACKGROUND CONCENTRATIONS **
**************************************************
```

West Miramar Landfill Area
Tier 3 Cancer Flare

Receptor Distances (m)	Peak 1-hr Unit Concentration X/Q (ug/m3 per g/m^2-s)	Annual Average Unit Concentration X/Q (ug/m3 per g/m^2-s)	Formaldehyde MICR 50-00-0	Chloroform MICR 67-66-3	Benzene MICR 71-43-2	Vinyl Chloride MICR 75-01-4	Methylene Chloride MICR 75-09-2
1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
11	2.71E+03	2.71E+02	1.76E-07	3.55E-10	3.23E-08	6.69E-07	2.27E-08
100	6.16E+02	6.16E+01	3.99E-08	8.06E-11	7.35E-09	1.52E-07	5.16E-09
200	2.89E+02	2.89E+01	1.87E-08	3.78E-11	3.45E-09	7.13E-08	2.42E-09
300	2.16E+02	2.16E+01	1.40E-08	2.83E-11	2.58E-09	5.33E-08	1.81E-09
400	1.75E+02	1.75E+01	1.13E-08	2.29E-11	2.09E-09	4.32E-08	1.47E-09
500	1.39E+02	1.39E+01	8.99E-09	1.82E-11	1.66E-09	3.42E-08	1.16E-09
600	1.12E+02	1.12E+01	7.23E-09	1.46E-11	1.33E-09	2.75E-08	9.34E-10
700	9.16E+01	9.16E+00	5.94E-09	1.20E-11	1.09E-09	2.26E-08	7.67E-10
800	7.67E+01	7.67E+00	4.97E-09	1.00E-11	9.15E-10	1.89E-08	6.43E-10
900	6.54E+01	6.54E+00	4.24E-09	8.56E-12	7.81E-10	1.61E-08	5.48E-10
1,000	5.66E+01	5.66E+00	3.67E-09	7.41E-12	6.76E-10	1.40E-08	4.74E-10

West Miramar Landfill Area
Tier 3 Cancer Flare

Trichloroethylene MICR	Ethylene Dichloride MICR	Acrylonitrile MICR	Perchloroethylene MICR	Offsite Worker MICR	Sensitive MICR
79-01-6	107-06-2	107-13-1	127-18-4		
0.00E+00	0.00E+00	0.00E+00	0.00E+00	**0.00E+00**	**0.00E+00**
1.38E-08	1.67E-08	7.28E-07	6.47E-08	**8.23E-07**	**5.88E-06**
3.15E-09	3.79E-09	1.65E-07	1.47E-08	**1.87E-07**	**1.34E-06**
1.48E-09	1.78E-09	7.76E-08	6.90E-09	**8.78E-08**	**6.27E-07**
1.10E-09	1.33E-09	5.80E-08	5.16E-09	**6.56E-08**	**4.69E-07**
8.94E-10	1.08E-09	4.70E-08	4.18E-09	**5.32E-08**	**3.80E-07**
7.09E-10	8.54E-10	3.73E-08	3.31E-09	**4.21E-08**	**3.01E-07**
5.70E-10	6.86E-10	3.00E-08	2.66E-09	**3.39E-08**	**2.42E-07**
4.68E-10	5.64E-10	2.46E-08	2.19E-09	**2.78E-08**	**1.99E-07**
3.92E-10	4.72E-10	2.06E-08	1.83E-09	**2.33E-08**	**1.66E-07**
3.34E-10	4.03E-10	1.76E-08	1.56E-09	**1.99E-08**	**1.42E-07**
2.89E-10	3.49E-10	1.52E-08	1.35E-09	**1.72E-08**	**1.23E-07**

West Miramar Landfill Area
Tier 3 Chronic Flare

Receptor Distances (m)	Peak 1-hr Unit Concentration X/Q (ug/m3 per g/m^2-s)	Annual Average Unit Concentration X/Q (ug/m3 per g/m^2-s)	Formaldehyde HIC 50-00-0	Chloroform HIC 67-66-3	Benzene HIC 71-43-2	Methyl Chloroform HIC 71-55-6	Methylene Chloride HIC 75-09-2	Carbon Disulfide HIC 75-15-0	Trichloroethylene HIC 79-01-6
1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
11	2.71E+03	2.71E+02	6.97E-02	1.59E-06	1.33E-04	8.55E-06	4.05E-04	2.95E-06	8.24E-05
100	6.16E+02	6.16E+01	1.58E-02	3.62E-07	3.02E-05	1.94E-06	9.21E-05	6.69E-07	1.87E-05
200	2.89E+02	2.89E+01	7.43E-03	1.70E-07	1.42E-05	9.11E-07	4.32E-05	3.14E-07	8.79E-06
300	2.16E+02	2.16E+01	5.56E-03	1.27E-07	1.06E-05	6.81E-07	3.23E-05	2.35E-07	6.57E-06
400	1.75E+02	1.75E+01	4.50E-03	1.03E-07	8.57E-06	5.52E-07	2.62E-05	1.90E-07	5.32E-06
500	1.39E+02	1.39E+01	3.57E-03	8.16E-08	6.80E-06	4.38E-07	2.07E-05	1.51E-07	4.22E-06
600	1.12E+02	1.12E+01	2.87E-03	6.56E-08	5.46E-06	3.52E-07	1.67E-05	1.21E-07	3.39E-06
700	9.16E+01	9.16E+00	2.36E-03	5.39E-08	4.49E-06	2.89E-07	1.37E-05	9.96E-08	2.79E-06
800	7.67E+01	7.67E+00	1.97E-03	4.51E-08	3.76E-06	2.42E-07	1.15E-05	8.34E-08	2.33E-06
900	6.54E+01	6.54E+00	1.68E-03	3.85E-08	3.20E-06	2.06E-07	9.78E-06	7.11E-08	1.99E-06
1,000	5.66E+01	5.66E+00	1.46E-03	3.33E-08	2.77E-06	1.79E-07	8.47E-06	6.16E-08	1.72E-06

West Miramar Landfill Area
Tier 3 Chronic Flare

Ethyl Benzene HIC 100-41-4	Ethylene Dichloride HIC 107-06-2	Acrylonitrile HIC 107-13-1	Toluene HIC 108-88-3	Chlorobenzene HIC 108-90-7	Hexane HIC 110-54-3	Perchloroethylene HIC 127-18-4	Xylenes HIC 1330-20-7	Hydrochloric Acid HIC 7647-01-0	Hydrogen Sulfide HIC 7783-06-4	Offsite Worker HIC	Sensitive HIC
0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	**0.00E+00**	**0.00E+00**
1.31E-05	1.35E-05	3.59E-03	6.44E-04	1.05E-05	4.32E-06	2.36E-03	9.80E-05	1.91E-01	6.46E-03	**2.04E-01**	**1.46E+00**
2.97E-06	3.08E-06	8.15E-04	1.46E-04	2.39E-06	9.81E-07	5.36E-04	2.23E-05	4.34E-02	1.47E-03	**4.64E-02**	**3.31E-01**
1.39E-06	1.44E-06	3.82E-04	6.87E-05	1.12E-06	4.60E-07	2.51E-04	1.04E-05	2.04E-02	6.89E-04	**2.18E-02**	**1.55E-01**
1.04E-06	1.08E-06	2.86E-04	5.13E-05	8.38E-07	3.44E-07	1.88E-04	7.81E-06	1.52E-02	5.15E-04	**1.63E-02**	**1.16E-01**
8.44E-07	8.74E-07	2.32E-04	4.16E-05	6.79E-07	2.79E-07	1.52E-04	6.33E-06	1.23E-02	4.17E-04	**1.32E-02**	**9.42E-02**
6.69E-07	6.93E-07	1.84E-04	3.30E-05	5.38E-07	2.21E-07	1.21E-04	5.01E-06	9.77E-03	3.31E-04	**1.05E-02**	**7.46E-02**
5.38E-07	5.57E-07	1.48E-04	2.65E-05	4.33E-07	1.78E-07	9.71E-05	4.03E-06	7.85E-03	2.66E-04	**8.40E-03**	**6.00E-02**
4.41E-07	4.58E-07	1.21E-04	2.18E-05	3.55E-07	1.46E-07	7.97E-05	3.31E-06	6.45E-03	2.18E-04	**6.90E-03**	**4.93E-02**
3.70E-07	3.83E-07	1.02E-04	1.82E-05	2.98E-07	1.22E-07	6.68E-05	2.77E-06	5.40E-03	1.83E-04	**5.78E-03**	**4.13E-02**
3.15E-07	3.27E-07	8.66E-05	1.56E-05	2.54E-07	1.04E-07	5.69E-05	2.36E-06	4.61E-03	1.56E-04	**4.93E-03**	**3.52E-02**
2.73E-07	2.83E-07	7.50E-05	1.35E-05	2.20E-07	9.03E-08	4.93E-05	2.05E-06	3.99E-03	1.35E-04	**4.27E-03**	**3.05E-02**

West Miramar Landfill Area
Tier 3 Acute Flare

Receptor Distances (m)	Peak 1-hr Unit Concentration X/Q (ug/m3 per g/m^2-s)	Formaldehyde HIA 50-00-0	Chloroform HIA 67-66-3	Benzene HIA 71-43-2	Methyl Chloroform HIA 71-55-6	Vinyl Chloride HIA 75-01-4	Methylene Chloride HIA 75-09-2	Carbon Disulfide HIA 75-15-0	Methyl Ethyl Ketone HIA 78-93-3	Toluene HIA 108-88-3
1	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
11	2.71E+03	2.23E-02	3.19E-05	6.13E-05	1.26E-06	3.40E-06	1.62E-04	3.80E-06	2.10E-05	5.23E-05
100	6.16E+02	5.05E-03	7.24E-06	1.39E-05	2.86E-07	7.73E-07	3.68E-05	8.64E-07	4.77E-06	1.19E-05
200	2.89E+02	2.37E-03	3.40E-06	6.53E-06	1.34E-07	3.63E-07	1.73E-05	4.05E-07	2.24E-06	5.57E-06
300	2.16E+02	1.77E-03	2.54E-06	4.88E-06	1.00E-07	2.71E-07	1.29E-05	3.03E-07	1.67E-06	4.16E-06
400	1.75E+02	1.44E-03	2.06E-06	3.96E-06	8.12E-08	2.20E-07	1.05E-05	2.46E-07	1.36E-06	3.37E-06
500	1.39E+02	1.14E-03	1.63E-06	3.14E-06	6.43E-08	1.74E-07	8.30E-06	1.95E-07	1.07E-06	2.67E-06
600	1.12E+02	9.16E-04	1.31E-06	2.52E-06	5.17E-08	1.40E-07	6.67E-06	1.56E-07	8.64E-07	2.15E-06
700	9.16E+01	7.52E-04	1.08E-06	2.07E-06	4.25E-08	1.15E-07	5.48E-06	1.28E-07	7.10E-07	1.77E-06
800	7.67E+01	6.30E-04	9.02E-07	1.73E-06	3.56E-08	9.63E-08	4.59E-06	1.08E-07	5.94E-07	1.48E-06
900	6.54E+01	5.37E-04	7.69E-07	1.48E-06	3.03E-08	8.21E-08	3.91E-06	9.18E-08	5.07E-07	1.26E-06
1,000	5.66E+01	4.65E-04	6.66E-07	1.28E-06	2.63E-08	7.11E-08	3.39E-06	7.95E-08	4.39E-07	1.09E-06

West Miramar Landfill Area
Tier 3 Acute Flare

Perchloroethylene HIA 127-18-4	Xylenes HIA 1330-20-7	Hydrochloric Acid HIA 7647-01-0	Hydrogen Sulfide HIA 7783-06-4	Offsite Worker HIA	Sensitive HIA
0.00E+00	0.00E+00	0.00E+00	0.00E+00	**0.00E+00**	**0.00E+00**
4.13E-05	3.12E-05	8.18E-02	1.54E-02	**9.73E-02**	**6.95E-01**
9.38E-06	7.08E-06	1.86E-02	3.49E-03	**2.21E-02**	**1.58E-01**
4.40E-06	3.32E-06	8.72E-03	1.64E-03	**1.04E-02**	**7.41E-02**
3.29E-06	2.48E-06	6.52E-03	1.23E-03	**7.75E-03**	**5.54E-02**
2.67E-06	2.01E-06	5.28E-03	9.93E-04	**6.28E-03**	**4.49E-02**
2.11E-06	1.60E-06	4.19E-03	7.87E-04	**4.98E-03**	**3.56E-02**
1.70E-06	1.28E-06	3.37E-03	6.33E-04	**4.00E-03**	**2.86E-02**
1.39E-06	1.05E-06	2.76E-03	5.20E-04	**3.29E-03**	**2.35E-02**
1.17E-06	8.82E-07	2.32E-03	4.35E-04	**2.75E-03**	**1.97E-02**
9.96E-07	7.52E-07	1.97E-03	3.71E-04	**2.35E-03**	**1.68E-02**
8.63E-07	6.52E-07	1.71E-03	3.21E-04	**2.03E-03**	**1.45E-02**

Appendix H

Map of Nearest Receptors

Path: G:\gis\projects\27\27654116\mxd\miramar_distance_figure.mxd, 03/19/07, Jamie_Nyholt

Appendix I

WML Odor Complaint

SAN DIEGO COUNTY AIR POLLUTION CONTROL DISTRICT
9150 CHESAPEAKE DRIVE
SAN DIEGO, CA 92123-1096
PHONE (858) 650-4700
FAX (858) 650-4659

FAX TRANSMITTAL COVER SHEET

DATE: 8/16/05

TO: Massie Hatch
URS Corp.

PHONE: 714-433-7710

FAX: 714-433-7701

FROM: Mary Perry
APCD

PHONE: 858-650-4518

FAX: 858-650-4659

EMAIL: mary.perry@sdcounty.ca.gov

NUMBER OF PAGES TRANSMITTED: 3
(Including transmittal page)

COMMENTS:

RE: Your request for SD APCD records

Odor-related public nuisance complaints regarding the West Miramar Landfill (ID#88196C) – One complaint (2004-0217)

If you have any questions, or need additional information, please see the contact information above

SAN DIEGO AIR POLLUTION CONTROL DISTRICT
COMPLAINT INVESTIGATION REPORT

☒ Initial Report ☐ Supplemental Report

Complaint No: 2004-0217 Date Received: 11/30/04 Time Received: 0950

Investigation Start Date: 11-30-04 Time: 1200

Nature of Complaint: Odors from landfill

Complainant: Telephone no:

Address: City/Zip:

Source: Miramar Landfill Telephone no: (858)836-4832

Address: 5180 Convoy St. City/Zip: San Diego, 92111

ID #/Permit #: 88196C / 971254

Source Contact and Title: Dana Armstrong /Disposal Site Supervisor

Source Type: Active non-hazardous landfill

INVESTIGATION

1. Location and distance of complainant from source:
2. Wind Direction: East Wind Speed: variable Sky Conditions: clear
3. Property damage observed: not at this time
4. Physical evidence collected: not at this time
5. Description and classification of odor, dust, smoke, other

   At complainant:: no odor detected at this time

   At source: class 4-5 odor of green waste, fresh trash

   Other locations (see sketch):
6. V.E. Evaluation: ☐ Yes ☒ No If yes attach copy of V.E. Evaluation
7. Description of emission point: green waste recycling, trash management
8. NTC Issued: ☐ Yes ☒ No Document No: Rules:
9. NOV Issued: ☐ Yes ☒ No Document No: Rules:

AQIII Initials: JDC Equipment: 484 Results: UN Date Closed: 1/9/05

FINDINGS/RECOMMENDATIONS/CONCLUSION

Pursuant to complaint 2004-0217 I arrived at the complainant location at approx 1200 on 11-30-04. The complainant was not home at this time. While at this location I did not smell landfill type odors. I conducted a surveillance drive in the neighborhood approx ¼ mile and did not detect landfill type odors at this time. I left my business card on the front door of the complainant's home.

I drove to the source location and informed them of this complaint. I asked for and was given consent to inspect the facility. Although there was no activity of grinding or screening at the green waste recycling area at this time the odor of compost and or mulch was very noticeable.

While at the SW corner of the active landfill I observed municipal waste being spread and compacted by heavy equipment. While at this location I smelled a very strong odor trash (a mixture of many different types of waste typical at landfill operations.

On 12-14-04 the complainant at approx 0800 informed me that the odor was very bad this morning. I arrived at the complainant location at approx 10:55. The complainant was not home at this time. While at this location I did not smell landfill type odors at this time. I called the complainant and left message to call me.

Conclusion: I informed the complainant and source of nuisance rule 51. The complainant is located upwind from the source. On most days the prevailing wind is out of the west or south/west. The source accepts approx 6,000 tons of trash per day. All trash brought to the landfill is required to be covered with soil material at the end of every business day. I am unable to validate this complaint at this time. I recommend no further action on this complaint until such time additional complaint is received by the district.

Other potential sources:

1. San Diego City Bio-solids
2. _____
3. _____

Date and time the complainant was contacted with the results of the complaint:

Date: 11/30/04 Time: 1445

If complainant was not contacted, please provide the reason:

_____

_____

_____

_____

_____

Complaint referrals made to:

_____

Inspector's signature: afuchs Date: 12/30/04

APCD Rev 10/02
afuchs

BIOLOGICAL RESOURCES REPORT

MIRAMAR LANDFILL EXPANSION
MCAS MIRAMAR
SAN DIEGO, CALIFORNIA

PREPARED FOR:

CITY OF SAN DIEGO DEVELOPMENT SERVICES DEPARTMENT

URS PROJECT NO.27654416.15000

MARCH, 2007

REPORT

BIOLOGICAL RESOURCES REPORT

Prepared for

City of San Diego Development Services Department
202 C Street
San Diego, California 92101

URS Project No. 27654416.15000

Patrick J. Mock, Ph.D.
Senior Biologist

March, 2007

URS

1615 Murray Canyon Road, Suite 1000
San Diego, CA 92108-4314
619.294.9400 Fax: 619.293.7920

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EXECUTIVE SUMMARY

This report addresses the existing biological resources, potential impacts, and proposed mitigation measures associated with the City of San Diego's proposed expansion of the Miramar Landfill, located on the Marine Corps Air Station Base at Miramar (MCAS Miramar) in San Diego, California. The proposed project will be confined to the permitted landfill area, and will raise the height of the existing landfill to extend capacity for approximately four years.

The project site has been previously graded and filled with solid waste. Some vegetation occurs on the dirt surface. The majority of the project impact area is composed of disturbed and developed land. The proposed project area supports a total of six vegetation communities: chamise chaparral, coastal sage scrub, disturbed coastal sage scrub, southern mixed chaparral, and disturbed eucalyptus woodland. No resident sensitive plant or animal species are located within the proposed project impact area. The area surrounding the project supports several sensitive plant and animal species, including little mousetail (*Myosurus minimus ssp. apus*), Orcutt's brodiaea (*Brodiaea orcuttii*), San Diego barrel cactus (*Ferocactus viridescens*), San Diego goldenstar (*Muilla clevelandii*), wart-stemmed ceanothus (*Ceanothus verrucosus*), willowy monardella (*Monardella viminea*), San Diego mesa mint (*Pogogyne abramsii*), California horned lark (*Eremophila alpestris*), northern harrier (*Circus cyaneus*), southern California rufous-crowned sparrow, (*Aimophila ruficeps canescens*), San Diego fairy shrimp (*Branchinecta sandiegonensis*), and California gnatcatcher (*Polioptila californica*).

The proposed Miramar Landfill expansion will have no direct impacts on sensitive plant or animal species, as none of these species occur within the project area. There is the potential for indirect impacts to occur as a result of the existing permitted landfill. The impacts would not change from currently permitted conditions as a result of the proposed project. The area where indirect impacts have the potential to occur could extend up to 300 feet from the project edge due to dust and erosion into adjacent habitats, or excessive noise dissipating from the project area. These indirect impacts are the same as current impacts, and are currently reduced with the implementation of standard Best Management Practices to minimize dust and erosion. Noise conditions will also be similar to existing conditions at the active landfill.

Vegetation has reestablished over the engineered landfill in areas not currently being actively used. Direct impacts on coastal sage scrub would be compensated for through onsite restoration of perimeter disturbed areas with coastal sage scrub species at a 1.5:1 ratio and chaparral at a 1:1 ratio, per the City's Biology Guidelines, however, with or without the proposed project, these areas will all be subject to final grading and revegetation with native species, per the Closure Plan.

SECTION 1 INTRODUCTION

The City of San Diego proposes to expand the existing Miramar landfill, located on southwest corner of Marine Corps Air Station at Miramar (MCAS Miramar) in San Diego, California (Figure 1). Proposed improvements include the vertical expansion of the facility, which will increase the capacity of the landfill and extend its lifespan by approximately four years. The proposed project will be located on top of the existing landfill, and will not include any impacts to previously undisturbed areas. This report addresses the existing biological resources, potential impacts resulting from the proposed project and alternative, and mitigation measures to reduce these impacts below a level of significance.

The City of San Diego has identified two species of seagull, California gull (*Larus californicus*) and western gull (*Larus occidentalis*), that present a potential bird-strike hazard with aircraft. The City has an existing bird abatement program specifically targeted at this species. The abatement program uses an educated of staff to assure that the landfill is managed in ways that are less attractive to this gull species, such as a confined, well maintained tipping area. Staff education also ensures that interest in the landfill, on the part of this species, is identified early. Abatement methods include bio-acoustics, which include use of an air gun and distress calls. Visual cues, such as a taxodermically mounted specimen that has been positioned in a distressed position, are also used on occasion. All of these methods of bird abatement are unaffected by the height of the landfill and would be as effective with the proposed project as they are at the current height limit.

1.1 METHODS

The City of San Diego conducted surveys on the project site to document the area's current biological resources and evaluate the potential impacts of the proposed project. All surveys for floral and faunal species were recorded within a 500-foot area around and within the project area. Focused surveys for California gnatcatcher were conducted by City staff holding the appropriate USFWS Recovery Permit in areas of potentially suitable habitat.

The project area was surveyed on foot, and all observed plants and animals were identified and recorded. Plant communities observed on the site were classified according to the Holland Code (1986). Vegetation communities on the site were mapped electronically using existing database from MCAS Miramar, and with the aid of a 2005 aerial photograph. Plant and animal species were identified by City staff during weekly monitoring of the active landfill site using scat, tracks, burrows, vocalizations, or direct observations with the aid of binoculars (City of San Diego 2005, J. Howard, pers. comm.)

1.2 ENVIRONMENTAL SETTING

The proposed project site is located on the footprint of the existing Miramar Landfill, north of the 52 freeway at Convoy Street. The project encompasses approximately 470 acres, and is surrounded by MCAS Miramar to the south, east, and west, and by the Miramar Nursery and some disturbed portions of the base to the north.

1.3 EXISTING CONDITIONS

The proposed footprint of the project area contains land that has already been disturbed during the operation of the landfill. It is surrounded by a diverse coverage of native habitat to the south, east and west, including riparian scrub habitat in the San Clemente canyon drainage system. Most of the surrounding area has intact and disturbed vegetation, and supports a high diversity of flora and fauna (Figure 2).

A majority of the project area is located in disturbed or developed habitats. Portions of the landfill have been revegetated with native and non-native vegetation as they have become inactive. The site now supports a total of six vegetation communities: chamise chaparral, coastal sage scrub, disturbed coastal sage scrub, southern mixed chaparral, and disturbed eucalyptus woodland (Table 1). Additionally there are large areas of disturbed habitat, and developed land within the project area (Figure 2). Floral and faunal species lists complied from onsite surveys are provided in Appendix A and Appendix B, respectively.

1.3.1 Plant Communities

The following plant communities occur within the direct impact area and a 500-foot buffer area around the proposed project. Most of these communities do not occur within the active landfill area. The following vegetation communities occur within the boundaries of the active landfill proposed for height expansion.

Chamise Chaparral

Chamise chaparral is characterized by nearly monotypic stands of chamise (*Adenostoma fasciculatum*) to 1-3 m (3-9 ft) in height. Additional shrub species, such as deerweed (*Lotus scoparius*) and broom baccharis (*Baccharis sarathroides*) are also present in this community, but contribute little to the overall cover. The herbaceous component of this association is largely lacking. Chamise chaparral occurs on xeric slopes and ridges, and is found on shallower, drier soils. This habitat type is very limited within the project area, comprising a total of 0.07 acres in the project direct impact area.

Coastal Sage Scrub

Coastal sage scrub is comprised of low, soft-woody subshrubs to about 1 meter (3 ft) high, many of which are facultatively drought-deciduous. This association is typically found on dry sites, such as steep, south-facing slopes or clay-rich soils that are slow to release stored water. Dominant shrub species in this vegetation type may vary, depending on local site factors and levels of disturbance. Dominant species within coastal sage scrub locations on the northeast side the project area include California sagebrush (*Artemisia californica*), flat-top buckwheat (*Eriogonum fasciculatum*), laurel sumac (*Malosma aurina*), deerweed (*Lotus scoparius*), and black sage (*Salvia mellifera*). A large area of coastal sage scrub occurs on the eastern side of the project, just outside of the limits of grading. Dominant species in this area include California sagebrush (*Artemisia californica*), flat-top buckwheat (*Eriogonum fasciculatum*), laurel sumac (*Malosma aurina*), deerweed (*Lotus scoparius*), broom baccharis (*Baccharis sarathroides*), lemonade berry (*Rhus integrifolia*) and black sage (*Salvia mellifera*). Other, less frequent, constituents of this community include monkey flower (*Mimulus aurantiacus*), Yerba Santa (*Eriodictyon crassifolium*),

Table 1
Summary of Existing Plant Communities within Direct Impact Area and within 500 feet of the Proposed Project

Vegetation Community	Acreage within Direct Impact Area	Acreage within 500 ft. Buffer Area
Chamise Chaparral	0.07	15.25
Disturbed Chamise Chaparral	0	1.79
Southern Mixed Chaparral	1.89	27.23
Disturbed Southern Mixed Chaparral	2.63	3.11
Scrub Oak Chaparral	0	0.95
Diegan Coastal Sage Scrub	2.36	33.90
Disturbed Coastal Sage Scrub	0	15.69
Coastal Sage-Scrub Chaparral	0	6.93
Non-Native Grassland	0	5.04
Disturbed Non-Native Grassland	0	48.74
Disturbed Mulefat Scrub	0	2.18
Disturbed Southern Willow Scrub	0	0.55
Vernal Marsh	0	0.36
Disturbed Vernal Marsh	0	1.31
Riparian Forest (Sycamore Woodland)	0	13.33
Natural Flood Channel/Streambed	0	0.52
Southern Coast Live Oak Riparian Forest	0	1.33
Disturbed Eucalyptus Woodland	1.00	1.00
Developed	275.59	282.84
Disturbed Habitat	184.83	310.65
Total Acreage	**468.37**	**772.7**

and white sage (*Salvia apiana*). Coastal sage scrub is a very small component of the project site, comprising 2.36 acres of revegetated area within the project direct impact area.

Southern Mixed Chaparral

Southern mixed chaparral tends to occur on steeper, more mesic north-facing slopes than chamise chaparral. This vegetation community type is characterized by a relatively high diversity of species. Typical species within the project area include wart-stemmed ceanothus (*Ceanothus verrucosus*), black sage (*Salvia mellifera*), Yerba Santa (*Eriodictyon crassifolium*), chamise (*Adenostoma fasicicuatum*), coast spine bush (*Cneoridium dumosum*), blue dicks (*Dichelstemma capitatum*), and toyon (*Hertomeles*

arbutifolia). Approximately 4.52 acres of southern mixed chaparral are contained within the project direct impact area.

Disturbed Eucalyptus Woodland

Eucalyptus woodland is typically characterized by dense stands of gum trees (*Eucalyptus* spp.). Plants in this genus, imported primarily from Australia, were originally planted in groves throughout many regions of coastal California as a potential source of lumber and building materials, for their use as windbreaks, and for their horticultural novelty. They have increased their cover through natural regeneration, particularly in moist areas sheltered from strong coastal winds. Gum trees naturalize readily in the state and, where they form dense stands, tend to completely supplant native vegetation, greatly altering community structure and dynamics. Very few native plants are compatible with eucalyptus. The disturbed eucalyptus stands in the project area contained a mixture of small eucalyptus trees, acacia (*Acacia baileyana*), and lemonade berry (*Rhus integrifolia*). Approximately 1.0 acres of disturbed eucalyptus woodland are contained in the project direct impact area.

Disturbed Habitat

Disturbed habitat occupies land on which the native vegetation has been significantly altered by land-clearing activities such that the species composition and site conditions are not characteristic of the disturbed phase of a defined plant association (e.g., disturbed coastal sage scrub). Such habitat is typically found in vacant lots, roadsides, abandoned fields or previously graded lands, and is dominated by non-native annuals and perennial broadleaf species. Much of the area within the Miramar Landfill project is considered disturbed habitat. Dominate species include mustards, fennel, eucalyptus, acacia, thistle, crown daisy, sweet clover, brome grass, oats, castor bean, and sea lavender.

Developed

Developed areas support nonnative vegetation because of the presence of buildings or roads. The level of soil disturbance is such that only the most ruderal plant species are present. Within the project site these areas include most of the active landfill, areas supporting structures, and associated access roads.

1.3.2 Wildlife

More than 30 species of wildlife have been documented in the project area and surrounding buffer zone over the last few years of monitoring by City staff at the landfill. A listing of wildlife species detected in the project area is provided in Appendix B.

Wildlife Movement Corridors

A wildlife movement corridor can be defined as a linear landscape feature allowing animal movement between two patches of habitat. Connections between extensive areas of open space are integral to maintaining regional biological diversity and population viability. In the absence of corridors, habitats become isolated islands surrounded by development. Fragmented habitats support significantly lower numbers of species and increase the likelihood of extinction for select species when restricted to small

isolated areas of habitat. Areas that serve as wildlife movement corridors are considered biologically sensitive.

Wildlife corridors can be separated into two categories: regional wildlife corridors and local corridors. Regional corridors link large sections of undeveloped land and serve to maintain genetic diversity between wide-ranging populations. Local corridors permit movement between discrete vegetation patches. These linkages effectively allow a series of small, connected habitat patches to function as a larger block of habitat and perhaps result in the occurrence of higher species diversity or numbers of individuals than would otherwise occur in isolation. Target species for wildlife corridor assessment typically include coyote (*Canis latrans*), bobcat (*Felis rufus*), mountain lion (*Felis concolor*), and mule deer (*Odocoileus hemionus*). No wildlife corridors occur within the direct impact area. The east-west canyon that occurs south of the landfill likely functions as a habitat linkage in the project vicinity.

Noise Sensitive Wildlife

Noise-sensitive receptors are land uses associated with indoor and/or outdoor activities that may be subject to stress and/or significant interference from noise. They often include habitat occupied by threatened or endangered noise-sensitive wildlife. Potential noise-sensitive receptors in the project vicinity are the California gnatcatchers located on the revegetated slopes of the active landfill.

1.4 SENSITIVE SPECIES

1.4.1 Sensitive Habitats

Sensitive habitats are those that support sensitive plant or animal species, or unique vegetation communities considered rare within the region. The City of San Diego considers coastal sage scrub a sensitive habitat; according to the City's MSCP coastal sage scrub is a Tier II habitat. The United States Fish and Wildlife Service (USFWS) has estimated that coastal sage scrub habitat has been reduced by 70 to 90 percent of its historical extent (USFWS, 1991), primarily because of urban expansion along the coast. Additional evidence of the decline of this once common habitat is the growing number of declining plant and animal species dependent upon it, including the California gnatcatcher, cactus wren, rufous-crowned sparrow, San Diego horned lizard (*Phyronosoma coronatum*), orange-throated whiptail lizard (*Cnemidophorus hyperythrus beldingi*), and many of the sensitive plant species in San Diego County.

1.4.2 Sensitive Plants

Several rare, threatened and endangered plants are known from the Miramar area. Within the 500 ft. buffer zone around the project there are seven historic locations of sensitive plant species, including little mousetail (*Myosurus minimus ssp. apus*), Orcutt's brodiaea (*Brodiaea orcuttii*), San Diego barrel cactus (*Ferocactus viridescens*), San Diego goldenstar (*Muilla clevelandii*), wart-stemmed ceanothus (*Ceanothus verrucosus*), willowy monardella (*Monardella viminea*), and San Diego mesa mint (*Pogogyne abramsii*).

1.4.3 Sensitive Wildlife

Three regionally sensitive bird species, California horned lark (*Eremophila alpestris*), southern California rufous-crowned sparrow, (*Aimophila ruficeps canescens*), and northern harrier (*Circus cyaneus*), have been identified in the buffer zone around the project area, but it is unlikely that they are using the project site for nesting. These species are listed as Species of Special Concern (SSC) under the California Department of Fish and Game. Several California gnatcatchers (*Polioptila californica*) have also been observed in the buffer zone on revegetated coastal sage scrub slopes just outside of the project area. No California gnatcatchers have been detected in coastal sage scrub or disturbed coastal sage scrub within the project direct impact area itself. The California gnatcatcher is listed as federally threatened under the Endangered Species Act. In June 2006, protocol surveys for the California gnatcatcher, performed in the project direct impact area, came up negative. However, gnatcatchers in the buffer area have been observed frequently by qualified biologists during landfill monitoring activities over the last few years. The San Diego fairy shrimp (*Branchinecta sandiegonensis*) is a federal endangered species, which are commonly found in vernal pools within the project vicinity. Additionally, several historical locations of fairy shrimp occur within the project buffer area.

SECTION 2 IMPACTS

2.1 SIGNIFICANCE CRITERIA

Direct impacts occur when biological resources are altered or destroyed during the course of, or as a result of, project implementation. Examples of such impacts include removal or grading of vegetation, filling jurisdictional waters, or severing or physically restricting the width of a wildlife corridor. Indirect impacts may include elevated levels of dust, erosion, invasive exotic species, noise or artificial lighting within native habitats adjacent to the project direct impact area. These types of indirect impacts can affect vegetation communities or their use by sensitive species. Permanent impacts may result in irreversible damage to biological resources, whereas temporary impacts are interim changes in the local environment that would result from the construction phase of a project.

According to the City of San Diego Significance Determination Guidelines, impacts on biological resources are assessed through the CEQA review process, the Environmentally Sensitive Lands Ordinance and through the review of the project's consistency with the City's MSCP Subarea Plan (City of San Diego, 1998). The direct, indirect, and cumulative impacts of a project must be analyzed for significance, and the extent of "take" of sensitive species and habitats should be quantified. It is the policy of the City under the MSCP program to minimize all direct and indirect impacts on undisturbed habitats and sensitive species where practicable.

2.2 IMPACT ASSESSMENT

2.2.1 Direct Impacts

Construction of the proposed project will be limited to the existing landfill footprint, which is subject to on-going impacts with or without the proposed project. Some of the existing landfill footprint has been revegetated with native vegetation communities. The proposed project would result in impacts to 468.37 acres, including 2.36 acres of revegetated coastal sage scrub and 4.59 acres of revegetated chaparral habitats (Table 2). The proposed Miramar Landfill height expansion will have no direct impacts on sensitive plant or animal species, as none of these species occur within the project grading impact area that is currently part of the active landfill.

Table 2
Direct Impacts to Vegetation Communities from the Proposed Project

Vegetation Community	Tier	Acres
Diegan Coastal Sage Scrub	II	2.36
Developed	N/A	275.59
Disturbed Eucalyptus Woodland	IV	1.00
Disturbed Habitat	IV	184.83
Chamise Chaparral	III	0.07
Disturbed Southern Mixed Chaparral	III	2.63
Southern Mixed Chaparral	III	1.89
TOTAL		**468.37**

Although the proposed project would stay within the existing, permitted landfill footprint and will not have significant direct or indirect impacts as compared with the existing conditions, measures would be taken to compensate for the loss of vegetation that has been reestablished within the footprint area. Slope areas that do not need to be impacted, will not be, reducing the project footprint from 476 to 468 acres, thereby avoiding impacts to 8 acres of coastal sage scrub. It should be pointed out, however, that with or without the proposed project, all 476 acres will require final grading at closure. According the City's Land Development Manual, page 16 (Upland Impacts Outside of the MHPA), which is used here as a guideline, the acres avoided should be subtracted from the acres impacted. Since the amount of Tier II and III habitat impacted (6.95 acres) is less than 8 acres, no additional mitigation measures are proposed. Due to the phased nature of landfill operations, the amount of disturbed habitat onsite is expected to remain approximately constant.

With or without the proposed project, the entire landfill will be subject to re-contouring at closure, and at that time, the entire site will be revegated with native species, per the Closure Plan. This action is required per the Resource Conservation Recovery Act, subtitle D, and would occur with or without the proposed height increase. The exact nature of the revegetation plan will be reviewed and approved by regulatory agencies at the time of closure, and cannot be finalized at this point. Implementation of Best Management Practices during construction of the landfill minimizes adverse edge effects due to excessive dust and erosion. Staff biologists will review grading plans prior to construction to minimize impacts to sensitive habitats and species. Brushing of the site will be restricted to the non-breeding season of birds (September 1 to February 28).

Many non-native species are weedy or "pioneer" species that invade disturbed areas. Some disturbed areas have been recolonized by non-native eucalyptus trees. However, these specimens are small, young, and are not thriving on the harsh landfill surface. Thus they are small and thin and do not support raptor nests, though raptors may use them as perching spots, from time to time, and may forage over the landfill. They do not occur in numbers and fly at heights sufficient to pose a strike hazard with aircraft. Existing landfill operations have left large disturbed areas that are completely bare, or have been invaded by nonnative species. Under the Proposed Project, this condition would remain, though it would be

restricted to a slightly smaller area (468 acres) within the existing landfill footprint (476 acres). Impacts to eight acres of habitat area that are within the permitted footprint of the landfill would be avoided. Although, disturbance to this area could occur under the existing permit, disturbances to these areas are not necessary for the Proposed Project.

2.2.2 Indirect Impacts

There is the potential for indirect impacts to occur as a result of the existing landfill operation and also the proposed project. The area where indirect impacts have the potential to occur could extend up to 300 feet from the development edge, due to the increased levels of dust, invasive exotic species, erosion into adjacent habitats, or increased noise generated from the project area during earth-moving activities. These indirect impacts are referred to as "edge effects."

The spread of dust from the permitted landfill has the potential to impact plant species located within the buffer zone. Excessive dust can interfere with photosynthesis and potentially reduce the productivity of dusted plants in the area. These impacts are currently reduced due to Best Management Practices (BMPs) required to minimize air quality impacts. Erosion and sedimentation are currently controlled within the active landfill and will continue to be managed with the proposed project.

The primary noise sources associated with the operation of the landfill include trucks and other heavy machinery used to transport refuse and dirt within the facility, and pyrotechnic devices used to manage seagulls and other nuisance wildlife. These sources have the potential to impact sensitive wildlife located in the surrounding project area, including California gnatcatcher. Noise levels from the proposed project are likely to be equivalent to noise levels from the current landfill operation, although the greater height will provide a greater separation distance, slightly reducing the noise. Because the slopes will be at an angle, the final increased separation will be more than 63 feet, although initially the separation will be less. No increases in overall noise levels are expected as a result of implementation of the proposed project. The landfill height increase will create additional earthen berms that will act as noise barriers to adjacent to gnatcatcher occupied habitat.

No significant impacts to wildlife movement are anticipated.

2.2.3 Cumulative Impacts

Cumulative impacts consider the potential regional effects of a project and how a project may affect an ecosystem or one of its members beyond the project limits on a regional level. The habitat in the proposed project area provides very little habitat to wildlife. The entire project area has been previously disturbed and offers very little new habitat for plant and animal species in the area. Additionally, the proposed project will not conflict with the preservation of wildlife corridors in the Miramar area. All construction activities will be occurring on previously disturbed land, and will not create new impacts to wildlife corridors.

2.2.4 Significance of Impacts

Direct impacts on coastal sage scrub and other native habitats, whether naturally occurring or planted as an erosion control measure, are considered less than significant. Impacts to areas with reestablishing

native vegetation could occur under the existing permit as operations are shifted within the landfill footprint. Therefore, the proposed height increase will result in no new impacts above and beyond what is already permitted.

Indirect impacts from edge effects are also not significant, because the current condition and the post-project build-out conditions of the site will be similar. Potential edge effects within adjacent habitats will be similar to the edge effects occurring from the current landfill operation.

SECTION 3 MITIGATION

No significant biological impacts were identified and no mitigation measures are required.

SECTION 4 REFERENCES

California Department of Fish and Game, Natural Heritage Division. 2006. State and Federal Endangered and Threatened Animals of California.

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City of San Diego. 1998. MSCP Subarea Plan. August.

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Unitt, P. 2004. San Diego County Bird Atlas. *Proceedings of the San Diego Natural History Museum*. No. 39.

US Fish and Wildlife Service (USFWS) 1991. Proposed Rule to List the Coastal California Gnatcatcher as Endangered; 56 FR 47053 47060. September.

SOURCES:
Airphoto USA (2005 aerial); City of San Diego

VICINITY MAP
MIRAMAR LANDFILL

URS

750 0 750 1500 Feet
SCALE: 1" = 1500' (1:18,000)

CHECKED BY: JN	DATE: 3-20-07	FIG. NO: 1
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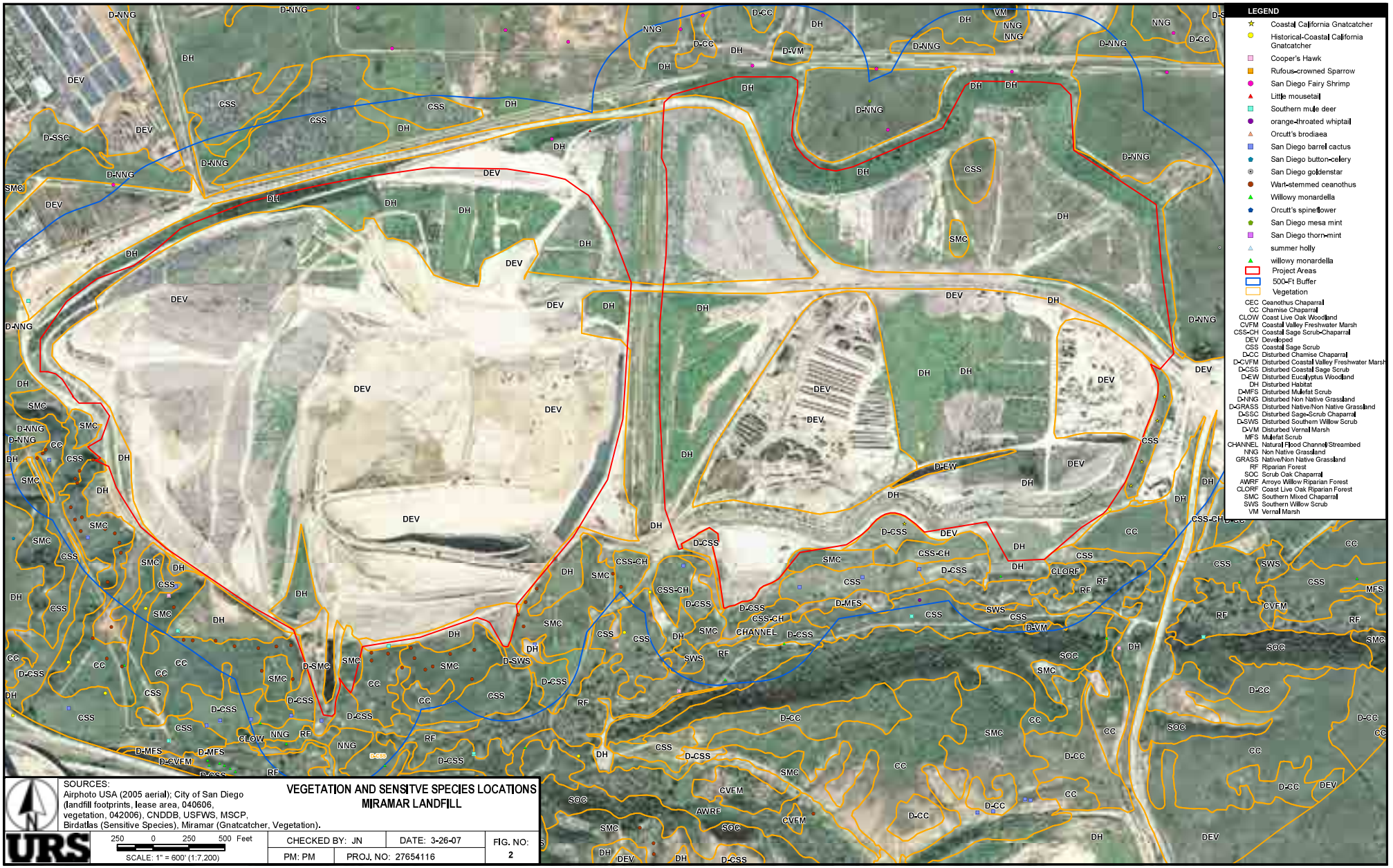

SOURCES:
Airphoto USA (2005 aerial); City of San Diego (landfill footprints, lease area, 040606, vegetation, 042006), CNDDB, USFWS, MSCP, Birdatlas (Sensitive Species), Miramar (Gnatcatcher, Vegetation).

VEGETATION AND SENSITVE SPECIES LOCATIONS
MIRAMAR LANDFILL

URS

250 0 250 500 Feet
SCALE: 1" = 600' (1:7,200)

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PM: PM | PROJ. NO: 27654116

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Plant Species[1]

PTERIDOPHYTES (FERNS AND FERN ALLIES)

SELAGINELLACEAE – Spike-Moss Family
Selaginella bigelovii - Bigelow's spike moss

ANGIOSPERMS (FLOWERING PLANTS)

MONOCOTYLEDONEAE

LILIACEAE – Lily Family
Dichelostemma capitatum – blue dicks

POACEAE - Grass Family
**Avena barbata* - slender wild oat
**Avena fatua* - wild oat
**Bromus diandrus* – ripgut brome
**Bromus hordeaceus* – soft chess
**B. madritensis* ssp. *rubens* - foxtail chess
Bromus japonicus – Japanese brome
Bromus sterlilis – poverty brome
**Cortaderia jubata*. – pampas grass
**Cynodon dactylon* – bermuda grass
**Hordeum jubatum*
**Pennisetum setaceum* – fountain grass
**Polypogon monspeliensis* – rabbit's foot grass
Sorghum bicolor – milo
**Vulpia myuros*

DICOTYLEDONEAE

AMARANTHACAE – Amaranth Family
**Amaranthus albus* – white tumbleweed

ANACARDIACEAE – Sumac Family
Malosma laurina – laurel sumac
Rhus integrifolia - lemonadeberry

APIACEAE – Carrot Family
**Foeniculum vulgare* – sweet fennel

ASTERACEAE - Sunflower Family
Artemisia californica – California sagebrush
Baccharis salicifolia – mulefat

Baccharis sarothroides – broom baccharis
**Carduus pyncnocephalus* – Italian thistle
**Centaurea melitensis* – tocalote
**Centaurea solstitialis* - yellow starthistle
**Chrysanthemum coronarium* - crown daisy
**Conyza bonariensis* – flax-leaf fleabane
**Cynara cardunculus* – globe artichoke
Deinandra fasciculata - fascicled tarplant
Gnaphalium bicolor - cudweed

Heterotheca grandiflora – telegraph weed
Isocoma menziesii var. *menziesii* – goldenbush
**Lactuca serriola* – prickly lettuce
Pluchea odorata - salt marsh fleabane
**Sonchus asper* – prickly sow thistle
**Sonchus oleraceus* – sow thistle
Stephanomeria exigua - wreath-plant
Xanthium strumarium – cocklebur

BORAGINACEAE - Borage Family
Plagiobothrys sp. – popcorn flower

BRASSICACEAE - Mustard Family
**Brassica nigra* – black mustard
**Hirschfeldia incana* – short-pod mustard
**Raphanus sativus* - wild radish

CACTACEAE – Cactus Family
Cylindropuntia prolifera - cholla
Opuntia littoralis – coastal prickly pear

CHENOPODIACEAE - Goosefoot Family
*Atriplex polycarpa – Alkali saltbush
*Atriplex semibaccata – Australian saltbush
*Chenopodium album
**Salsola tragus* – Russian thistle

EUPHORBIACEAE – Spurge Family
Chamaesyce maculata – spotted surge
Eremocarpus setigerus – dove weed
**Ricinus communis* – castor bean

FABACEAE - Pea Family
Acacia greggii – catclaw acacia
Acacia longifolia – Sydney golden wattle

Lotus scoparius – deerweed
Lupinus sp. Lupine sp.
**Melilotus alba* - white sweet clover
**Melilotus officinalis* - yellow sweet clover

GERANIACEAE - Geranium Family
**Erodium cicutarium* - red-stem filaree
**Geranium dissectum* – cut-leaved geranium

HYDROPHYLLACEAE – Waterleaf Family
Eriodictyon trichocalyx var. *trichocalyx* – yerba santa

LAMIACEAE - Mint Family
Salvia mellifera – black sage
Salvia apiana – white sage

MALVACEAE - Mallow Family
**Malva parviflora* - cheeseweed

MYRTACEAE – Myrtle Family
**Eucalyptus globules* – blue gum
**Eucalyptus camaldulensis* – red gum

PLUMBAGINACEAE – Leadwort Family
**Limonium perezii* – sea lavender

POLYGONACEAE – Buckwheat Family
Eriogonum fasciculatum var. *fasciculatum* – California buckwheat

RHAMNACEAE – Buckthorn Family
Ceanothus verrucosus – wart-stem ceanothus

ROSACEAE - Rose Family
Adenostoma fasciculatum - chamise
Heteromeles arbutifolia - toyon

RUBIACEAE – Madder Family
Galium angustifolium var. *angustifolium* – narrow-leaved bedstraw

RUTACEAE – Rue Family
Cneoridium dumosum – coast spice bush

SALICACEAE – Willow Family
Salix exigua – sandbar willow
Salix lasiolepis – arroyo willow

SCROPHULARIACEAE – Figwort Family
Mimulus aurantiacus – red bush monkey flower

SOLANACEAE – Nightshade Family
Datura wrightii – jimson weed
**Nicotiana glauca* – tree tobacco
**Solanum nigrum* – black nightshade

ORNAMENTALS

**Physalis* – tomato

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[1] Nomenclature from Hickman (1993) and Beauchamp (1986).

* Non-native species

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Hickman, J. C. 1993. The Jepson manual: higher plants of California. University of California Press, Berkeley, California. 1400 pp.

Simpson, M.G. and J.P. Rebman. 2001. Checklist of the Vascular Plants of San Diego County, 3rd Edition. 100 pp.

Animal Species

Common Name	Scientific Name
Amphibians	
Pacific Tree Frog	*Hyla regilla*
Reptiles	
Gopher Snake	*Pituophis melanolecus*
Striped Whipsnake	*Masticophis taeniatus*
Western Rattlesnake	*Crotalus viridis*
Western Fence Lizard	*Scloporus occidentalis*
San Diego Alligator Lizard	*Gerrhonotus multicarinatus webbi*
Western Skink	*Eumeces skiltonianus*
Birds	
Common Raven	*Corvus corax*
Mourning Dove	*Zenaida macroura*
Horned Lark	*Eremophila alpestris*
House Finch	*Carpodacus mexicanus*
Bushtit	*Psaltriparus minimus*
California Toehee	*Pipilo crissalis*
Red-tailed hawk	*Buteo jamaicensis*
American Kestrel	*Falco sparverius*
Northern Harrier	*Circus cyaneus*
White-tailed Kite	*Elanus caeruleus*
Scrub Jay	*Aphelocoma coerulescens*
California Quail	*Callipepla californica*
California Gull	*Larus californicus*
Western Gull	*Larus occidentalis*
Song Sparrow	*Melospiza melodia*
European Starling	*Sturnus vulgaris*
Western Meadowlark	*Sturnella neglecta*
California Gnatcatcher	*Polioptila califonica*
Cliff Swallow	*Hirundo pyrrhonota*
California Thrasher	*Toxostoma redivivum*
Mammals	
Coyote	*Canis latrans*
California Ground Squirrel	*Spermophilus beecheyi*
Audubon Cottontail Rabbit	*Sylvilagus audubonii*
Deer Mouse	*Peromyscus maniculatus*
Norway Rat	*Rattus norvegicus*

Traffic Impact Study

West Miramar Landfill Proposed Height Increase

1.0 Introduction

1.1 Purpose

The purpose of this study is to determine the potential traffic impacts associated with continuing disposal operations at the West Miramar Landfill for an additional four years, as a result of the proposed 20-foot height increase.

1.2 Study Area and Project Background

The project site is located on the Marine Corps Air Station (MCAS) Miramar, fully within the existing footprint of the Miramar Landfill site. The landfill currently operates under a Solid Waste facility Permit (SWFP) (37-AA-0020) that allows a permitted maximum throughput of 8,000 tons per day and 2,000 waste hauling vehicles per day. No change to these conditions is proposed. In determining compliance with this SWFP, vehicles entering the facility through the bypass lane and vehicles transporting green and woody materials to the Miramar Greenery are subtracted from the daily totals. In addition to the waste received, 99,507 tons of diverted materials and 37,116 tons of clean fill was accepted at the landfill in FY05. The Miramar Greenery is a composting facility located within Phase I of the West Miramar Landfill (WML), which operates under a separate SWFP (37-AB-0003). All of the traffic coming to the facility was included in the analysis as part of the existing conditions.

The actual traffic rate entering the landfill has been increasing, as would be expected based on the growth of the San Diego urban area and the resulting increase in demand for disposal services. Although waste diversion efforts, including recycling, source reduction and composting measures, are increasing, these efforts have not, in the past, been able to keep up with the growth in demand for disposal services. The current waste diversion rate is currently measured at slightly more than 50% of the amount of material generated. Since 1989, demand for disposal services in San Diego County has continued to grow by approximately 5% per year.

Although demand for disposal services is steadily increasing, the project does not propose to modify the permit to allow the facility to take more than the currently permitted 2,000 trips per day. Instead, regional population and economic growth resulting in increased demand for waste disposal facilities is expected to be addressed in one of two ways: 1) expansion of existing private facilities or siting of new facilities, or

2) modification of existing transfer operations to provide export of trash out of the region. The first option appears to be the most likely. The privately operated Sycamore Landfill has recently received a permit revision to allow a moderate increase in tons per day entering the facility and it has a massive increase currently under preliminary environmental review. Additionally, there are two new disposal facilities proposed, and numerous vendors of advanced technologies attempting to overcome the economic and permitting challenges of such facilities.

One or several of these options is expected to accommodate the increasing demand for disposal capacity. It is not the goal of the proposed project to accommodate the growing waste stream of the region. It is only the goal of the project to enable existing disposal operations at the Miramar Landfill to continue for an additional four years, at the currently permitted rates of disposal.

The proposed WML height increase project would not increase the daily or annual off-site vehicle traffic to and from the Miramar Landfill. However, since the proposed height increase would extend the active life of the landfill by approximately four years, offsite vehicular emissions associated with the Miramar Landfill operations would continue longer. These PM emissions would be present in San Diego County regardless of whether the proposed WML height increase project is implemented, since once the Miramar Landfill closes, the vehicular traffic will be transferred to another facility.

The project site access is provided through the northern leg of the Convoy Street/SR-52 westbound ramp intersection. Within the project site, the Greenery and the landfill share the same entrance at the scale house. The driveway to the Greenery then exists from the landfill's internal road. The entrances to the recycling center/household hazardous waste facility, Metropolitan biosolids center are provided by separate driveways that branch off before the traffic reaches the scalehouse.

The scenarios analyzed in this study include the following: 1) existing conditions, 2) existing conditions plus cumulative projects, and 3) future conditions (2030), with and without planned traffic improvements. Future conditions were projected using SANDAG Series 10 Regional Transportation Model and the City's General Plan roadway circulation network.

This Traffic Impact Study is based on an analysis done by Wilson and Company for another proposed project requiring separate permitting and CEQA analysis: a proposed construction and demolition debris recycling facility. The Wilson analysis was performed in accordance with City of San Diego and San Diego Traffic Engineers' Council (SANTEC) / Institute of Transportation Engineering (ITE) guidelines.

When the City of San Diego has land use authority, a traffic impact study is required for projects generating more than 1,000 total average daily trips (ADT) or 100 peak hour trips, or 500 ADT or 50 peak hour trips if the proposed project does not conform to the Land Use and Transportation elements of the General or Community Plan. *SANTEC / ITE Guidelines for Traffic Impact Studies (TIS) in the San Diego Region* specifies that

computerized long-range forecasts and select zone assignments an be conducted for all projects generating 2,400 or more ADT, or 200 or more peak-hour trips. Because the project would not change the existing conditions, no traffic study is required under the City's guidelines. However, landfill operations differ from other uses in that usually, at some point, they reach capacity and close. The purpose of this study is to fully disclose the existing, permitted conditions, and to make it clear that this project would enable the landfill to operate for an additional four to five years.

1.3 Report Organization

Following this Introduction chapter, this report is organized into the following sections:

2.0 Methodology – This chapter describes the methods and standards used.

3.0 Existing Conditions – This chapter describes the existing traffic network within the study area.

4.0 Project Description – This chapter describes the proposed project.

5.0 Existing Conditions plus Cumulative Projects – This chapter describes near-term developments that are anticipated to generate additional trips.

6.0 Year 2030 Traffic Conditions with Existing Roadway Network – This chapter projects future traffic conditions based on SANDAG's Regional Transportation Model forecast.

7.0 Year 2030 Traffic Conditions with Community Plan Roadway Network – This chapter projects future traffic conditions based on SANDAG's Regional Transportation Model forecast and the future classifications of the roadway system as presented in the Kearney Mesa Community Plan and the Public Facilities Financing Plan.

8.0 Findings and Recommendations – This chapter summarizes findings and makes recommendations.

2.0 Methodology

2.1 Roadways

The City of San Diego's Level of Service (LOS) standards for roadways shown in **Table 2.1** are used as long-range planning guides. The actual capacity of roadway segments varies according to individual characteristics including:

- classification,
- capacity,
- geometrics, and
- ADTs.

TABLE 2.1
CITY OF SAN DIEGO CIRCULATION ELEMENT
LOS STANDARDS

Roadway Functional Classification	LOS				
	A	B	C	D	E
Expressway (6-lane)	< 30,000	< 42,000	< 60,000	< 70,000	< 80,000
Prime Arterial (6-lane)	< 25,000	< 35,000	< 50,000	< 55,000	< 60,000
Major Arterial (6-lane, divided)	< 20,000	< 28,000	< 40,000	< 45,000	< 50,000
Major Arterial (4-lane, divided)	< 15,000	< 21,000	< 30,000	< 35,000	< 40,000
Secondary Arterial/Collector (4-lane w/ center lane)	< 10,000	< 14,000	< 20,000	< 25,000	< 30,000
Collector (4-lane w/o center lane)	< 5,000	< 7,000	< 10,000	< 13,000	< 15,000
Collector (2-lane w/ continuous left-turn lane)					
Collector (2-lane no fronting property)	< 4,000	< 5,500	< 7,500	< 9,000	< 10,000
Collector (2-lane w/ commercial fronting)	< 2,500	< 3,500	< 5,000	< 6,500	< 8,000
Collector (2-lane multi-family)					
Sub-Collector (2-lane single-family)	-	-	< 2,200	-	-

Source: Traffic Impact Study Manual, City of San Diego, July 1998

2.2 Peak Hour Intersection LOS Standards

2.2.1 Intersections

Intersections were analyzed using methods in Chapter 16 of the *Highway Capacity Manual (HCM) 2000, Transportation Research Board Special Report 209*. The HCM ranks LOS according to delay time, in terms of seconds per vehicle. The rankings shown in **Table 2.2** are calculated by multiplying stop delay time by 1.3. *Synchro 6* traffic analysis software, by Trafficware, was used for the computerized analysis of intersections because of its ability to analyze closely-spaced intersections.

The HCM 2000 methodology sets 1,900 passenger-car per hour per lane as the ideal saturation flow rate at signalized intersections. This is based on the minimum headway that can be sustained between departing vehicles at a signalized intersection. The service saturation flow rate is determined by adjusting the ideal saturation according to specific conditions, including:

- lane width,
- on-street parking,
- bus stops,
- pedestrian volume,
- traffic composition (or percentage of heavy vehicles), and
- shared lane movements (e.g., through and right-turn movements sharing the same lane).

TABLE 2.2
SIGNALIZED INTERSECTION LOS CRITERIA

Average Control Delay (seconds/vehicle)	LOS Characteristics
<10	*LOS A* has a low delay, progression is extremely favorable, and most vehicles do not stop at all. Short cycle lengths may also contribute to low delay.
>10– 20	*LOS B* has good progression and/or short cycle lengths. More vehicles stop than for LOS A, causing higher levels of average delay.
>20 – 35	*LOS C* has some delays, fair progression and/or longer cycle lengths. Individual cycle failures may occur. Many vehicles stop, although many still pass through the intersection without stopping.
>35– 55	*LOS D* has high delay, because of unfavorable progression, long cycle lengths, or high volumes. Congestion and individual cycle failures are noticeable.
>55 – 80	*LOS E* is considered the limit of acceptable delay. Individual cycle failures are frequent occurrences.
>80	*LOS F* has excessively high delay, considered unacceptable to most drivers. This condition often occurs when LOS D at the intersection is exceeded. Poor progression and long cycle lengths may be contributing causes.

Source: Highway Capacity Manual (HCM) 2000, TRB Special Report 209

2.3 Ramps

Consistent with Caltrans requirements, the signalized intersections at SR-52 freeway ramps were analyzed using the Intersecting Lane Volume (ILV) procedures as described in Topic 406 of the *Caltrans Highway Design Manual* (HDM), 5th Edition. This analysis categorizes intersections as being "under capacity," "at capacity," or "over capacity," as shown in **Table 2.3**, in terms of intersecting lane vehicles per hour (ILV/hr).

TABLE 2.3
LEVEL OF OPERATIONS THRESHOLDS
AT RAMP INTERSECTIONS

Threshold, ILV/hr	Description
<1200: (Under Capacity)	Stable flow with slight, but acceptable delay. Occasional signal loading may develop. Free midblock operations.
1200-1500: (At Capacity)	Unstable flow with considerable delays possible. Some vehicles occasionally wait two or more cycles to pass through the intersection. Continuous backup occurs on some approaches.
>1500: (Over Capacity)	Stop-and-go operation with severe delay and heavy congestion(1). Traffic volume is limited by maximum discharges rates of each phase. Continuous backup in varying degrees occurs on all approaches. Where downstream capacity is restrictive, mainline congestion can impede orderly discharge through the intersection.

Source: Caltrans Highway Design Manual 5th Edition, Topic 406

(1) The amount of congestion depends on how much the ILV/hr value exceeds 1500. Observed flow rates will normally not exceed 1500ILV/hr, and the excess will be delayed in a queue.

2.4 Traffic Queuing

A traffic queuing analysis was conducted to see if roadway segments can accommodate existing and projected traffic queues. *Synchro 6* traffic analysis software was used to calculate the average peak hour traffic queues. The queue lengths were then compared to the existing available vehicle storage lengths to determine potential deficiencies.

2.5 Freeway Segments

The LOS of freeway segments was determined using Exhibit 23-2 of the HCM. Exhibit 23-2 identifies the LOS in terms of: maximum density, minimum speed, and maximum volume-to-capacity (V/C) ratio.

2.6 Determination of Significant Impacts

The thresholds in the *SANTEC/ITE Guidelines for Traffic Impact Studies (TIS) in the San Diego Region* (amended February 2004) for various types of facilities are based on:

1) an acceptable increase in the Volume / Capacity (V/C) ratio for roadway and freeway segments, and

2) increases in vehicle delays for intersections and ramps.

In the City of San Diego, LOS D is considered acceptable for roadway and intersection operations. **Table 2.5** summarizes the impact significance thresholds as identified by the City of San Diego.

TABLE 2.5
SIGNIFICANT TRAFFIC IMPACTS THRESHOLDS

LOS with Project	Allowable Change Due to Impact					
	Freeways		Roadway Segments		Intersections	Ramp Metering
D, E, & F (or ramp meter delays above 15 min.)	V/C	Speed (mph)	V/C	Speed (mph)	Delay (sec)***	Delay (min.)***
	0.01	1	0.02	1	2	2

Source: SANTEC/ITE Guidelines for Traffic Impact Studies (TIS) in the San Diego Region, February 2004

Notes:

* All LOS measurements are based upon HCM procedures for peak-hour conditions. However, vehicle to capacity (V/C) ratios for Roadway Segments may be estimated on an ADT/24-hour traffic volume basis (using Table 2.1 or a similar LOS chart for each jurisdiction). The acceptable LOS for freeways, roadways, and intersections is generally "D" ("C" for undeveloped or not densely developed locations per jurisdiction definitions).

** If a proposed project's traffic causes the values shown in the table to be exceeded, the impacts are determined to be significant. These impact changes may be measured from appropriate computer programs or expanded manual spreadsheets.

*** Delay is defined as the average stopped delay per vehicle measured in seconds for intersections or minutes for ramp meters.

3.0 Existing Conditions

3.1 Roadway Network

Roadways

Convoy Street: is a four-lane north-south roadway with a two-way left turn lane. The two-way left turn lane becomes a single (or dual) left turn lane at intersections. Convoy Street narrows to a three-lane roadway between the westbound and eastbound ramps of SR-52. Within the Miramar Landfill property (north of the SR-52 interchange), Convoy Street narrows to a two-lane undivided street. South of the SR-52 interchange ramps, Convoy Street intersects with Copley Park Place, Convoy Court, and Clairemont Mesa Boulevard, all of which run in an east-west direction.

Copley Park Place: is a four-lane east-west undivided street, terminating in a signalized T-intersection at Convoy Street, where a left turn lane is added.

Convoy Court: is a two-lane east-west undivided street with on-street parking on both sides. It forms a four-legged signalized intersection with left turn lanes at the Convoy Street intersection.

Clairemont Mesa Boulevard: is a six-lane east-west street that intersects Convoy Street at the southern end of the study area.

State Route 52 (SR-52): is a six-lane access-controlled freeway providing a connection between the East County of San Diego to the east and the community of La Jolla to the west, via the communities of Clairemont Mesa and Kearney Mesa.

Intersections

Five key intersections, shown in **Figure 3-1**, were identified for analysis:

1. Convoy Street / SR-52 WB ramps
2. Convoy Street / SR-52 EB Ramps
3. Convoy Street / Copley Park Place
4. Convoy Street / Convoy Court
5. Convoy Street / Clairemont Mesa Boulevard

3.2 Roadway and Intersection Volumes

The existing ADT outside the facility are presented in **Figure 3-2**. Roadway segment and study area intersection counts were conducted in the first week of February 2006.

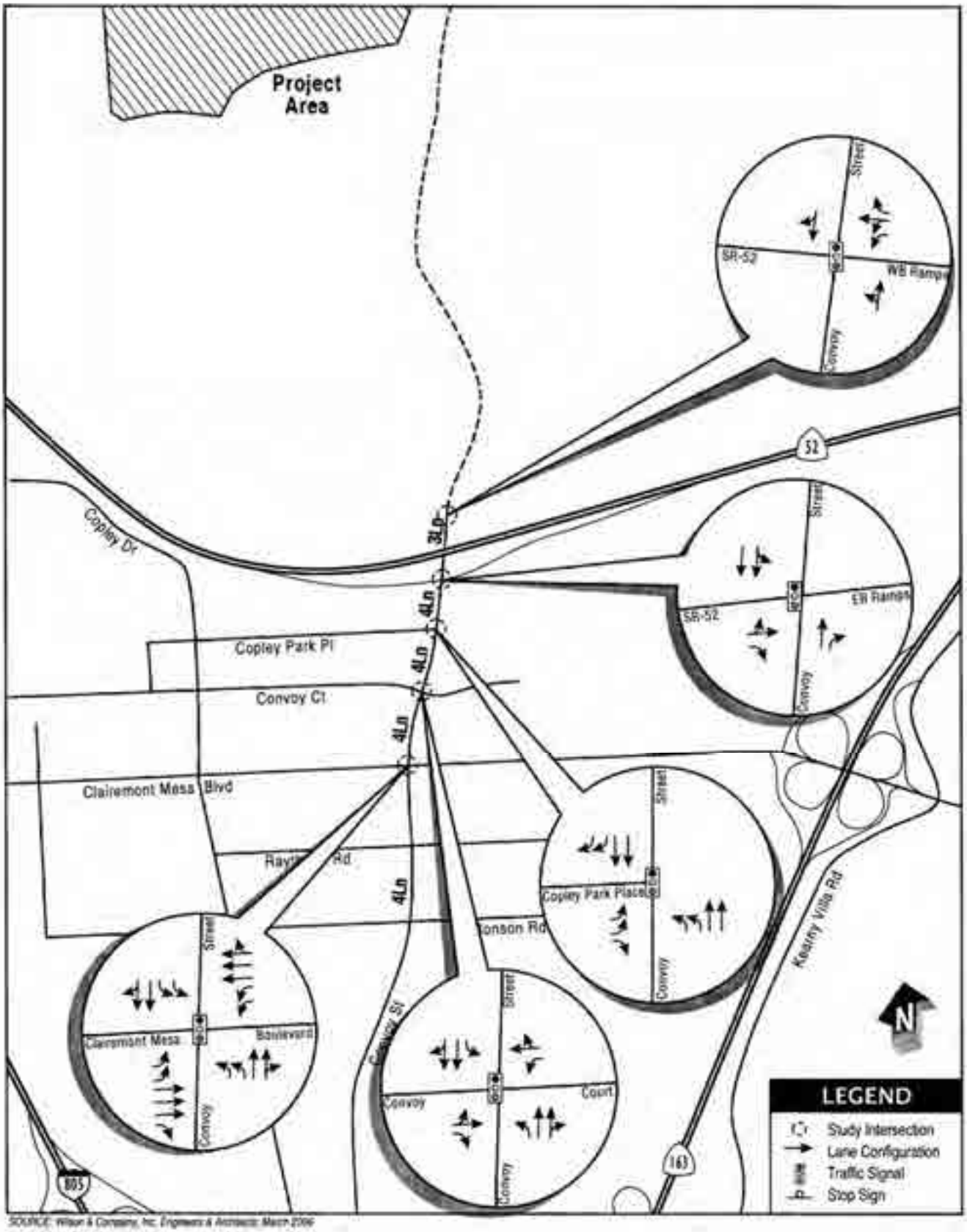
3.3 Internal Circulation

Although there was a small drop in 2006, the average annual traffic count has increased each year since 2002, as shown in **Table 3.1**. In fiscal years (new FYs begin on July 1) 2003 through 2006 significant tonnages began going to the Greenery, and these tonnages were not included in the traffic counts for the landfill. The Greenery is a separately permitted facility. Currently an estimated 80,000 to 100,000 tons per year go to the Greenery. For the entire study period, FY 2002 through 2006, the permit has held steady at a 2,000 vehicle per day limit. This limit is considered the "existing condition."

TABLE 3.1
AVERAGE ANNUAL TRAFFIC OVER TIME

FISCAL YEAR	AVERAGE TRAFFIC COUNT PER DAY
2002	1,458
2003	1,518
2004	1,560
2005	1,598
2006	1,542

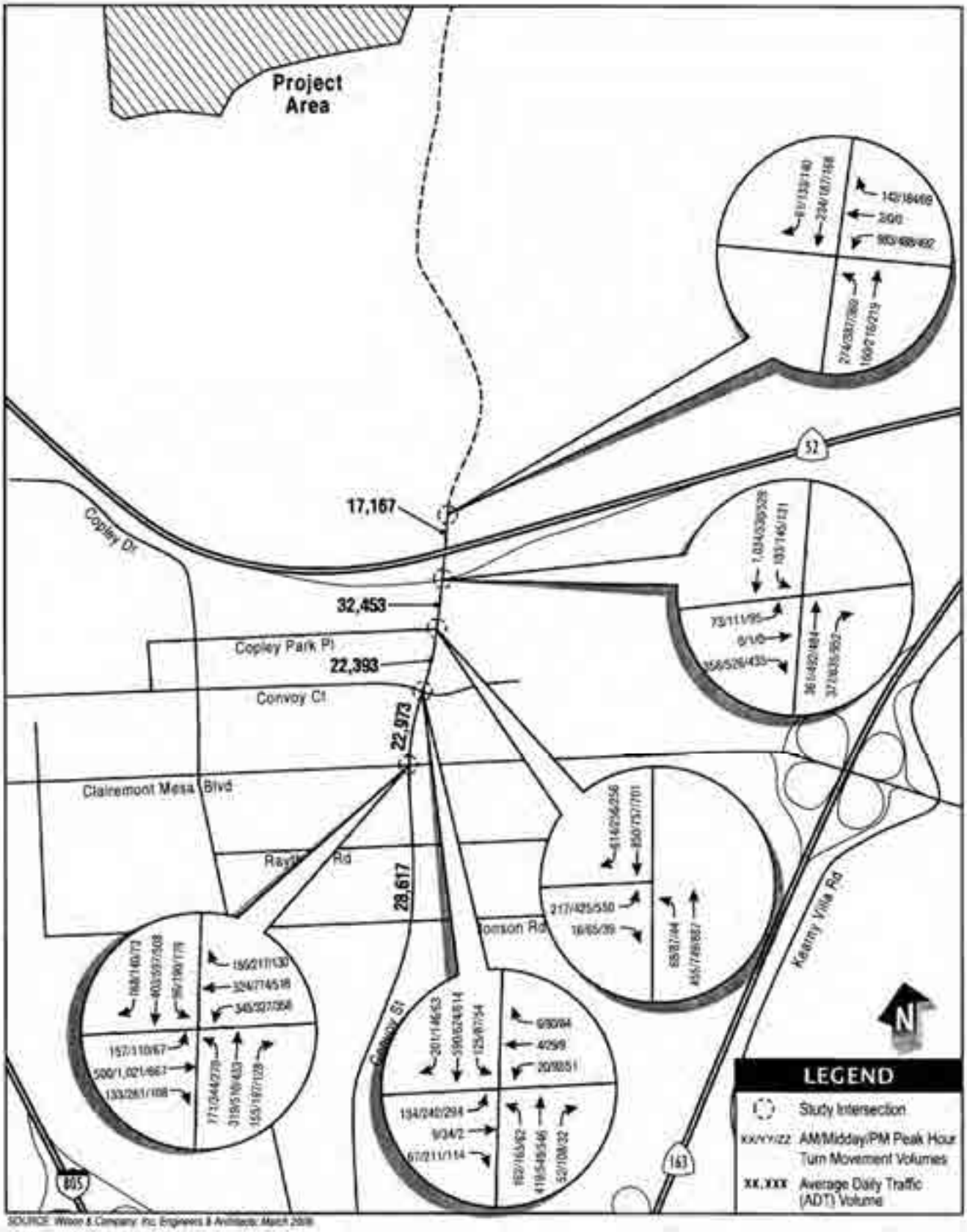
A review of driveways to the recycling center/household hazardous waste facility, biosolids center, and the landfill at the fee booth shows that all access points have adequate line of sight and turning radii.



SOURCE: Wilson & Company, Inc. Engineers & Architects March 2006

WILSON &COMPANY Miramar Greenery Expansion Mixed Waste Processing Facility Development

Figure 3-1
Roadway & Intersection Lane Configurations
Existing Conditions



SOURCE: Wilson & Company, Inc. Engineers & Architects, March 2008

WILSON & COMPANY

Miramar Greenery Expansion
Mixed Waste
Processing Facility Development

Figure 3-2
Traffic Volumes
Existing Conditions

For the period 10/23/06 thru 10/27/06, processing time at the scalehouse are as follows:

Commercial vehicles	ticketless	approx. 30 seconds
Commercial vehicles	with ticket	approx. 180 seconds
Passenger vehicles		approx. 240 seconds

Queuing time at the scale peeks to five minutes for short intervals. Figure 3-2 Supplemental shows Typical Onsite Weekday Average Daily Traffic at the feebooth. Traffic control measures are maintained at the WML to ensure that traffic flows into, on and out of the site occurs with minimal interference and safety problems for customers and for traffic on adjacent and adjoining public streets, roads or highways. Previous inspections by the LEA and the absence of public complaints indicate that adequate traffic control in accordance with the above criteria and applicable regulations has been achieved at the WML. The following procedures constitute the Traffic Control Plan for the WML:

- Customers using WML gain access via Convoy Street. The entrance area facilities are located approximately 0.2 miles from the entrance gate. The entrance road widens to a total of seven lanes at the entrance area. Four lanes are inbound traffic, one lane is for site visitors and two are for outbound traffic.

- Once customers are queued through the entrance area facilities, they travel on a paved two-lane internal road that continues to the administration/operations trailers where it turns to the west onto the Phase I area of the landfill. A portion of the main internal paved haul road is three lanes allowing for slower traffic on the uphill side of San Clemente Canyon. At the Phase I area, the internal road turns into an improved tightly compacted dirt road topped with compacted asphalt grindings leading to the various operational areas (i.e., commercial and public unloading areas, green and dry wood waste recycling areas, and to at least one other active working area to ensure continuous operations during inclement weather, etc.).

  The speed limits on the WML are 35 mph on the main paved haul road leading from the entrance area to the edge of the fill areas and 15 mph on the dirt haul roads over the fill areas. Signs are posted indicating speed limits, equipment crossings, unloading areas, and recycling areas.

- At the waste unloading and recycling areas, spotters stop and direct traffic. Safety cones are also used to separate two-way traffic at the unloading areas and for the random load checking.

Upon acceptance of waste for disposal at the scalehouse, vehicles are immediately directed by the scalehouse operator to the working face of the landfill. Signs are posted along the

internal haul roads to guide customers to the designated unloading areas. Both commercial and private vehicles are directed to the working face but to separate tipping areas to better handle unloading and load checking activities and to expedite unloading for the commercial haulers.

The daily working face is approximately 200 feet wide, which is sufficient to accommodate unloading of waste without expose unnecessary amounts of waste to attract potential vectors. The commercial unloading area is generally maintained at the toe of the working face so that wastes can be immediately spread and compacted. This also provides maximum protection from winds thus reducing litter. Smaller private vehicles (hand un-loads) are directed to a separate unloading area located away from the commercial vehicle unloading area. This unloading arrangement is safer for site customers with smaller vehicles because it limits their interaction with commercial refuse vehicles and the landfill's heavy equipment.

Queuing of the commercial vehicles is done at a spotter's control booth next to the tipping area. Queuing times are kept to a minimum by widening the working face when necessary. A clean-out area is provided in front of the un-loading area to allow packer trucks to clean-out behind their packer blade. Due to the various length of time required to clean-out each vehicle (5 to 15 minutes) this area is kept large enough to handle all the trucks needing to use the area.

Waste unloaded in the area designated for private vehicles is deposited directly onto the surrounding deck area. The volume of refuse in the unloading area varies in size throughout the day depending on the number of private vehicles visiting the site. Periodically, throughout the day, refuse disposed in this area is pushed to the working face by a bulldozer and is immediately compacted. The procedure is more frequent on windy days. There is no queuing in the hand un-loading area.

Occasionally, ESD will operate two working faces in different locations of the refuse disposal area, completely separating the private and commercial unloading activities. This is done when waste must be placed in areas where sliver filling is necessary to meet desired final contours or enhance interim drainage control.

Rain and/or high winds are the predominant inclement weather conditions that may cause the operator to adjust onsite waste handling and disposal procedures. Vehicle access to the unloading areas is provided by paved roads and tightly compacted dirt roads. When heavy rains cause the unloading area to become muddy and unusable, operations are moved to a designated wet weather area to provide continuous operation during inclement weather. This area is near an improved internal road. Stockpiles of soil material are maintained near the working face and the designated alternative unloading area to insure an adequate supply of cover material.

For high wind conditions, the unloading area is typically reduced in size and, whenever possible, placed in a portion of the facility that affords some protection. Additional equipment may be used to expedite the spreading and compacting of the refuse as soon as

it is unloaded. Cover operations may also begin earlier in the day to reduce the area of exposed waste on the working face. In addition, portable litter fencing is available on-site and may be used down wind around the unloading area.

3.4 Level of Service

Roadway Segments

As shown in **Table 3.2**, three Convoy Street roadway segments currently operate at unacceptable levels; specifically: between the eastbound and westbound ramps of SR-52; between the eastbound ramps of SR-52 and Copley Park Place; and between Clairemont Mesa Boulevard and Raytheon Road.

TABLE 3.2
EXISTING ROADWAY LOS

Street	Segment	Cross-Section	Capacity	Volume	V/C	LOS
Convoy Street	Between SR-52 WB Ramps and SR-52 EB Ramps	3-Lane	15,000	17,167	1.144	**F**
	Between SR-52 EB Ramps and Copley Park Pl	4-Lane	30,000	32,453	1.082	**F**
	Between Copley Park Pl and Convoy Ct			22,393	0.746	D
	Between Convoy Ct and Clairemont Mesa Blvd			22,973	0.766	D
	Between Clairemont Mesa Blvd and Raytheon Rd			28,617	0.954	**E**

Source: Wilson & Company, Inc., May 2006

Intersections

Table 3.3 displays the existing intersection LOS and average vehicle delays. The existing signal timing was used in the analysis. All of the intersections are currently operating at acceptable LOS D or better.

TABLE 3.3
EXISTING PEAK HOUR INTERSECTION LOS

Intersection	AM		MD		PM	
	Delay (sec.)	LOS	Delay (sec.)	LOS	Delay (sec.)	LOS
Convoy St / SR-52 WB ramps	53.7	D	48.8	D	33.9	C
Convoy St / SR-52 EB ramps	52.1	D	24.6	C	37.4	D
Convoy St / Copley Park Pl	10.9	B	15.7	B	16.9	B
Convoy St / Convoy Ct	28.6	C	33.5	C	33.3	C
Convoy St / Clairemont Mesa Blvd	29.2	C	46.6	D	39.3	D

Source: Wilson & Company, Inc., May 2006

Ramp Capacity

As shown in **Table 3.4**, the westbound SR-52 ramp intersection is currently operating "At Capacity" in the AM peak hour and the eastbound SR-52 ramp intersection is operating "At Capacity" during the PM peak hour with a potential for unstable flow and considerable delays during these times. All other peaks for both ramp intersections are operating "Under Capacity" with stable flow and slight delay. These results are consistent with the HCM intersection analysis results presented in Table 3.2.

TABLE 3.4
EXISTING RAMP INTERSECTION CAPACITY

Intersection	Peak Hour	ILV / Hour	Description
Westbound SR-52 / Convoy Street	AM	1,222	*1200-1500: (At Capacity)*
	MD	1,167	*<1200: (Under Capacity)*
	PM	1,133	*<1200: (Under Capacity)*
Eastbound SR-52 / Convoy Street	AM	1,042	*<1200: (Under Capacity)*
	MD	973	*<1200: (Under Capacity)*
	PM	1,282	*1200-1500: (At Capacity)*

Source: Wilson & Company, Inc., May 2006

Traffic Queuing

As shown in **Table 3.5**, potential queuing issues currently exist at the Convoy Street / SR-52 eastbound ramps (the northbound right-turn queues exceed the storage capacity during the PM peak period) and at the Convoy Street / Convoy Court intersection (existing queues exceed storage capacity at the northbound left-turn lane during the AM, Midday (MD), and PM peak hours; and at the southbound left-turn lane during the AM and MD peak hours).

TABLE 3.5
EXISTING QUEUING

Intersection	Movement	Available Storage (feet)	Queue Length (feet)			Sufficient Storage?		
			AM	MD	PM	AM	MD	PM
Convoy St / SR-52 EB ramps	NBR	410	70	79	471	Yes	Yes	**No**
Convoy St / Copley Park Pl	NBL	85	46	54	27	Yes	Yes	Yes
Convoy St / Convoy Ct	NBL	70	235	290	83	**No**	**No**	**No**
	SBL	90	175	158	79	**No**	**No**	Yes
Convoy St / Clairemont Mesa Blvd	NBL	250	91	224	155	Yes	Yes	Yes
	SBL	275	63	138	111	Yes	Yes	Yes

Source: Wilson & Company, Inc.; April 2006

Freeway Segments

Table 3.6 shows that the segment of SR-52 to the east of Convoy Street currently operates at an unacceptable level. The freeway segment LOS analysis was conducted using a capacity threshold of 2,400 passenger-cars per hour per lane, a peak-hour factor of 0.92, and a 50/50 directional split.

TABLE 3.6
EXISTING FREEWAY SEGMENT LOS

Freeway	Segment	ADT	Peak Hour Volume	Lanes Per Direction	% HV	Volume (pc/h/ln)	V/C	LOS
SR-52	West of Convoy Street	106,000	9,300	3	3.1%	1,739	0.72	C
	East of Convoy Street	125,000	11,900	3	3.1%	2,225	0.93	E

Source: Wilson & Company, Inc., April 2006

Notes:
- %HV = Percentage of heavy vehicles in traffic
- V/C = Volume to capacity ratio

Assumptions:
- Per lane capacity = 2,400 passenger-car per hour per lane (pc/h/ln) based upon HCM 2000, Exhibit 23-2.
- PHF = 0.92, and
- Directional Split = 50/50.

4.0 Project Description

4.1 Project Description

The proposed project is to increase the allowable height of the landfill by 20 feet, thereby providing an estimated four additional years of service life. Service life can only be estimated. It varies considerably depending on the engineering techniques used, especially techniques that influence compaction rates. For example, "surcharging" of excavated material can compact refuse, providing additional capacity in the landfill area below the surcharge. Alternative daily cover can be used instead of dirt. Dirt used as cover, while it protects the environment, may consume large amounts of landfill capacity. Therefore, service life can only be estimated, especially as techniques to improve service life are refined.

To ensure a "worst case" analysis of the traffic impacts associated with prolonging the life of the landfill, it is assumed that the 20-foot height increase will provide an additional FIVE years of landfill capacity, rather than the more conservative four year estimate that has been used to project remaining service life for disposal capacity planning purposes. In the meantime, other efforts to increase the service life are being pursued on a parallel course, such as investigations of alternative daily cover, as are additional solid waste management projects, especially projects that may divert materials from disposal.

Although, for traffic study purposes, assuming approval of the proposed project, the landfill is projected to close by the year 2017, a proposed transfer station or materials recovery facility is expected to be developed and to process the same amount of trash as the landfill's maximum capacity of 8,000 tons per day and 2,000 vehicles per day. For the purpose of this study, the same volume of truck traffic is assumed to continue beyond the landfill closure, albeit for a different solid waste management purpose. The year 2030 was chosen to represent a reasonable foreseeable future condition. The San Diego Association of Governments provides forecasts and model documentation for 2030, and publishes a Regional Transportation Planning document.

The project site access is provided through the northern leg of the Convoy Street/SR-52 westbound ramp intersection. Within the project site, the Greenery and the landfill share the same entrance at the scale house. The driveway to the Greenery then exists from the landfill's internal road. The entrances to the recycling center/household hazardous waste facility and the Metropolitan biosolids center are provided by separate driveways that branch off before the traffic reaches the scalehouse.

In 2001, the permit for the landfill was changed to increase daily traffic from 1,400 trips to 2,000 trips per day. This action was subject to review under the California Environmental Quality Act (CEQA) and a traffic impact study was completed, which found no significant impacts. The composting operation ("Greenery") is currently permitted for 300 incoming trips and 50 outgoing trips per day. The landfill and Greenery currently average approximately 1,800 vehicles per day.

Trips per day limits are enforced by the Local Enforcement Agency (LEA), which ensures that solid waste facilities are operated in a way that is consistent with State Minimum Standards, and protects public health and safety and the environment. The LEA regulates based on Solid Waste Facility Permit conditions. The SWFP limits the number of vehicles that cross the scales, but does NOT include all trips to the site such as employee trips and vehicles going to the recycling center/household hazardous waste facility and biosolids center.

The proposed project will require a new Solid Waste facility Permit; however, this permit will have the same daily trip limitations as the existing permit. Consistent with the permit recently issued for a similar facility regulated by the LEA, the Sycamore Landfill, annual waste limits will not be included in the new limit.

The proposed project will have no effect on the other operations, such as the household hazardous waste and biosolids center, located within the City's leasehold, and will not alter traffic to those facilities in any way.

5.0 Cumulative Traffic

5.1 Cumulative Traffic

5.1.1 Cumulative Projects

Since the 1950's, when the City first began operating a landfill at this site, much development has occurred in the Kearny Mesa area. In fact, highway 52, from which the current landfill access is derived, was constructed by Caltrans over portions of the South Miramar Landfill. Roads, freeways, and commercial development have occurred in the area, adding virtually all of the existing traffic, most of which began many years after operation of the landfill.

Development in Kearny Mesa has slowed in recent years, but one significant foreseeable project is the Copley Pointe Project. This project includes an office building of approximately 500,000 square feet (SF) and a rental storage facility of 122,687 SF, originally proposed as a Home Depot. The Copley Pointe project is located off of Copley Drive near the I-805/SR-52 interchange. The City Department of Development Services approved the use of the preliminary project information for the purpose of trip generation and distribution of this cumulative project in this study.

The City of San Diego is developing plans for transfer stations and/or a materials recovery facility and/or a construction and demolition debris recycling facility, and/or an expanded green waste processing operations. The City has issued a contract for a consultant to assist with developing a long range waste management strategy. However, at this time, no facility is being proposed that would increase the existing trips or tons per day entering the leasehold area.

The existing permitted 2,000 trips per day of the landfill operation does not affect the cumulative project analysis in anyway because there is no change in conditions.

5.1.2 Cumulative Trip Generation

Table 5.1 shows that the Copley Pointe project would generate a total of 8,245 daily trips, 1,055 trips in the AM peak hour and 1,142 trips in the PM peak hour, most of which result from the proposed office land use. **Figure 5-1** displays the existing plus Copley, cumulative, traffic.

TABLE 5.1
COPLEY POINTE TRIPS

Land Use	Units		Trip Rate		ADT	AM					PM				
						%	Trips	In : Out	In	Out	%	Trips	In : Out	In	Out
Office	500,000	SF	16 / 1,000	SF	8,000	13	1,040	9 : 1	936	104	14	1,120	2 : 8	224	896
Rental Storage	122,687	SF	2 / 1,000	SF	245	6	15	5 : 5	7	7	9	22	5 : 5	11	11
Total	622,687	SF			8,245		1,055		943	111		1,142		235	907

Source: Wilson & Company, Inc., May 2006

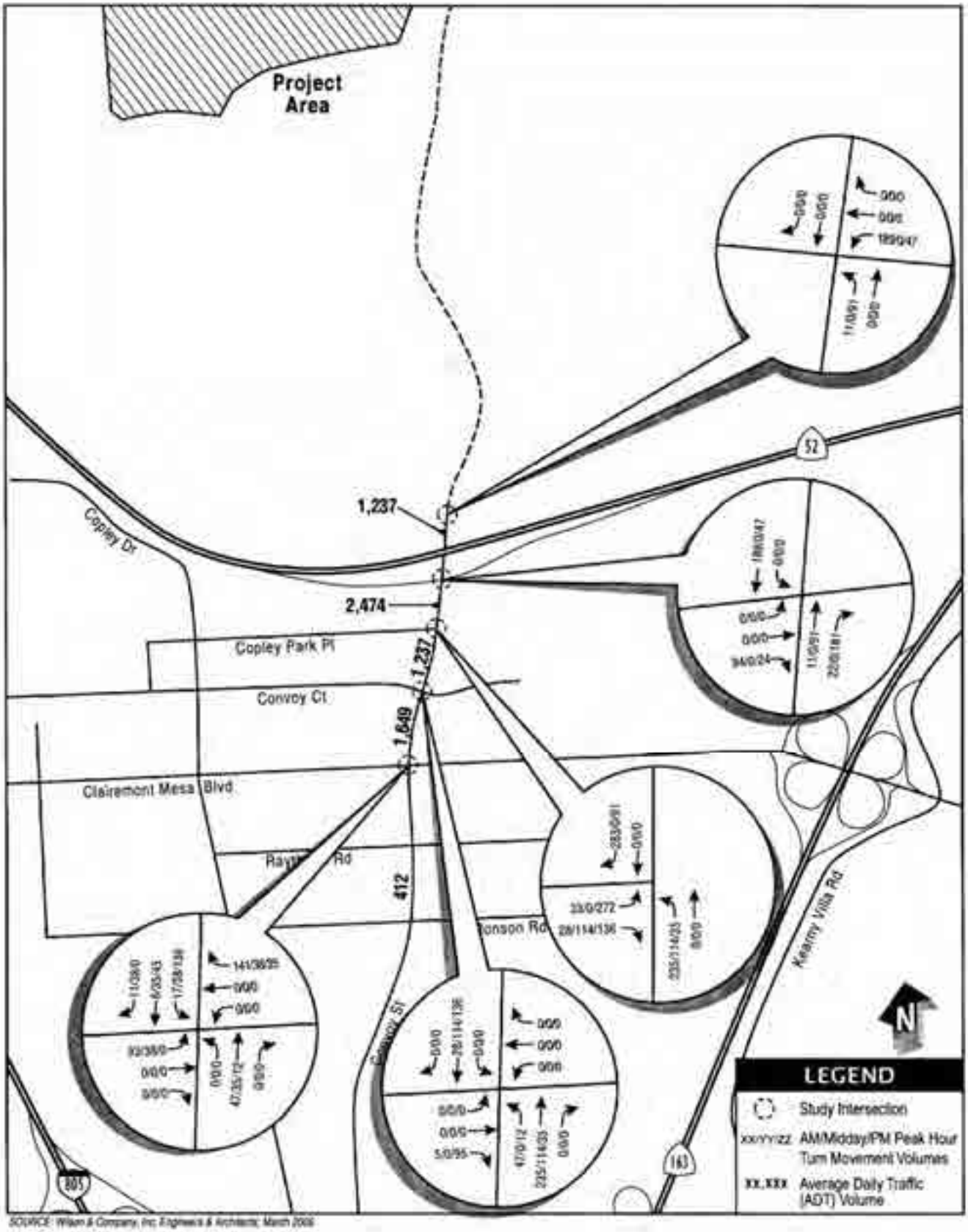
Assumptions:

- Midday trip generation equals 20% of the highest peak hour generation to account for lunch traffic.
- Directional Split = 50% / 50% split during the midday peak to account for lunch traffic.

5.2 Traffic Conditions

Figure 5-2 displays the roadway ADT and intersection peak hour traffic volumes including the Copley project. As shown in **Table 5.2**, three roadway segments along Convoy Street are projected to operate at unacceptable LOS E or F, specifically:

- between the eastbound and westbound SR-52 ramps (LOS F);
- between the eastbound SR-52 ramps and Copley Park Place (LOS F); and
- between Clairemont Mesa Boulevard and Raytheon Road (LOS E).



SOURCE: Wilson & Company, Inc. Engineers & Architects; March 2008

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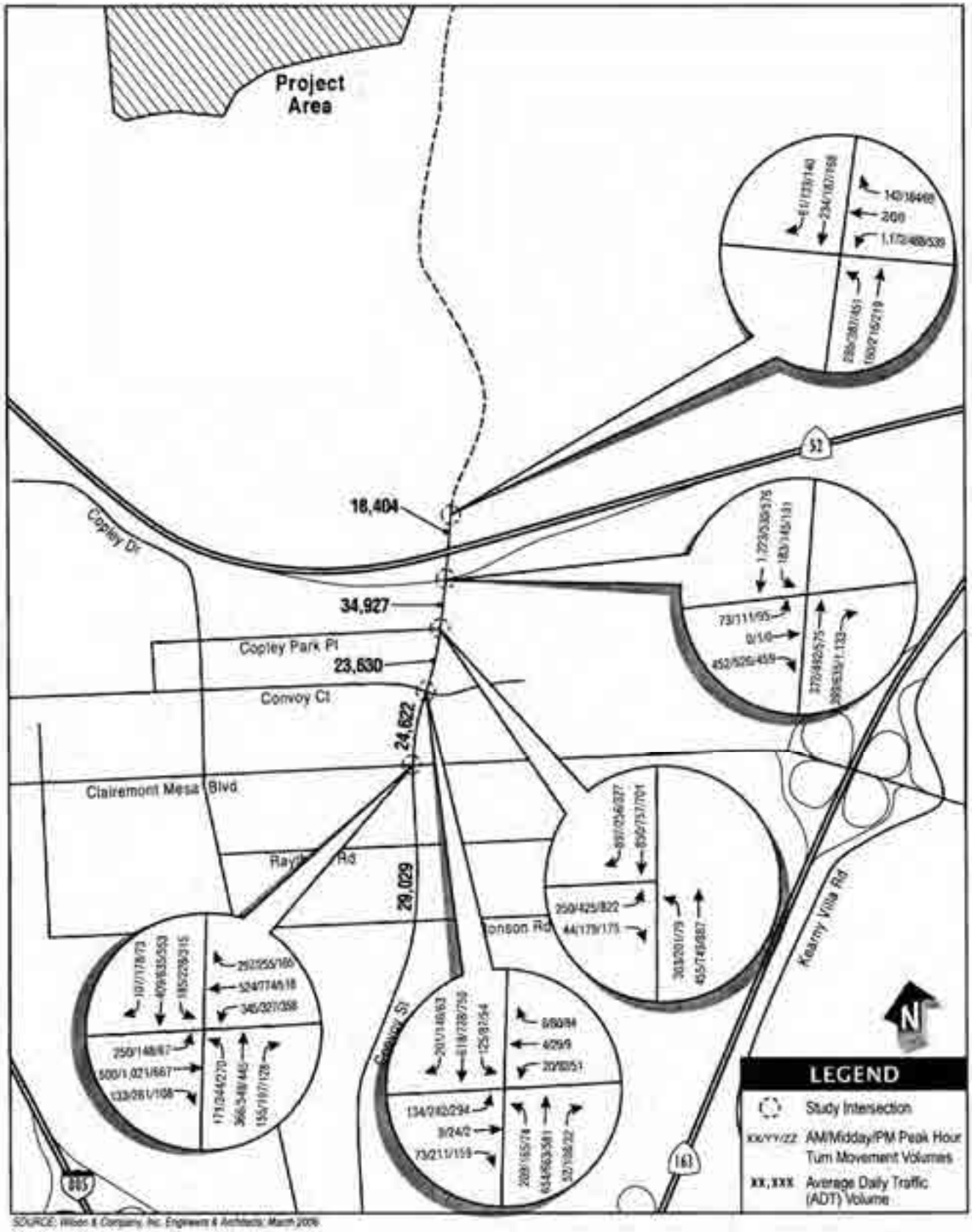
Mixed Waste
Processing Facility Development

Figure 5-1

Cumulative Project Trip Assignment



SOURCE: Wilson & Company, Inc. Engineers & Architects; March 2006

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Figure 5-2
Traffic Volumes
Near-Term Base Conditions

TABLE 5.2
CUMULATIVE ROADWAY SEGMENT LOS

Street	Segment	Cross-Section	Capacity	Volume	V/C	LOS
Convoy Street	Between SR-52 WB Ramps and SR-52 EB Ramps	3-Lane	15,000	18,404	1.227	**F**
	Between SR-52 EB Ramps and Copley Park Pl	4-Lane	30,000	34,927	1.164	**F**
	Between Copley Park Pl and Convoy Ct			23,630	0.788	D
	Between Convoy Ct and Clairemont Mesa Blvd			24,622	0.821	D
	Between Clairemont Mesa Blvd and Raytheon Rd			29,029	0.968	**E**

Source: Wilson & Company, Inc., May 2006

Intersections

As shown in **Table 5.3**, the ramp intersections of eastbound and westbound SR-52 at Convoy Street are projected to operate at an unacceptable LOS E or F in the AM peak period when Copley project traffic is considered. The intersection of the westbound SR-52 ramps at Convoy Street is also projected to fail.

TABLE 5.3
PEAK HOUR INTERSECTION LOS RESULTS
CUMULATIVE CONDITIONS

Intersection	AM		MD		PM	
	Delay (sec.)	LOS	Delay (sec.)	LOS	Delay (sec.)	LOS
Convoy St / SR-52 WB ramps	74.4	**E**	40.8	D	39.8	D
Convoy St / SR-52 EB ramps	88.0	**F**	32.2	C	67.0	**E**
Convoy St / Copley Park Pl	15.2	B	18.2	B	22.1	C
Convoy St / Convoy Ct	33.0	C	41.5	D	32.1	C
Convoy St / Clairemont Mesa Blvd	31.9	C	48.3	D	41.2	D

Source: Wilson & Company, Inc., May 2006

Ramp Capacity

As shown in **Table 5.4**, with the addition of Copley project traffic, the SR-52 westbound ramp/Convoy Street intersection would operate "At Capacity" with a potential for unstable flow and considerable delays during the AM and PM peak hours.; and the SR-52 eastbound ramp/Convoy Street intersection would operate at "Under Capacity" during the AM and midday peak hours and "At Capacity" during the PM peak hour. These results are consistent with the HCM intersection analysis results presented in Table 5.3.

TABLE 5.4
RAMP INTERSECTION - CUMULATIVE CONDITIONS

Intersection	Peak Hour	ILV / Hour	Description
Westbound SR-52 Ramps / Convoy Street	AM	1,327	*1200-1500: (At Capacity)*
	MD	1,167	*<1200: (Under Capacity)*
	PM	1,248	*1200-1500: (At Capacity)*
Eastbound SR-52 Ramps / Convoy Street	AM	11,55	*<1200: (Under Capacity)*
	MD	973	*<1200: (Under Capacity)*
	PM	1,478	*1200-1500: (At Capacity)*

Source: Wilson & Company, Inc., May 2006

Traffic Queuing

As shown in **Table 5.5**, potential queuing issues would exist under this scenario at the following locations:

- Convoy Street / SR-52 eastbound ramps: The northbound right-turn queues during the PM peak hour.
- Convoy Street / Copley Park Place: The northbound left-turn queues during the AM and MD peak hours.
- Convoy Street / Convoy Court: The northbound left-turn lane during the AM, MD and PM peaks; and the southbound left-turn queues during the AM and MD peak.

TABLE 5.5
QUEUING ANALYSIS- CUMULATIVE CONDITIONS

Intersection	Movement	Available Storage (feet)	Queue Length (feet)			Sufficient Storage?		
			AM	MD	PM	AM	MD	PM
Convoy St / SR-52 EB ramps	NBR	410	75	79	697	Yes	Yes	**No**
Convoy St / Copley Park Pl	NBL	85	93	103	37	**No**	**No**	Yes
Convoy St / Convoy Ct	NBL	70	319	290	95	**No**	**No**	**No**
	SBL	90	177	158	79	**No**	**No**	Yes
Convoy St / Clairemont Mesa Blvd	NBL	250	91	224	113	Yes	Yes	Yes
	SBL	275	103	162	134	Yes	Yes	Yes

Source: Wilson & Company, Inc., May 2006

Freeway Segments

As shown in **Table 5.6**, east of Convoy Street, SR-52 would operate at an unacceptable level when Copley traffic is included.

TABLE 5.6
FREEWAY SEGMENT LOS - CUMULATIVE CONDITIONS

Freeway	Segment	ADT	Peak Hour Volume	Lanes Per Direction	% HV	Volume (pc/h/ln)	V/C	LOS
SR-52	West of Convoy Street	106,825	9,401	3	3.1%	1,757	0.732	C
	East of Convoy Street	126,649	12,032	3	3.1%	2,249	0.937	**E**

Source: Wilson & Company, Inc., May 2006

Notes:
- %HV = Percentage of heavy vehicles in traffic
- V/C = Volume to capacity ratio

Assumptions:
- Per lane capacity = 2,400 passenger-car per hour per lane (pc/h/ln) based upon HCM 2000, Exhibit 23-2.
- PHF = 0.92, and
- Directional Split = 50/50.

6.0 Traffic Conditions in 2030 (Existing Roadway Network)

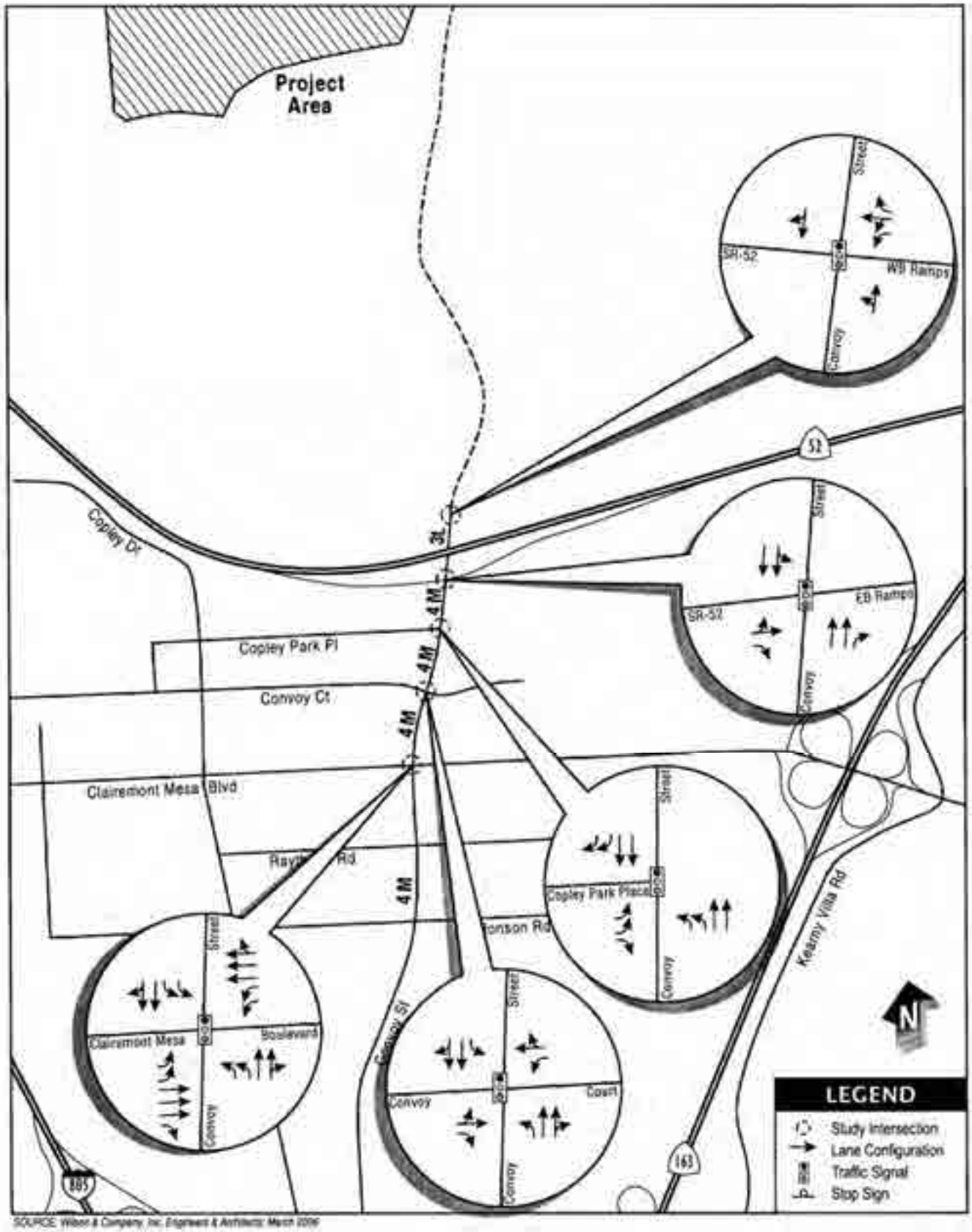
The San Diego Association of Governments provides forecasts and model documentation, in additional to Regional Transportation Planning for the year 2030. Therefore, the year 2030 was selected for a future traffic scenario. For this scenario, despite the fact that the landfill will have reached capacity, it is assumed that a Materials Recovery Facility or Transfer Station will be developed at the same capacity.

6.1 Roadway Network

The first scenario considered does not take into consideration the ultimate future roadway network called for in the Kearney Mesa Community Plan or the more recent Public Facilities Financing Plan for the community.

6.2 Traffic Conditions

Turning movement volumes projected for 2030 are shown in **Figure 6-1**, and road and traffic conditions for that year are shown in **Figure 6-2**. Daily traffic volumes were derived from the SANDAG Series 10 forecast. The future peak hour intersection volumes were derived using the *Turns W32* software by *Dowling Associates, Inc*. The proposed project would not change the permitted traffic entering the facility, and therefore would have no impact on Year 2030 projections.



SOURCE: Wilson & Company, Inc. Engineers & Architects; March 2006

Figure 6-1
Roadway & Intersection Lane Configurations
Cumulative Year 2030 Conditions
(Existing Network)

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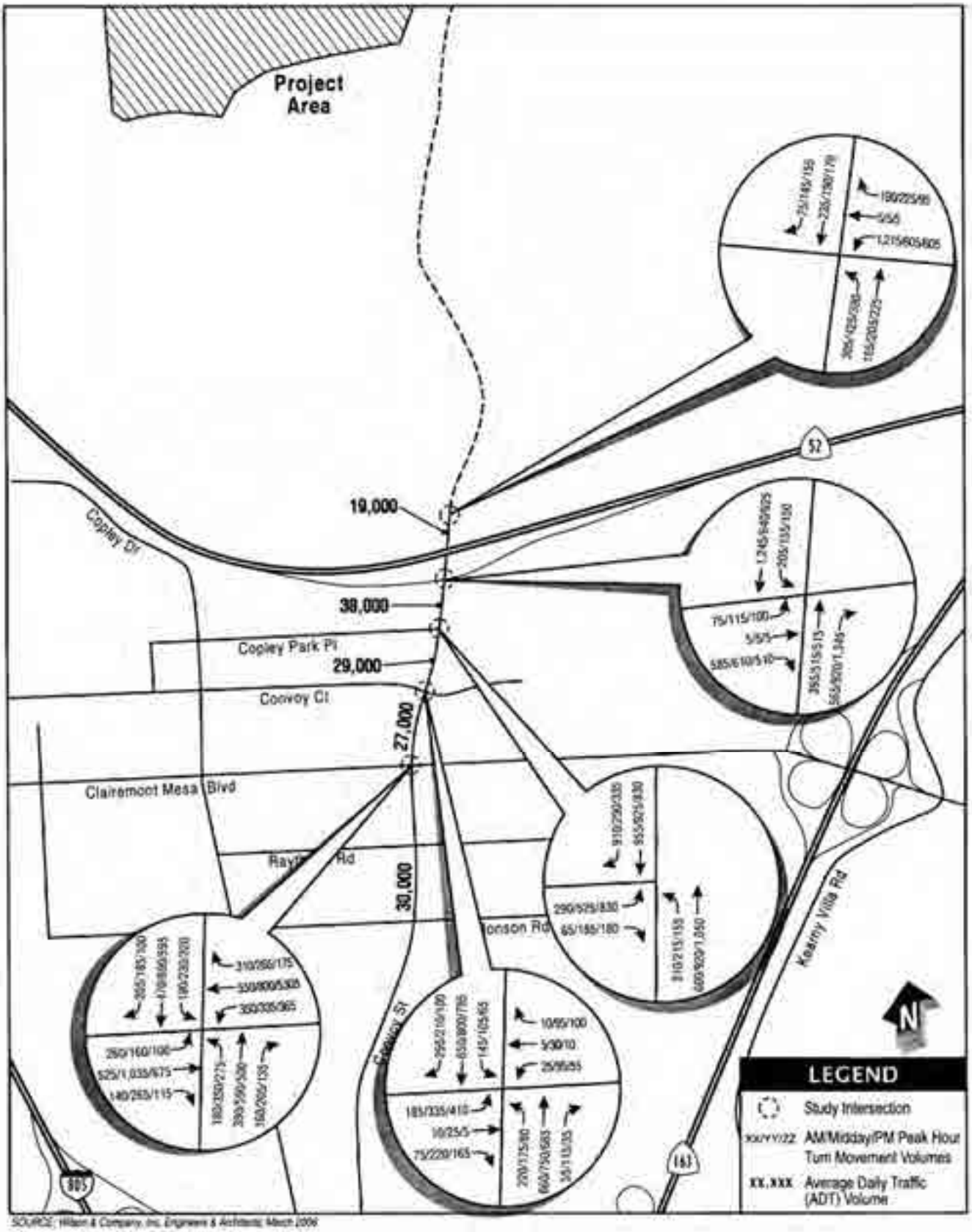

SOURCE: Wilson & Company, Inc. Engineers & Architects, March 2006

Figure 6-2
Traffic Volumes
Cumulative Year 2030
Base Conditions

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Processing Facility Development

Roadway Segments

As shown in **Table 6.1**, all of the study area roadway segments along Convoy Street are projected to operate at unacceptable LOS E or F under the Year 2030 conditions, unless the roadways are improved.

TABLE 6.1
ROADWAY SEGMENT LOS
YEAR 2030 (EXISTING ROADWAY NETWORK)

Street	Segment	X-Section	Capacity	Volume	V/C	LOS
Convoy Street	Between SR-52 WB and EB Ramps	3-Lane	15,000	19,000	1.267	**F**
	Between SR-52 EB Ramps & Copley Park Pl	4-Lane	30,000	38,000	1.267	**F**
	Between Copley Park Pl & Convoy Ct			29,000	0.967	**E**
	Between Convoy Ct & Clairemont Mesa Blvd			27,000	0.900	**E**
	Between Clairemont Mesa Bl. & Raytheon Rd			30,000	1.000	**F**

Source: Wilson & Company, Inc., May 2006

Intersections

Table 6.2 shows that in 2030 most of the study area intersections are projected to operate at LOS D or better, with the following exceptions: 1) Convoy Street/SR-52 WB ramps (which will operate at LOS E during morning peak hours); and 2) Convoy Street/SR-52 EB ramps (which will operate at LOS F during both morning and evening peak periods).

TABLE 6.2
PEAK HOUR INTERSECTION LOS
YEAR 2030 (EXISTING ROADWAY NETWORK)

Intersection	AM		MD		PM	
	Delay (sec.)	LOS	Delay (sec.)	LOS	Delay (sec.)	LOS
Convoy St / SR-52 WB ramps	73.8	**E**	45.8	D	39.4	D
Convoy St / SR-52 EB ramps	96.6	**F**	38.3	D	103.4	**F**
Convoy St / Copley Park Pl	9.7	A	14.2	B	18.4	B
Convoy St / Convoy Ct	31.9	C	33.1	C	26.8	C
Convoy St / Clairemont Mesa Blvd	31.6	C	35.5	D	31.8	C

Source: Wilson & Company, Inc., May 2006

Ramp Intersections

As shown in **Table 6.3**, in 2030, without improvements, problems would occur on the eastbound SR-52 ramps. Without improvements, the intersection of the westbound SR-52 ramps / Convoy Street would operate "At Capacity" with potential for unstable flows and associated delays during the AM, MD and PM peak hours. Without improvements, the intersection of the eastbound SR-52 ramps / Convoy Street would operate "Over Capacity" with stop-and-go operation and severe delay and heavy congestion during the PM peak hour, and "At Capacity" with potential for unstable flows and associated delays during the AM and MD peak.

TABLE 6.3
RAMP INTERSECTIONS
YEAR 2030 (EXISTING ROADWAY NETWORK)

Intersection	Peak Hour	ILV / Hour	Description
Westbound SR-52 / Convoy Street	AM	1,387	*1200-1500: (At Capacity)*
	MD	1,271	*1200-1500: (At Capacity)*
	PM	1,240	*1200-1500: (At Capacity)*
Eastbound SR-52 / Convoy Street	AM	1,309	*1200-1500: (At Capacity)*
	MD	1,318	*1200-1500: (At Capacity)*
	PM	1,733	***>1500: (Over Capacity)***

Source: Wilson & Company, Inc., May 2006

Traffic Queuing

Table 6.4 shows that in 2030, if there are no road improvements, there are projected to be potential queuing problems at the following intersections:

- Convoy Street / SR-52 eastbound ramps: The northbound right-turn queues during the MD and PM peak hours.
- Convoy Street / Copley Park Place: The northbound left-turn queues during the AM peak hour.
- Convoy Street / Convoy Court: The northbound left-turn lane queues during the AM, MD and PM peak hours; and the southbound left-turn queues during the AM and MD peak hours.

TABLE 6.4 QUEUING
YEAR 2030 CONDITIONS (EXISTING ROADWAY NETWORK)

Intersection	Movement (see Notes)	Available Storage (feet)	Queue Length (feet)			Sufficient Storage?		
			AM	MD	PM	AM	MD	PM
Convoy St / SR-52 EB ramps	NBR	410	130	606	1411	Yes	**No**	**No**
Convoy St / Copley Park Pl	NBL	85	95	76	59	**No**	Yes	Yes
Convoy St / Convoy Ct	NBL	70	350	256	133	**No**	**No**	**No**
	SBL	90	228	178	88	**No**	**No**	Yes
Convoy St / Clairemont Mesa Blvd	NBL	250	95	187	137	Yes	Yes	Yes
	SBL	275	67	83	179	Yes	Yes	Yes

Source: Wilson & Company, Inc., May 2006

Notes: NB = Northbound, SB = Southbound, R = Right , L = Left

Freeway Segments

The SR-52 freeway is approved for widening in the vicinity of the project to include an additional High-Occupancy Vehicle (HOV) lane and a general purpose (mixed-flow) lane in each direction of SR-52. Funding for the SR-52 widening project is programmed through the recently voter-approved TransNet extension with an estimated completion date by 2012.

TABLE 6.5
FREEWAY SEGMENT LOS
YEAR 2030 (EXISTING ROADWAY NETWORK)

Freeway	Segment	ADT	Peak Hour Volume	Lanes Per Direction	% HV	Volume (pc/h/ln)	V/C	LOS
SR-52	West of Convoy Street	161,000	14,168	4	3.1%	1,987	0.828	D
	East of Convoy Street	169,000	16,055	4	3.1%	2,251	0.938	**E**

Source: Wilson & Company, Inc., May 2006

Notes:
- %HV = Percentage of heavy vehicles in traffic
- V/C = Volume to capacity ratio
- Bold letter indicates unacceptable LOS E or F.

Assumptions:
- Per lane capacity = 2,400 passenger-car per hour per lane (pc/h/ln) based upon HCM 2000, Exhibit 23-2.
- PHF = 0.92, and
- Directional Split = 50/50.

Although the planned SR-52 freeway widening includes a general-purpose lane in addition to a high-occupancy vehicle (HOV) lane in each direction of travel, the HCM has not incorporated the analysis of HOV lanes in its methodology as of the latest edition (HCM 2000). Therefore, the analysis only accounts for the additional general-purpose lane in each direction. **Table 6.5** displays the results of the LOS analysis for the SR-52 segments to the east and west of Convoy Street based on a 4-lane directional cross-section. SR-52, east of Convoy Street is projected to operate at an unacceptable LOS E in 2030.

7.0 Traffic Conditions in 2030 (Community Plan Roadway Network)

7.1 Roadway Network

Figure 7-1 displays the projected roadway and intersections for 2030 conditions given the roadway network as specified in the Kearney Mesa Community Plan. This analysis assumes that Convoy Street is improved to a 4-lane Major Arterial, including the bridge over SR-52. The improvement proposes two lanes of travel in each direction of Convoy Street, with a left-turn lane, and sidewalks on each side of the bridge.

The 2030 peak hour intersection turn movements were developed by comparing existing and forecasted DTs along the intersection approaches and applying the respective growth factors. Year 2030 traffic volumes were obtained from the SANDAG Series 10 model.

7.2 Traffic Conditions

Roadway Segment

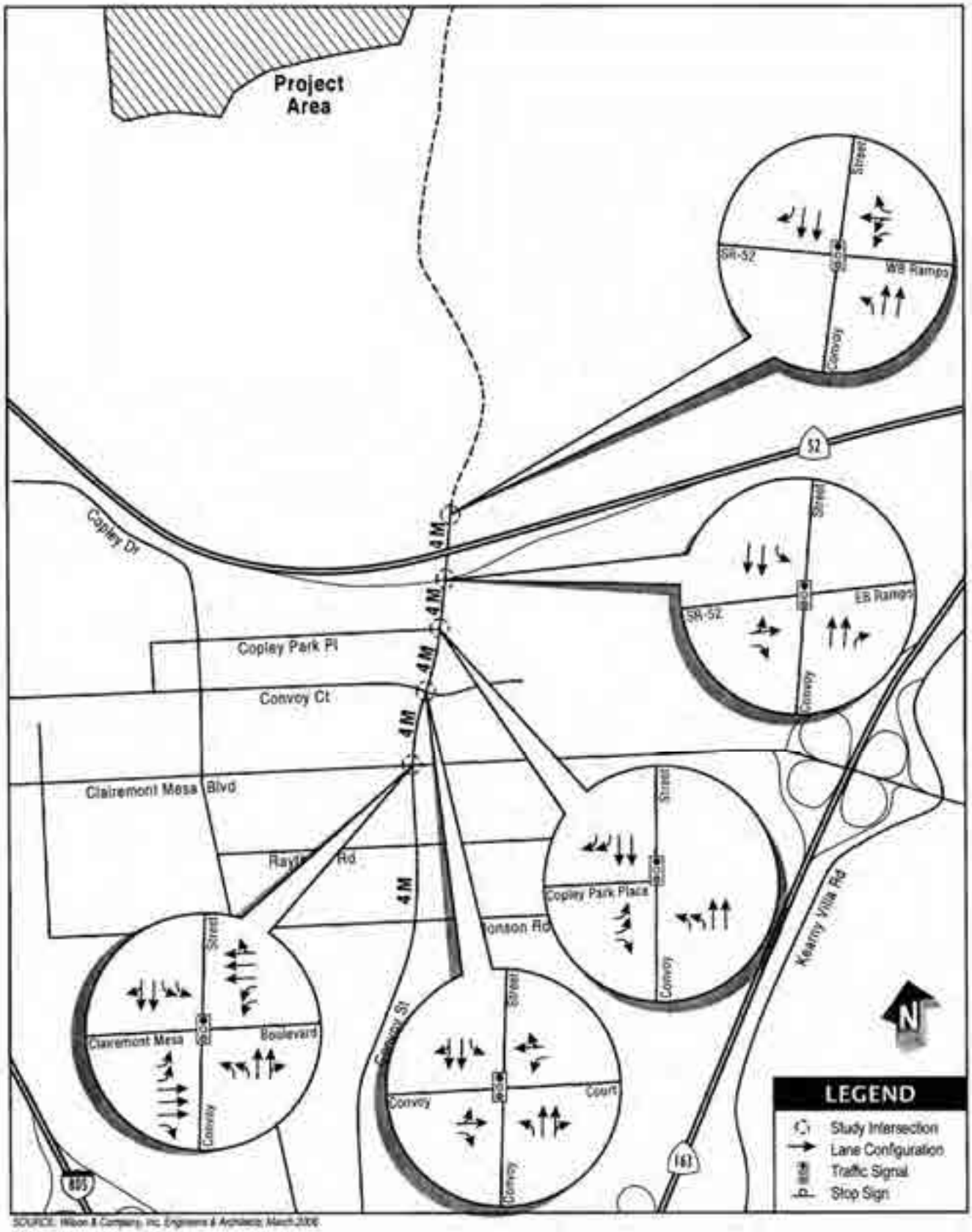
Table 7.1 shows that in 2030, provided planned improvements are made, only one segment of Convoy Street, between the SR-52 EB Ramps and Copley Park Place, is expected to have an unacceptable level of service.

Intersections

As shown in **Table 7.2**, only one intersection, Convoy Street / SR-52 EB ramps is projected to have any periods of unacceptable service in 2030, provided planned roadway improvements occur.

Ramps

As shown in **Table 7.3**, the westbound SR-52 ramps / Convoy Street intersection would operate "Under Capacity" with stable flow and slight delay during the AM, MD and PM peak hours; and the eastbound SR-52 ramps / Convoy Street intersection would be "At Capacity" conditions with potential for unstable flows and associated delays during the AM and PM peak hours and "Under Capacity" during the MD peak hour. Neither of the ramp intersections is projected to operate "Over Capacity" assuming planned improvements are made.



SOURCE: Wilson & Company, Inc. Engineers & Architects, March 2006

Figure 7-1
Roadway & Intersection Lane Configurations
Cumulative Year 2030 Base Conditions
(Community Plan Network)

WILSON & COMPANY
Miramar Greenery Expansion
Mixed Waste
Processing Facility Development

TABLE 7.1
ROADWAY SEGMENT LOS
2030 CONDITIONS (COMMUNITY PLAN ROADWAY NETWORK)

Street	Segment	Classification	Capacity	Volume	V/C	LOS
Convoy Street	Between SR-52 WB & EB Ramps	4-Lane Major	40,000	19,000	0.475	B
	Between SR-52 EB Ramps & Copley Park Pl			38,000	0.950	**E**
	Between Copley Park Pl & Convoy Ct			29,000	0.725	C
	Between Convoy Ct & Clairemont Mesa Blvd			27,000	0.675	C
	Between Clairemont Mesa Bl & Raytheon Rd			30,000	0.750	D

Source: Wilson & Company, Inc., May 2006

TABLE 7.2
INTERSECTION LOS
CONDITIONS IN 2030 (COMMUNITY PLAN ROADWAY NETWORK)

Intersection	AM		MD		PM	
	Delay (sec.)	LOS	Delay (sec.)	LOS	Delay (sec.)	LOS
Convoy St / SR-52 WB ramps	39.0	D	33.2	C	32.5	C
Convoy St / SR-52 EB ramps	25.8	C	40.4	D	75.7	**E**
Convoy St / Copley Park Pl	10.4	B	13.4	B	17.4	B
Convoy St / Convoy Ct	28.1	C	31.8	C	26.9	C
Convoy St / Clairemont Mesa Blvd	27.8	C	36.0	D	28.4	C

Source: Wilson & Company, Inc., May 2006

TABLE 7.3- RAMPS
CONDITIONS IN 2030 (COMMUNITY PLAN ROADWAY NETWORK)

Intersection	Peak Hour	ILV / Hour	Description
Westbound SR-52 Ramps / Convoy Street	AM	1,070	*<1200: (Under Capacity)*
	MD	897	*<1200: (Under Capacity)*
	PM	855	*<1200: (Under Capacity)*
Eastbound SR-52 Ramps / Convoy Street	AM	1,225	*1200-1500: (At Capacity)*
	MD	1,075	*<1200: (Under Capacity)*
	PM	1,495	*1200-1500: (At Capacity)*

Source: Wilson & Company, Inc., May 2006

Traffic Queuing

As shown **Table 7.4**, potential queuing issues would exist in 2030 at the following locations, even with the proposed traffic improvements:

- Convoy Street / SR-52 westbound ramps: The northbound left-turn queues during the AM and PM peak hours.
- Convoy Street / SR-52 eastbound ramps: The northbound right-turn queues during the PM peak hour.
- Convoy Street / Copley Park Place: The northbound left-turn queues during the AM peak hour.
- Convoy Street / Convoy Court: The northbound and southbound left-turn lane queues during all peak hours.

TABLE 7.4- QUEUING
2030 CONDITIONS IN 2030 (COMMUNITY PLAN ROADWAY NETWORK)

Intersection	Movement	Available Storage (feet)	Queue Length (feet)			Sufficient Storage?		
			AM	MD	PM	AM	MD	PM
Convoy St / SR-52 WB ramps	NBL	190	302	112	318	**No**	Yes	**No**
Convoy St / SR-52 EB ramps	NBR	495	83	466	1291	Yes	Yes	**No**
	SBL	240	102	139	236	Yes	Yes	Yes
Convoy St / Copley Park Pl	NBL	85	126	79	62	**No**	Yes	Yes
Convoy St / Convoy Ct	NBL	70	327	255	131	**No**	**No**	**No**
	SBL	90	198	183	91	**No**	**No**	**No**
Convoy St / Clairemont Mesa Blvd	NBL	250	80	160	128	Yes	Yes	Yes
	SBL	275	100	78	96	Yes	Yes	Yes

Source: Wilson & Company, Inc., May 2006

Freeway Segments

As shown in **Table 7.5**, in 2030, the SR-52 freeway segment east of Convoy Street is projected to operate at an unacceptable LOS E, even with the proposed traffic improvements.

TABLE 7.5
FREEWAY LOS
2030 CONDITIONS IN 2030 (COMMUNITY PLAN ROADWAY NETWORK)

Freeway	Segment	ADT	Peak Hour Volume	Lanes Per Direction	% HV	Volume (pc/h/ln)	V/C	LOS
SR-52	West of Convoy Street	161,000	14,168	4	3.1%	1,987	0.83	D
	East of Convoy Street	169,000	16,055	4	3.1%	2,251	0.94	**E**

Source: Wilson & Company, Inc., May 2006

Notes:
- %HV = Percentage of heavy vehicles in traffic
- V/C = Volume to capacity ratio

Assumptions:
- Per lane capacity = 2,400 passenger-car per hour per lane (pc/h/ln) based upon HCM 2000, Exhibit 23-2.
- PHF = 0.92, and
- Directional Split = 50/50.

8.0 Findings and Recommendations

8.1 Summary of Roadway and Intersection Analyses

Roadway Segments

Table 8.1 displays roadway segment LOS results for each of the analyzed scenarios. The proposed project would not alter the existing, cumulative, or future LOS, because no change to existing conditions is proposed. Currently unacceptable conditions exist. However, these conditions are not affected by the foreseen project development in the area. By 2030, with projected growth, conditions will deteriorate; yet, with planned road improvements, all road segments will operate at an acceptable level. This assumes that the facility will continue to generate trips; by 2030 it is expected that the site will no longer be operating as a landfill, but that it will have received a new permit for new operations, such as materials recovery, at the same input rate as the existing landfill.

Intersections

As shown in **Table 8.2,** currently all intersections are functioning at an acceptable LOS, however, with foreseen projects, the LOS is expected to drop to unacceptable levels. By the year 2030, if there are no improvements, the SR-52 west and east bound ramps will have unacceptable service. While planned improvements will improvement the situation, unacceptable service is anticipated for the east bound ramps. The proposed project will not contribute to any of these conditions because no change to existing ADT limits is proposed.

TABLE 8.1
CONVOY LOS

SEGMENT	EXISTING	CUMULA-TIVE	2030 WITH EXISTING ROAD NET WORK	2030 WITH PLANNED IMPROVEMENTS
Between SR-52 WB Ramps and SR-52 EB Ramps	F	F	F	B
Between SR-52 EB Ramps and Copley Park Pl	F	F	F	E
Between Copley Park Pl and Convoy Ct	D	D	E	C
Between Convoy Ct and Clairemont Mesa Blvd	D	D	E	C
Between Clairemont Mesa Blvd and Raytheon Rd	E	E	F	D

Source: Wilson & Company, Inc., May 2006

TABLE 8.2
INTERSECTION PEAK PERIOD LOS

INTERSECTION	EXISTING			CUMULATIVE			2030 – NO IMPROVEMENTS			2030-IMPROVED PER PLANS		
	AM	MD	PM	AM	MD	PM	AM	MD	PM	AM	MD	PM
Convoy St/SR52 WB ramp	D	D	C	E	D	D	E	D	D	D	C	C
Convoy St/SR52 EB ramp	D	C	D	F	C	E	F	D	F	C	D	E
Convoy St/Copley Park Pl	B	B	B	B	B	C	A	B	B	B	B	B
Convoy St/Convoy Ct	C	C	C	C	D	C	C	C	C	C	C	C
ConvoySt/Clairemont Mesa Blvd	C	D	D	C	D	D	C	D	C	C	D	C

Source: Wilson & Company, Inc., May 2006

Ramps

As shown in **Table 8.3**, with the addition of the Copley project traffic, westbound ramp conditions will become "Over Capacity," and will remain that way through 2030, although planned improvements would alleviate the problem.

TABLE 8.3
SUMMARY OF RAMP CAPACITY

Intersection	Existing Conditions	Cumulative Conditions	Year 2030 with no Improvements	Year 2030 w Planned Improvements
	AM MD PM	AM MD PM	AM MD PM	AM MD PM
ConvoySt/SR52 WB ramp	1,222 1,167 1,133	1,327 1,167 1,248	1,387 1,271 1,240	1,070 897 855
Convoy St/SR52 EB ramp	1,042 937 1,282	1,155 937 1,478	1,309 1,318 1,733	1,225 1,250 1,485

Source: Wilson & Company, Inc., May 2006

Recommendations

Both existing and future conditions appear to have at least some unacceptable traffic conditions. Planned road improvements will resolve some of the existing and projected unacceptable conditions on the roadways in the vicinity of the existing landfill. Because no changes to the existing permits for the landfill are proposed, no contributions to planned improvements are recommended.

FINAL VISUAL ASSESSMENT

VISUAL ASSESSMENT OF MIRAMAR
LANDFILL EXPANSION EIS/EIR

PREPARED FOR
CITY OF SAN DIEGO

URS PROJECT NO. 27654116.03000

MARCH, 2007

VISUAL ASSESSMENT OF MIRAMAR LANDFILL EXPANSION EIS/EIR

Prepared for

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9601 Ridgehaven Court, Suite 210
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URS Project No. 27654116.03000

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SECTION 1 EXISTING CONDITIONS

1.1 BACKGROUND

The City's landfill is located on the southwest portion of federal land within MCAS Miramar (Figure 1.1-1). The City operates the landfill under an easement granted from the federal government. The current grant of easement authorizes the City to use portions of the property for landfill activities, including operation and maintenance of landfill operations.

Refuse disposal operations began in 1959 in the South Miramar Landfill and ceased operations in 1973. South Miramar Landfill is located south of San Clemente Canyon and extends south of State Route 52. Disposal operations were conducted in the North Miramar Landfill from 1973 through 1983. West Miramar Landfill is located west of North Miramar Landfill. A utility corridor separates Phase I from Phase II of the West Miramar Landfill. Soils are stockpiled in the North Miramar Landfill area for use as daily and final cover for the West Miramar Landfill. The locations of the various areas of the landfill are shown in Figure 1.1-1. The City is currently operating in Phase II of the West Miramar Landfill. Disposal in the West Miramar Landfill began in 1983 and it is anticipated that the permitted airspace would be fully utilized by 2012. Phase II is permitted for a top deck elevation of +463 feet MSL.

1.2 CURRENT CONDITIONS

The Miramar Landfill General Development Plan (GDP) characterizes the MCAS property as follows: "Regionally, NAS [MCAS] Miramar provides one of the largest, most contiguous remaining land parcels in southern California that is interconnected to other large tracts of land by wildlife corridors." The MCAS Miramar Integrated Natural Resources Management Plan, May 2000 describes the topography as follows: "Elevations on MCAS Miramar range from just over 1,178 feet in the east to 240 feet in the west. The gently sloping, eroded plateaus or mesas where the flight line and air operations are located are cut by southwesterly draining canyons. These give rise to a series of marine wave-cut terraces, which in turn grade to the steep and dissected hills of Sycamore Canyon. The hummocky topography that includes impervious subsurface layer supports vernal pools in the western and central areas of MCAS Miramar. It consists of alternating well-drained to moderately well drained mounds and poorly drained swales."

The visual patterns of MCAS Miramar can be grouped into three main categories: steep rolling undeveloped mesas and canyons, airfield/developed areas, and landfill-related. Surrounding areas to the north, west, south and southeast of the Station are characterized by dense development. The densely developed communities surrounding the Station include: Mira Mesa and Scripps Ranch to the north, University City to the west, Clairemont Mesa to the southwest, and Kearny Mesa and Tierrasanta to the south (see Figure 1.1-1). Major freeways also intersect and bound the Station. Interstate 805 bounds the western edge, State Route 52 traverses the southern edge and Interstate 15 intersects the station toward the center. A small portion of State Route 163 also crosses the southern portion of the Station merging into Interstate 15. There are no major water bodies or rivers within the area; however, large ephemeral drainages flow through the Station including, but not limited to, Rose Canyon, San Clemente Canyon, Sycamore Canyon, Oak Canyon, Spring Canyon and Quail Canyon.

The October 2003 wildfires burned most of the undeveloped portions of MCAS Miramar. The fires charred thousands of acres of vegetated land. Since then, vegetation has returned to the area, although the sage-scrub and chaparral communities are now characterized by lower-lying vegetation that is otherwise similar in appearance to the pre-burn vegetation.

SECTION 2 REGULATORY ENVIRONMENT

2.1 LOCAL

The regulatory documents referenced for this report include the following:

- City of San Diego, Significance Determination Thresholds/CEQA, February 2004
- City of San Diego, Progress Guide and General Plan, June 1989
- County of San Diego, Scenic Highway Element/San Diego County General Plan, December 1986

Other resource documents reviewed included:

- City of San Diego/Miramar Landfill General Development Plan EIS/EIR, July 1994
- General Development Plan, Miramar Landfill, September 1994
- West Miramar Sanitary Landfill EIR, October 1980

2.1.1 City of San Diego Standards

The City of San Diego's Significance Determination Thresholds and Initial Study Checklist provide guidance in determining potential significant impacts to Visual Quality and Neighborhood Character.

CHECKLIST QUESTIONS

Would the proposal result in:

1. A substantial obstruction of any vista or scenic view from a public viewing area as identified in the community plan?

2. The creation of a negative aesthetic site or project?

3. Project bulk, scale, materials, or style that would be incompatible with surrounding development?

4. Substantial alteration to the existing or planned surface relief features?

5. The loss of any distinctive or landmark tree(s), or stand of mature trees as identified in the community plan?

6. Substantial light or glare that would adversely affect daytime or nighttime view in the area?

SIGNIFICANCE THRESHOLDS

There is a potential for significant impacts associated with:

1. Views

Projects that would block public views from designated open space areas, roads, or parks or to significant visual landmarks or scenic vistas (Pacific Ocean, downtown skyline, mountains, canyons, waterways). To exceed this significance threshold, one or more of the following conditions must apply:

a. The project would substantially block a view through a designated public view corridor as shown in the adopted community plan, the General Plan, or the Local Coastal Program.

   Minor view blockages would not be considered to meet this condition. To determine whether this condition has been met, consider the level of effort required by the viewer to retain the view.

b. The project would cause substantial view blockage of a public resource (such as the ocean) that is considered significant by the applicable community plan. Unless the project is moderate to large in scale, condition "c" would typically have to be met for view blockage to be considered substantial.

c. The project exceeds the allowed height or bulk regulations, and this excess causes unnecessary view blockage.

d. The project would have a cumulative effect by opening up a new area for development, which will ultimately cause "extensive" view blockage. (Cumulative effects are usually considered significant for a community plan analysis, but not necessarily for individual projects. Project level mitigation should be identified at the community plan level). View blockage would be considered "extensive" when the overall scenic quality of a resource is changed; for example, from an essentially natural view to a largely man-made appearance.

2. Neighborhood Character/Architecture

Projects that severely contrast with the surrounding neighborhood character. To exceed this significance threshold, one or more of the following conditions must apply:

a. The project exceeds the allowed height or bulk regulations and existing patterns of development in the surrounding area by a significant margin.

b. The project would have an architectural style or use building materials in stark contrast to adjacent development where the adjacent development follows a single or common architectural theme (e.g., Gaslamp Quarter, Old Town).

c. The project would result in the physical loss, isolation, or degradation of a community identification symbol or landmark (e.g., a stand of trees, coastal bluff, historic landmark), which is identified in the General Plan, applicable to the community plan or local coastal program.

d. The project is located in a highly visible area (e.g., on a canyon edge, hilltop, or adjacent to an interstate highway) and would strongly contrast with the surrounding development or natural topography through excessive bulk, signage, or architectural projections.

e. The project would have a cumulative effect by opening up a new area for development or changing the overall character of the area (e.g., rural to urban, single-family to multi-family). Project level mitigation should be identified at the community plan level.

3. Land Form Alteration

Grading

Projects that significantly alter the natural (or naturalized) landform. To exceed this significance threshold, typically the following conditions must apply:

a. The project would alter more than 2,000 cubic yards of earth per graded acre by either excavation or fill. Grading of a smaller amount may still be considered significant in highly scenic or environmentally sensitive areas. Excavation for garages and basements are typically not held to this threshold. In addition, one or more of the following conditions (1-3) must apply to meet this significance threshold.

    1. The project would disturb steep (25 percent gradient or steeper) sensitive slopes in excess of the encroachment allowances of the Environmentally Sensitive Lands regulations and steep hillside guidelines as defined by the SDMC, Section 143.0101. Additional resources to use include but are not limited to C-720 maps (Coastal Zone Sensitive Slopes Map Drawings). However, these maps may not be accurate in determining steep hillsides containing environmentally sensitive habitats.

    2. The project would create manufactured slopes higher than ten feet or steeper than 2:1 (50 percent).

    3. The project would result in a change in elevation of steep natural slopes (25 percent gradient or steeper) from existing grade to proposed grade of more than five feet by either excavation or fill, unless the area over which excavation or fill would exceed five feet is only at isolated points on the site.

b. However, the above conditions may not be considered significant if one or more of the following apply:

    1. The proposed grading plans clearly demonstrate, with both spot elevations and contours, that the proposed landforms will very closely imitate the existing on-site

landform and/or the undisturbed, pre-existing surrounding neighborhood landforms. This may be achieved through "naturalized" variable slopes.

2. The proposed grading plans clearly demonstrate, with both spot elevations and contours, that the proposed slopes follow the natural existing landform and at no point vary more than 1.5 feet from the natural landform elevations.

3. The proposed excavation or fill is necessary to permit installation of alternative design features such as step-down or detached buildings, non-typical roadway or parking lot designs, and alternative retaining wall designs which reduce the project's overall grading requirements.

4. Development Features

Projects that have a negative visual appearance. To meet this significance threshold, one or more of the following conditions must apply:

a. The project would create a cluttered and distracting appearance and would substantially conflict with City codes (e.g., a sign plan that proposes extensive signage beyond the City's sign ordinance allowance).

b. The project significantly conflicts with the height, bulk, or coverage regulations of the zone and does not provide architectural interest (e.g., a tilt-up concrete building with no offsets or varying window treatment).

c. The project includes crib, retaining, or noise walls greater than six feet in height and 50 feet in length with minimal landscape screening or berming where the walls would be visible to the public.

d. The project is large and would result in an exceeding monotonous visual environment (e.g., a large subdivision in which all the units are virtually identical).

e. The project includes a shoreline protection device in a scenic, high public use area, unless the adjacent bluff areas are similarly protected.

f. The project proposes mass terracing of natural slopes with cut or fill slopes in excess of five feet to construct flat-pad, single-level structures.

The applicable community plan may specify that these conditions become even more significant for projects that are highly visible from designated open spaces, roads, parks, or significant visual landmarks. However, in this case, the federal government establishes all land use restrictions, and no special view significance has been identified for the landfill area in MCAS land use planning documents. Although the City does not have land use authority on the base, the discussions in the community plans of the surrounding area did inform this analysis, as explained in section 2.1.3.

5. Light/Glare

Projects that would emit or reflect a significant amount of light and glare. To exceed this significance threshold, one or more of the following must apply:

a. The project would be moderate to large in scale, more than 50 percent of any single elevation of a building's exterior is built with a material with a light reflectivity greater than 30 percent, and the project is adjacent to a major public roadway or public area.

b. The project would shed substantial light onto adjacent property or would emit a substantial amount of ambient light into the nighttime sky.

The nature of the project precludes it from being considered a significant impact under most of the foregoing criteria. For this project, the particularly relevant threshold states that if a project would "alter more than 2,000 cubic yards of earth per graded acre by either excavation or fill" it will typically have a significant visual impact. Since this project involves several million cubic yards of fill, this threshold would apply. In addition, to exceed the above threshold, "…one or more of the following conditions (1-3) must apply . . . "1) The project would disturb steep (25 percent gradient or steeper) sensitive slopes; 2) The project would create manufactured slopes higher than ten feet or steeper than 2:1 (50 percent), or 3) The project would result in a change in elevation of steep natural slopes (25 percent or gradient or steeper) from existing grade to proposed grade of more than five feet by either excavation or fill, unless the area over which excavation or fill would exceed five feet is only at isolated points on the site." However, if "proposed landforms will very closely imitate the existing on-site landform" the project may not be considered significant.

2.1.2 City of San Diego/Miramar Landfill General Development Plan

The City of San Diego in cooperation with what was then Naval Air Station, Miramar prepared the Miramar Landfill General Development Plan (GDP) EIS/EIR, July 1994. Landform alteration/visual quality conclusions were as follows: "The GDP elements [specifically the proposed Materials Recovery Facility] will require the permanent removal of approximately 50 acres of native vegetation and an existing knoll in the viewshed of adjacent public way the project will cause unavoidable alteration to landform and visual character. The Kearny Mesa Community Plan indicates that the prime viewshed slopes located along SR-52 should be preserved. These slopes will be permanently altered. The permanent manufactured slopes adjacent to SR 52 [specifically the then-proposed, but no longer planned, WMLOD project] would be a significant impact to visual resources in a setting that has historically contained open spaces with broad vistas to the distant mountains." Cumulative impacts identified included, "increased bulk and intensity of new landforms and structures from public views." Mitigation solutions included revegetation, landscape planning, and architecture that "blend into the surrounding environment." The manufactured slopes are not part of the proposed project and are no longer planned. The 50-acre site and existing knoll is located south of the proposed project area and development of this site is not part of the proposed project; however, while not currently proposed, this facility is still planned, and impacts from development of this facility are considered in the cumulative impact section of the EIR. No other visual impacts were identified in the 1994 EIS/EIR.

2.1.3 Adjacent Community Plan Adherence

The densely developed communities surrounding MCAS Miramar include: Mira Mesa and Scripps Ranch to the north, University City to the west, Clairemont Mesa to the southwest, and Kearny Mesa and Tierrasanta to the south (see Figure 1.1-1). Each of these communities has developed a community plan. Since each of these communities have viewsheds to the project, each was reviewed for guidelines relating to visual resources. Although each varied in specificity relating to areas considered scenic, all maintained a similar overall goal and policy, "to preserve whenever possible scenic resources including scenic views and view corridors."

2.1.4 County of San Diego Guidelines

At the county level, the protection of scenic and visual resources are recognized within the County General Plan under several elements including: the Scenic Highways Element (Adopted January 9, 1975 and last amended December 10, 1986), the Circulation Element (adopted December 5, 1967 and last amended July 27, 1994), the Conservation Element (adopted December 10, 1975 and last amended April 17, 2002), the Regional Land Use Element (adopted January 3, 1979 and last amended April 17, 2002), the Recreation Element (adopted March 29, 1972 and amended October 28, 1993), and finally the Open Space Element (adopted December 20, 1973 and last amended April 17, 2002).

The Scenic Highways Element defines four Officially Designated Scenic Highways within San Diego County (State Scenic Highway Program is explained in the State Regulatory Section, Section 2.2 below). These Designed Highways include portions of the following routes: State Route 75, State Route 78, State Route 125 and State Route 163. Although State Route 163 does cross the military base it does not cross our project. The portion of this route that is designated as scenic occurs in the Balboa Park, almost 10 miles south of the project area. None of the other Designated Scenic Highways are within viewsheds of the project. State Route 52 is an "eligible" State Scenic Highway but has yet to be adopted, therefore there are no regulations mandated for this route.

The Conservation Element establishes zoning areas, which include Scenic Protection Overlay Zones or Resource Conservation Areas to protect scenic and natural resource areas within the county. These Zones are designated for unincorporated portions of the county only. Sycamore Canyon County Open Space Preserve does bound the Station to the northeast. However, is more than 5 miles from the landfill project area and there are no views of the proposed project from the Preserve.

2.2 STATE

2.2.1 California Environmental Quality Act

The California Environmental Quality Act (CEQA) law (Public Resources Code sections 21000- 21177) and Guidelines (California Code of Regulations sections 15000-15387) provide a framework for addressing impacts to visual resources, including language in the Guidelines Appendix G. Using this framework, proposed projects would be considered to have significant aesthetic impacts if they were to:

- Have a substantial adverse effect on scenic vistas or substantially degrade the existing visual character or quality of the project sites and their surroundings;
- Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway; and
- Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area.

Unless findings of overriding considerations are made, CEQA requires the mitigation of all project impacts to less than significant levels.

2.2.2 State Scenic Highway Program

California's Scenic Highway Program was created by the California Legislature to preserve and protect scenic highway corridors from change that would diminish the aesthetic value of land adjacent to those highways. When a city or county nominates an eligible highway for official designation, it must adopt ordinances to preserve the scenic quality of the corridor or document that such regulations already exist.

Scenic corridor protection programs typically require, in the vicinity of the highway, regulation of type and density of land use, detailed site planning, control of outdoor advertising, restrictions on earthmoving and landscaping, and on the design and appearance of structures and equipment (California Streets and Highways Code section 260 et seq.).

There are four Officially Designated Scenic Highways in San Diego County. They include portions of the following routes: State Route 75, State Route 78, State Route 125 and State Route 163. Although State Route 163 does cross the military base it does not cross our project. The portion of this route that is designated as scenic occurs in the Balboa Park, almost 10 miles south of the project area. None of the other Designated Scenic Highways are within viewsheds of the project. State Route 52 is an “eligible” State Scenic Highway but has yet to be adopted, therefore there are no regulations that apply to this route.

2.3 FEDERAL

Since Miramar Landfill is located on land leased from the Department of Defense, federal regulations governing visual resources are also addressed in this document.

2.3.1 MCAS Miramar Visual Resource Guidelines

MCAS Miramar has developed two documents to protect visual resources: the Integrated Natural Resources Management Plan, MCAS Miramar, May 2000; and the Base Exterior Architectural Plan, MCAS Miramar, 1999.

2.3.1.1 Integrated Natural Resources Management Plan

The primary purpose of the Integrated Natural Resources Management Plan (INRMP) is to integrate Marine Corps Air Station Miramar's land use needs, in support of the military mission, with the management and conservation of natural resources. The INRMP summarizes baseline natural information. Although there are no specific policies relating to visual resource protection, the intent of the plan clearly states that natural resources on the base should be protected and maintained.

2.3.1.2 Base Exterior Architectural Plan

While the INRMP emphasizes preserving natural resources, the Base Exterior Architecture Plan (BEAP) provides detailed architectural requirements and describes aesthetic values. These aesthetic ideals include, but are not limited to, the allowable type of lighting fixtures, the colors of paint, the heights of signage, and the general look of all aspects of development within the base.

2.3.2 National Environmental Policy Act

The National Environmental Policy Act (NEPA) (42 U.S. Code Section 4231), requires that all major actions sponsored, funded, permitted, or approved by federal agencies undergo planning to ensure that environmental considerations such as impacts related to aesthetics and visual quality are given due weight in project decision-making.

NEPA Section 101(b)(2) states that it is the “continuous responsibility” of the federal government to “use all practicable means” to “assure for all Americans safe, healthful, productive, and esthetically and culturally pleasing surroundings.” Under the Council on Environmental Quality implementing regulations, environmental analysis is to consider impacts on urban quality, historic and cultural resources, and the design of the built environment (Section 1502.6).” Agencies shall “identify methods and procedures to insure that presently unquantified environmental amenities and values may be given appropriate consideration (Section 1507.2).”

2.3.3 Federal Highway Administration (FHWA) Visual Resource Guidelines

In compliance with NEPA, each federal agency develops impact evaluation criteria. Because it owns land within the viewshed, applicable federal aesthetic guidelines for this project include the Federal Highway Administration (FHWA)’s Visual Impact Assessment (VIA) for Highway Projects Guidelines. These Guidelines do not outline thresholds for significance but do provide a methodology that helps identify potential aesthetic impacts. Title 23 of the U.S. Code regulates federal highway development and the VIA for Highway Projects (March 1981) provides additional guidance.

Under FHWA Guidelines, visual impact is defined as follows:

resource change + viewer response = visual impact.

To evaluate **resource change**, one must define the visual resources in the area, their character and their quality. To evaluate **viewer response** one must define the viewers ("of" and "from" the road), their exposure and their sensitivity. Landscape character (e.g., water, vegetation, and manmade development)

is usually described by identifying landscape units by pattern elements (form, line, color, texture) and pattern character (dominance, scale, diversity, continuity). Landscape quality must also be considered and is defined by vividness, intactness, and unity. Viewer exposure is also a factor. The physical location of the viewer, number of people in each viewer group, and the duration of their view define it. Viewer sensitivity is influenced by the viewer's activity, awareness, values, and the cultural significance of the visual resource to the viewer.

2.4 LIGHT AND GLARE REGULATIONS

Since there are no lighting elements proposed as part of the project, light and glare regulations and nighttime viewing conditions were not assessed in this report.

SECTION 3 ANALYSIS – VISUAL ASSESSMENT

3.1 INTRODUCTION

Even when using established methodologies, making the determination about the significance of an impact on visual quality is highly subjective. All federal methodologies agree that visual impact can be determined by analyzing change to the natural landscape and viewer response to that change. When considering the overall aesthetic impacts of raising the landfill twenty feet, the resource change (i.e., adding additional landfill capacity to an already existing landfill) and overall viewer response was investigated by providing: a detailed review of the study area, description of the principal visual characteristics of the project, the visual resources and viewers affected, the significance of the main visual issues, the effects of the project alternatives, and recommended mitigation measures (if necessary).

3.2 ANALYSIS OF STUDY AREA

3.2.1 Collection of GIS Base Data

Existing and proposed landfill topographic data were collected for the purpose of creating accurate viewshed models. Landfill staff and Shaw Environmental & Infrastructure, Inc provided these data. To identify all potential views of the proposed project, URS gathered additional topographic data for the project vicinity.

The U.S. Geological Service (USGS) has created Digital Elevation Models (DEMs), or so-called "terrain models" for most of the U.S. identifying the elevations or surfaces associated with any given area. These were used as a basis for additional topographic data (e.g., the addition of twenty-feet of landfill capacity) to create another type of terrain model known as a Triangulated Integrated Networks (TINs). These spatially accurate, three-dimensional surface models allowed the viewshed to be modeled, and views to and from a specific point simulated. URS downloaded the appropriate USGS DEMs; created updated TINs using new topographic data acquired for the entire study area and ran several viewshed models to identify viewers potentially affected by the project.

Since state and federal regulations emphasize views from Scenic Highways, a viewshed model was run for Eligible State Scenic Highway State Route 52. Although not a Designated Scenic Highway, drivers along this Eligible Scenic Highway have some of the closest direct views to the project site. The model shows that travelers along this highway have relatively unobscured views of the landfill only blocked when intervening topography (mainly revegetated landfill knolls) or vegetative roadside screening exist. Although there are limited stretches where drivers have relatively unobscured views to the landfill, typical views consist of short-duration glimpses of the tops of the unvegetated landfill area. Similar views are found from Interstate 805, which runs west of the project area.

GIS was also used to assess land uses within the region thereby identifying all potential sensitive viewers (i.e., potential Key Observation Points) (KOPs) to the project. San Diego Association of Governments (SANDAG) provided 2003 existing land use GIS data, and also 2020 proposed land use data. In addition to viewshed model results and land use analyses, other factors were considered before selecting KOPs, including: viewer type (i.e., traveler, residential, recreational); viewer sensitivity (what activity is the

viewer engaged in); duration of viewer (short duration – high speed traveler, long duration – hiker along trail); previously identified viewpoints considered; potentially sensitive residential areas in the vicinity (community planning areas); current conditions; proximity to landmarks, historic features, trails, bike paths, water bodies, scenic corridors and/or scenic highways.

3.2.2 KOP and Simulation Point Identification

The intent of KOP selection is to identify those locations in the vicinity of the project that best represent views toward the project as seen from public roads and other public places such as recreation areas and trails or private (e.g., long-term residential) locations. KOPs are generally selected for one or two reasons: 1) the location provides representative views of the landscape along a specific route segment or in a general region of interest; and/or 2) the viewpoint effectively captures the presence or absence of a potentially significant project impact in that location. KOPs are typically established in locations that provide high visibility to relatively large numbers of viewers and/or sensitive viewing locations such as residential areas, recreation areas, and vista points.

In addition to choosing KOP locations that represent key sensitive viewer types or potentially significant visual impact locations, KOPs are also evaluated for visual simulation potential. Simulations usually consist of a "before" photo and "after" simulation that, when compared side-by-side, help the reader visualize the proposed change to a project area. A "before" photo is taken in the field, then a computer-generated rendering of the proposed project is added to this "before" photo to create an "after" photo. These "before" and "after" visual simulations are easily understood visual representations of proposed project visual impacts. Visual simulation KOPs therefore are often chosen to represent a "worst-case-scenario" view rather than a view that represents a key sensitive viewer type or key sensitive location. For example, a view from a highly used roadway immediately adjacent to a project (e.g., State Route 52) might be perceived to represent both a key sensitive viewer type and key viewer location. It is therefore expected that this location would be selected as a representative KOP. Field review might find a view from another location (e.g., Interstate 805) lends itself to a better visual simulation. Other factors considered when choosing simulation KOPs include: intervening topography, manmade development (e.g., road, fences, utilities, signs), or vegetative screening often only recognized with field visits.

A review of the proposed project, project alternatives and site background, visual resources of concern, and viewer sensitivity, was followed by a field investigation of the project vicinity. Once KOPs were identified, thirteen KOPs were selected to serve as key visual simulation locations. These KOPs are chosen based on viewer sensitivity, and also because the photos from these locations will provide visual simulations that show the proposed project changes most clearly (e.g., worst-case scenarios). See Figure 3.2-1 for the location of the thirteen KOPs. While it is not possible to represent every view toward the project, the KOPs identified are representative of typical views with potential for visual impacts generated by the proposed project and they facilitate review and discussion. The KOPs chosen are representative of key sensitive viewer types, key sensitive viewer locations and/or key visual simulation locations (see Figure 3.2-1). The thirteen KOPs for the proposed project were visited and compared with viewshed modeling results (as explained above and as identified on Figure 1.1-1 and Figure 3.2-1). The thirteen KOPs provide a representative selection of all potential viewer types and land uses within the study area (see Figure 3.2-1).

A viewshed model was run on each KOP using GIS Spatial Analyst Software. This model (ArcView 3.2a with Spatial Analyst 2.0) was used with USGS topographic 10-meter digital elevation models (DEMs), to create an existing surface. GIS data show, based solely on topography, what can be seen from any given point along a surface; however, GIS data do not take into account development, vegetation or other screening in place. GIS data are also limited by the date of creation of the surface topographic information.

The KOPs chosen include the most comprehensive and diverse range of viewer types in proximity to the project site. Since state and federal regulations rank foreground views as most sensitive, viewers within this range were emphasized. Photos were taken from each of these KOP locations (Figures 3.2-2 through 3.2-8) using a high definition, 6.1 megapixel digital camera. Figure 3.2-1 shows these photo locations and includes the direction the photo was taken. The thirteen final KOPs, incorporating residential, traveler, and recreational views throughout the study area, are as follows:

KOP 1: Residential View from University City on Steinbeck Avenue

This KOP represents views from residents within the University City Community. Although viewshed modeling (as shown in Figure 1.1-1) identified KOP 1 as having a potential line-of site to the project, the field review proved otherwise. During the field visit it was determined that mature vegetative screening and/or topography in all of the residents' backyards screen all potential views to the project site from this location. Although viewshed modeling is helpful in quickly defining areas that can and cannot see a project, they are based upon topography alone. They do not take into account structures and vegetative screening, which often block views. Figure 3.2-2, therefore shows no existing view from KOP 1. See Figure 3.2-1 for the location of KOP 1.

KOP 2: Travel View Southbound along Interstate 805

This view represents views for travelers along southbound Interstate 805. As they pass by the site, travelers have views to their left of the top of the existing landfill. Although partially blocked by topography, travelers will have short duration lines of site to the project. Travelers waiting at the Governor Drive on-ramp light during peak hours will have longer duration direct views toward the project. Although partially obscured by intervening topography, this KOP has one of the more direct views of the project, affects many travelers (since this is a highly used on-ramp), and was therefore also selected as a key visual simulation location. See Figure 3.2-1 for the location of KOP 2. See Figure 3.2-2 for the existing view toward the project site from KOP 2.

KOP 3: Recreational View from University Gardens Park

This KOP represents recreational views from the nearest University City Park, University Gardens Park. The project site is completely blocked from view by all users within the park, even those standing on the top steps of the ball field bleachers, the highest elevation in the park with potential view corridors. Picnic tables located within the park (as shown in Figure 3.2-3) are screened by mature trees, topography, and development. See also figure 3.2-1 for the location of KOP 3.

KOP 4: Residential View from University City on Wolfstar Court

This view represents residential views from University City. These residences are located in closest proximity to the project site. Views from the backyards of residences along Wolfstar have direct, unscreened views to the site. Although over ¼-mile away (and therefore considered a midground rather than a foreground view), residences have a distant although direct line-of-site to the project vicinity. While viewers from this location can see the project in the distance, viewer's attention is often directed to the lower elevation freeways. These freeways maintain sharp visual contrast to their surroundings, include moving vehicles (that naturally draw a viewer's attention), gray-tan color (cutting through the greens and tans of vegetative cover), and generate noise in the area (also drawing visual attention). However, as these residents have a distant but direct view of the project, this KOP was also selected as a key visual simulation location. See Figure 3.2-1 for the location of KOP 4. See Figure 3.2-3 for the existing view toward the project site from KOP 2.

KOP 5: Traveler View Eastbound along State Route 52

This view represents travelers heading eastbound along State Route 52 from just south of I-805. Travelers along SR-52, going in an eastbound direction, have limited to no views of the project site. Eastbound travelers are generally looking directly ahead, or in this case, east. However, the site lies north of the SR-52 just east of the I-805/SR-52 intersection. Views to the project are therefore short in duration and limited to none. The I-805 intersection interconnection ramps block all views of the project to this point. For eastbound SR-52 viewers (e.g., passengers) to see the project, they would have to turn all the way to their left and even behind them, once SR-52 veers southward (approximately ¼-mile past the I-805/SR-52 interconnection). See Figure 3.2-1 for the location of KOP 5. See Figure 3.2-4 for the existing view toward the project site from KOP 5.

KOP 6: Residential View from Clairemont Mesa on Palmyra Avenue

This view represents residential views from the Clairemont Mesa area. Although more than ½-mile away (and therefore considered midground views), residents along Palmyra Avenue have relatively unobscured views to the project site. Since these residences lie atop a hillside overlooking the entire MCAS Miramar area, albeit distant, these backyard views span a wide angle and draw the viewer's attention. Structures lie within the foreground views and distract from these views. However, this view was selected as a key visual simulation viewpoint for several reasons, including: 1) elevation of area provides expansive views, 2) views have little to no intervening screening, and 3) these views represent a key sensitive viewer type (long term residences). See Figure 3.2-1 for the location of KOP 6. See Figure 3.2-4 for the existing view toward the project site from KOP 6.

KOP 7: Traveler View Westbound along State Route 52 at Point Close to the Landfill

This view represents westbound travelers along State Route 52. As mentioned previously, State Route 52, although not designated, is an eligible State Scenic Highway. Whereas eastbound travelers along this highway have limited views to the project, westbound travelers have open expansive and close proximity views to the project area. However, viewers must turn 90-degrees to their right for full views of the project. The project area (Phase I and II) is over ¼-mile from the highway. However, since the area is relatively undeveloped (MCAS Miramar), the landfill facilities stand out from within the existing visual

setting, contrasting with the rolling low-vegetated hills within the area. Therefore this KOP is included as a key visual simulation location. See Figure 3.2-1 for the location of KOP 7. See Figure 3.2-5 for the existing view toward the project site from KOP 7.

KOP 8: Traveler View Northbound on Interstate 805

This view represents traveler views northbound along Interstate 805. The project site is located just northeast of the I-805/SR-52 interchange. With interconnection flyover ramps and heavy on-coming highway traffic, travelers tend to focus on the road rather than the project site. However, if a viewer looks 90-degrees to the right, there are portions along I-805 where there are clear direct views to the project, especially in areas at higher elevations, which look down upon the project area. Figure 3.2-5 shows the traveler view located in closest proximity (e.g., worst case view) to the project site. Foreground topography blocks parts of Phase I; however, this phase is visible above the horizon of these hills. Although this view would likely be maintained only by a passenger and would be limited in duration due to high travel speeds, it does show a key "worst-case" view of the project and therefore is included as a key visual simulation location. See Figure 3.2-1 for the location of KOP 8. See Figure 3.2-5 for the existing view toward the project site from KOP 8.

KOP 9: Residential View from Kearny Mesa at Kearny Lodge

This view represents residential views from homes within the Kearny Lodge Trailer Park (the nearest residential development to the proposed project location). The trailer park runs alongside State Route 52 and is bounded on the west by Interstate-805. Although blocked by walls and intervening topography there are limited views from elevated structures (e.g., staircases or residential walls) where the proposed project can be seen. Views from this area are limited. See Figure 3.2-1 for the location of KOP 9. See Figure 3.2-6 for the existing view toward the project site from KOP 9 (a staircase entrance to a residence with a distant glimpse of the project). It should be noted that most residences are completely blocked from views to the project.

KOP 10: Traveler View Westbound along State Route 52

Similar to KOP 7, this KOP represents traveler views along Eligible State Scenic highway, SR-52. KOP 7 is located in closest proximity to the project site. However, travelers are forced to look to their right for clear views of the project. KOP 10 was chosen because travelers at this point along the highway are facing directly toward the landfill area and are more likely to notice the non-natural features (e.g., non-vegetated landfill cells, landfill-related structures, and moving vehicles). Although distant and often blocked by roadside shrubs, there are occasional direct views for travelers along the highway; therefore this KOP is included as a key visual simulation location. See Figure 3.2-1 for the location of KOP 10. See Figure 3.2-6 for the existing view toward the project site from KOP 10.

KOP 11: Recreational View from Kearny Mesa at Hickman Field

This view represents recreational views from the nearest Kearny Mesa park, Hickman Field. As shown in Figure 3.2-7, even those recreational users standing on the top riser of the ball field's bleachers have distant if any views to the project site. Since recreational views tend to absorb their immediate recreational experiences (e.g., a ballgame or a picnic), views to the project site from this park are few to

none. See Figure 3.2-1 for the location of KOP 11. See Figure 3.2-7 for the existing view toward the project site from KOP 11.

KOP 12: Traveler View Westbound along State Route 52 at State Route 163 Interchange

This view represents traveler views at the interchange of SR-52 and State Route 163. This KOP was chosen because it is elevated, providing expansive views toward the project. This KOP also represents traveler views from State Route 163, which bounds the landfill project area on the east. Although views to the project site are considered background views (i.e., more than a mile away) the beige, unvegetated top of the landfill contrasts with the natural low-brush-covered natural environment making up the visual environment from this view; therefore this KOP is included as a key visual simulation location. See Figure 3.2-1 for the location of KOP 12. See Figure 3.2-7 for the existing view toward the project site from KOP 12.

KOP 13: Hiker View from Marian Bear Natural Park (Southwest of I-805/SR-52 Interchange)

This view represents hiker views from within the Multiple Habitat Planning Area (MHPA) Marian Bear Natural Park, just southwest of the I-805/SR-52 interchange on the trail extending north from Limerick Avenue. As the project site is located just northeast of the I-805/SR-52 interchange, this view illustrates the location from which the project would be most visible from the park. Figure 3.2-8 shows the view located in closest proximity (e.g., worst case view) to the project site. All other views are at a further distance and are partially obstructed.

This portion of the park is located on a hillside overlooking the entire MCAS Miramar area, and although approximately ½-mile away (and therefore considered a mid-ground rather than a foreground view), recreational users have a direct line-of-site to the project vicinity. The I-805 and SR-52 freeways lie within the foreground and distract from views of the project area. Additionally, in comparison to KOP 2 and/or KOP 7, the number of viewers in this location is considerably less. However, this KOP does show a key "worst-case" view of the project and is therefore included as a key visual simulation location. See Figure 3.2-1 for the location of KOP 13. See Figure 3.2-8 for the existing view toward the project site from KOP 13.

3.3 PRINCIPAL VISUAL CHARACTERISTICS OF THE PROJECT

This section addresses the principal visual characteristics of the project and/or and ancillary project components (including, if any, light and/or glare components). This project involves a twenty-foot height increase of an existing landfill, along with re-vegetation of the landfill; the project components are relatively simple. The proposed revegetation will consist of native species, as discussed in the Closure Plan. Native plants will provide more interest with a variety of shrubs and natural look, compared to many landfill closures consisting only of non-native ryes or clovers. (See Figures 3.5-1 through 3.5-8 for visual simulations showing the landfill at final height increase with revegetation).

There are no ancillary components (e.g., new roads, structures or light/glare elements) that are proposed as part of this project.

3.3.1 Physical Characteristics

Landfill staff and Shaw Environmental & Infastructure, Inc. provided AutoCAD renderings and electronic files depicting existing and proposed Phase I and Phase II profiles.

According to the calculations done by the engineers, the proposed 20 foot height increase will provide an additional, approximately, 13 million cubic yards of capacity. Reduced by final cover requirements the additional capacity will be closer to 10 million cubic yards. This increase in capacity will extend the life of the landfill for more than four additional years.

3.3.2 Ancillary Project Characteristics

Ancillary facilities such as access roads, electrical substations, construction staging areas, signage and lighting components, and off-site electrical utility lines must also be included in any project's potential aesthetic impacts. As mentioned previously, there are no ancillary project characteristics or features proposed as part of this project.

3.4 VISUAL RESOURCE IMPACT METHODOLOGY

Visual impacts relating to the height increase within the study area were analyzed using the federal methodology, explained in Section 2.0, that evaluates resource change and viewer response. Landscape character (e.g., water, vegetation, and development), usually described by identifying units of landscape types, is evaluated before the change is considered. These units include pattern elements (form, line, color, texture) and pattern character (dominance, scale, diversity, continuity). Landscape quality is defined by vividness, intactness, and unity. Viewer response is evaluated after reviewing viewer activity, viewer awareness, location of viewer, number of viewers, duration of the view, and aesthetic values.

3.4.1 Resource Change

The visual resources of a given area consist of the landforms, vegetation, and cultural modifications such as, structures that impart an overall visual impression of the landscape. A number of factors are considered when evaluating the visual resources of a landscape and the potential for one or more visual impacts to occur. This visual impact assessment evaluates the area/existing views, as they exist prior to any proposed changes to determine the susceptibility of the visual resources to change.

3.4.2 Viewer Response

As identified previously, viewer response is often difficult to determine. Identifying whether or not viewer response to a project is positive or negative can be highly subjective and can vary dramatically based on several factors, mentioned above (e.g., viewer activity, viewer awareness, location of viewer, number of viewers, duration of the view, and aesthetic values). For this assessment, summarizing viewer responses to the raising of the landfill by twenty feet was based upon an analysis of each of the noted factors. The result of this analysis determines the severity of the change that will result from the completion of the project.

3.4.3 Measuring Visual Impacts

For this report, visual impact assessment guidelines provided by the FHWA were consulted, but were also compared with the Bureau of Land Management's Visual Resource Manual (VRM), and the U.S. Department of Agriculture (USDA) Forest Service Scenery Management Guidelines. A combination of all three guidelines were used to develop an Impact Significance Chart (see Table 3.4-1 below). This Impact Significance Chart helps evaluate the significance of each impact based on the severity of the change and the viewer response to the change (susceptibility).

Table 3.4-1
Visual Resources Impact Significance Chart

Impact Susceptibility	Impact Severity		
	Low	Moderate	High
Low	Insignificant[1]	Insignificant	Adverse But Less Than Significant[2]
Moderate	Insignificant	Adverse But Less Than Significant	Significant But Feasibly Mitigated[3]
High	Insignificant	Adverse But Less Than Significant	Significant And Unavoidable[4]

1 Insignificant impacts may or may not be perceptible but are considered minor in the context of existing landscape characteristics and view opportunity.

2 Adverse but less than significant impacts are perceived as negative but do not exceed environmental thresholds (Class III).

3 Significant impacts can be mitigated to a level that is not significant or can be avoided altogether with feasible mitigation. Without mitigation, the impact could exceed environmental thresholds (Class II).

4 Significant impacts cannot be feasibly mitigated (Class I).

By this ranking methodology, for a visual impact to be considered significant, two conditions must exist: 1) the landscape must be of high quality and be highly valued by the public; and 2) the perceived incompatibility of one or more proposed project elements or characteristics must lead to a substantial reduction in visual quality.

3.4.3.1 Visual Impact Susceptibility

Visual impact susceptibility is the likelihood that a landscape will demonstrate a noticeable visual impact with project implementation. A visual impact susceptibility ranking is derived from a combination of existing **visual quality, viewer sensitivity,** and **viewer exposure**. Each of these factors is given a ranking of low, moderate, or high. These factors are described below.

Visual quality is a measure of the overall impression or appeal of an area or existing view as determined by the particular landscape characteristics. In this case, the quality is judged by the views of the expansive open spaces surrounding the area, and the aesthetic quality and appeal of the existing surroundings. The attributes of variety, vividness, coherence, uniqueness, harmony, and pattern contribute to the visual quality classifications of indistinctive (low), common (moderate), and distinctive (high). Visual quality provides a point of reference to assess whether a project would appear compatible with the established features of the setting or would contrast noticeably and unfavorably with them. A landscape's ability to accept alteration without diminishment of visual quality (or creation of visual contrast) is often referred to

as *Visual Absorption Capability*. It is possible for new structures to be compatible with the existing structures in their replication of the existing forms, lines, colors, and/or textures where the new structures do not appreciably change the balance of natural and cultural elements.

Viewer sensitivity addresses the level of interest or concern of viewers regarding an area's visual resources and is closely associated with viewers' expectations for the area. Viewer sensitivity reflects the importance placed on a given landscape or urban area based on the human perceptions of the intrinsic beauty or aesthetic quality of the existing landforms and, in this case, the existing landfill.

Viewer exposure describes the degree to which people have views of the landscape. Viewer exposure considers the number of viewers, the duration of view, the landscape, and the proximity of viewers to the subject landscape.

3.4.3.2 Visual Impact Severity

Visual impact severity or the degree of visual impacts is based on the following factors: **visual contrast, project dominance,** and **view impairment.** Each of these factors is given a ranking of low, moderate, or high. These factors are described below.

Visual contrast evaluates a proposed project's or activity's consistency with the visual elements of form, line, color, and texture already established in the landscape. Other elements that are considered in evaluating visual contrast include the degree of natural screening by vegetation and landforms, placement of structures relative to existing vegetation and landforms, distance from the point of observation, and relative size or scale. Generally, visual contrast inversely correlates with visual absorption capability.

Project dominance refers to the project's relationship to other visible landscape components in terms of vertical and horizontal extent. A project's scale and spatial relationship to the existing landscape can be categorized as subordinate, co-dominant, or dominant.

View impairment refers to the extent a project's scale and position would result in the blockage of higher quality visual elements by lower quality elements.

3.5 SIGNIFICANCE OF THE MAIN VISUAL ISSUES

Determining significant impact on visual quality is highly subjective. However, using the established federal methodology described above can help evaluate aspects of visual impact. Various local, state, and federal regulations have been put in place to help with this analysis as identified in Section 2.1 and as shown in Table 3.4-1. The standards of significance used in this assessment follow state and federal guidance and have been identified below.

An *adverse visual impact (threshold of significance)* occurs within public view when: 1) a project perceptibly changes existing features of the physical environment so that they no longer appear to be characteristic of the subject locality or region; 2) a project introduces new features to the physical environment that are perceptibly uncharacteristic of the region and/or locale; or 3) aesthetic features of the landscape or urban setting become less visible (e.g., partially or totally blocked from view) or are removed. Changes that seem uncharacteristic are those that appear out of place, discordant, or distracting.

In this case, the change must be seen as uncharacteristic after several years, not just months after a project is complete. The degree of the visual impact depends upon how noticeable the adverse change may be. The noticeability of adverse changes is a function of project features, context, and viewing conditions (angle of view, distance, and primary viewing directions).

3.5.1 Standards of Significance

Local standards of significance are identified in Section 2.1. Under the City's significance criteria, 2000 cubic yards of earth moved may be considered significant. This project will move over 13,000,000 cubic yards of fill and 476 acres will be graded. Clearly by City thresholds, the project has the potential for adverse aesthetic impacts. To exceed the City's significance a project generally must alter the natural (or naturalized) landform. In this case, no natural landforms would be altered, although the landfill has become the expected feature in places where it can be seen.

In addition, to exceed City's significance threshold, typically one or more of the following conditions (1-3) must apply to meet this significance threshold.

1) The project would disturb steep (25 percent gradient or steeper) sensitive slopes in excess of the encroachment allowances of the Environmentally Sensitive Lands regulations and steep hillside guidelines as defined by the SDMC, Section 143.0101. No sensitive slopes would be impacted by this project.

2) The project would create manufactured slopes higher than ten feet or steeper than 2:1 (50 percent). This would occur in some locations, so this criterion applies to the proposed project.

3) The project would result in a change in elevation of steep natural slopes (25 percent gradient or steeper) from existing grade. No natural slopes would be effected by this project. Therefore according to the City's significance criteria, this project meets only one of the three, and therefore is not considered to have a significant impact.

In addition, when the proposed grading plans clearly demonstrate, with both spot elevations and contours, that the proposed landforms will very closely imitate the existing onsite landform, no significant impact is expected. This is the case with the proposed project, which would raise the height of the landfill by 20 feet, but would not alter the landform in any other way. Therefore, for this reason, in addition to the reason above, no significant impact could be identified under the City's criteria.

For this project, although City thresholds were taken into consideration and have been included in this evaluation, land uses on the site are determined by the federal landowner. Therefore, state and federal impact criteria have also been used to evaluate project impacts

According to federal and state regulations, a finding of whether a proposed action significantly affects the quality of the human environment is determined by considering the context in which it would occur and the intensity of the action (40 Code of Federal Regulations section 1508.27; CEQA Guidelines section 15126.2[a]). CEQA Guidelines (California Code of Regulations sections 15000-15387), especially Appendix G, provides guidance. Under these criteria, proposed projects would be considered to have significant aesthetic impacts if they:

1. Have a substantial adverse effect on a scenic vista.
2. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State Scenic highway.
3. Substantially degrade the existing visual character or quality of the site and its surroundings.
4. Create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area.

The first three criteria are the focus of the assessment of the landscape's visual impact susceptibility and the severity of the visual impact. No new sources of light or glare are proposed, so the forth criteria was not considered.

A visual impact severity or susceptibility ranking of **Low** is achieved if two or more of the contributing factors are rated low. A visual impact severity or susceptibility ranking of **High** is achieved if two or more of the contributing factors are rated high. A visual impact severity or susceptibility ranking of **Moderate** is achieved for all other combinations of contributing factors.

The degree of impact significance is set as a function of impact susceptibility and impact severity. Table 3.4-1 illustrates the relationship between impact susceptibility and impact severity, leading to the determination of impact significance.

As Table 3.4-1 shows, a visual impact is considered *significant* if the impact severity ranking is high and has an associated impact susceptibility ranking of moderate or high. Second tier impacts occur when impact severity is: 1) rated high and has an associated impact susceptibility ranking of low, or 2) rated moderate with associated impact susceptibility rankings of moderate or high. Such second tier impacts are *considered adverse but not significant*, meaning that the impact is considered negative, but it does not exceed environmental thresholds for significance as described here. Third tier impacts occur when impact severity is: 1) rated moderate with an associated impact susceptibility ranking of low, or 2) rated low with associated impact susceptibility rankings of low, moderate, or high. Third tier impacts are generally *insignificant* and while they may or may not be perceptible, they are considered minor in the context of existing landscape characteristics and viewing opportunities.

3.5.2 Aesthetic Impacts

Visual Character. The visual character of a project area is defined as the landforms, water, vegetative patterns, and existing modifications that give an area its distinguishing qualities. This component is relatively objective. The topography of the area is gently rolling undeveloped hills covered by low-growing shrubs. There are no major water bodies within the area although ephemeral streams do run throughout the region. This area contrasts strongly with the surrounding land uses bounded on every side by urban development comprised of several communities (including Kearny Mesa, Clairemont Mesa, University City, Mira Mesa). The overall impression of the site is rural, although the area is interspersed with existing landfill features including stark cuts in the land exposing unvegetated landfill areas and other manmade elements, including the visually dominant moving landfill vehicles that traverse the area. The eye is often drawn toward movement and these vehicles within the relatively undeveloped area. The green color of the hills contrast with the buff color of the landfill and roadways. Overall, manmade features and vegetated rolling hills co-dominate the landscape.

Visual Quality. The visual quality of an area is a subjective issue. Visual quality measures overall attractiveness of an area and the capability of preserving this attractiveness when new features are introduced. The proposed site, bounded on all sides by dense urban development, is mostly rural with the exception of the existing landfill and related facilities, roadways and vehicles. Intermittent green rolling hills and canyons covered by weeds and shrubs are interspersed with obvious tan landfill features and moving landfill vehicles, lend to an impression of moderate to low visual quality for this site. Memorable landscape components include existing landfill roadways and cut/fills within the area, in addition to undisturbed or minimally disturbed rolling hills and canyons with views of urban development on all sides. Distinctive visual patterns on this project site include the vegetated hills and canyons. The visual integrity of the site is moderate to low. There is a majority of land that remains undeveloped or is defined by revegetated landfill areas that now blend with the area (that would lend itself to moderate integrity). Other areas are clearly scarred with landfill activities, piles, cut/fill areas, roadways and more (that would lend itself to a low integrity level). Given the lack of memorability of the project area (other than the man-made features and facilities), and given the lack of unity within the site and its surroundings, overall visual quality of the project area is considered moderate-low.

Viewer Exposure. The number of viewers, as well as the duration of views, is considered in determining viewer exposure. There are three types of viewer exposure considered in this analysis: travelers (focusing on those traveling along adjacent SR-52 to the south and adjacent I-805 to the west; residential (including residential views from surrounding communities and/or local workers), and recreational facility users including park, trail and other recreational park areas in the surrounding area.

Travelers along SR-52 and I-805 maintain the most number of views to project area since traveler counts along these roadways are high. The site is visible for brief to extended periods of time (depending on rate and direction of travel) along these roadways. Nearby residents have more extended periods of time to view the project. However, there is a limited number of views from residential or park locations.

View duration of 10 seconds or less is considered brief, 10 to 60 seconds is considered moderate duration, and 60 seconds or more is considered long duration or high. Therefore, viewer duration for travelers along the highways is considered low while residential viewer duration is considered high. Conclusions regarding viewer exposure have been determined on a KOP-by-KOP basis in the following long-term visual impacts discussion below.

Sensitivity Level. Visual sensitivity includes a consideration of the public's expectation of the area, viewer activity, and viewer reaction to development within the context of the area's visual quality. Relative sensitivity varies with the viewer's activities, expectations, and attitudes. Individuals viewing from highway KOPs are potentially less sensitive to views than residents. Since the highways near the project area provide no scenic vistas, the expectation of scenic views are less likely and therefore viewer sensitivity is less. Frequent travelers along this roadway, commuters, are still sensitive to views, although because they are traveling to a particular destination on a regular basis they tend to be relatively less sensitive than travelers headed toward recreational destinations.

Since the rural landscape has already been scarred by existing landfill, the public's expectation for the area is moderate to low (depending on the viewer's angle).

Construction Impacts. Evaluation of construction impacts focuses on the short-term visual impacts resulting from project construction and the presence of equipment, materials, and earth moving in the existing landscape. Since by nature the project includes the presence of equipment, materials, and earth moving over a four-year period, these impacts are considered part of the project not as short-term construction impacts. Therefore, there are no construction impacts associated with this project. Consequently they are not addressed in this assessment.

Long-Term Visual Impacts. Long-term project impacts result from project operation and the permanent presence of aboveground built facilities in the existing landscape. The addition of capacity of the existing landfill qualifies as having long-term visual impacts to the natural environment. These impacts are considered adverse, yet less than significant.

Impacts to visual resources, as explained above, are evaluated according to resource change and viewer response. Resource changes are evaluated according to susceptibility (consisting of visual quality, viewer sensitivity, and viewer exposure) and impact severity (consisting of visual contrast, project dominance, and view impairment). Table 3.5-1 ranks each KOP for each of the significance categories listed in Table 3.4-1. A brief description, by KOP of each of these rankings is included below.

Table 3.5-1
Impact Significance by Key Observation Point (KOP)

KOP	Impact Susceptibility				Impact Severity			
	Visual Quality	Viewer Sensitivity	Viewer Exposure	Overall Ranking	Visual Contrast	Project Dominance	View Impairment	Overall Ranking
1	L	H	L	**L**	L	L	L	**L**
2	L	M	H	**M**	M	M	L	**M**
3	H	H	M	**H**	L	L	L	**L**
4	H	H	L	**H**	M	L	L	**L**
5	H	M	H	**H**	L	L	L	**L**
6	H	H	L	**H**	L	L	L	**L**
7	M	M	H	**M**	H	M	L	**M**
8	L	M	H	**M**	M	L	L	**L**
9	L	H	L	**L**	L	L	L	**L**
10	H	H	H	**H**	M	L	L	**L**
11	H	H	M	**H**	L	L	L	**L**
12	H	M	H	**H**	L	L	L	**L**
13	H	M	L	**M**	M	M	L	**M**

L Low
M Moderate
H High

Impact from KOP 1. There are no direct views to the project site from KOP 1. Mature vegetation shields the backyard views from residences along the east side of the street. Front yard views from these residences are not in the direction of the project. Views of the project from residences facing the project area (along the west side of the street) are shielded by development, topography, and the vegetative screening. Therefore, the overall visual quality from this KOP is rated as **low**. Because residential viewers have constant, longer duration views and are more susceptible to view changes, residential viewers are more sensitive to their surroundings and therefore viewer sensitivity at this KOP is rated **high**. This KOP represents more than a dozen typical residential views within this area. Viewer exposure in aggregate is rated **low** since there are only a limited number of residences at this location with this typical view. Since visual quality and viewer exposure are ranked **low** and viewer sensitivity, is ranked high**,** overall visual susceptibility for this KOP is ranked as **low.**

In addition, since the project is screened from this KOP, visual contrast, project dominance and view impairment are all ranked as **low**. Consequently, visual impact severity for this KOP is ranked **low**.

In conclusion, the visual impact susceptibility is classified as low based on low rankings for view quality and viewer exposure and high rankings for viewer sensitivity. Visual impact severity is also classified as low based on low rankings for view impairment, visual contrast, and project dominance (see Table 3.5-1). Therefore, the project impacts for this KOP are rated *insignificant* (see Table 3.5-2). Consequently, no mitigation measures are recommended for this KOP.

Impact from KOP 2. From the vantage point of this KOP (southbound travelers along I-805 at the Governor Drive on-ramp), there are partial views to the project site (see Figure 3.2-2 and simulation Figure 3.5-1). There are no scenic views from this location. Typical views consist of freeway structures, traffic, surrounding vegetated topography, and mixed urban uses. These views are common in the area; therefore visual quality from this KOP is rated as **low**. Travelers, especially freeway travelers, are often focused on the road and traffic rather than the surroundings. A traveler at the on-ramp for the I-805 south is sensitive to the ramp light, other travelers, and has limited opportunity to view surroundings. Since the project is located in the line-of-site of travelers stopped at this on-ramp, viewer sensitivity is ranked as **moderate** for this KOP. I-805 is one of the main arterials within the San Diego area and Governor Drive a major arterial connecting to it. Therefore a high number of travelers frequent the area. Viewer exposure therefore is rated **high.** Overall, visual susceptibility for this KOP is ranked as **moderate.**

The majority of the project is currently blocked from view by existing vegetated hills. Only the tip of the landfill can be seen from this KOP. Currently, the buff-colors and smooth landfill texture contrast with the surrounding green and brown rugged vegetated hills. With the proposed project, the landfill height would increase, thereby amplifying this visual contrast. However, as the project includes revegetation of the landfill, the greenery of the vegetation will reduce the color and texture contrast that currently exists. Thus, visual contrast from this KOP is ranked as **moderate.** Project dominance, although a change will be perceptible, is ranked **moderate**. View impairment is ranked **low** because there are no scenic views from this KOP and the current view of the project will only change slightly. Consequently, visual impact severity for this KOP is ranked as **moderate**.

In conclusion, the visual impact susceptibility is classified as moderate based on low rankings for view quality, moderate ranking for viewer sensitivity, and high ranking for viewer exposure. Visual impact severity is classified as moderate based on moderate rankings for both visual contrast and project

dominance, and a low ranking for view impairment (see Table 3.5-1). Therefore, the project impacts for this KOP are rated *adverse but less than significant* (see Table 3.5-2 and simulation Figure 3.5-1). Consequently, no mitigation measures are recommended for this KOP.

Impact from KOP 3. From the vantage point of this KOP (recreational viewers within a University City park), there are no views to the project site (see Figure 3.2-3). Being a park site, the natural visual quality of the KOP is ranked **high**. Since recreational viewers are more aware of their surroundings and maintain views from these locations for longer periods of time, recreational viewers by nature are considered sensitive. Viewer sensitivity is therefore also ranked **high** for this KOP. Viewer exposure, based on an average amount of park users for the area is rated **moderate.** Overall, visual susceptibility for this KOP is therefore ranked as **high.**

The project is currently blocked from recreational viewers from all points within the park. Visual contrast, project dominance and view impairment from this KOP are all ranked as **low.** As a result, visual impact severity for this KOP is ranked as **low**.

In conclusion, the visual impact susceptibility is classified as high based on high rankings for view quality and viewer sensitivity and a moderate ranking for viewer exposure. Visual impact severity is classified as low based on low rankings for visual contrast, project dominance and view impairment (see Table 3.5-1). Therefore, the project impacts for this KOP are rated *insignificant* (see Table 3.5-2). Consequently, no mitigation measures are recommended for this KOP.

Impact from KOP 4. From residences within University City there are distant views to the project site (see Figure 3.2-3 and simulation Figure 3.5-2). Residences positioned on an elevated mesa have expansive views of the freeway interchange area (I-805/SR-52) and its surroundings from their backyards. These views are typical within the region (i.e., freeways and urban mixed uses) and are not considered scenic; however, the expansiveness of views qualifies this KOP as having **high** visual quality. As mentioned previously, because residential viewers are more aware of changes to their surroundings and maintain views of these surroundings for longer periods of time, residential viewers by nature are considered sensitive. Viewer sensitivity is therefore ranked **high** for this KOP. Viewer exposure, based on the limited number of backyard viewers, is rated **low.** Overall, visual susceptibility for this KOP is therefore ranked as **high.**

From this KOP the project blends in with the surrounding mixed land uses within the region. Distance to the project site (more than ¼-mile) further minimizes project contrast with its surroundings. While the original landfill project resulted in strong visual contrast to the area, the proposed project will be adding height of 20 ft. (which is minimized by the distance) to the landfill; however, the proposed revegetation will greatly reduce the existing contrast of the landfill from its natural surrounding. Visual contrast is thereby classified as **moderate**. Project dominance and view impairment from this KOP are ranked as **low.** As a result, visual impact severity for this KOP is ranked as **low**.

In conclusion, the visual impact susceptibility is classified as high based on high rankings for view quality and viewer sensitivity and a low ranking for viewer exposure. Visual impact severity is classified as low based on moderate rankings for visual contrast, and low rankings for project dominance and view impairment (see Table 3.5-1). Therefore, the project impacts for this KOP are rated *insignificant* (see

Table 3.5-2 and simulation Figure 3.5-2). Consequently, no mitigation measures are recommended for this KOP.

Impact from KOP 5. Eastbound travelers along SR-52 have no views to the project site (see Figure 3.2-4). State Route 52 is considered an Eligible State Scenic Highway. Although not designated, this eligible state scenic highway has been identified as having scenic vistas and viewsheds. Views from this highway are often expansive since large portions of the highway are flanked on the north by the relatively undeveloped MCAS Miramar and on the south by Rose Canyon. Although parts of Miramar have been used as landfill, many of these landfill areas have been revegetated and consequently blend back into the natural environment. Although views are interrupted by traffic, freeway structures, traffic signs, and surrounding topography, views from this KOP are considered to be of **high** visual quality due to the proximity to Rose Canyon. Although travelers at this KOP are focused on traffic-related activities, viewer sensitivity is ranked **moderate** since the viewer is aware that open expansive views along this route are likely. Viewer exposure, based on the high number of freeway users, is rated **high.** Overall, visual susceptibility for this KOP is therefore ranked as **high.**

Since the project is not visible from this KOP, visual contrast, project dominance and view impairment are all ranked as **low.** As a result, visual impact severity for this KOP is ranked as **low**.

In conclusion, the visual impact susceptibility is classified as high based on high rankings for view quality, and viewer exposure and moderate ranking for viewer sensitivity. Visual impact severity is classified as low based on low rankings for visual contrast, project dominance and view impairment (see Table 3.5-1). Therefore, the project impacts for this KOP are rated *insignificant* (see Table 3.5-2). Consequently, no mitigation measures are recommended for this KOP.

Impact from KOP 6. Some residences within the Clairemont area have expansive direct views to the project site (see Figure 3.2-4 and simulation Figure 3.5-3). The view, which is of a variety of land uses, is from an elevated position and therefore provides relatively unobscured, albeit it distant, long-term views from backyards in this area. Visual quality from this KOP is ranked **high**. Viewer sensitivity, as explained previously, is by nature sensitive, because views are for long durations and residents are highly aware of changes to their immediate visual environment. Viewer sensitivity for this KOP is thus ranked **high.** Viewer exposure, based on the limited number of residents with these expansive views, is rated **low.** Overall, visual susceptibility for this KOP is therefore ranked as **high.**

The project is visible from this KOP, but from a distance of more than ½-mile. The existing project site is barely perceptible as the landfill and its related facilities and it blends with the overall mix of natural and urban uses in the region. The project would have no perceptible change to the current visual contrast, thus earning a ranking of **low**. Project dominance, since the additional capacity would be barely perceivable from this KOP, is therefore also ranked as **low.** View impairment would not be changed because of the height increase and therefore it too is ranked as **low** from this KOP. As a result, visual impact severity for this KOP is ranked as **low**.

In conclusion, the visual impact susceptibility is classified as high based on the low ranking for viewer exposure, but high ranking for visual quality and viewer sensitivity. Visual impact severity is classified as low based on low rankings for visual contrast, project dominance, and view impairment (see Table 3.5-1). Therefore, the project impacts for this KOP are rated *insignificant* (see Table 3.5-2 and simulation Figure 3.5-3). Consequently, no mitigation measures are recommended for this KOP.

Impact from KOP 7. Westbound travelers along SR-52, near the project site, occasionally have views to the project site (see Figure 3.2-5 and simulation Figure 3.5-4). Low to moderately high (3-10-foot) shrubs, alongside the freeway, block some of the views from this KOP. Additionally, travelers at this KOP are moving at high speeds and have views for a short duration. Visual quality is ranked **moderate**. Travelers are focused on traffic-related activities. Viewer sensitivity is ranked **moderate.** Viewer exposure, based on the high number of freeway users, is rated **high.** Overall, visual susceptibility is ranked as **moderate.**

Existing visual contrast in the area is rated as **high**. The cut/fills of tan roadways criss-crossing throughout the area contrast strongly with the natural vegetated rolling hills and revegetated landfill areas visible from the roadway. Because the proposed project includes revegetation, it will actually reduce the visual contrast in the area. Therefore, project dominance for the proposed project would be considered **moderate**. View impairment from this KOP is ranked as **low.** As a result, visual impact severity for this KOP is ranked as **low**.

In conclusion, the visual impact susceptibility is classified as moderate, based on the moderate ranking for view quality and viewer sensitivity, and high ranking for viewer exposure. Visual impact severity is classified as low based on a high ranking for visual contrast, a moderate ranking for project dominance and a low ranking for view impairment (see Table 3.5-1). Therefore, the project impacts for this KOP are rated *adverse but less than significant* (see Table 3.5-2 and simulation Figure 3.5-4). Consequently, no mitigation measures are recommended for this KOP.

Impact from KOP 8. Northbound travelers along I-805 have partially obscured views of the project site (see Figure 3.2-5 and simulation Figure 3.5-5). The area offers no scenic vistas, is surrounded by traffic, freeway structures, traffic signs, and surrounding topography obscures views; therefore, visual quality is ranked **low**. Travelers at this KOP are focused on traffic-related activities and are traveling at high rates of speed. However, to the east, views to the project site are perceptible. Viewer sensitivity is ranked **moderate.** Viewer exposure, based on the high number of freeway users, is rated **high.** Overall, visual susceptibility is ranked as **moderate.**

From this KOP the majority of the landfill is blocked by intervening vegetated topography. Visual contrast would be considered **moderate**. Project dominance and view impairment from this KOP are both ranked as **low.** As a result, visual impact severity for this KOP is ranked as **low**.

In conclusion, the visual impact susceptibility is classified as moderate based on the low ranking for view quality, a moderate ranking for viewer sensitivity and a high ranking for viewer exposure. Visual impact severity is classified as low based on a moderate ranking for visual contrast, and low rankings for both project dominance and view impairment (see Table 3.5-1). Therefore, the project impacts for this KOP are rated *insignificant* (see Table 3.5-2 and simulation Figure 3.5-5). Consequently, no mitigation measures are recommended for this KOP.

Impact from KOP 9. Mobile home residences within Kearny Mesa have noise walls surrounding the community. Most views to the project are blocked. Limited views to the project are perceptible when standing on the top stairs to mobile home entrance, as shown in Figure 3.2-6. The area offers no scenic vistas and views are comprised primarily of other residences, a sound wall, and vegetative screening, Visual quality from this KOP is ranked **low**. Residential views are considered sensitive; therefore viewer sensitivity for this KOP is ranked **high.** Viewer exposure, based on the limited number of viewers, is rated **low.** Overall, visual susceptibility for this KOP is therefore ranked as **low.**

The project is visible from this KOP, albeit distant and only from a few elevated points within the residential community. Visual contrast for the proposed project would be considered **low** from this KOP since the view of proposed project features would not be distinguishable. Project dominance and view impairment from this KOP are also ranked as **low.** As a result, visual impact severity for this KOP is ranked as **low**.

In conclusion, the visual impact susceptibility is classified as low based on the low ranking for view quality, a high ranking for viewer sensitivity, and a low ranking for viewer exposure. Visual impact severity is classified as low based on low rankings for visual contrast, project dominance, and view impairment (see Table 3.5-1). Therefore, the project impacts for this KOP are rated *insignificant* (see Table 3.5-2). Consequently, no mitigation measures are recommended for this KOP.

Impact from KOP 10. Westbound travelers along SR-52 have extensive views to the project (see Figure 3.2-6 and simulation Figure 3.5-6). Whereas KOP 7 is closer to the site, views from KOP 10 are more direct, since they are facing northwest toward the site. As mentioned, SR-52 is an eligible state scenic highway offering long stretches of open views. View durations of the project site are short due to traveler rates of speed, but because the view all along this route are relatively unobscured (except for roadway vegetative screening) viewers are more aware of their surroundings and therefore the project site. Visual quality from this KOP is ranked **high**. Viewer sensitivity for this KOP is ranked **high.** Viewer exposure is also ranked **high.** Overall, visual susceptibility for this KOP is therefore ranked as **high.**

The existing landfill is a different color and texture than the surrounding natural (or naturalized) topography. Adding 20 feet to the existing landfill structure will adversely affect visual contrast. However, the degree that the additional capacity will add to this already existing contrast will be minimal from this KOP. Furthermore, the revegetation associated with the proposed project will allow the landfill to blend back into the natural environment. Visual contrast from this KOP is thereby ranked as **moderate.** Since the view of proposed project features would not be distinguishable, project dominance and view impairment from this KOP are also ranked as **low.** As a result, visual impact severity for this KOP is ranked as **low**.

In conclusion, the visual impact susceptibility is classified as high based on high rankings for view quality, viewer sensitivity, and viewer exposure. Visual impact severity is classified as low based on low rankings for project dominance and view impairment and a moderate ranking for visual contrast (see Table 3.5-1). Therefore, the project impacts for this KOP are rated *insignificant* (see Table 3.5-2 and simulation Figure 3.5-6). Consequently, no mitigation measures are recommended for this KOP.

Impact from KOP 11. From a park within Kearny Mesa a visitor has no views to the project unless the viewer stands on the top bleacher of the ballpark and turns away from the field to look toward the site. From this vantage point the project area can barely be seen in the distance (see Figure 3.2-7). It should be noted that most recreational viewers will not be focused in this direction but rather toward an activity (e.g., ballgame). Visual quality from this KOP is ranked **high** due to the fact that the area is a recreational area. Viewer sensitivity for this KOP is ranked **high** because, as mentioned previously, recreational viewers are more sensitive to their visual environment. Viewer exposure is ranked **moderate** since the number of viewers within the area vary. Overall, visual susceptibility for this KOP is therefore ranked as **high.**

Since adding additional capacity to a site that is barely perceptible, visual contrast, project dominance, and view impairment from this KOP are also ranked as **low.** As a result, visual impact severity for this KOP is ranked as **low**.

In conclusion, the visual impact susceptibility is classified as high based on high rankings for view quality and viewer sensitivity and exposure. Visual impact severity is classified as low based on low rankings for visual contrast, project dominance, and view impairment (see Table 3.5-1). Therefore, the project impacts for this KOP are rated *insignificant* (see Table 3.5-2). Consequently, no mitigation measures are recommended for this KOP.

Impact from KOP 12. Travelers at the SR-163 on-ramp to SR-52 have distant but direct views to the project site (see Figure 3.2-7 and simulation Figure 3.5-7). Intervening topography and roadside screening block views except for pieces of the tops of the landfill. Visual quality from this KOP is ranked **high** due to expansive views toward the relatively undeveloped MCAS Miramar. Viewer sensitivity for this KOP is ranked **moderate** because viewers are focusing on traffic-related activities but are aware of the expansive views. Viewer exposure is ranked **high** since the number of travelers at this interconnection is high. Overall, visual susceptibility for this KOP is therefore ranked as **high.**

Since adding additional capacity to the proposed project site will be only slightly visible from this KOP, visual contrast, project dominance, and view impairment from this KOP are also ranked as **low.** As a result, visual impact severity for this KOP is ranked as **low**.

In conclusion, the visual impact susceptibility is classified as high based on high rankings for view quality and viewer exposure, and a moderate ranking for viewer sensitivity. Visual impact severity is classified as low based on low rankings for visual contrast, project dominance, and view impairment (see Table 3.5-1). Therefore, the project impacts for this KOP are rated *insignificant* (see Table 3.5-2 and simulation Figure 3.5-7). Consequently, no mitigation measures are recommended for this KOP.

Impact from KOP 13. Hikers using the trail extending north from Limerick Avenue, within the Marian Bear Natural Park, have expansive direct views to the project site (see Figure 3.2-8 and simulation Figure 3.5-8). The view is from an elevated position and therefore provides relatively visible, albeit short-term views from the hiking trail in this area. Visual quality from this KOP is ranked **high**. Persons utilizing the area may have an expectation of a high quality visual environment; however, views are only for short durations and during recreational use. Viewer sensitivity for this KOP is thus ranked **moderate.** Viewer exposure, based on the limited number of hikers utilizing this trail, is rated **low.** Overall, visual susceptibility for this KOP is therefore ranked as **moderate.**

The project is visible from this KOP, but from a distance of approximately ½-mile. The existing landfill is a different color and texture than the surrounding natural (or naturalized) topography resulting in strong visual contrast to the area. However, as the project will only add 20 feet to the landfill and the revegetation will help blend the landfill back into the natural environment, the project will not significantly alter the visual contrast. Visual contrast from this KOP is thereby ranked as **moderate.** The cut/fills of tan roadways criss-crossing throughout the area and in the adjacent valley, contrast strongly with the natural vegetated rolling hills and revegetated landfill areas visible from the roadway. Project dominance for the proposed project would be considered **moderate.** View impairment from this KOP is ranked as **low.** As a result, visual impact severity for this KOP is ranked as **moderate**.

In conclusion, the visual impact susceptibility is classified as moderate based on the high ranking for visual quality, moderate ranking for viewer sensitivity and low ranking for viewer exposure. Visual impact severity is classified as moderate based on moderate rankings for visual contrast and project dominance, and low raking for view impairment (see Table 3.5-1). Therefore, the project impacts for this KOP are rated *adverse but less than significant* (see Table 3.5-2 and simulation Figure 3.5-8). Consequently, no mitigation measures are recommended for this KOP.

Table 3.5-2
Visual Impact Significance Summary by KOP

KOP	Visual Impact		
	Impact Susceptibility Ranking	Impact Severity Ranking	Impact Classification
1	Low	Low	Insignificant[1]
2	Moderate	Moderate	Adverse but Less than Significant[2]
3	High	Low	Insignificant[1]
4	High	Low	Insignificant[1]
5	High	Low	Insignificant[1]
6	High	Low	Insignificant[1]
7	Moderate	Moderate	Adverse but Less than Significant[2]
8	Moderate	Low	Insignificant[1]
9	Low	Low	Insignificant[1]
10	High	Low	Insignificant[1]
11	High	Low	Insignificant[1]
12	High	Low	Insignificant[1]
13	Moderate	Moderate	Adverse but Less than Significant[2]

1 Insignificant impacts may or may not be perceptible but are considered minor in the context of existing landscape characteristics and view opportunity.

2 Adverse but less than significant impacts are perceived as negative but do not exceed environmental thresholds (Class III).

3 Significant impacts can be mitigated to a level that is not significant or can be avoided altogether with feasible mitigation. Without mitigation, the impact could exceed environmental thresholds (Class II).

4 Significant impacts cannot be feasibly mitigated (Class I).

The project will have insignificant aesthetic impacts to viewers from seven of the thirteen KOPs (or 58%). Impacts from 3 of the thirteen KOPs (or 23%) were considered adverse but less than significant. Overall, the project is found to have adverse but less than significant impacts.

3.6 CUMULATIVE IMPACTS

CEQA Guidelines require a discussion of cumulative impacts, which is a change in the environment that results from adding the effect of the project to those effects of closely-related past, present and probable future projects. In order to comply with this provision, existing land uses in the project vicinity were compared to projected land uses as defined by the San Diego County General Plan 2030 Revision. During this comparison it was noted that future land uses (probable future projects) were not expected to change. In addition, contact with MCAS Miramar verified land uses on the Station were not expected to change. Consequently, the probable future visual environment will remain similar to that which exists currently.

It is often assumed that a visual impact will affect natural scenic vistas and the natural visual character of an area. Clearly the initial development of the landfill in a previously farmed, but largely undeveloped environment resulted in significant impact to scenic vistas and the visual character of the area. Scenic vistas once included expansive views of natural landscape tucked between mountain ridgelines. Once the landfill was established, scenic vistas and visual character were redefined. Hillside views are now noticeably different. The eye is drawn to the tops of unvegetated landfill ridgelines and the motion of landfill-related vehicles within the open environment. Measuring aesthetic impacts to the area must now be determined by measuring only potential aesthetic impacts created from new development. Aesthetic impacts of this project are therefore defined as changes made by adding a 20-foot height increase to the existing landfill setting and revegetation.

Cumulative Aesthetics Impacts: Initial development of the landfill substantially affected scenic vistas and degraded the pastoral visual character and/or quality of the project site. The addition of 20 feet to the existing landfill structure would barely be perceptible from most vantage points. Additionally, revegetation has been incorporated into the project that will positively affect the visual character and/or quality of the area.

Cumulative impacts include the combined view of the Proposed Project, together with the potential future development of the Materials Recovery Facility considered in the EIS/EIR for the landfill's General Development Plan (GDP), and the proposed Construction and Demolition Debris (C&D) Recycling facility, which could add in industrial-looking use to the surface of the landfill. The Materials Recovery Facility will be much closer to viewpoints, and will partially block views of the Proposed Project and the C&D facility. The impacts associated with these three projects, all affecting the existing disturbed and landfilled areas will not change the existing nature of the landscape, which has already been altered by landfill operations.

The proposed facilities under the GDP analyzed in Phase I, notably the Household Hazardous Waste collection facility, have already been developed. The Materials Recovery Facility has not yet been developed and may be developed in the future, but as anticipated in the GDP, this facility will be adequately screened from public view. Since the current view is of the biosolids facility, which was developed subsequent to the EIS/EIR for the GDP, adequate screening of the area would reduce an existing impact and would not contribute to any cumulatively significant deterioration in the viewshed quality. Most GDP Phase II projects, such as the paper pulping plant, are no longer proposed.

Since little additional land development or landform alteration is anticipated under either Miramar or City of San Diego plans for the Proposed Project area, no substantive development is anticipated that would add to anticipated landfill visual changes from the identified KOPs, and thus result in cumulative visual impacts.

Another proposed project is the expansion of the Sycamore Landfill, located approximately eight miles to the east. The viewshed do not currently overlap, since the Sycamore Landfill is located eight miles to the east, with intervening mountains. However, as currently proposed, the top of the proposed Sycamore Landfill expansion may eventually be visible to some viewers in the Miramar Landfill vicinity. This massive increase would doubtless be considered a significant impact from many viewpoints. However,

due to the location of the Miramar Landfill, the visibility of Sycamore Landfill's top would be substantially reduced, as a result of distance and of the atmospheric perspective (haze) that is common in the area. At eight miles away, Sycamore Landfill would be characterized as a background visual element, and would not have a substantial visual effect on viewers near Miramar.

The amount of earth to be moved is substantial (476 acres will be graded, and more than 13,000,000 cubic yards will be landfilled). Earth movement required for the C&D Recycling facility would be minimal, and that needed for the Materials Recovery Facility would primarily be for the purpose of visual screening. However, the revegetation associated with this project will have a positive effect on the area's visual quality. Cumulative impacts resulting from this project are therefore considered adverse, yet less than significant.

SECTION 4 RECOMMENDATIONS

To minimize visual impacts due to four additional years of operation and a 20-foot height increase, no further measures, other than those outlined in the Closure Plan, are considered necessary.

SECTION 5 REFERENCES

5.1 DOCUMENTS

Association of Environmental Professionals, 2004, California Environmental Quality Act Statutes and Guidelines. PLEASE CONSULT AND REFERENCE THE 2005 GUILDINES. They have changed quite a bit.

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PLEASE CONSULT AND REFERENCE ALL COMMUNITY PLANS.

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Federal/National Environmental Policy Act (NEPA) Guidelines
Website: http://ceq.eh.doe.gov/nepa/regs/nepa/nepaeqia.htm.

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MCAS Miramar Draft Master Plan, KTU+A, 1999.

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State CEQA Guidelines
Website: http://ceres.ca.gov/ceqa/.

State/Caltrans Scenic Highways Program
Website: http://www.dot.ca.gov/hq/LandArch/scenic_highways/index.htm.

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USDA, Forest Service, 1973, National Forest Landscape Management, Vol. I1, Agriculture Handbook No.462, Government Printing Office, Washington, D.C.

USDI, Bureau of Land Management, 1980, Visual Resources Management Program, Government Printing Office, Washington, D.C.

West Miramar Sanitary Landfill EIR, City of San Diego, 1980.

5.2 OTHER SOURCES

City of San Diego, Personal Correspondence/Communications and Data, 2005.

Shaw Environmental, Inc., Personal Correspondence/Communications and Data, 2005.

Figure 1.1-1
Project Overview Map

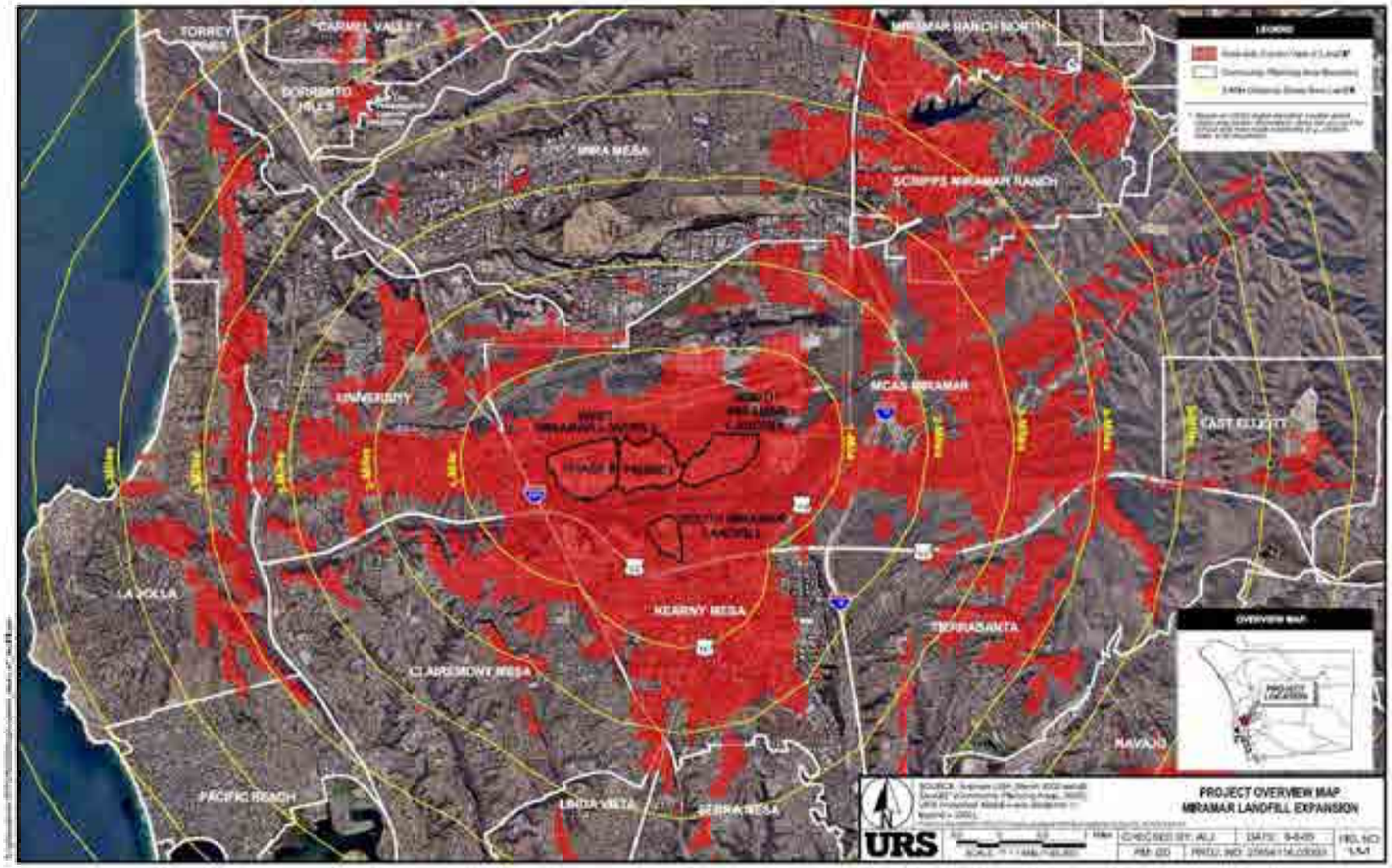


Figure 3.2-1
Visual Resources Key Observations Points (KOPs)

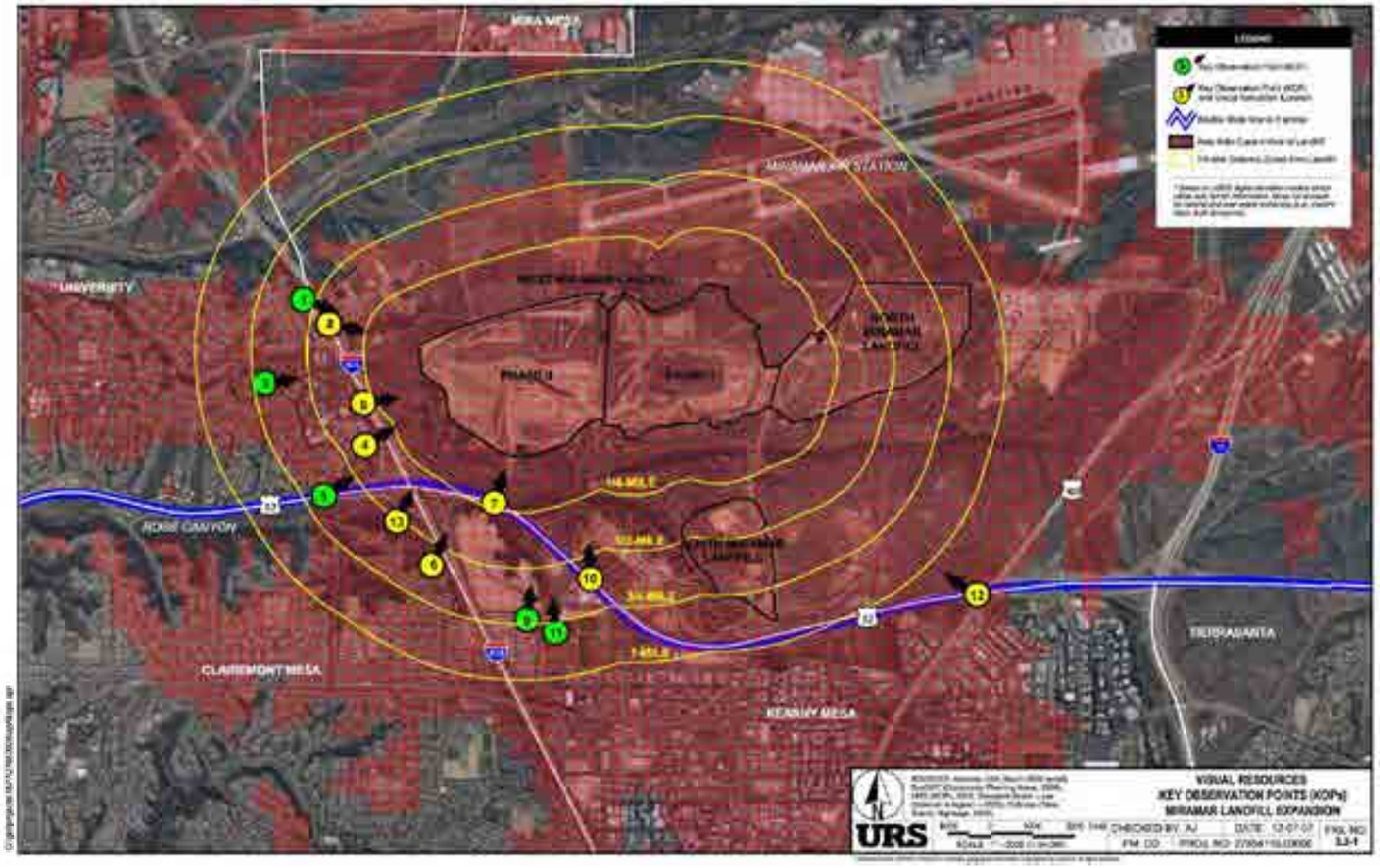


Figure 3.2-2
Existing View Photos: KOP #1 and KOP #2

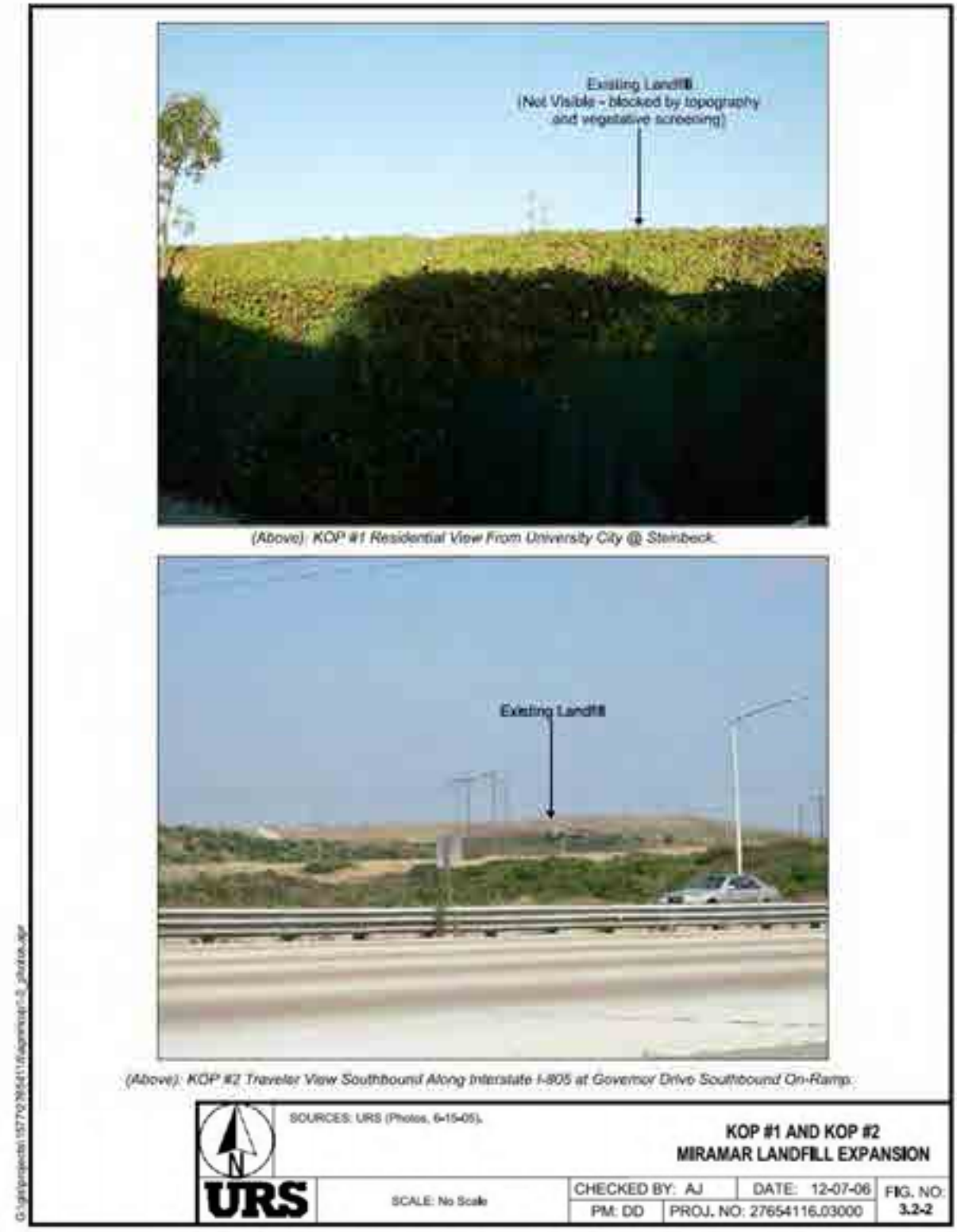


Figure 3.2-3
Existing View Photos: KOP #3 and KOP #4

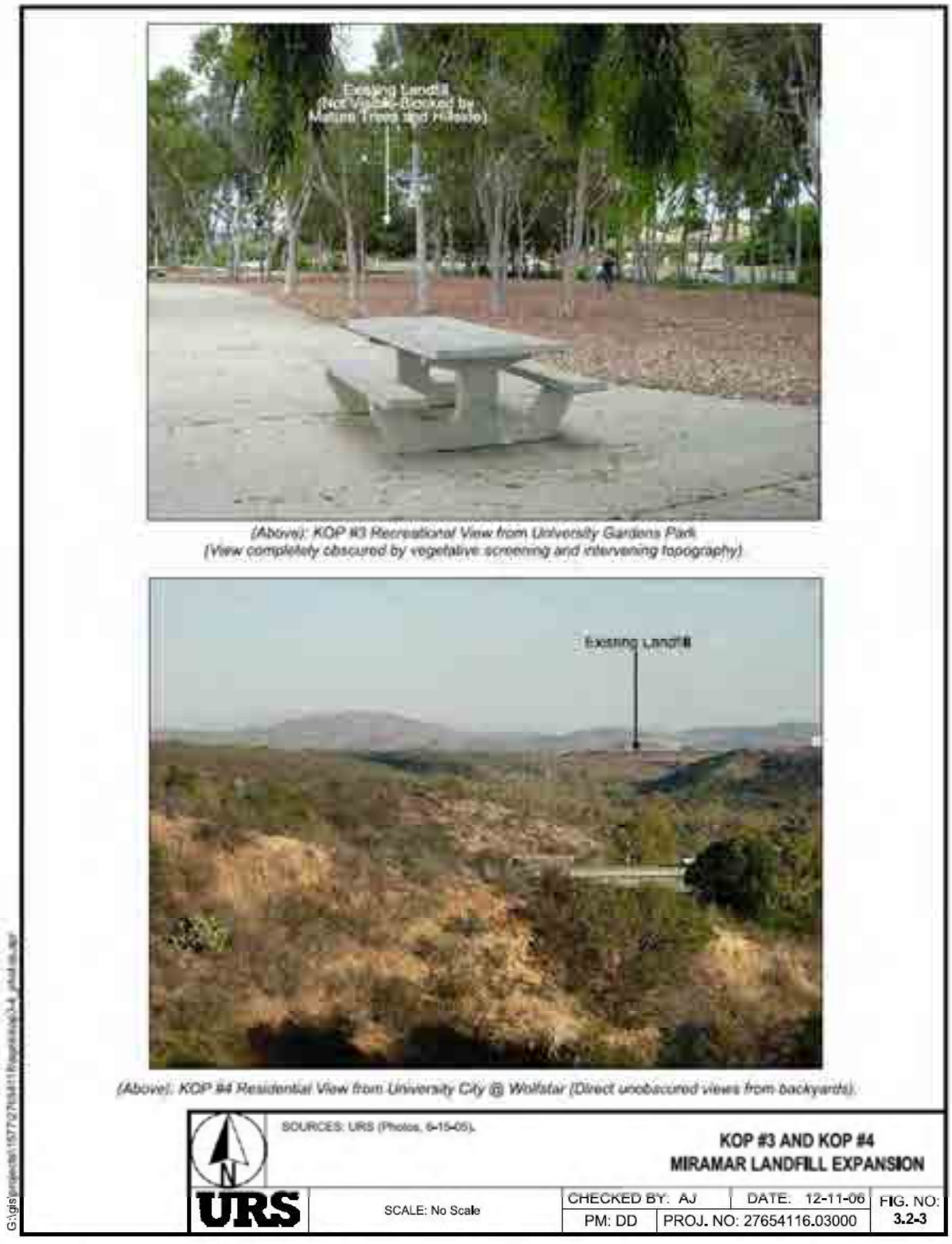


Figure 3.2-4
Existing View Photos: KOP #5 and KOP #6

Figure 3.2-5
Existing View Photos: KOP #7 and KOP #8

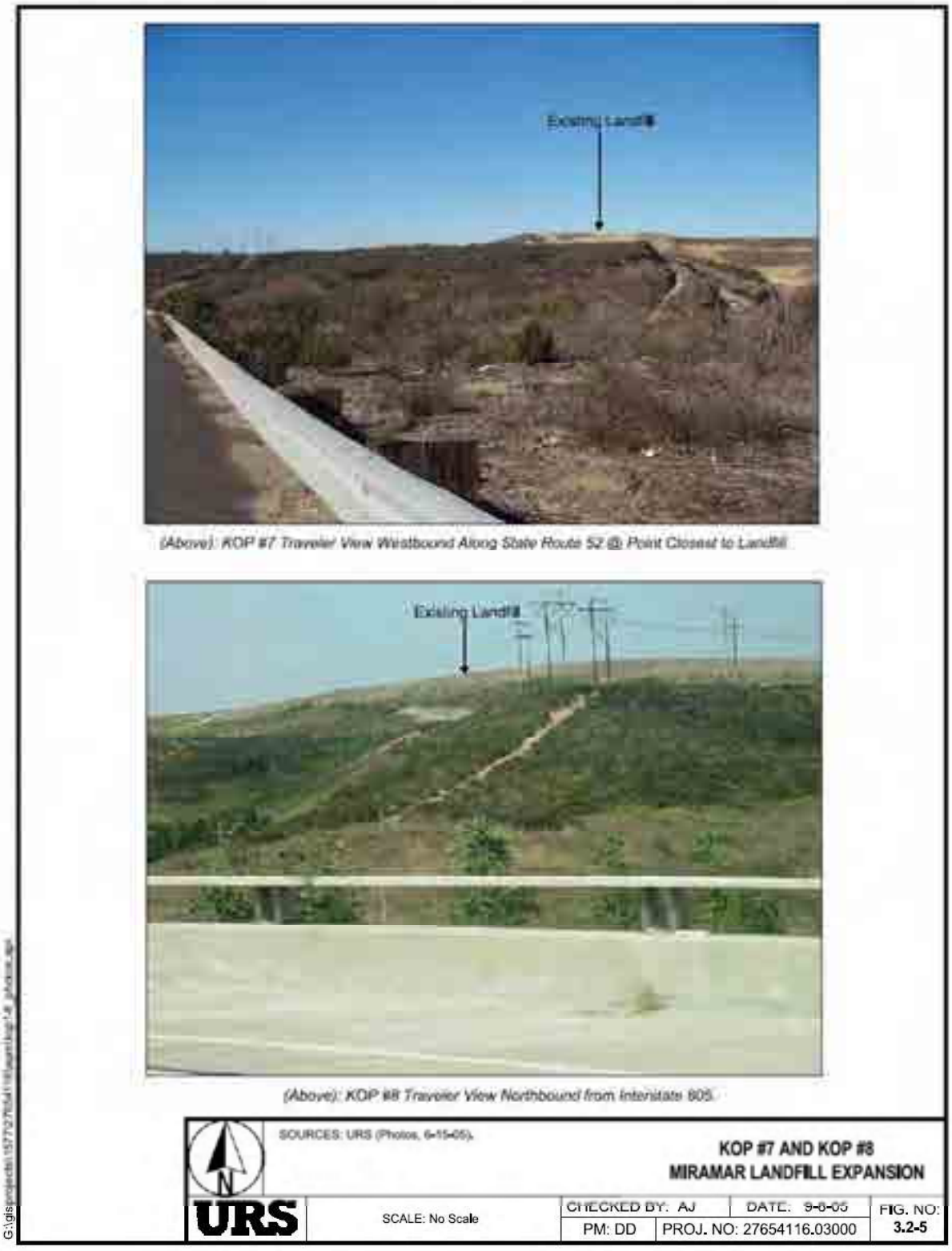


Figure 3.2-6
Existing View Photos: KOP #9 and KOP #10

(Above): KOP #9 Residential View From Kearny Mesa @ Kearny Lodge Trailer Park (Views almost completely screened by intervening screening).

(Above): KOP #10 Traveler View Westbound Along State Route 52.

SOURCES: URS (Photos, 6-15-05).

KOP #9 AND KOP #10
MIRAMAR LANDFILL EXPANSION

URS	SCALE: No Scale	CHECKED BY: AJ	DATE: 12-08-06	FIG. NO: 3.2-6
		PM: DD	PROJ. NO: 27654116.03000	

Figure 3.2-7
Existing View Photos: KOP #11 and KOP #12

(Above): KOP #11 Recreational View From Kearny Mesa @ Hickman Field (Landfill barely visible in center of picture)

(Above): KOP #12 Traveler View @ SR-52/SR-163 Interchange

SOURCES: URS (Photos, 6-15-05).

KOP #11 AND KOP #12
MIRAMAR LANDFILL EXPANSION

URS	SCALE: No Scale	CHECKED BY: AJ	DATE: 12-08-06	FIG. NO: 3.2-7
		PM: DD	PROJ. NO: 27654116.03000	

Figure 3.2-8
Existing View Photos: KOP #13

(Above): KOP #13 Hiker view from Marian Bear Natural Park

This space intentionally left blank.

SOURCES: URS (Photos, 6-15-05).

KOP #13
MIRAMAR LANDFILL EXPANSION

URS

SCALE: No Scale

CHECKED BY: AJ | DATE: 12-08-06 | FIG. NO: 3.2-8
PM: DD | PROJ. NO: 27654116.03000

Figure 3.5-1
Visual Simulation at KOP2
(I-805 at Governor Drive On-Ramp)

Figure 3.5-2
Visual Simulation at KOP 4
(Residential View from University @ Wolfstar)

Figure 3.5-3
Visual Simulation at KOP 6
(Residential View from Clairemont Mesa @ Palmyra)

Figure 3.5-4
Visual Simulation at KOP 7
(Westbound along SR-52 @ Point Closest to Landfill)

Figure 3.5-5
Visual Simulation at KOP 8
(I-805 North/Closest View to the Project)

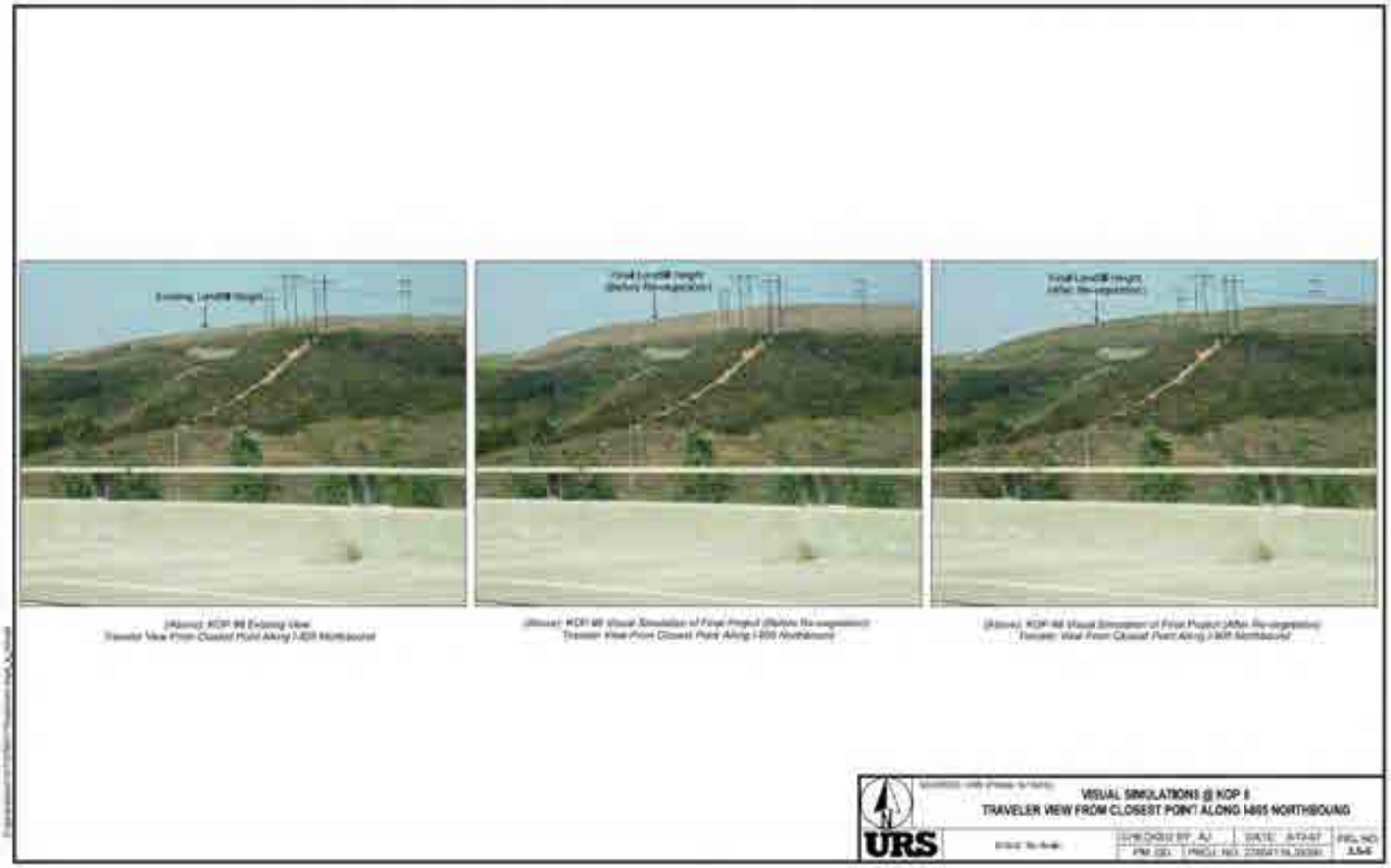


Figure 3.5-6
Visual Simulation at KOP 10
(Traveler View Westbound along SR-52)

Figure 3.5-7
Visual Simulation at KOP 12
(Traveler View at SR-52/SR-163 Interchange)

Figure 3.5-8
Visual Simulation at KOP 13
(MHPA Area Hiker View from Marian Bear Natural Park)

Proposed West Miramar Landfill Height Increase
City of San Diego, California

1.0 Introduction

This report analyzes the potential effects of the proposed project on water quality. According to the 1994 Water Quality Control Plan developed by the Regional Water Quality Control Board (RWQCB), the proposed project occurs within the Penasquitos Hydrographic Unit (Unit 6) of the San Diego Basin Planning Area (Area 9), within the Peninsula Range Physiographic Province of California. The San Diego Region is divided into a coastal plain area, a central mountain-valley area, and an eastern mountain-valley area. The coastal plain area comprises a series of wave-cut benches covered by thin terrace deposits. This terraced surface has been deeply bisected by streams draining to the sea. Water resources in the San Diego Region are classified as coastal waters, surface waters, ground waters, imported surface waters, and reclaimed water. The proposed project occurs along the San Clemente Canyon drainage (hydrologic basin number 6.4), with recreational uses identified in areas such as Mission Bay.

Groundwater protection and monitoring are required for the existing landfill operation, per the requirements of Title 27. Depth to groundwater measurements are taken on a quarterly basis and samples are taken on a semi-annual basis. Samples are analyzed for a modified list of constituents as modified for onsite leachate characteristics. Once every five years, samples are analyzed for the entire Title 27 suite of constituents. Groundwater reports are filed with the RWQCB twice a year. The annual report summarizes the years' sampling events and includes trend analysis with historical data. The Joint Technical Document describes the ground water monitoring system in more detail in section 5.2, providing a figure showing monitoring points, an appendix showing the sampling and analysis plan, and appendices describing the monitoring and reporting program. The proposed project would not change the footprint, and would make no changes to the existing groundwater protection and monitoring program.

With the proposed project, the surface features would change, and the higher slope walls would require additional surface runoff controls. The discharge of storm water-borne pollutants from the landfill into waters of the United States must be limited pursuant to the California Water Board's industrial requirements. The Joint Technical Document describes the necessary controls, to be incorporated into the Closure Plan, as project design features that are inspected by regulatory agencies, including the RWQCB. These controls for the landfill are described in more detail in the Storm Water Pollution Prevention Plan (SWPPP), provided as Appendix A-7 of the Joint Technical Document. This report describes some of the primary features of the SWPPP, and includes 1) a description of existing controls, 2) how those controls would be modified to accommodate landfilling activities during the period of time the landfill is open because of the

15-to-20 foot height increase, and 3) how those controls would be modified when the landfill ceases operations and is closed.

2.0 Site Topography and Physiography

The West Miramar Landfill (WML) is a typical southern California canyon-and-area landfill located in Kearny Mesa. It occupies part of the large, relatively level Kearny Mesa Community, which is bisected by a number of major east/west trending canyons including San Clemente Canyon, which is south of the site, and Rose Canyon, which is north of the site. Four smaller north/south trending tributary canyons and several lesser drainages characterize the geomorphology of the site itself. The mesa surface within the Phase II area slopes gently to the west from an elevation of approximately 430 feet above mean sea level (msl) on the northeast side of the site to approximately 370 feet above msl on the west. Along the southern boundary, the mesa is truncated by the steep northern wall of the San Clemente Canyon. San Clemente Canyon itself flows east to west from an elevation of approximately 300 feet above msl below the east side of the Phase I area to 260 feet above msl below the west side of the Phase II area of the site.

While San Clemente Canyon forms the southern boundary of the WML, the western boundary is formed by existing cut slopes which descend approximately 20 to 40 feet from Kearny Mesa to the I-805 right-of-way. The north perimeter of the landfill is defined by a security fence for the western runways of MCAS Miramar. East of and adjacent to the site is the North Miramar Landfill which consists of mounded fill areas and man-made slopes.

3.0 Climatic Conditions

The San Diego climate can be described as "Mediterranean," with cool, relatively wet winters and warm, dry summers, and is controlled by the strength and position of a semipermanent high-pressure center over the Pacific Ocean. This center tends to maintain moderate temperatures, low rainfall amounts (generally confined to the cooler months), moderate humidity, and light winds. Both summer and winter temperatures are moderated by breezes from the Pacific Ocean. Diurnal and seasonal oscillations about the mean annual temperature are small. Temperatures above 90°F or below freezing seldom occur.

Data for the 1971-2000 normal period is from the San Diego WSO Airport weather station (NCDC COOP 047740), 8 miles south of WML, which indicate a mean high temperature of 70.8ºF, a mean temperature of 64.4ºF, and a mean low temperature of 53.9ºF. The highest mean temperature (83.7ºF) occurs in September and the lowest mean temperature (48.9ºF) occurs in December. For the entire period of record (1914-present), the highest recorded temperature was 111ºF (September 26, 1963) and the lowest was 29ºF (January 4, 1949). The mean rainfall for

the 1971-2000 normal period was 10.77 inches. Over the entire period of record, the lowest annual rainfall was 3.41 inches (1953) and the highest was 24.93 inches (1941). Because of its inland location, the climate at WML is slightly warmer and drier than at the Airport weather station, which is located at sea level next to San Diego Bay.

The wet season at WML extends from October through April. About 95 percent of the total annual precipitation falls within this period, with mean monthly values ranging from 0.50 to 2.03 inches per month and maximum monthly values ranging from 4.98 to 9.26 inches per month. Figure 1 shows the mean and maximum precipitation values by month for the Airport station, as well as the highest recorded daily precipitation value for each month. Monthly values for the minimum precipitation are not shown because they equal zero in every month. The maximum recorded daily values for precipitation during the wet season range from 2.04 to 3.23 inches.

The Rational Method hydrology analysis was used to predict the 100-year runoff peak for the WML drainage areas. These studies conform to standards set forth in the San Diego County Hydrology Manual (County of San Diego, 2001). Peak flows were calculated using the drainage basins shown on the final grading plan (Figure 2). The tables on Figure 2 summarize the estimated runoff values.

For flood analysis and drainage design purposes, the following estimated amounts of precipitation (as measured in a depth gauge) occur at the specified return period (how frequently), and are of the specified duration (how long the rain event lasts):

Table 3.1
Estimated Precipitation

Return Period of Rainstorm (years)	Rainstorm Duration (hours)	Rainfall (inches)
2	6	1.12
	24	1.69
5	6	1.36
	24	2.34
10	6	1.56
	24	2.74
25	6	1.86
	24	3.29
50	6	2.13
	24	3.50
100	6	2.38
	24	3.91

Source: County of San Diego, 2001, *San Diego County Hydrology Manual*, Department of Public Works, Flood Control Section, August (Appendix B).

Figure 1

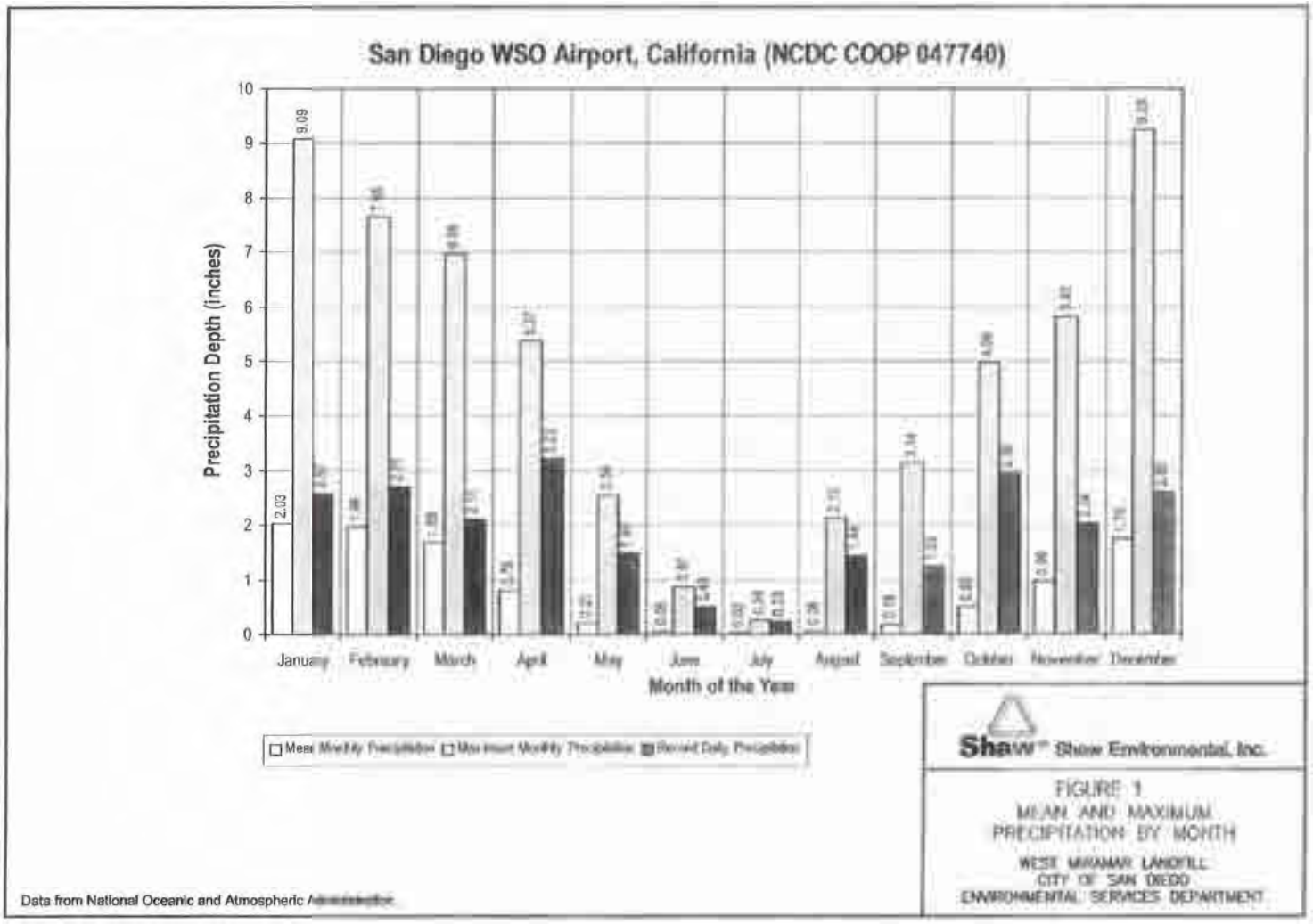
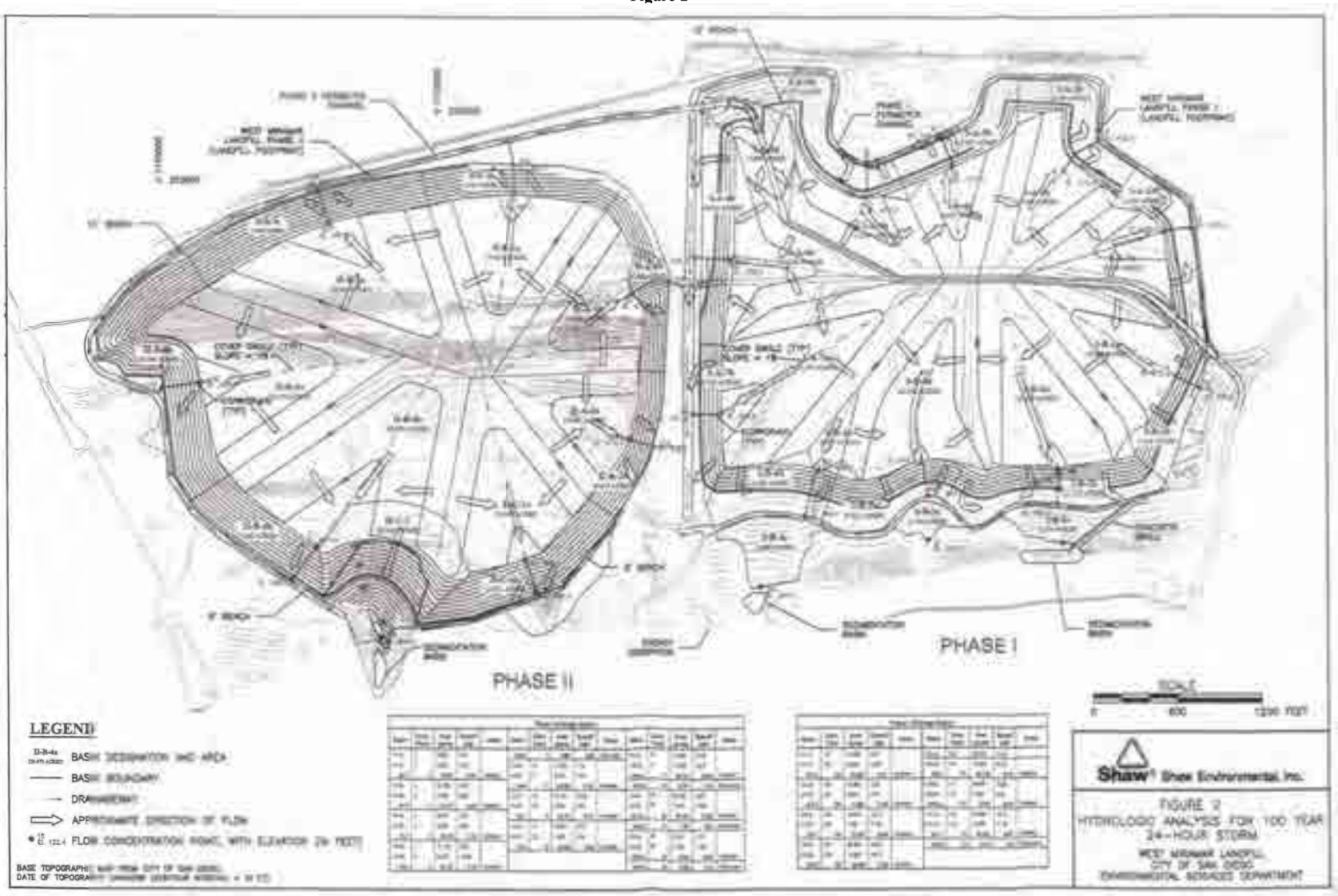

San Diego WSO Airport, California (NCDC COOP 047740)
Precipitation Depth (inches)
0
1
2
3
4
5
6
7
8
9
10
9.09
2.03
January
February
March
April
May
June
July
August
September
October
November
December
Month of the Year
Mean Monthly Precipitation
Maximum Monthly Precipitation
Record Daily Precipitation
Data from National Oceanic and Atmospheric Administration
Shaw Shaw Environmental, Inc.
FIGURE 1
MEAN AND MAXIMUM
PRECIPITATION BY MONTH
WEST MIRAMAR LANDFILL
CITY OF SAN DIEGO
ENVIRONMENTAL SERVICES DEPARTMENT

Figure 2


PHASE II
PHASE I
LEGEND
BASIN DESIGNATION AND AREA
BASIN BOUNDARY
DRAINAGEWAY
APPROXIMATE DIRECTION OF FLOW
FLOW CONCENTRATION POINT, WITH ELEVATION (IN FEET)
BASE TOPOGRAPHY
DATE OF TOPOGRAPHY
0
600
1200 FEET
Shaw Shaw Environmental, Inc.
FIGURE 2
HYDROLOGIC ANALYSIS FOR 100 YEAR
24-HOUR STORM
WEST MIRAMAR LANDFILL
CITY OF SAN DIEGO
ENVIRONMENTAL SERVICES DEPARTMENT

No officially-designated 100-year or 500-year floodplains have been mapped on or adjacent to the WML lease area. The floor of San Clemente Canyon is a natural drainage that is subject to flooding at frequent intervals. As WML is well above the canyon floor, no part of the landfill is subject to inundation by a 100-year flood in San Clemente Canyon. However, some damage to the access road, peripheral drainage facilities, and sedimentation basins could occur during such a flood.

4.0 Drainage Design

The purpose of the surface-water drainage-control system is to divert stormwater runoff in a controlled manner and convey it from the site in order to minimize erosion and limit the potential infiltration of surface water into the refuse disposal areas. Drainage-control facilities at WML are sized to handle runoff from a 100-year, 24-hour rainstorm, in accordance with design criteria set by both the City and the County of San Diego. With respect to general flooding, the landfill is not subject to inundation by a 100-year flood in the San Clemente Canyon drainage. This is because the WML facilities are well above the floors of canyons subject to inundation.

4.1 Existing, Proposed, and Final Drainage Systems

EXISTING DRAINAGE SYSTEMS

Onsite drainage features are intended to control storm water that falls on the landfill or the surrounding support facilities. The existing drainage control system for the WML consists of drainage channels, berms, down drains, energy dissipaters, and detention basins. Drainage berms along the perimeter of the landfill decks convey surface water to San Clemente Canyon after traveling through the down drains or earthen drainage channels and then into the detention basins.

Compacted earth berms around the deck perimeter, the working face, and the intermediate benches are configured as shallow V-shaped channels directing storm water to the down drain inlets along the perimeter of the top deck. Perimeter channels with a typical gradient of 1 to 3 percent are used around the landfill perimeter. The perimeter drainage facilities are used to collect and divert surface water run-on that originates offsite to the north and east of the site; however, much of the existing topography around the landfill slopes parallel to or away from the site and will not require offsite run-on control.

The onsite drainage control system for WML contains three low point locations along the perimeter of the landfill. Sedimentation basins have been constructed at all of these locations as part of an overall erosion control and desilting system. The desilting basins are intended to reduce the amount of silt ultimately discharged from the landfill site by temporarily containing

runoff and allowing sediments to settle out. Each of the siltation basins then discharges into San Clemente Canyon.

Three surface water monitoring locations are located along San Clemente Canyon providing a background (upstream) point and two sample locations (downstream). These stations are monitored on a quarterly basis and results are reported to the Regional Water Quality Control Board.

PROPOSED DRAINAGE SYSTEMS

The existing drainage system will be modified to drain the runoff associated with the slightly higher slopes. As the landfill is constructed, the system must be continually modified to ensure that the system provides effective collection of all site runoff even as the topography changes.

The collected runoff associated with the slightly taller landfill would discharge into sedimentation basins, as it does now. Sediments would settle before water is discharged into San Clemente Canyon, as they do now. Sedimentation basins would be maintained, with sediment periodically removed and used at the landfill, as it is now.

Several options are available to provide sufficient protection of downstream resources against sedimentations. For example, the sediment basin can be designed with the capacity equivalent to 3,000 ft^3 of storage per acre. Alternatively, the basin can be designed according the following equation, or in a manner at least as protective as one designed according to this equation:

$$As = 1.2Q/Vs$$

Where: As, is the minimum surface area for trapping soil particles

Vs, is the settling velocity of the design particle size (the smallest soil grain size as determine by wet sieve analysis)

Q, is the discharge rate measured in ft^3 per second, calculated as

Q = C (the runoff coefficient) x I (the precipitation intensity for the 10-year, 6-hour event) x A (the area draining into the sediment basin in acres)

The existing sedimentation basin for Phase I is sufficient for the needs of the landfill as currently designed, and for the proposed height increase. The Phase II sedimentation would require either an enlargement to accommodate the slightly increased value of "A," or an engineered design, such as inclusion of baffles, to increase the rate at which particles drop out, effectively increasing "Vs." This design decision will be made as the landfill proceeds, in consultation with the Regional Water Quality Control Board, which has approval authority over drainage design.

Velocity dissipaters would continue to be used at the exit from the sedimentation basins to provide discharge rates that do not produce excessive scour.

FINAL DRAINAGE SYSTEMS

At closure, the final drainage system will be designed, constructed, and maintained as a permanent system. The existing drainage facilities will be removed during placement of the final cover and re-established as the final drainage facilities after the final cover is in place. As is established in the existing Closure Plan and in the new Closure Plan, storm water on the landfill deck will drain by overland flow to drainage swales that radiate out from the deck interior to down drains at the deck perimeter. In addition, low berms along the perimeter of the deck will prevent local storm water flows from discharging over the side slopes. Instead, the deck berms will redirect flows to the down drain inlets. The down drains would discharge to drainage channels along the landfill perimeter that, in turn, discharge to sedimentation basins. Storm water from other nearby facilities would discharge directly into the perimeter drainage channels. The proposed final drainage plan is shown in Figure 2.

The final grades for Phase I and Phase II define radial ridge-and-valley surfaces on the top decks. Storm water runoff from the ridges would collect in the valleys and flow from there outward toward the landfill perimeter. To avoid erosion of the cover by these concentrated flows, shallow swales protected with soil containing gravel and cobble-sized stone will be located along the valleys. The stony soil used to construct these swales would support the same plant community used to vegetate the rest of the cover. Figure 3 shows a typical section of such a swale.

The downdrains would be perpendicular to slope contours and located atop, and anchored into, the final landfill surface. They would be extended up completed side slopes of the landfill as the filling progresses. The downdrains also would have inlets at each bench to accommodate flows along the inside edge of the intermediate benches resulting from stormwater from the landfill side slopes. Figure 3 shows a typical section of a downdrain.

At closure, the potential soil loss is limited because the landfill will have a compacted final cover, established final vegetation and a stone-armored drainage system. The closed landfill must withstand erosion caused by stormwater so that the function of the final cover will not be compromised within the post-closure performance period. The annual erosion rate on the landfill slopes should not exceed 2.0 tons per acre, as estimated using the Universal Soil Loss Equation (Wischmeier and Smith, 1978; and U.S. EPA, May 1991).

Universal Soil Loss Equation:

$$A = R \times K \times L \times S \times C \times P$$

Where:

	A	=	Average soil loss, in tons/acre
	R	=	Rainfall and runoff erosivity index
	K	=	Soil erodibility factor, tons/acre
	L	=	Slope-length factor
	S	=	Slope-steepness factor
	C	=	Cover-management factor
	P	=	Practice factor

Some USLE parameters remain constant over the entire site, while others vary from point to point with local conditions. The following ranges of input values were used:

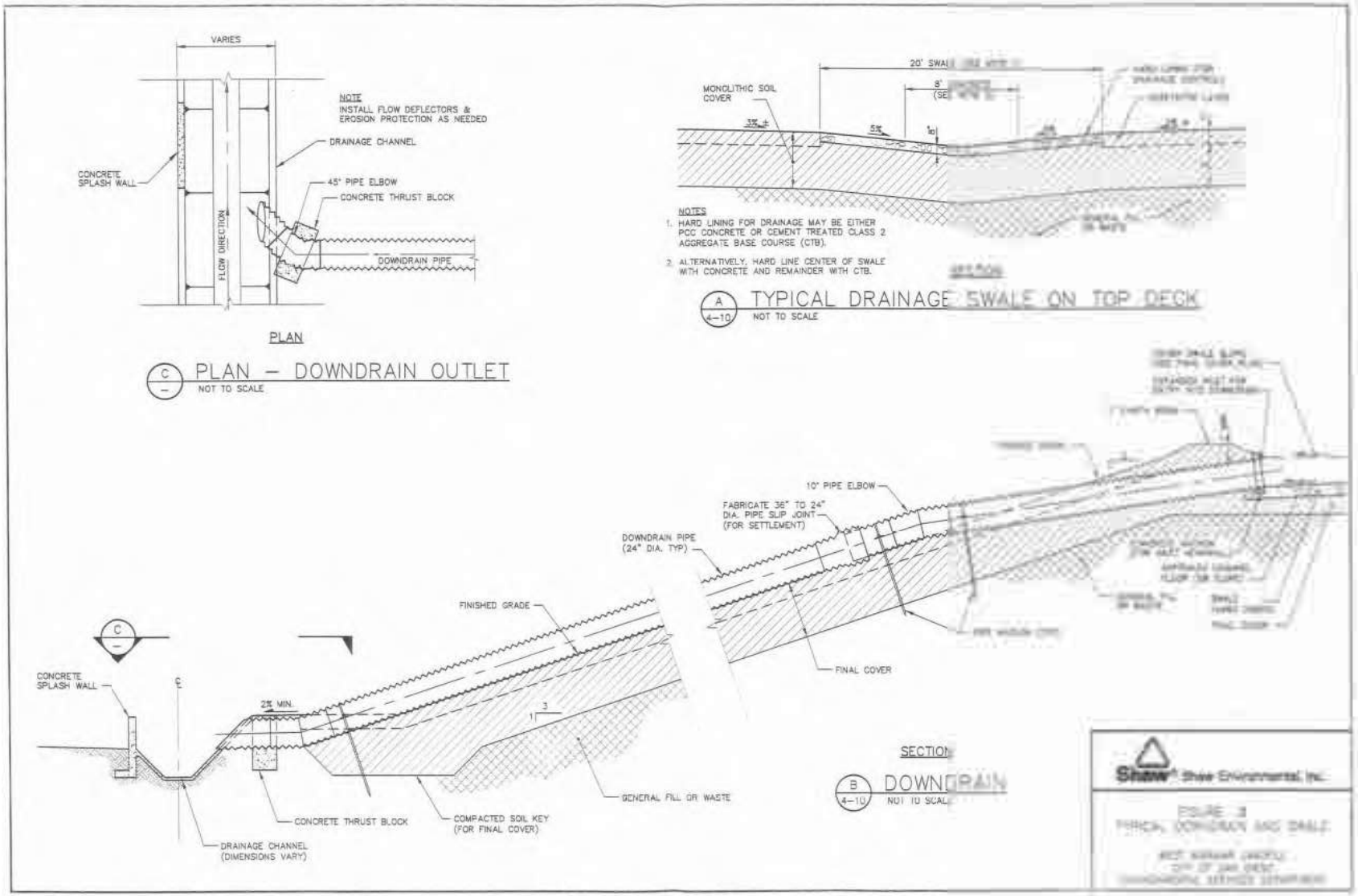
Table 4.1
USLE Parameter Input Values

Parameter	Values	Basis and Source
R	20	Published value for San Diego WSO Airport climatic data (digital data in Toy and Foster, 1998)
K	0.32	Default value for clay loam or sandy clay loam soil (digital data in Toy and Foster, 1998)
LS	0.230 to 26.9	Varies with slope length and gradient (Table 3 and Figure 4, Wischmeier and Smith, 1978)
C	0.067	For 70% Type W (herbaceous) cover with no canopy (Table 10, Wischmeier and Smith, 1978)
	0.020	Crushed-stone mulch on steep slopes (Table 9, Wischmeier and Smith, 1978)
P	1.0	Default value when no specific support practices are used
	0.5 to 0.9	Contour plowing used to slow runoff; value varies with slope gradient (Table 14, Wischmeier and Smith, 1978)

Initial analysis, employing an assumption that no conservation practices were used (P = 1.0), yielded an overall average annual soil-loss rates of 2.41 tons/acre for Phase I and 2.79 tons/acre for Phase II. Because both results exceeded the regulatory limit of 2.0 tons/acre, it was necessary to incorporate suitable cropping practices and conservation support measures into the grading and cover designs to limit erosion. A second analysis was then made, incorporating contour plowing of the cover surface (furrows oriented parallel to contour lines on the top deck and side slopes) as a conservation practice. This strategy yielded overall average annual soil-loss rates of 1.79 tons/acre (Phase I) and 2.47 tons/acre (Phase II). Although the overall average soil

losses for Phase I fell within the 2.0 tons/acre limit, individual steep slopes within Phase I yielded annual soil losses of as much as about 6.5 tons/acre. Similarly, and locally even higher, soil-loss rates in Phase II prevented its overall average soil loss rate from falling under the 2.0 tons/acre limit.

Figure 3


VARIES
NOTE
INSTALL FLOW DEFLECTORS & EROSION PROTECTION AS NEEDED
DRAINAGE CHANNEL
CONCRETE SPLASH WALL
45° PIPE ELBOW
CONCRETE THRUST BLOCK
FLOW DIRECTION
DOWNDRAIN PIPE
PLAN
C
PLAN – DOWNDRAIN OUTLET
NOT TO SCALE
MONOLITHIC SOIL COVER
NOTES
1. HARD LINING FOR DRAINAGE MAY BE EITHER PCC CONCRETE OR CEMENT TREATED CLASS 2 AGGREGATE BASE COURSE (CTB).
2. ALTERNATIVELY, HARD LINE CENTER OF SWALE WITH CONCRETE AND REMAINDER WITH CTB.
A
4-10
TYPICAL DRAINAGE SWALE ON TOP DECK
NOT TO SCALE
10° PIPE ELBOW
FABRICATE 36" TO 24" DIA. PIPE SLIP JOINT (FOR SETTLEMENT)
DOWNDRAIN PIPE (24" DIA. TYP)
FINAL COVER
FINISHED GRADE
CONCRETE SPLASH WALL
2% MIN.
CONCRETE THRUST BLOCK
COMPACTED SOIL KEY (FOR FINAL COVER)
GENERAL FILL OR WASTE
DRAINAGE CHANNEL (DIMENSIONS VARY)
SECTION
B
4-10
DOWNDRAIN
NOT TO SCALE
Shaw Shaw Environmental, Inc.

Because the soil loss associated with contour plowing alone remained excessive, a third analysis was made assuming that the steep side slopes were armored with the functional equivalent of a crushed-rock mulch. This cropping practice significantly reduced estimated soil losses to overall average annual rates of 1.46 tons/acre in Phase I and 1.85 tons/acre in Phase II. Over the 30-year post-closure maintenance period, the overall average soil losses under this scenario would be about 0.44 inches (Phase I) and 0.56 inches. This 30-year soil loss represents approximately 0.9 percent (Phase I) and 1.2 percent (Phase II) of the total thickness of the monolithic soil cover.

The landfill closure design would incorporate techniques to bring potential soil erosion within acceptable limits. The deck areas in both Phase I and Phase II are designed for overland- flow runoff with a minimum gradient of 3.0 percent (except for channels). The landfill will also be planted with a properly designed vegetative cover to enhance stabilization of surface soils and reduce erosion. As described above, the final cover surface will be plowed along the contour to reduce runoff flow velocities and trap sediment being carried by that runoff.

The final grading plan would provide for the interception and removal of runoff before it spills over the perimeter of the top deck and onto the slopes. This would be done by constructing berms and swales at the tops of side slopes to collect runoff and convey it to the down drains. The side-slope surfaces would be armored to prevent local runoff from detaching the soil. This can be done by using a rocky soil, containing large percentages of gravel and cobble sizes, for at least the uppermost one foot of the monolithic cover on the side slopes. Such a soil can still support vegetation. Slopes treated in this manner will "self armor" as water flowing down the slope winnows out fine-grained soil but leaves a "pavement" of gravel and cobbles. Small terraces will be graded onto the side slopes at relatively short vertical intervals to intercept runoff and reduce the lengths of open slope exposed to erosion. The locations and configurations of these terraces should be determined on a site-specific basis as part of the final design of the vertical expansion.

These measures are incorporated into the required Closure Plan, which will be enforced and inspected by Registered Environmental Health Specialist agents of the Local Enforcement Agency. Therefore they are considered part of the project design, rather than mitigation measures to be included in a Mitigation and Reporting Program. As a result of these controls, the project would not result in any net increase in runoff contamination, and therefore would have no direct or cumulative impacts on water quality.

APPENDIX B

FIRE HYDRANT METER PROGRAM

CITY OF SAN DIEGO CALIFORNIA DEPARTMENT INSTRUCTIONS	NUMBER **DI** 55.27	DEPARTMENT Water Department
SUBJECT **FIRE HYDRANT METER PROGRAM (FORMERLY: CONSTRUCTION METER PROGRAM)**	**PAGE** 1 **OF** 10	**EFFECTIVE DATE** October 15, 2002
	SUPERSEDES **DI** 55.27	**DATED** April 21, 2000

1. **PURPOSE**

1.1 To establish a Departmental policy and procedure for issuance, proper usage and charges for fire hydrant meters.

2. **AUTHORITY**

2.1 All authorities and references shall be current versions and revisions.

2.2 San Diego Municipal Code (NC) Chapter VI, Article 7, Sections 67.14 and 67.15

2.3 Code of Federal Regulations, Safe Drinking Water Act of 1986

2.4 California Code of Regulations, Titles 17 and 22

2.5 California State Penal Code, Section 498B.0

2.6 State of California Water Code, Section 110, 500-6, and 520-23

2.7 Water Department Director

Reference

2.8 State of California Guidance Manual for Cross Connection Programs

2.9 American Water Works Association Manual M-14, Recommended Practice for Backflow Prevention

2.10 American Water Works Association Standards for Water Meters

2.11 U.S.C. Foundation for Cross Connection Control and Hydraulic Research Manual

3. **DEFINITIONS**

3.1 **Fire Hydrant Meter:** A portable water meter which is connected to a fire hydrant for the purpose of temporary use. (These meters are sometimes referred to as Construction Meters.)

3.2 **Temporary Water Use:** Water provided to the customer for no longer than twelve (12) months.

3.3 **Backflow Preventor:** A Reduced Pressure Principal Assembly connected to the outlet side of a Fire Hydrant Meter.

4. POLICY

4.1 The Water Department shall collect a deposit from every customer requiring a fire hydrant meter and appurtenances prior to providing the meter and appurtenances (see Section 7.1 regarding the Fees and Deposit Schedule). The deposit is refundable upon the termination of use and return of equipment and appurtenances in good working condition.

4.2 Fire hydrant meters will have a 2 ½" swivel connection between the meter and fire hydrant. The meter shall not be connected to the 4" port on the hydrant. All Fire Hydrant Meters issued shall have a Reduced Pressure Principle Assembly (RP) as part of the installation. Spanner wrenches are the only tool allowed to turn on water at the fire hydrant.

4.3 The use of private hydrant meters on City hydrants is prohibited, with exceptions as noted below. All private fire hydrant meters are to be phased out of the City of San Diego. All customers who wish to continue to use their own fire hydrant meters must adhere to the following conditions:

a. Meters shall meet all City specifications and American Water Works Association (AWWA) standards.

b. Customers currently using private fire hydrant meters in the City of San Diego water system will be allowed to continue using the meter under the following conditions:

1. The customer must submit a current certificate of accuracy and calibration results for private meters and private backflows annually to the City of San Diego, Water Department, Meter Shop.

2. The meter must be properly identifiable with a clearly labeled serial number on the body of the fire hydrant meter. The serial number shall be plainly stamped on the register lid and the main casing. Serial numbers shall be visible from the top of the meter casing and the numbers shall be stamped on the top of the inlet casing flange.

3. All meters shall be locked to the fire hydrant by the Water Department, Meter Section (see Section 4.7).

4. All meters shall be read by the Water Department, Meter Section (see Section 4.7).

5. All meters shall be relocated by the Water Department, Meter Section (see Section 4.7).

6. These meters shall be tested on the anniversary of the original test date and proof of testing will be submitted to the Water Department, Meter Shop, on a yearly basis. If not tested, the meter will not be allowed for use in the City of San Diego.

7. All private fire hydrant meters shall have backflow devices attached when installed.

8. The customer must maintain and repair their own private meters and private backflows.

9. The customer must provide current test and calibration results to the Water Department, Meter Shop after any repairs.

10. When private meters are damaged beyond repair, these private meters will be replaced by City owned fire hydrant meters.

11. When a private meter malfunctions, the customer will be notified and the meter will be removed by the City and returned to the customer for repairs. Testing and calibration results shall be given to the City prior to any re-installation.

12. The register shall be hermetically sealed straight reading and shall be readable from the inlet side. Registration shall be in hundred cubic feet.

13. The outlet shall have a 2 ½ "National Standards Tested (NST) fire hydrant male coupling.

14. Private fire hydrant meters shall not be transferable from one contracting company to another (i.e. if a company goes out of business or is bought out by another company).

4.4 All fire hydrant meters and appurtenances shall be installed, relocated and removed by the City of San Diego, Water Department. All City owned fire hydrant meters and appurtenances shall be maintained by the City of San Diego, Water Department, Meter Services.

4.5 If any fire hydrant meter is used in violation of this Department Instruction, the violation will be reported to the Code Compliance Section for investigation and appropriate action. Any customer using a fire hydrant meter in violation of the requirements set forth above is subject to fines or penalties pursuant to the Municipal Code, Section 67.15 and Section 67.37.

4.6 **Conditions and Processes for Issuance of a Fire Hydrant Meter**

Process for Issuance

a. Fire hydrant meters shall only be used for the following purposes:

1. Temporary irrigation purposes not to exceed one year.

2. Construction and maintenance related activities (see Tab 2).

b. No customer inside or outside the boundaries of the City of San Diego Water Department shall resell any portion of the water delivered through a fire hydrant by the City of San Diego Water Department.

c. The City of San Diego allows for the issuance of a temporary fire hydrant meter for a period not to exceed 12 months (365 days). An extension can only be granted in writing from the Water Department Director for up to 90 additional days. A written request for an extension by the consumer must be submitted at least 30 days prior to the 12 month period ending. No extension shall be granted to any customer with a delinquent account with the Water Department. No further extensions shall be granted.

d. Any customer requesting the issuance of a fire hydrant meter shall file an application with the Meter Section. The customer must complete a "Fire Hydrant Meter Application" (Tab 1) which includes the name of the company, the party responsible for payment, Social Security number and/or California ID, requested location of the meter (a detailed map signifying an exact location), local contact person, local phone number, a contractor's license (or a business license), description of specific water use, duration of use at the site and full name and address of the person responsible for payment.

e. At the time of the application the customer will pay their fees according to the schedule set forth in the Rate Book of Fees and Charges, located in the City Clerk's Office. All fees must be paid by check, money order or cashiers check, made payable to the City Treasurer. Cash will not be accepted.

f. No fire hydrant meters shall be furnished or relocated for any customer with a delinquent account with the Water Department.

g. After the fees have been paid and an account has been created, the

meter shall be installed within 48 hours (by the second business day). For an additional fee, at overtime rates, meters can be installed within 24 hours (within one business day).

4.7 **Relocation of Existing Fire Hydrant Meters**

a. The customer shall call the Fire Hydrant Meter Hotline (herein referred to as "Hotline"), a minimum of 24 hours in advance, to request the relocation of a meter. A fee will be charged to the existing account, which must be current before a work order is generated for the meter's relocation.

b. The customer will supply in writing the address where the meter is to be relocated (map page, cross street, etc). The customer must update the original Fire Hydrant Meter Application with any changes as it applies to the new location.

c. Fire hydrant meters shall be read on a monthly basis. While fire hydrant meters and backflow devices are in service, commodity, base fee and damage charges, if applicable, will be billed to the customer on a monthly basis. If the account becomes delinquent, the meter will be removed.

4.8 **Disconnection of Fire Hydrant Meter**

a. After ten (10) months a "Notice of Discontinuation of Service" (Tab 3) will be issued to the site and the address of record to notify the customer of the date of discontinuance of service. An extension can only be granted in writing from the Water Department Director for up to 90 additional days (as stated in Section 4.6C) and a copy of the extension shall be forwarded to the Meter Shop Supervisor. If an extension has not been approved, the meter will be removed after twelve (12) months of use.

b. Upon completion of the project the customer will notify the Meter Services office via the Hotline to request the removal of the fire hydrant meter and appurtenances. A work order will be generated

for removal of the meter.

c. Meter Section staff will remove the meter and backflow prevention assembly and return it to the Meter Shop. Once returned to the Meter Shop the meter and backflow will be tested for accuracy and functionality.

d. Meter Section Staff will contact and notify Customer Services of the final read and any charges resulting from damages to the meter and backflow or its appurtenance. These charges will be added on the customer's final bill and will be sent to the address of record. Any customer who has an outstanding balance will not receive additional meters.

e. Outstanding balances due may be deducted from deposits and any balances refunded to the customer. Any outstanding balances will be turned over to the City Treasurer for collection. Outstanding balances may also be transferred to any other existing accounts.

5. EXCEPTIONS

5.1 Any request for exceptions to this policy shall be presented, in writing, to the Customer Support Deputy Director, or his/her designee for consideration.

6. MOBILE METER

6.1 Mobile meters will be allowed on a case by case basis. All mobile meters will be protected by an approved backflow assembly and the minimum requirement will be a Reduced Pressure Principal Assembly. The two types of Mobile Meters are vehicle mounted and floating meters. Each style of meters has separate guidelines that shall be followed for the customer to retain service and are described below:

a) **Vehicle Mounted Meters**: Customer applies for and receives a City owned Fire Hydrant Meter from the Meter Shop. The customer mounts the meter on the vehicle and brings it to the Meter Shop for

inspection. After installation is approved by the Meter Shop the vehicle and meter shall be brought to the Meter Shop on a monthly basis for meter reading and on a quarterly basis for testing of the backflow assembly. Meters mounted at the owner's expense shall have the one year contract expiration waived and shall have meter or backflow changed if either fails.

b) **Floating Meters**: Floating Meters are meters that are not mounted to a vehicle. **(Note: All floating meters shall have an approved backflow assembly attached.)** The customer shall submit an application and a letter explaining the need for a floating meter to the Meter Shop. The Fire Hydrant Meter Administrator, after a thorough review of the needs of the customer, (i.e. number of jobsites per day, City contract work, lack of mounting area on work vehicle, etc.), may issue a floating meter. At the time of issue, it will be necessary for the customer to complete and sign the "Floating Fire Hydrant Meter Agreement" which states the following:

    1) The meter will be brought to the Meter Shop at 2797 Caminito Chollas, San Diego on the third week of each month for the monthly read by Meter Shop personnel.

    2) Every other month the meter will be read and the backflow will be tested. This date will be determined by the start date of the agreement.

If any of the conditions stated above are not met the Meter Shop has the right to cancel the contract for floating meter use and close the account associated with the meter. The Meter Shop will also exercise the right to refuse the issuance of another floating meter to the company in question.

Any Fire Hydrant Meter using reclaimed water shall not be allowed use again with any potable water supply. The customer shall incur the cost of replacing the meter and backflow device in this instance.

7. FEE AND DEPOSIT SCHEDULES

7.1 **Fees and Deposit Schedules:** The fees and deposits, as listed in the Rate Book of Fees and Charges, on file with the Office of the City Clerk, are based on actual reimbursement of costs of services performed, equipment and materials. Theses deposits and fees will be amended, as needed, based on actual costs. Deposits, will be refunded at the end of the use of the fire hydrant meter, upon return of equipment in good working condition and all outstanding balances on account are paid. Deposits can also be used to cover outstanding balances.

All fees for equipment, installation, testing, relocation and other costs related to this program are subject to change without prior notification. The Mayor and Council will be notified of any future changes.

8. UNAUTHORIZED USE OF WATER FROM A HYDRANT

8.1 Use of water from any fire hydrant without a properly issued and installed fire hydrant meter is theft of City property. Customers who use water for unauthorized purposes or without a City of San Diego issued meter will be prosecuted.

8.2 If any unauthorized connection, disconnection or relocation of a fire hydrant meter, or other connection device is made by anyone other than authorized Water Department personnel, the person making the connection will be prosecuted for a violation of San Diego Municipal Code, Section 67.15. In the case of a second offense, the customer's fire hydrant meter shall be confiscated and/or the deposit will be forfeited.

8.3 Unauthorized water use shall be billed to the responsible party. Water use charges shall be based on meter readings, or estimates when meter readings are not available.

8.4 In case of unauthorized water use, the customer shall be billed for all applicable charges as if proper authorization for the water use had been obtained, including but not limited to bi-monthly service charges, installation charges and removal charges.

8.5 If damage occurs to Water Department property (i.e. fire hydrant meter, backflow, various appurtenances), the cost of repairs or replacements will be charged to the customer of record (applicant).

Water Department Director

Tabs: 1. Fire Hydrant Meter Application
2. Construction & Maintenance Related Activities With No Return To Sewer
3. Notice of Discontinuation of Service

APPENDIX

Administering Division: Customer Support Division

Subject Index:
Construction Meters
Fire Hydrant
Fire Hydrant Meter Program
Meters, Floating or Vehicle Mounted
Mobile Meter
Program, Fire Hydrant Meter

Distribution: DI Manual Holders

Application for Fire Hydrant Meter (EXHIBIT A)

PUBLIC UTILITIES Water & Wastewater

(For Office Use Only)

NS REQ	FAC#
DATE	BY

METER SHOP (619) 527-7449

Application Date	Requested Install Date:

Meter Information

Fire Hydrant Location: (Attach Detailed Map//Thomas Bros. Map Location or Construction drawing.) Zip:	T.B.	G.B. (CITY USE)
Specific Use of Water:		
Any Return to Sewer or Storm Drain, If so , explain:		
Estimated Duration of Meter Use: ☐ Check Box if Reclaimed Water		

Company Information

Company Name:			
Mailing Address:			
City:	State:	Zip:	Phone: ( )
*Business license#	*Contractor license#		
A Copy of the Contractor's license OR Business License is required at the time of meter issuance.			
Name and Title of Billing Agent: (PERSON IN ACCOUNTS PAYABLE)			Phone: ( )
Site Contact Name and Title:			Phone: ( )
Responsible Party Name:			Title:
Cal ID#			Phone: ( )
Signature:	Date:		

Guarantees Payment of all Charges Resulting from the use of this Meter. Insures that employees of this Organization understand the proper use of Fire Hydrant Meter

☐ Fire Hydrant Meter Removal Request	Requested Removal Date:	
Provide Current Meter Location if Different from Above:		
Signature:	Title:	Date:
Phone: ( )	Pager: ( )	

☐ City Meter ☐ Private Meter		
Contract Acct #:	Deposit Amount: $ 936.00	Fees Amount: $ 62.00
Meter Serial #	Meter Size: 05	Meter Make and Style: 6-7
Backflow #	Backflow Size:	Backflow Make and Style:
Name:	Signature:	Date:

WATER USES WITHOUT ANTICIPATED CHARGES FOR RETURN TO SEWER

Auto Detailing
Backfilling
Combination Cleaners (Vactors)
Compaction
Concrete Cutters
Construction Trailers
Cross Connection Testing
Dust Control
Flushing Water Mains
Hydro Blasting
Hydro Seeing
Irrigation (for establishing irrigation only; not continuing irrigation)
Mixing Concrete
Mobile Car Washing
Special Events
Street Sweeping
Water Tanks
Water Trucks
Window Washing

Note:

1. If there is any return to sewer or storm drain, then sewer and/or storm drain fees will be charges.

Date

Name of Responsible Party
Company Name and Address
Account Number:_____

Subject: Discontinuation of Fire Hydrant Meter Service

Dear Water Department Customer:

The authorization for use of Fire Hydrant Meter #_____, located at *(Meter Location Address)* ends in 60 days and will be removed on or after *(Date Authorization Expires)*. Extension requests for an additional 90 days must be submitted in writing for consideration 30 days prior to the discontinuation date. If you require an extension, please contact the Water Department, or mail your request for an extension to:

City of San Diego
Water Department
Attention: Meter Services
2797 Caminito Chollas
San Diego, CA 92105-5097

Should you have any questions regarding this matter, please call the Fire Hydrant Hotline at (619)_____-_____.

Sincerely,

Water Department

APPENDIX C

MATERIALS TYPICALLY ACCEPTED BY CERTIFICATE OF COMPLIANCE

MATERIALS TYPICALLY ACCEPTED BY CERTIFICATE OF COMPLIANCE

1. Soil amendment
2. Fiber mulch
3. PVC or PE pipe up to 16 inch diameter
4. Stabilizing emulsion
5. Lime
6. Preformed elastomeric joint seal
7. Plain and fabric reinforced elastomeric bearing pads
8. Steel reinforced elastomeric bearing pads
9. Water stops (Special Condition)
10. Epoxy coated bar reinforcement
11. Plain and reinforcing steel
12. Structural steel
13. Structural timber and lumber
14. Treated timber and lumber
15. Lumber and timber
16. Aluminum pipe and aluminum pipe arch
17. Corrugated steel pipe and corrugated steel pipe arch
18. Structural metal plate pipe arches and pipe arches
19. Perforated steel pipe
20. Aluminum underdrain pipe
21. Aluminum or steel entrance tapers, pipe down drains, reducers, coupling bands and slip joints
22. Metal target plates
23. Paint (traffic striping)
24. Conductors
25. Painting of electrical equipment
26. Electrical components
27. Engineering fabric
28. Portland Cement
29. PCC admixtures
30. Minor concrete, asphalt
31. Asphalt (oil)
32. Liquid asphalt emulsion
33. Epoxy

APPENDIX D

SAMPLE CITY INVOICE WITH CASH FLOW FORECAST

City of San Diego, CM&FS Div., 9753 Chesapeake Drive, SD CA 92123

Project Name:

Work Order No or Job Order No.

City Purchase Order No.

Resident Engineer (RE):

RE Phone#: Fax#:

Contractor's Name:

Contractor's Address:

Contractor's Phone #:

Contractor's fax #:

Contact Name:

Invoice No.

Invoice Date:

Billing Period: (To)

Item #	Item Description	Contract Authorization				Previous Totals To Date		This Estimate		Totals to Date	
		Unit	Price	Qty	Extension	%/QTY	Amount	% / QTY	Amount	% / QTY	Amount
1					$ -		$ -		$ -	0.00	$ -
2					$ -		$ -		$ -	0.00%	$ -
3					$ -		$ -		$ -	0.00%	$ -
4					$ -		$ -		$ -	0.00%	$ -
5					$ -		$ -		$ -	0.00%	$ -
6					$ -		$ -		$ -	0.00%	$ -
7					$ -		$ -		$ -	0.00%	$ -
8					$ -		$ -		$ -	0.00%	$ -
5					$ -		$ -		$ -	0.00%	$ -
6					$ -		$ -		$ -	0.00%	$ -
7					$ -		$ -		$ -	0.00%	$ -
8					$ -		$ -		$ -	0.00%	$ -
9					$ -		$ -		$ -	0.00%	$ -
10					$ -		$ -		$ -	0.00%	$ -
11					$ -		$ -		$ -	0.00%	$ -
12					$ -		$ -		$ -	0.00%	$ -
13					$ -		$ -		$ -	0.00%	$ -
14					$ -		$ -		$ -	0.00%	$ -
15					$ -		$ -		$ -	0.00%	$ -
16					$ -		$ -		$ -	0.00%	$ -
17	**Field Orders**				$ -		$ -		$ -	0.00%	$ -
					$ -		$ -		$ -	0.00%	$ -
	CHANGE ORDER No.				$ -		$ -		$ -	0.00%	$ -
					$ -		$ -		$ -	0.00%	$ -
	Total Authorized Amount (including approved Change Order)				**$ -**		**$ -**		$ -	**Total Billed**	$ -

SUMMARY

A. Original Contract Amount	$ -
B. Approved Change Order #00 Thru #00	$ -
C. Total Authorized Amount (A+B)	$ -
D. Total Billed to Date	$ -
E. Less Total Retention (5% of D)	$ -
F. Less Total Previous Payments	$ -
G. Payment Due Less Retention	**$0.00**
H. Remaining Authorized Amount	$0.00

I certify that the materials have been received by me in the quality and quantity specified

_____

Resident Engineer

_____

Construction Engineer

Retention and/or Escrow Payment Schedule

Total Retention Required as of this billing (Item E)	$0.00
Previous Retention Withheld in PO or in Escrow	$0.00
Add'l Amt to Withhold in PO/Transfer in Escrow:	***$0.00***
Amt to Release to Contractor from PO/Escrow:	

Contractor Signature and Date: _____

NOTE: CONTRACTOR TO CALCULATE TO THE 2ND DECIMAL PLACE.

WBS #:	B18108
Date Submitted:	10/10/2018
NTP Date:	3/23/2018
Final Statement of WD Date:	5/23/2020
Contract #:	K-XX-XXXX-XXX-X
Contract Amount:	$5,617,000

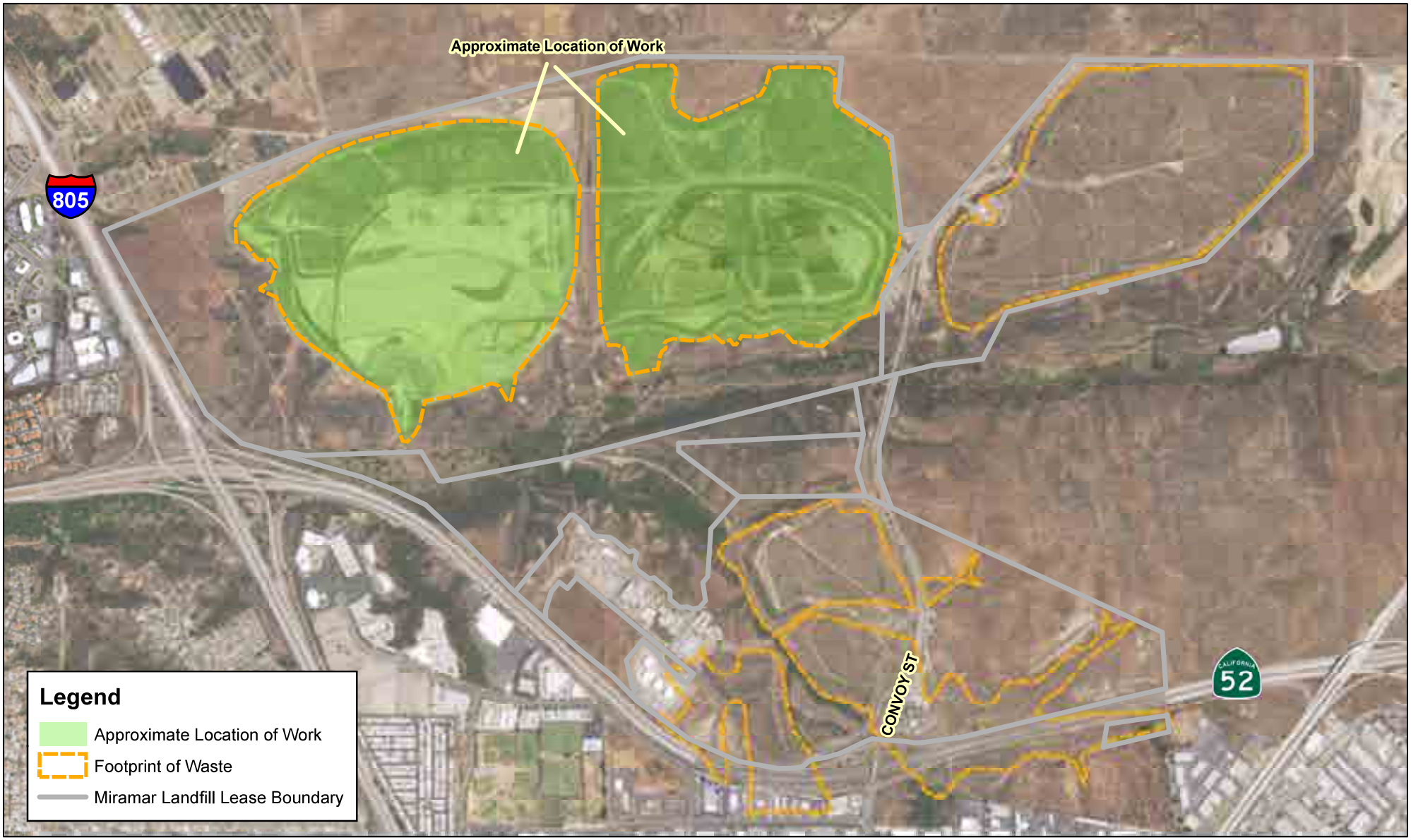
Construction Cash Flow Forecast

"Sewer and Water Group Job 965 (W)"

Year	January	February	March	April	May	June	July	August	September	October	November	December
2018				15,000	25,000	52,000	52,000	100,000	10,000	100,000	100,000	100,000
2019	10,000	10,000	85,000	58,000	100,000	100,000	100,000	100,000	100,000	100,000	1,000,000	1,000,000
2020	100,000	100,000	100,000	1,000,000	1,000,000							
2021												
2022												
2023												
2024												
2025												

APPENDIX E

LOCATION MAP



The City of SAN DIEGO

Miramar Landfill Storm Water Basin Improvements
Appendix E - Location Map

Miramar Landfill Stormwater Improvements
Location Map

0 500 1,000 2,000 3,000 4,000 Feet

APPENDIX F

SAMPLE OF PUBLIC NOTICE

FOR SAMPLE REFERENCE ONLY

The City of SAN DIEGO

CONSTRUCTION NOTICE

PROJECT TITLE

Work on your street will begin within one week to replace the existing water mains servicing your community.

The work will consist of:

- Saw-cutting and trench work on Ingulf Street from Morena Boulevard to Galveston Street to install new water mains, water laterals and fire hydrants.
- Streets where trenching takes place will be resurfaced and curb ramps will be upgraded to facilitate access for persons with disabilities where required.
- This work is anticipated to be complete in your community by December 2016.

How your neighborhood may be impacted:

- Water service to some properties during construction will be provided by a two-inch highline pipe that will run along the curb. To report a highline leak call 619-515-3525.
- Temporary water service disruptions are planned. If planned disruptions impact your property, you will receive advance notice.
- Parking restrictions will exist because of the presence of construction equipment and materials.
- "No Parking" signs will be displayed 72 hours in advance of the work.
- Cars parked in violation of signs will be TOWED.

Hours and Days of Operation:
Monday through Friday X:XX AM to X:XX PM.

City of San Diego Contractor:
Company Name, XXX-XXX-XXXX

To contact the City of San Diego: SD Public Works
619-533-4207 | engineering@sandiego.gov | sandiego.gov/CIP
This information is available in alternative formats upon request.

The City of SAN DIEGO

CONSTRUCTION NOTICE

PROJECT TITLE

Work on your street will begin within one week to replace the existing water mains servicing your community.

The work will consist of:

- Saw-cutting and trench work on Ingulf Street from Morena Boulevard to Galveston Street to install new water mains, water laterals and fire hydrants.
- Streets where trenching takes place will be resurfaced and curb ramps will be upgraded to facilitate access for persons with disabilities where required.
- This work is anticipated to be complete in your community by December 2016.

How your neighborhood may be impacted:

- Water service to some properties during construction will be provided by a two-inch highline pipe that will run along the curb. To report a highline leak call 619-515-3525.
- Temporary water service disruptions are planned. If planned disruptions impact your property, you will receive advance notice.
- Parking restrictions will exist because of the presence of construction equipment and materials.
- "No Parking" signs will be displayed 72 hours in advance of the work.
- Cars parked in violation of signs will be TOWED.

Hours and Days of Operation:
Monday through Friday X:XX AM to X:XX PM.

City of San Diego Contractor:
Company Name, XXX-XXX-XXXX

To contact the City of San Diego: SD Public Works
619-533-4207 | engineering@sandiego.gov | sandiego.gov/CIP
This information is available in alternative formats upon request.

APPENDIX G

SWPPP CONSTRUCTION BMP MAINTENANCE LOG

SWPPP Construction BMP Maintenance Log

Examples of construction BMP maintenance activites include but are not limited to tasks listed below. The contractor is ultimately responsible for compliance with the Storm Water Standards Manual and/or the Construction General Permit, and for ensuring all BMPs function per manufacturer's specifications. Use the attached log to schedule and document maintenance activities. The log shall be kept with the project SWPPP document at all times.

Construction BMP Maintenance Acitivities

- Maintain stabilized construction entrances/exits
- Redress gravel/rock to full coverage and remove any sediment accumulation
- Remove and replace geotextile/compost blanket/plastic with holes or tears
- Redress and restabilize erosion or rilling greater than 1-inch deep
- Reapply hydraulic stabilization products to full coverage
- Remove and replace silt fence/fiber roll/gravel bags/etc. with holes or tears
- Reinstall or replace silt fence/fiber roll/etc. with sags
- Remove sediment accumulation from perimeter controls
- Remove sediment accumulation from storm drain inlet protection and check dams
- Remove sediment accumulation from energy dissipators
- Repair or remove any vehicle/equipment that leaks
- Remove any accumulation in drip pans or containment
- Empty concrete washouts when they reach 75% capacity
- Empty waste disposal containers when they reach 95% capacity

Construction BMP Maintenance Log

Project Title:
WBS/IO No:
WDID:

Scheduled Date/Time	Completion Date/Time	Location	Maintenance Tasks Performed	Logged By

APPENDIX H

SLOPE STABILITY ANALYSIS FOR EAST BASIN MODIFICATION

13 April 2020

Mr. Craig Ferguson
Mr. Luke Bromley
City of San Diego
Environmental Services Department
Disposal & Environmental Protection Division
9601 Ridgehaven Court, Suite 310
San Diego, California 92123

Subject: **Slope Stability Analysis for East Basin Modification**
Storm Water Basin Improvements – West Miramar Landfill
Task Order 19, Agreement H1877003

Dear Mr. Ferguson and Mr. Bromley:

Geosyntec Consultants, Inc. (Geosyntec) has prepared this letter for the City of San Diego (City) in support of the design cut slope inclinations of the north slope of the existing East Basin located at the West Miramar Landfill (Facility). This letter summarizes results from the limited geotechnical investigation and of slope stability analyses performed.

1. INTRODUCTION

Industrial storm water discharges at the Facility are subject to timelines for meeting Numeric Action Limits (NAL) outlined in the State Water Resource Control Board's (SWRCB) Storm Water Industrial General Permit (IGP) (Order No. 2014-0057-DWQ) (2014 IGP) and Numeric Levels (NLs) outlined in a Consent Decree the City entered into with San Diego Coastkeeper and Coastal Environmental Rights Foundation on 20 November 2018.

Storm water basin improvement feasibility for the Facility is being evaluated to help bring the Facility into compliance with water quality objectives outlined in the IGP and Consent Decree. This includes evaluating the benefits and feasibility of improvements for the existing East Basin, namely increased basin capacity and storm water retention, and improved basin conveyance infrastructure. Specifically, this letter presents an evaluation of conceptual design cut slope inclinations of the north slope of the existing East Basin to increase basin capacity. Knowledge of site conditions, developed from a review of geologic conditions and a limited geotechnical investigation, was used to characterize the subsurface soil materials to perform slope stability analyses as described below.

2. SITE CONDITIONS

2.1 East Basin Description

The East Basin is a sedimentation basin for West Miramar Landfill. It is located south of West Miramar landfill and has a storm water volume capacity of approximately 3.12 acre-feet. It is bound to the east and south by gravel access roads, natural slopes to the west, and the landfill to the north. An existing power line pole, two groundwater monitoring wells, and encapsulated landfill waste are also located to the north of the East Basin as shown on Figure 1.

2.2 Regional Geology

The Facility lies within the San Diego coastal margin along the western flanks of the Peninsular Range geomorphic province of southern California, which is characterized by northwest-trending mountains, valleys, and geologic structure. The generally north to northwest trending coastline and mountains developed in response to oblique, right-lateral, strike-slip fault zones associated with the plate boundary interaction between the Pacific and North American tectonic plates. The coastal margin consists predominantly of Quaternary and Tertiary age sedimentary rocks that have undergone faulting and erosion resulting in rugged terraced surfaces dissected by numerous drainages extending to the west.

The oldest rocks in the San Diego area are Mesozoic age (250 to 65 million years before present) volcanic flows and volcaniclastic breccias. These rocks were intruded by Cretaceous age (65 million years before present) granitic basement rocks, also known as the Peninsular Ranges Batholith. Within the coastal plain, the Peninsular Ranges basement rocks underlie a thick sequence of Upper Cretaceous (100 to 65 million years before present), Tertiary (65 to 1.8 million years before present), and Quaternary age (last 700,000 years) marine, paralic, and non-marine claystone, siltstone, and conglomerate sedimentary rocks [Kennedy and Tan, 2005][1].

At the Site, very old lacustrine, playa, and estuarine deposits, termed very old paralic deposits, of middle to early Pleistocene age (2.6 to 0.8 million years before present) overlie middle Eocene age (56 to 34 million years before present) conglomerate (Stadium Conglomerate) [Kennedy and Tan, 2005][1]. The very old paralic deposits (formerly named the Linda Vista Formation), are comprised of interfingered strandline, beach, estuarine and colluvial deposits composed of siltstone, sandstone and conglomerate.

[1] Kennedy, M.P., and S.S. Tan, 2005. "Geologic Map of the San Diego 30'x60' Quadrangle, California," California Geological Survey Regional Geologic Map No. 3, scale 1:100,000.

2.3 Limited Geotechnical Investigation

Geosyntec conducted a limited geotechnical investigation including a site reconnaissance, geotechnical exploration (including two borings), and geotechnical laboratory testing.

Prior to commencing our field investigation program, a site reconnaissance was performed by Geosyntec, accompanied by a representative from the City, on 4 February 2020 and included an evaluation of the existing site surface conditions, site access, and mark-out of exploration locations. Geosyntec contacted Underground Service Alert (DigAlert) to coordinate clearance of the proposed exploration locations with respect to below ground utilities.

Based on the proposed boring depths, geotechnical boring permits from the County of San Diego, Department of Environmental Health were not required. A site- and project-specific task hazard analysis was prepared for the project.

The limited geotechnical field investigation included drilling two hollow steam auger borings (designated Borings B-1 and B-2) on the gravel access road north of the East Basin to collect representative geotechnical data. The borings were advanced by Pacific Drilling of San Diego, California using a truck-mounted drill rig equipped with a 6-inch diameter hollow stem auger. The borings were advanced on 14 February 2020 to depths of approximately 10 feet below existing ground surface (ft bgs). Approximate boring locations are shown on Figure 1.

The borings were logged under the direction of a Geosyntec engineer and soil samples were classified in accordance with the Unified Soil Classification System (USCS). Boring logs are presented in Attachment A. Sampling information and other pertinent field data and observations are included on the boring logs. Spoils from the boring were used as borehole backfill.

2.4 Geotechnical Laboratory Testing

The soil samples collected from borings were visually classified and were tested by Southern California Soil Testing (SCST) of San Diego, California to evaluate the physical and engineering properties of the material. Laboratory tests were performed in general accordance with ASTM standard test procedures as indicated in the Table 1 below. Laboratory test results, including a summary table, are presented in Attachment B.

Table 1. ASTM Standard Test Procedures

Geotechnical Laboratory Test	Test Designation
Grain Size Analysis	ASTM D422 or D6913
Moisture Content	ASTM D2216
Atterberg Limits	ASTM D4318
Direct Shear	ASTM D3080

2.5 Subsurface Conditions

The subsurface conditions were observed and documented in the recent geotechnical borings. These explorations indicate an approximately 1-foot road gravel course (i.e. Class II base) above engineered fill and Stadium Conglomerate along the gravel access road north of the East Basin.

2.5.1 Engineered Fill

Engineered fill primarily consists of medium dense clayey sand with gravel. Engineered fill thickness along the north gravel access road increases from approximately 1 foot at boring B-1 to approximately 3 feet at boring B-2.

2.5.2 Stadium Conglomerate

The Eocene-age Stadium Conglomerate underlies the engineered fill along the existing north slope of the East Basin. The formation is identified by its characteristic gravel to cobble size, subrounded metavolcanic cobbles in a light brown to gray silty to clayey sand matrix. The unit generally contains localized cemented concretions or lenses and drapes unconformably over the underlying crystalline granitic rock.

2.6 Groundwater

Groundwater was not encountered within the exploration performed at the site to depths up to 10 feet bgs. Based on a previous groundwater study at the South Miramar Landfill [Geosyntec, 2016][2] the deep groundwater level at the southern border of the site was at elevations between approximately 175 and 187 ft NAVD88 and the perched groundwater level measured at the southern border of the site was at elevation 289 ft NAVD88 during the same time period. The bottom of the East Basin is at an elevation of approximately 291 ft NAVD88; therefore, slope stability analyses included the perched groundwater level.

[2] Geosyntec Consultants (2016). "April 2016 through September 2016, Semiannual Monitoring Report, Water Quality Monitoring Program, South Miramar Landfill," October.

3. CUT SLOPE STABILITY ANALYSES

The objective of the slope stability analyses is to evaluate conceptual design cut slopes for the north slope of the East Basin to increase basin capacity.

3.1 Method of Analysis

Slope stability analyses for the cut slope were performed using the two-dimensional limit equilibrium computer program SLOPE/W version 8.16.5.15361 [GEO-SLOPE International, LTD., 2016][3]. The analyses were based on the Spencer method of slices, which satisfies both moment and force equilibrium stability on circular sliding surfaces. The results of the slope stability analyses are typically presented in terms of a factor of safety defined as the ratio of the total stabilizing forces/moments along an assumed sliding plane divided by the total sum of internal and external driving forces/moments acting on the sliding mass. Typically, a factor of safety of at least 1.5 is desired for long-term stability (i.e. permanent cut slope).

Pseudostatic slope stability procedures are commonly used to evaluate the seismic performance of earth structures and natural slopes. In pseudostatic limit equilibrium analyses, the effects of an earthquake are conservatively represented by a static horizontal inertial force applied to the potential sliding mass. This horizontal inertial force is expressed as the product of a seismic coefficient (k) and the weight of the potential sliding mass. In a pseudostatic slope stability approach, it is assumed the embankment material does not undergo severe strength loss as a result of earthquake shaking [Bray and Travasarou, 2009][4]. The yield coefficient is defined as the seismic coefficient that brings the slope to a factor of safety of 1.0 in a pseudostatic analysis. The yield coefficient is used to estimate permanent seismic induced deformations of the slope. The method proposed by Bray and Travasarou [2007][5], described as a simplified semiempirical predictive model, was used to estimate seismic deformation for the slope. This method estimates the probability of exceedance of displacement based on embankment material dynamic strength properties and input ground motion.

This calculation package presents cut slope stability evaluations for the following loading conditions:

- Static, long-term conditions (drained material strength properties);
- Pseudostatic (seismic loading and drained material strength properties).

[3] GEO-SLOPE International, Ltd. (2016). "SLOPE/W," version 8.16.5.15361, Calgary, Canada.
[4] Bray and Travasarou (2009). "Pseudostatic Coefficient for Use in Simplified Seismic Slope Stability Evaluation," Journal of Geotechnical and Geoenvironmental Engineering, ASCE, September, p.1336-1340.
[5] Bray and Travasarou (2007). "Simplified Procedure for Estimating Earthquake-Induced deviatoric slope displacements," Journal of Geotechnical and Geoenvironmental Engineering, ASCE 133(4):381-392.

3.2 Design Parameters

Slope stability analyses were performed for cross-section A-A' (Figure 1), which represents the critical condition for the north slope of the East Basin with an existing slope angle of approximately 2.15H:1V (horizontal:vertical). At this location the north slope reaches its maximum height and existing slope angle, and the maximum depth of engineered fill placed for construction of the access roads, all factors that could adversely affect slope stability.

Based on review of geological conditions at the East Basin and results from the limited geotechnical investigation, the subsurface conditions were conservatively assumed to consist of 5 feet of engineered fill (i.e. the presence of road gravel course was excluded from the analyses), overlying the Stadium Conglomerate formation. The waste was assumed to slope 2H:1V up to 5 feet above the perched groundwater level. The East Basin bottom elevation is approximately 291 ft NAVD88, consequently, perched groundwater was modeled approximately 2 feet below the bottom of the East Basin.

Geotechnical design parameters used for slope stability analyses for the Stadium Conglomerate were assumed based on laboratory test results (Attachment B), engineered fill design parameters were conservatively assumed based on typical properties for clayey sands (Attachment C) and engineering judgement. Geotechnical design parameters used are summarized in Table 2 below and shown in Figures 2 through 5.

Table 2. Geotechnical Design Parameters

Material	Unit Weight (pcf)	Friction Angle (°)	Cohesion (psf)
Engineered Fill	115	25	200
Stadium Conglomerate	120	28[1]	400
Waste[2]	85	33	0

Notes:

[1]Direct shear test samples of Stadium Conglomerate consisted of remolded material from bulk samples collected at depths ranging from 2.5 feet to 10 feet bgs. The presence of gravel can result in artificial high friction angle values that are not representative of the soil matrix. Therefore, a lower friction angle value of 28 degrees was selected for the analyses.

[2]Kavazanjian, E., Matasovic, N., Bonaparte, R., and Schmertmann, G. R. (1995)' "Evaluation of MSW Properties for Seismic Analysis", Proceedings of Geoenvironmental 2000, pp. 1126-1141.

Additionally, stability of cut slope angles of 2H:1V, 1.5H:1V, 1H:1V and 0.9H:1V was evaluated, and a vehicle load of 125 pounds per square foot (psf) was conservatively applied along the intersection of the access roads.

The East Basin is situated within a seismically active region and will likely experience moderate to severe ground shaking in response to a large magnitude earthquake occurring on a local or more distant active fault during the expected lifespan of the Facility. Site specific seismic design parameters assuming Site Class C (i.e. very dense soil and soft rock), and a Risk Category II are included in Attachment D.

4. RESULTS

Slope stability of the north slope of the East Basin was evaluated using SLOPE/W and the design parameters described above. SLOPE/W stability analysis graphical results typically include assumed critical sliding surface and rotation center, sliding mass divided into slices for computational purposes, calculated factor of safety, and material properties

4.1 Static Slope Stability

Long-term static slope stability analysis results are presented in Figures 2 through 5 and are summarized in Table 3 below. Static slope stability analyses indicate a 0.9H:1V slope is the steepest value that meets the factor of safety recommended for long-term condition (i.e FS > 1.5).

Table 3. Slope Stability Analysis Results

Slope Angle	Factor of Safety
2H:1V	2.2
1.5H:1V	1.9
1H:1V	1.6
0.9H:1V	1.5

4.2 Pseudostatic Slope Stability and Seismic Deformation

Pseudostatic analyses were performed for the 0.9H:1V slope inclination geometry and a yield coefficient, ky, of 0.305g was calculated (Figure 6). The calculated yield coefficient was used to estimate slope seismic deformation based on the method proposed by Bray and Travasarou [2007][6]. Seismic deformation results are presented in Attachment E and summarized in Table 4 below.

[6] Bray and Travasarou (2007). "Simplified Procedure for Estimating Earthquake-Induced deviatoric slope displacements," Journal of Geotechnical and Geoenvironmental Engineering, ASCE 133(4):381-392.

Table 4: Seismic Deformation Summary

Slope	Ky (g)	Probability of Exceedance		
		16%	50%	84%
		Deformation (cm)		
East Basin – North slope	0.305	7.5	3.8	1.7

Notes:

1. Height of sliding mass, H = 35 ft
2. Shear wave velocity of sliding mass, Vs = 1,200 ft/s
3. Moment Magnitude, M_W = 6.69
4. Fundamental period, Ts = 4H/Vs
5. Degraded period = 1.5Ts
6. Spectral acceleration at degraded period = 0.819g (Attachment D)

Based on the results of the Bray and Travasarou [2007] seismic deformation evaluation, the estimated median displacement at the Site corresponding to a 50 percent probability of exceedance was estimated to be approximately 1.5 inches (3.8 cm). Conversely, seismic deformation analyses can evaluate the probability of exceedance for a selected displacement threshold. Hence, the probability of exceedance for seismic deformations larger than 10 inches was estimated to be zero. Seismic deformations of up to 10 inches are not expected to adversely affect the performance of the slope.

5. CONCLUSIONS AND RECOMMENDATIONS

The slope stability of the north slope of the East Basin was evaluated using SLOPE/W to obtain a factor of safety based on limit equilibrium analyses for the subsurface conditions at the Site and to estimate seismic induced permanent deformations. The geotechnical design parameters used in the analyses were developed based on review of geological conditions at the East Basin, results from the limited geotechnical investigation, and laboratory test results. Results of the slope stability analyses indicate the north slope of the East Basin can be increased from approximately 2H:1V to 0.9H:1V, to provide increased basin capacity.

Geosyntec recommends the East Basin north slope modification not extend west of the location of boring B-2 to minimize disturbance of an existing power line pole, which is located atop a natural ridge characterized by steep slopes. The slope stability analysis did not consider the foundation conditions or impacts to the power poles which are adjacent to the East Basin (Figure 1). The utility owner should be consulted prior to finalization of the East Basin modification design for concurrence with proposed grading.

Additionally, slope stability analyses presented herein were performed with assumed limits and depth of waste for the Facility north of the East Basin. Additional slope stability analyses will be

required if it is determined waste limits could potentially impact the East Basin north slope stability.

6. CLOSURE

We appreciate the opportunity to assist the City with this project. Please contact either of the undersigned at (858) 674-6559 if you have any questions, comments, or if you need additional information.

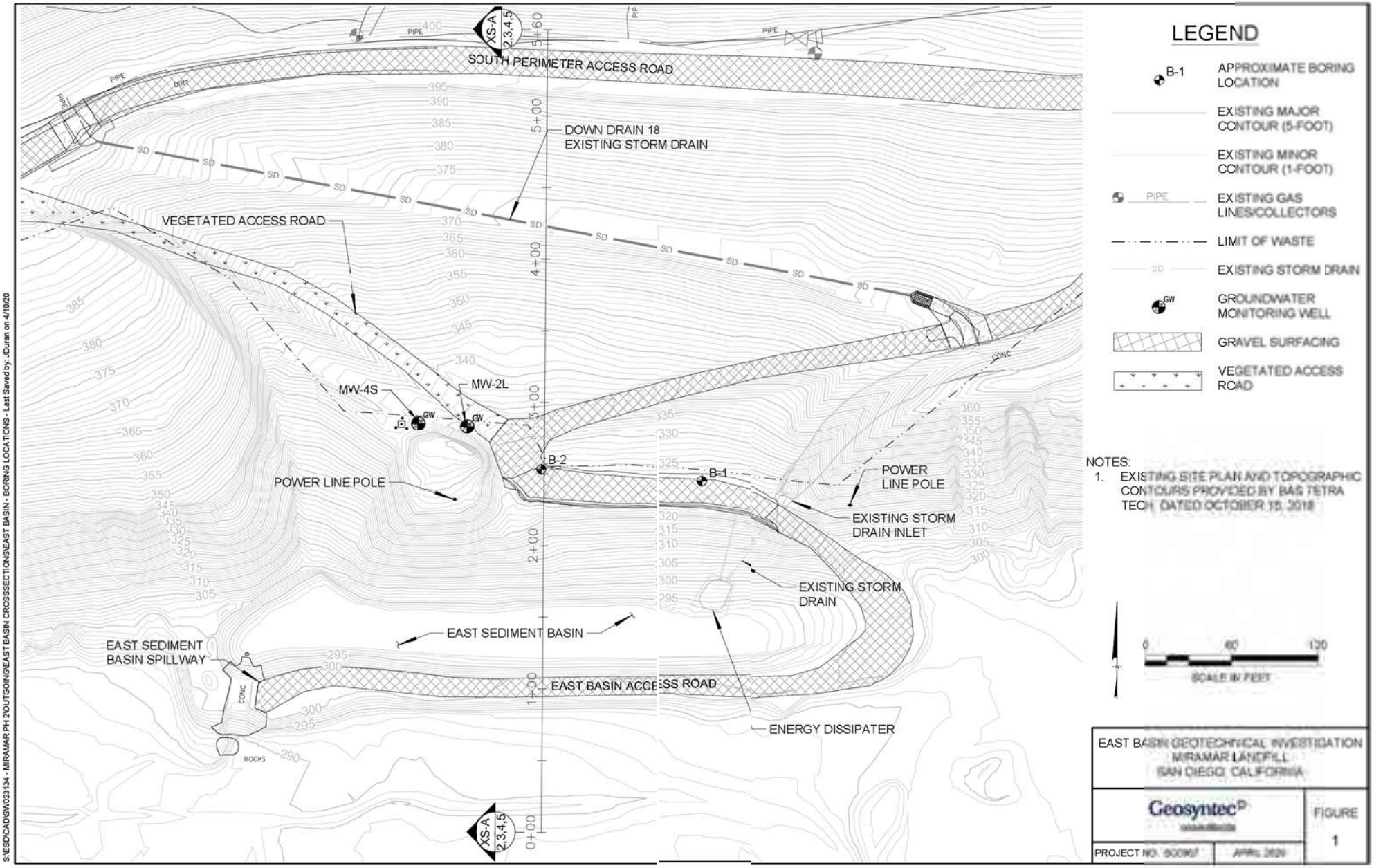
Sincerely,

Fabiana Arriaga, Ph.D., P.E.
Project Engineer

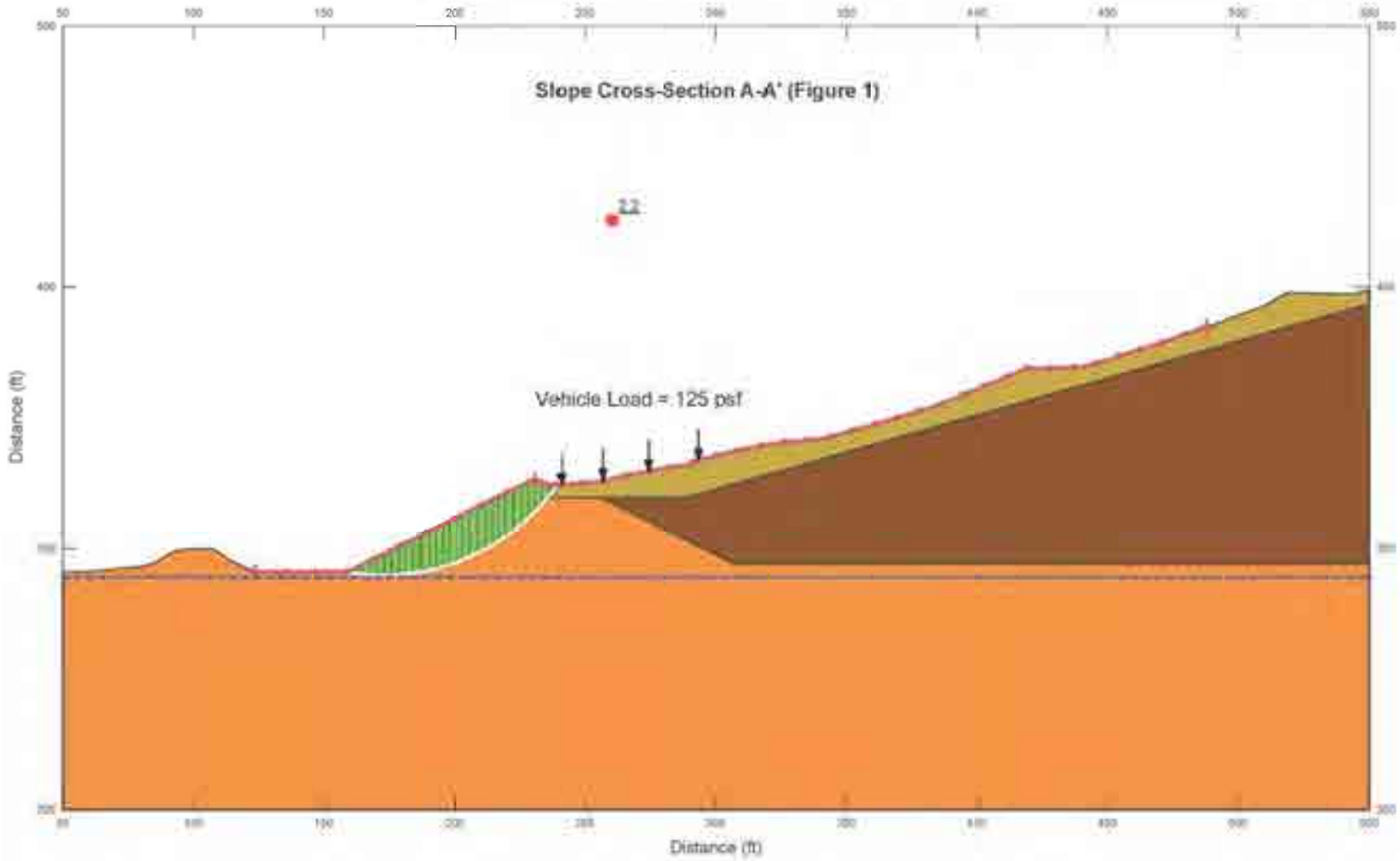
Rebecca Oliver, P.E.
Principal Engineer

Attachments:
Attachment A – Boring Logs
Attachment B – Laboratory Test Results
Attachment C – Engineered Fill Properties
Attachment D – Seismic Design Parameters
Attachment E – Seismic Deformation Analysis

FIGURES

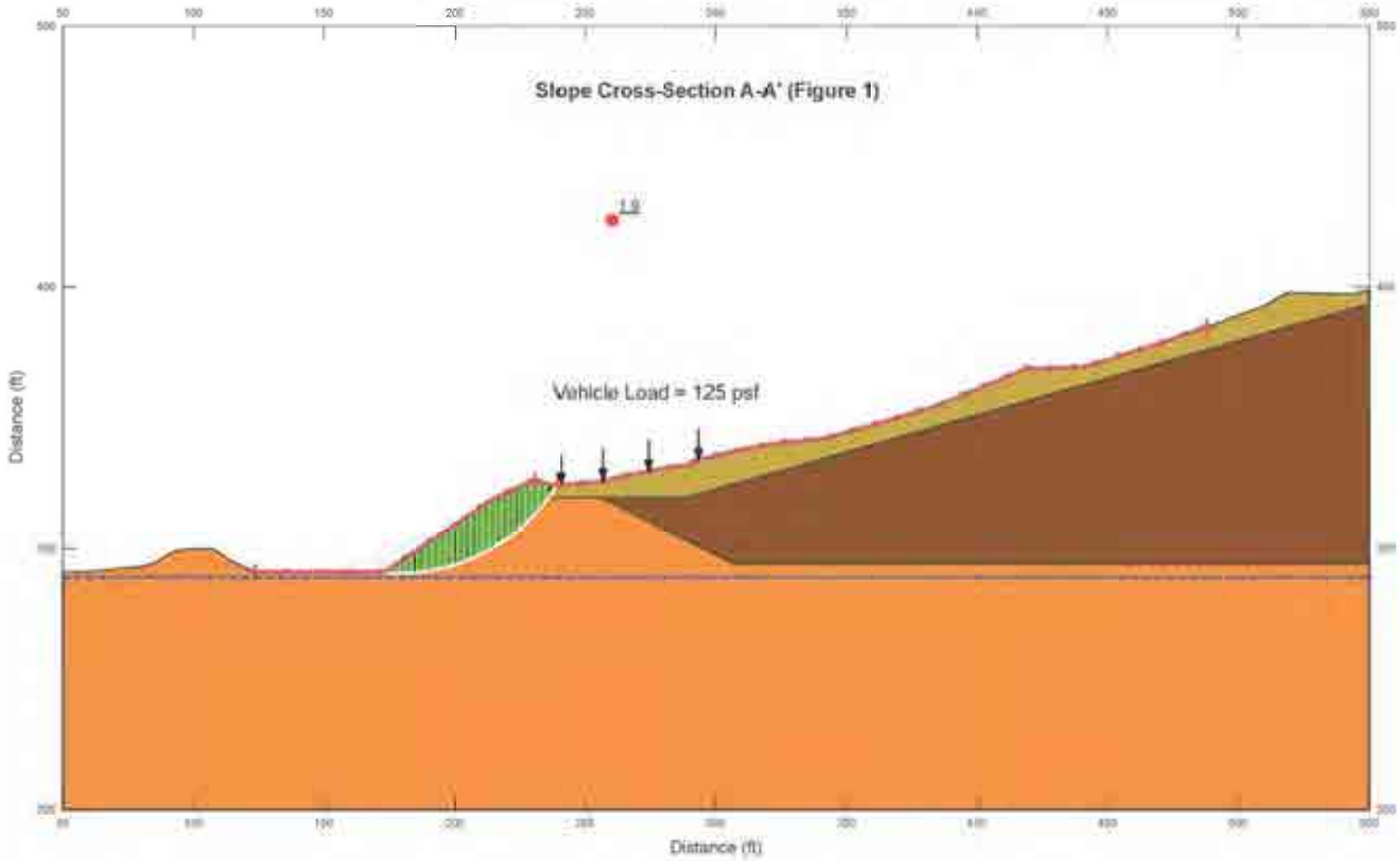


S:\ESD\CAD\SW\023134 - MIRAMAR PH 2\OUTGOING\EAST BASIN CROSSSECTIONS\EAST BASIN - BORING LOCATIONS - Last Saved by: JDuran on 4/10/20



Name	Model	Unit Weight (pcf)	Cohesion' (psf)	Phi' (°)
Engineered Fill	Mohr-Coulomb	115	200	25
Stadium Conglomerate	Mohr-Coulomb	120	400	28
Waste	Mohr-Coulomb	65	5	33

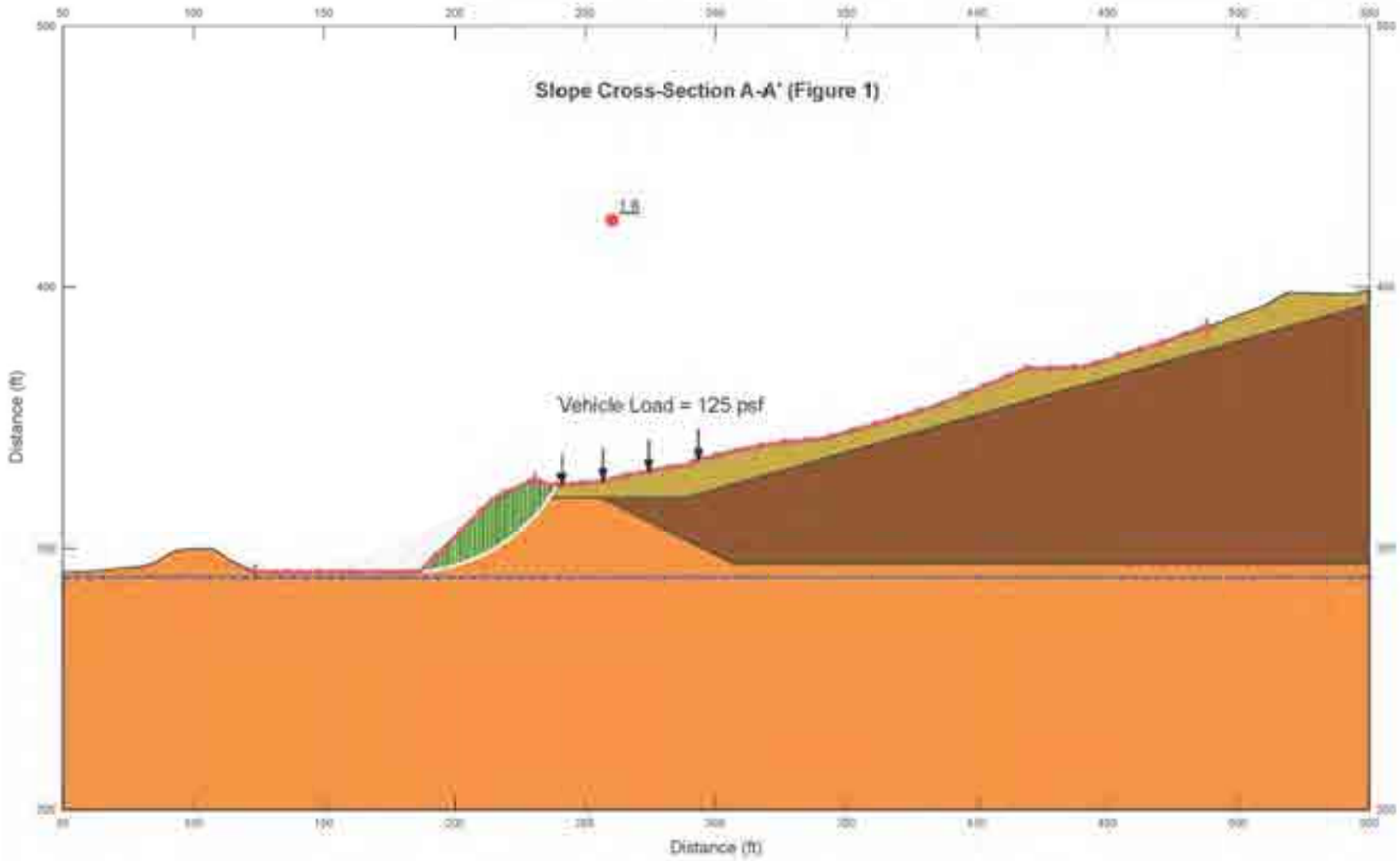
West Miramar Landfill		Geosyntec consultants	Figure 2
East Basin Cut Slope Stability			
2) 2H:1V- Entry Exit			
Project No: SC0957	April 2020		



Name	Model	Unit Weight (pcf)	Cohesion' (psf)	Phi' (°)
Engineered Fill	Mohr-Coulomb	115	200	25
Stadium Conglomerate	Mohr-Coulomb	120	400	28
Waste	Mohr-Coulomb	65	5	33

West Miramar Landfill		Geosyntec consultants
East Basin Cut Slope Stability		
3) 1.5H:1V - Entry Exit		
Project No: SC0957	April 2020	

Figure 3

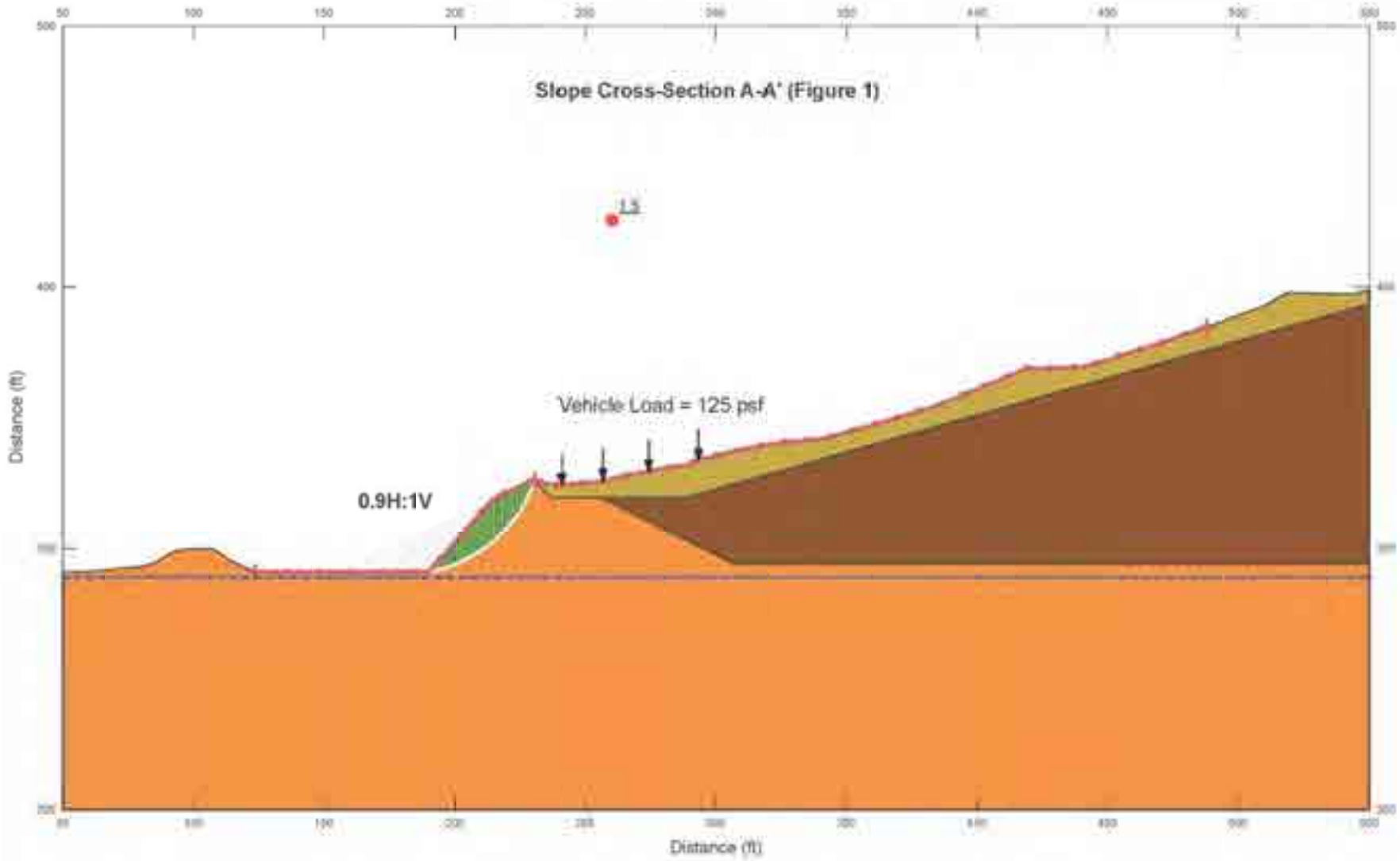


Name	Model	Unit Weight (pcf)	Cohesion' (psf)	Phi' (°)
Engineered Fill	Mohr-Coulomb	115	200	25
Stadium Conglomerate	Mohr-Coulomb	120	400	28
Waste	Mohr-Coulomb	65	5	33

West Miramar Landfill		Geosyntec consultants
East Basin Cut Slope Stability		
4) 1H:1V - Entry Exit		
Project No: SC0957	April 2020	

Figure 4

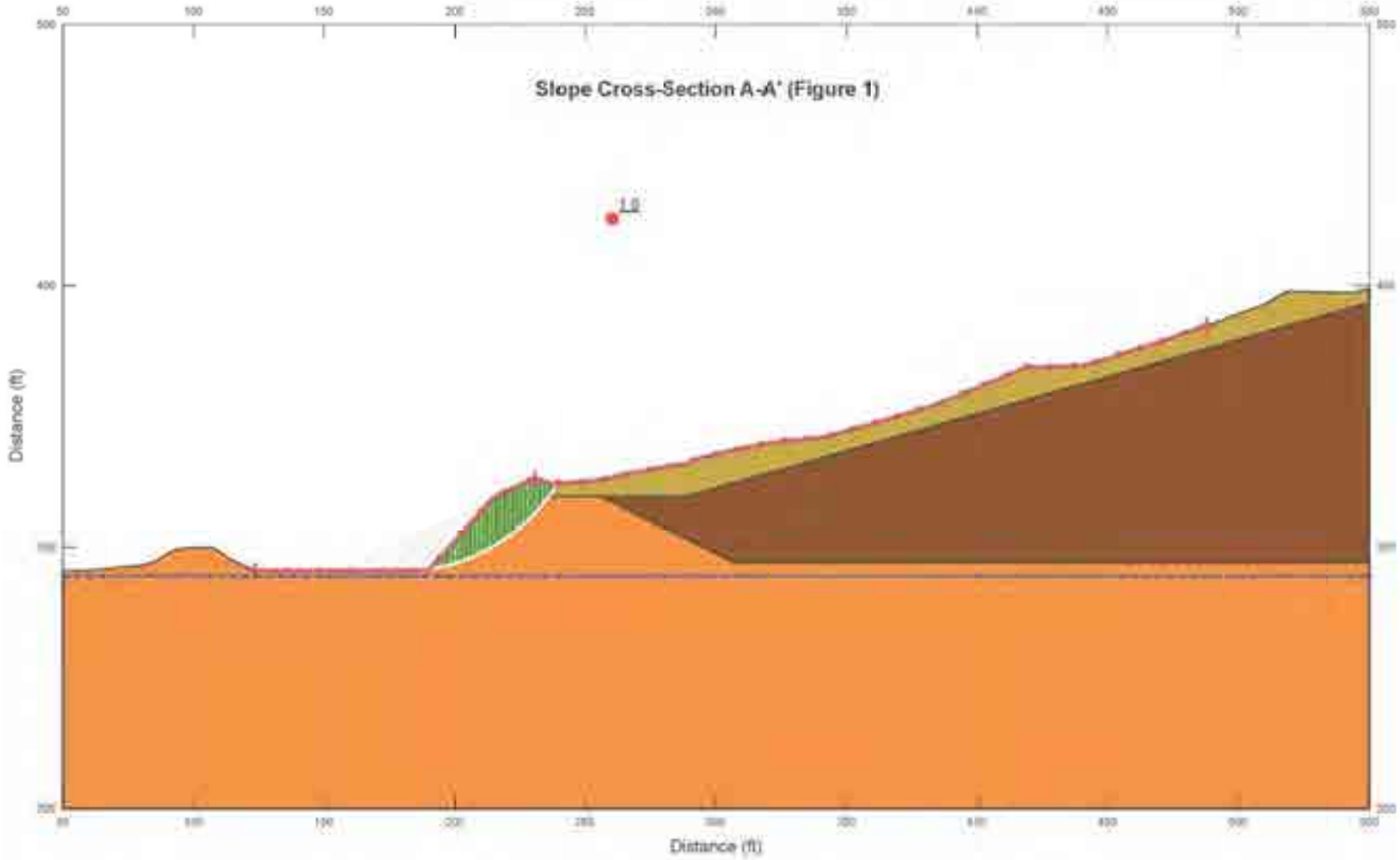
\\SDC-Citydata\ES2\Projects\SC0957 City of San Diego Miramar Landfill\TO 19 - Storm Water Basin Improvements\400\Technical\Task 01.2 Geotech Evaluation\Slope Stability\SC0957 Miramar East Basin Section A (B-2).gpz



Name	Model	Unit Weight (pcf)	Cohesion' (psf)	Phi' (°)
Engineered Fill	Mohr-Coulomb	115	200	25
Stadium Conglomerate	Mohr-Coulomb	120	400	28
Waste	Mohr-Coulomb	65	5	33

West Miramar Landfill		Geosyntec consultants	Figure 5
East Basin Cut Slope Stability			
5) Slope Angle Sensitivity – Entry Exit			
Project No: SC0957	April 2020		

\\SDC-Citydata\ES\Projects\SC0957 City of San Diego Miramar Landfill\TO 19 - Storm Water Basin Improvements\400\Technical\Task 01.2 Geotech Evaluation\Slope Stability\SC0957 Miramar East Basin Section A (B-2).gpj



Name	Model	Unit Weight (pcf)	Cohesion' (psf)	Phi' (°)
Engineered Fill	Mohr-Coulomb	115	200	25
Stadium Conglomerate	Mohr-Coulomb	120	400	28
Waste	Mohr-Coulomb	65	6	33

Horz Seismic Coef.: 0.305

West Miramar Landfill	
East Basin Cut Slope Stability	
6) 0.9H:1V - Entry Exit Pseudostatic	
Project No: SC0957	April 2020

Geosyntec consultants

Figure 6

ATTACHMENT A

BORING LOGS

Geosyntec consultants
16644 West Bernardo Dr., Suite 301
San Diego, CA 92127
Tel: (858) 674-6559
Fax: (858) 674-6586

PROJECT	Miramar Landfill
PROJECT LOCATION	San Diego, California
PROJECT NUMBER	SC0957-19-01

KEY SHEET - CLASSIFICATIONS AND SYMBOLS

GS FORM: KEY 09/99

EMPIRICAL CORRELATIONS WITH STANDARD PENETRATION RESISTANCE N VALUES *

	N VALUE * (BLOWS/FT)	CONSISTENCY	UNCONFINED COMPRESSIVE STRENGTH (TONS/SQ FT)
FINE GRAINED SOILS	0 - 2	VERY SOFT	<0.25
	3 - 4	SOFT	0.25 - 0.50
	5 - 8	FIRM	0.50 - 1.00
	9 - 15	STIFF	1.00 - 2.00
	16 - 30	VERY STIFF	2.00 - 4.00
	31 - 50	HARD	>4.00
	>50	VERY HARD	

	N VALUE * (BLOWS/FT)	RELATIVE DENSITY
COARSE GRAINED SOILS	0 - 4	VERY LOOSE
	5 - 10	LOOSE
	11 - 30	MEDIUM DENSE
	31 - 50	DENSE
	>50	VERY DENSE

* ASTM D 1586; NUMBER OF BLOWS OF 140 POUND HAMMER FALLING 30 INCHES TO DRIVE A 2 IN. O.D., 1.4 IN. I.D. SAMPLER ONE FOOT.

UNIFIED SOIL CLASSIFICATION AND SYMBOL CHART

MAJOR DIVISIONS			SYMBOLS	DESCRIPTIONS
COARSE GRAINED SOILS (MORE THAN 50% OF MATERIAL COARSER THAN NO. 200 SIEVE SIZE)	GRAVEL AND GRAVELLY SOILS (MORE THAN 50% OF COARSE FRACTION RETAINED ON NO.4 SIEVE)	CLEAN GRAVELS (LITTLE OR NO FINES)	GW	WELL-GRADED GRAVELS, GRAVEL-SAND MIXTURES, LITTLE OR NO FINES
			GP	POORLY GRADED GRAVELS, GRAVEL-SAND MIXTURES, LITTLE OR NO FINES
		GRAVELS WITH FINES (APPRECIABLE AMOUNT OF FINES)	GM	SILTY GRAVELS, GRAVEL-SAND-SILT MIXTURES
			GC	CLAYEY GRAVELS, GRAVEL-SAND-CLAY MIXTURES
	SAND AND SANDY SOILS (MORE THAN 50% OF COARSE FRACTION PASSING NO.4 SIEVE)	CLEAN SANDS (LITTLE OR NO FINES)	SW	WELL GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
			SP	POORLY GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
		SANDS WITH FINES (APPRECIABLE AMOUNT OF FINES)	SM	SILTY SANDS, SAND-SILT MIXTURES
			SC	CLAYEY SANDS, SAND-CLAY MIXTURES
FINE GRAINED SOILS (MORE THAN 50% OF MATERIAL FINER THAN NO. 200 SIEVE SIZE)	SILTS AND CLAYS (LIQUID LIMIT LESS THAN 50)		ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY
			CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
			OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
	SILTS AND CLAYS (LIQUID LIMIT GREATER THAN 50)		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SANDY OR SILTY SOILS, ELASTIC SILT
			CH	INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS
			OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
HIGHLY ORGANIC SOILS			PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENT

NOTE: DUAL SYMBOLS USED FOR BORDERLINE CLASSIFICATIONS

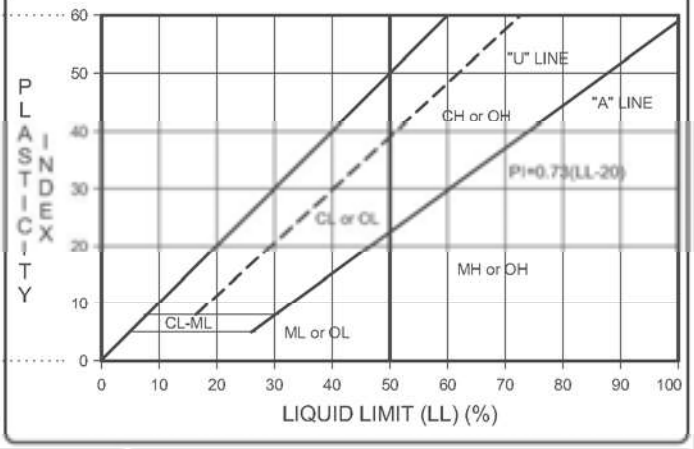
PARTICLE SIZE IDENTIFICATION

BOULDERS	>300 mm
COBBLES	75 - 300 mm
GRAVEL: COARSE	19.0 - 75 mm
GRAVEL: FINE	4.75 - 19 mm
SAND: COARSE	2.00 - 4.75 mm
SAND: MEDIUM	0.425 - 2.00 mm
SAND: FINE	0.075 - 0.425 mm
SILT	0.075 - 0.002 mm
CLAY	<0.002 mm

WELL GRADED - HAVING WIDE RANGE OF GRAIN SIZES AND APPRECIABLE AMOUNTS OF ALL INTERMEDIATE PARTICLE SIZES

POORLY GRADED - PREDOMINANTLY ONE GRAIN SIZE, OR HAVING A RANGE OF SIZES WITH SOME INTERMEDIATE SIZES MISSING

PLASTICITY CHART



OTHER MATERIAL SYMBOLS

- Siltstone
- Sandstone
- Siltstone/Claystone
- Claystone
- Shale
- Siltstone/Sandstone
- Conglomerate
- Granitic
- Sand
- Silt
- Silty Sand
- Alluvium
- Artificial Fill
- Debris Fill
- Asphalt
- Cement

WELL SYMBOLS

- GRANULAR BENTONITE
- BENTONITE CEMENT GROUT
- FILTER PACK
- CONCRETE
- NATIVE/ SLOUGH
- CENTRAL-IZER

SAMPLER AND OTHER SYMBOLS

- GRAB SAMPLE
- SPLIT SPOON
- STANDARD PENETRATION TEST (SPT)
- SHELBY TUBE
- CALIFORNIA SAMPLER
- BULK SAMPLE

- Water Level at Time Drilling, or as Shown
- Static Water Level
- HYD: Hydrometer
- MC: Moisture Content
- LC: LAB Compaction
- WA: Wash Analysis
- EI: Expansion Index
- SA: Sieve Analysis
- PI: Plasticity Index
- LL: Liquid Limit
- PID: Photo Ionization Device
- CORR: Corrosivity
- SG: Specific Gravity

BORING LOG GEOTECH (KEATON) MIRAMAR.GPJ SAN DIEGO GINT LIBRARY GLB 2/28/20

Geosyntec consultants
16644 West Bernardo Dr., Suite 301
San Diego, CA 92127
Tel: (858) 674-6559
Fax: (858) 674-6586

GS FORM: BORE 1/99

BOREHOLE RECORD

BORING B-1 | SHEET 1 OF 1
START DATE 02/14/2020 | ELEVATION 321.53 FT MSL
FINISH DATE 02/14/2020
PROJECT Miramar Landfill
LOCATION San Diego, CA
PROJECT NUMBER SC0957-19-01

DEPTH (ft)	MATERIAL DESCRIPTION	SYMBOLIC LOG	ELEVATION (ft)	SAMPLES NUMBER	SAMPLES TYPE	BLOW COUNTS	N VALUE	% RECOVERY	TIME	COMMENTS
	Class II Base - dense, slightly moist, gray blue									
	Fill - Clayey SAND (SC), medium dense, brown, moist, with gravel up to 1.5"									Bulk bag 2.5'-10' B-1-B
	Tertiary Stadium Conglomerate (Tst) - Clayey Gravel (GC), dense to very dense, brown, moist, gravel up to 2"			B-1-1		22 17 8	25	33		
5						35 43 10	53	0		Grinding sound from drill on rock - see remarks
						28 50/6"	50/6"	0		Grinding sound from drill on rock - see remarks
10				B-1-2		32 26 8	34	10		
	Boring terminated at 11.5'									
15										
20										
25										
30										

CONTRACTOR Pacific Drilling
EQUIPMENT MarL M10
DRILL MTHD 6" Hollow Stem Auger
DIAMETER
LOGGER R. Chan REVIEWER

LATITUDE 32°51'5.74" N
LONGITUDE 117°9'15.75" E
ANGLE Vertical
BEARING ------
PRINTED 2/28/20

REMARKS: SPT Driving rocks - artificially high blow counts
Drilled to 10'
SPT to 11.5'
No Groundwater encountered

COORDINATE SYSTEM: Lat-Long

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

BORING LOG GEOTECH (KEATON) MIRAMAR.GPJ SAN DIEGO GINT LIBRARY GLB 2/29/20

Geosyntec consultants
16644 West Bernardo Dr., Suite 301
San Diego, CA 92127
Tel: (858) 674-6559
Fax: (858) 674-6586

GS FORM: BORE 1/99

BOREHOLE RECORD

BORING B-2 | SHEET 1 OF 1
START DATE 02/14/2020 | ELEVATION 325.62 FT MSL
FINISH DATE 02/14/2020
PROJECT Miramar Landfill
LOCATION San Diego, CA
PROJECT NUMBER SC0957-19-01

DEPTH (ft)	MATERIAL DESCRIPTION	SYMBOLIC LOG	ELEVATION (ft)	SAMPLES NUMBER	SAMPLES TYPE	BLOW COUNTS	N VALUE	% RECOVERY	TIME	COMMENTS
	Class II Base - dense, slightly moist, gray blue									
	Fill - Clayey SAND (SC), medium dense, brown, moist, with coarse sand and gravel up to 1"			B-2-1		7 17 17	34	80		Bulk bag B-2-B 2.5'-10'
5	Tertiary Stadium Conglomerate (Tst) - Clayey Gravel (GC), medium dense to dense, brown, moist, with coarse sand and oxidation staining			B-2-2		13 22 14	36	10		
						9 8 5	13	0		Grinding sound from drill on rock Subrounded and subangular gravel
10	Pocket of fine gray sand			B-2-3		16 15 12	27	66		
	Boring terminated at 11.5'									
15										
20										
25										
30										

CONTRACTOR Pacific Drilling
EQUIPMENT MarL M10
DRILL MTHD 6" Hollow Stem Auger
DIAMETER
LOGGER R. Chan REVIEWER

LATITUDE 32°51'5.82" N
LONGITUDE 117°9'17.24" W
ANGLE Vertical
BEARING ------
PRINTED 2/28/20

REMARKS: Drilled to 10', SPT to 11.5'
No Groundwater encountered.
Drilled through woven geotextile material at unknown depth - recovered from drilling spoils.
COORDINATE SYSTEM: Lat-Long
SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

BORING LOG GEOTECH (KEATON) MIRAMAR GPJ SAN DIEGO GINT LIBRARY GLB 2/29/20

Geosyntec consultants

ATTACHMENT B

LABORATORY TEST RESULTS

Table 1
East Basin
West Miramar Landfill
Summary of Geotechnical Laboratory Testing

Sample ID	Top Depth	Bottom Depth	Grain Size Analysis (ASTM D6913)				Moisture Content (ASTM D2216)	Atterberg Limits (ASTM D4318)			Direct Shear (ASTM D3080)			
			USCS	G	S	F		LL	PL	PI	φ_{Peak}	C_{Peak}	φ_{res}	C_{res}
	ft	ft		%	%	%	%				Deg	psf	Deg	psf
B-1-B	2.5	10.0	-	45	17.3	37.7	3.5	40	15	25	31	631	31	621
B-2-B	2.5	10.0	-	49	14.1	36.9	2.8	32	13	19	33	430	33	428
B-1-1	2.5	4.0	SC	38	41.4	20.6	10.6	-	-	-	-	-	-	-
B-2-1	2.5	4.0	SC	38	42.3	19.7	8.5	-	-	-	-	-	-	-
B-2-3	10	11.5	SC	26	50.5	23.5	10.2	-	-	-	-	-	-	-

Sieve Analysis

ASTM C136 D6913 CT202

Report Date: 2/27/2020

SCST, LLC - San Diego
LEA: 47, Exp: 04/25/2021
6260 Riverdale St
San Diego, CA 92120
Phone: (619) 280-4321
Fax: (619) 280-4717

Client:
Geosyntec Consultants - San Diego Central Office
2355 Northside Dr., Suite 250
San Diego, CA 92108

Project:
180428P4.1
Miramar Landfill SW Basin #SC0957-19-01 Lab Testing - Geosyntec
5180 Convoy Street
San Diego, CA 92111

SAMPLE DETAILS

Sample Number: 51901 **Sample Date:** 02/14/2020 **Sampled By:** Client

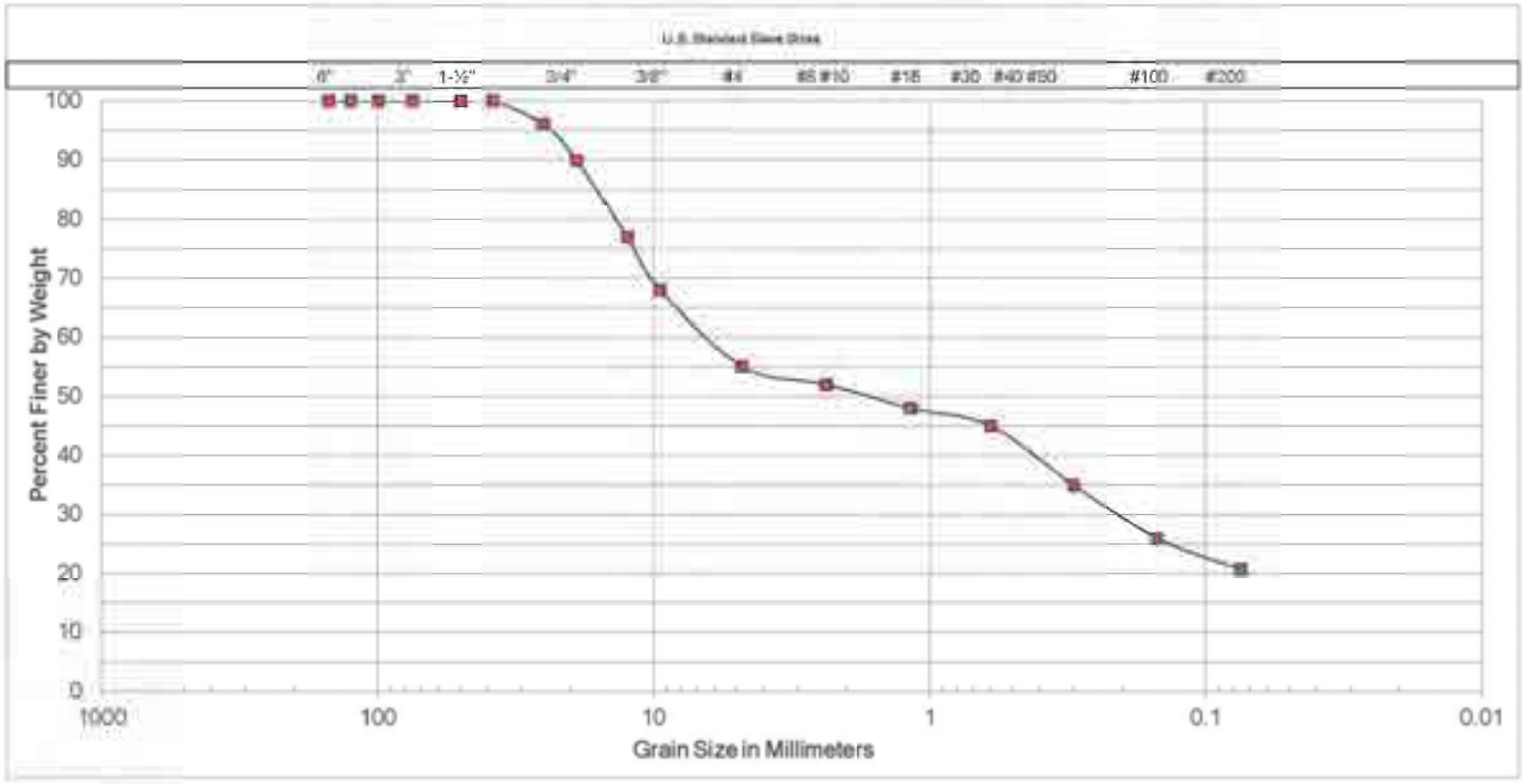
Sample Location: B-1-B at 2½ to 10 Feet (Miramar)

TEST DETAILS

Test Date: 02/27/2020 **Tested By:** Laboratory, SCST

Notes:
Weights before and after sieving differs by less than 0.3% in accordance to ASTM C136 8.7.

See SA 51901.pdf in the documents section at the end of this report.



Cobbles	Gravel		Sand			Silt or Clay
	Coarse	Fine	Coarse	Medium	Fine	

SAMPLE LOCATION
B-1-B at 2½ to 10 Feet
SAMPLE NUMBER
51901

UNIFIED SOIL CLASSIFICATION:	
DESCRIPTION	

ATTERBERG LIMITS	
LIQUID LIMIT	
PLASTIC LIMIT	
PLASTICITY INDEX	

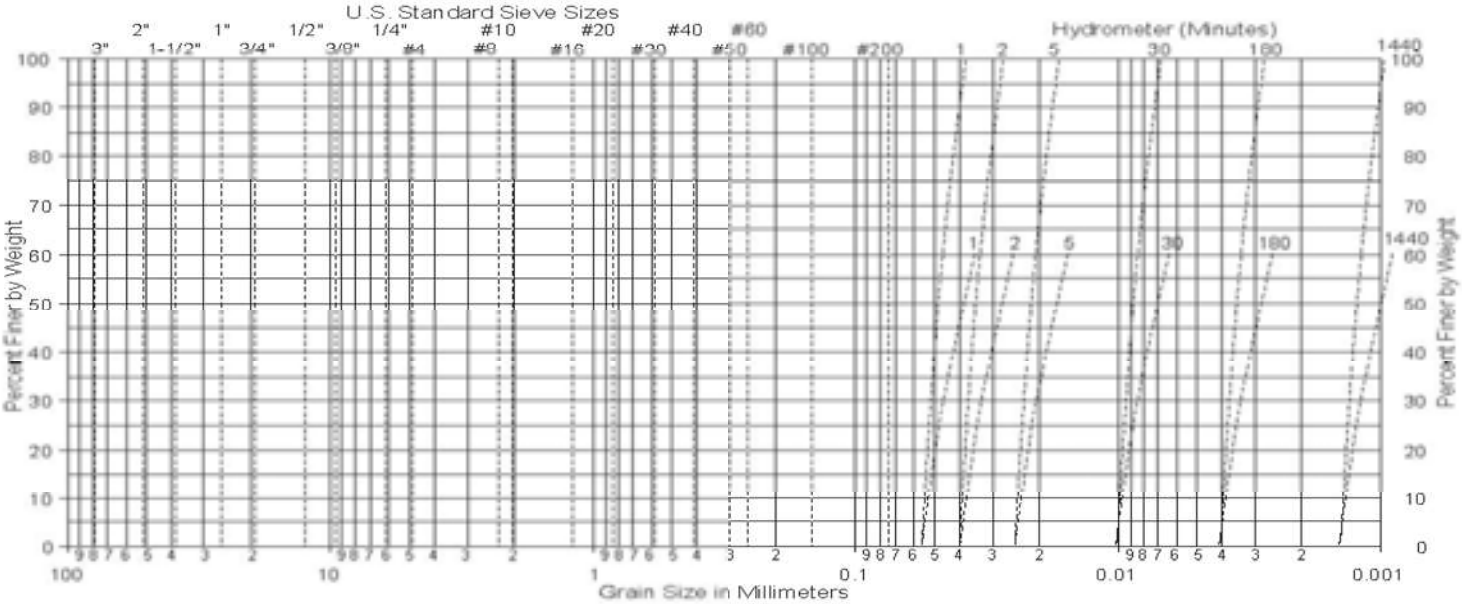
ATLAS SC ST

Miramar Landfill SW Basin
Geosyntec Consultants

By:	Tena, Chris	Date:	February, 2020
Job Number:	180428P4.1	Figure:	II-1

Job Name:	Miramar Landfill SW Basin	**Job Number:**	180428P4.1
Client:	Geosyntec Consultants	**Sample #:**	51901
Sampled By:	Client	**Tested By:**	Tena, Chris
Sample Date:	2/4/2020	**Tested Date:**	2/27/2020
Location:	B-1-B at 2½ to 10 Feet		

GRAIN SIZE DISTRIBUTION



Total Sample Weights				Moisture Content		Sample for Washed Sieve Analysis	
Total + #4	3215.4	Total - #4 Dry	3857.9	Wet Weight	500	-#4 Wet	307.1
Total - #4 Wet	3992.9	Total Dry Wt.	7073.3	Dry Weight	483.2	-#4 Dry	296.7
				% Moisture	3.5%	Soak Time	24 Hours

U.S. Standard Sieve

		Plus #4 Sample			Minus #4 Sample			
		Wt. Ret.	% Ret.	% Pass	Wt. Ret.	% Ret	% Pass	Specs
150mm	6"	0.0	0%	100%				
125mm	5"	0.0	0%	100%				
100mm	4"	0.0	0%	100%				
75mm	3"	0.0	0%	100%				
50mm	2"	0.0	0%	100%				
38.1mm	1 1/2"	0.0	0%	100%				
25mm	1"	272.5	4%	96%				
19mm	3/4"	681.8	10%	90%				
12.5mm	1/2"	1605.3	23%	77%				
9.5mm	3/8"	2246.1	32%	68%	0.0	0%	100%	
4.75mm	#4	3215.4	45%	55%	0.0	0%	100%	
2.36mm	#8			52%	18.7	6%	94%	
1.18mm	#16			48%	35.2	12%	88%	
600um	#30			45%	55.1	19%	81%	
300um	#50			35%	110.3	37%	63%	
150um	#100			26%	157.5	53%	47%	
75um	#200			20.7%	184.9	62.3%	37.7%	
Pan Weight								
.05mm	.05mm							
.005mm	.005mm							
.001mm	.001mm							

Sieve Analysis

ASTMC136 D6913 CT202

Report Date: 2/27/2020

SCST, LLC - San Diego
LEA: 47, Exp: 04/25/2021
6260 Riverdale St
San Diego, CA 92120
Phone: (619) 280-4321
Fax: (619) 280-4717

Client:
Geosyntec Consultants - San Diego Central Office
2355 Northside Dr., Suite 250
San Diego, CA 92108

Project:
180428P4.1
Miramar Landfill SW Basin #SC0957-19-01 Lab Testing - Geosyntec
5180 Convoy Street
San Diego, CA 92111

SAMPLE DETAILS

Sample Number: 51903 **Sample Date:** 02/14/2020 **Sampled By:** Client

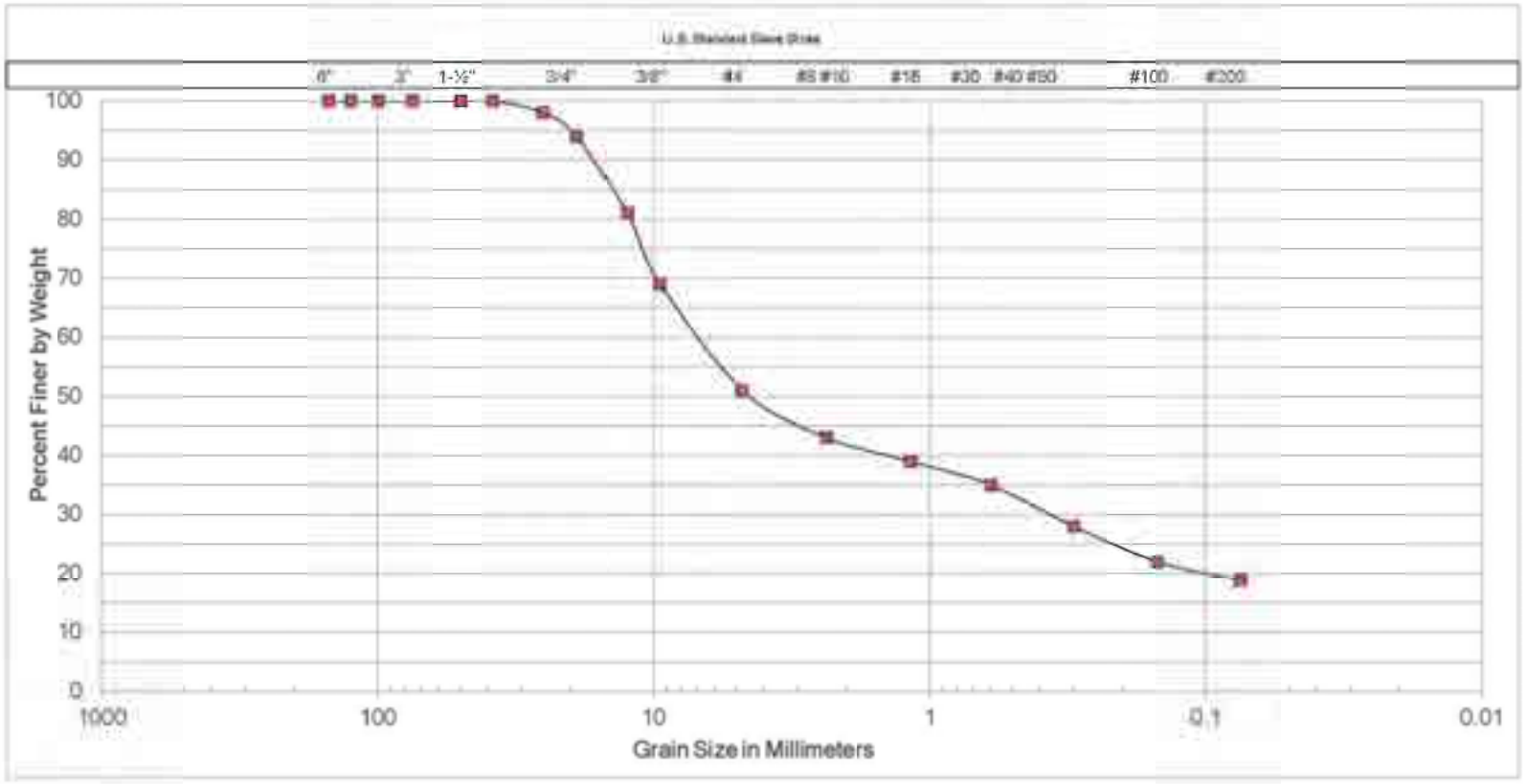
Sample Location: B-2-B at 2½ to 10 Feet (Miramar)

TEST DETAILS

Test Date: 02/27/2020 **Tested By:** Laboratory, SCST

Notes:
Weights before and after sieving differs by less than 0.3% in accordance to ASTM C136 8.7.

See SA 51903.pdf in the documents section at the end of this report.



Cobbles	Gravel		Sand			Silt or Clay
	Coarse	Fine	Coarse	Medium	Fine	

SAMPLE LOCATION
B-2-B at 2½ to 10 Feet
SAMPLE NUMBER
51903

UNIFIED SOIL CLASSIFICATION:	
DESCRIPTION	

ATTERBERG LIMITS	
LIQUID LIMIT	
PLASTIC LIMIT	
PLASTICITY INDEX	

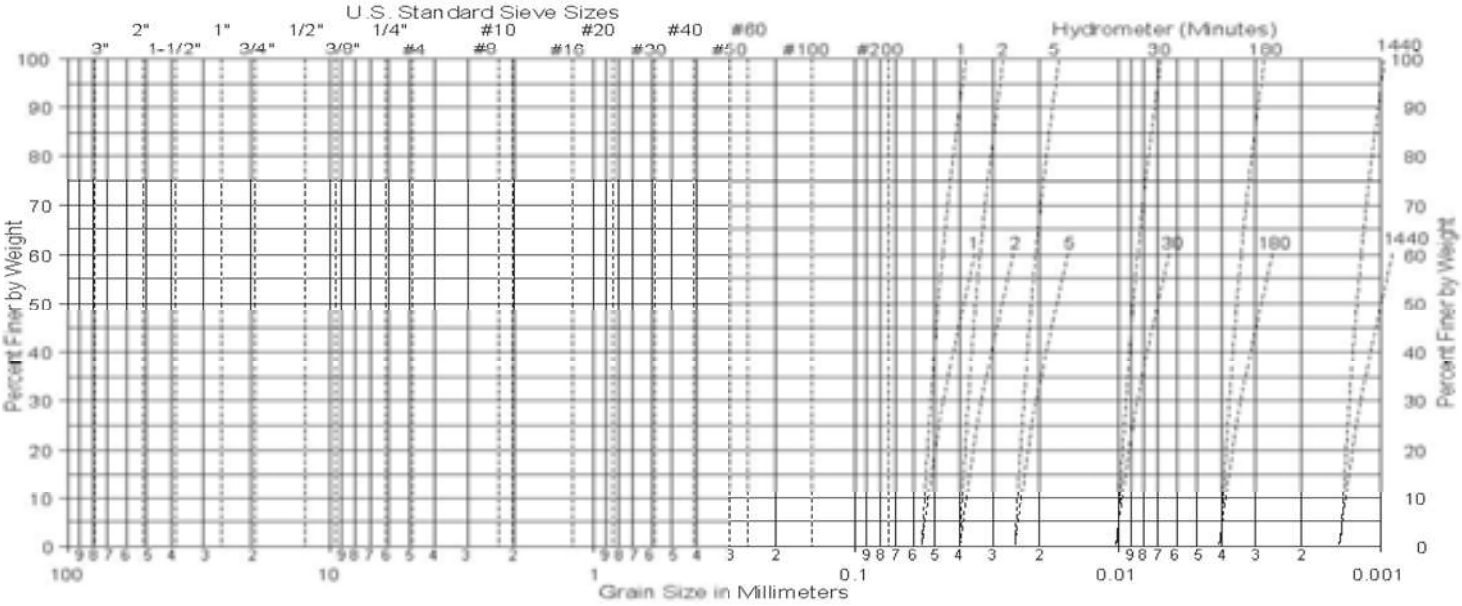
Miramar Landfill SW Basin

Geosynthetic Consultants

By:	Tena, Chris	Date:	February, 2020
Job Number:	180426P4.1	Figure:	II-1

Job Name:	Miramar Landfill SW Basin	**Job Number:**	180428P4.1
Client:	Geosyntec Consultants	**Sample #:**	51903
Sampled By:	Client	**Tested By:**	Tena, Chris
Sample Date:	2/4/2020	**Tested Date:**	2/27/2020
Location:	B-2-B at 2½ to 10 Feet		

GRAIN SIZE DISTRIBUTION



Total Sample Weights				Moisture Content		Sample for Washed Sieve Analysis	
Total + #4	2047.4	Total - #4 Dry	2101.5	Wet Weight	500	-#4 Wet	320.3
Total - #4 Wet	2160.3	Total Dry Wt.	4148.9	Dry Weight	486.2	-#4 Dry	311.6
				% Moisture	2.8%	Soak Time	24 Hours

U.S. Standard Sieve

		Plus #4 Sample			Minus #4 Sample			
		Wt. Ret.	% Ret.	% Pass	Wt. Ret.	% Ret	% Pass	Specs
150mm	6"	0.0	0%	100%				
125mm	5"	0.0	0%	100%				
100mm	4"	0.0	0%	100%				
75mm	3"	0.0	0%	100%				
50mm	2"	0.0	0%	100%				
38.1mm	1 1/2"	0.0	0%	100%				
25mm	1"	84.9	2%	98%				
19mm	3/4"	249.7	6%	94%				
12.5mm	1/2"	780.2	19%	81%				
9.5mm	3/8"	1271.2	31%	69%	0.0	0%	100%	
4.75mm	#4	2047.4	49%	51%	0.0	0%	100%	
2.36mm	#8			43%	48.6	16%	84%	
1.18mm	#16			39%	76.3	25%	76%	
600um	#30			35%	98.0	32%	69%	
300um	#50			28%	139.3	45%	55%	
150um	#100			22%	173.6	56%	44%	
75um	#200			18.8%	196.6	63.1%	36.9%	
Pan Weight								
.05mm	.05mm							
.005mm	.005mm							
.001mm	.001mm							

Sieve Analysis

ASTMC136 D6913 CT202

Report Date: 2/28/2020

SCST, LLC - San Diego
LEA: 47, Exp: 04/25/2021
6260 Riverdale St
San Diego, CA 92120
Phone: (619) 280-4321
Fax: (619) 280-4717

Client:
Geosyntec Consultants - San Diego Central Office
2355 Northside Dr., Suite 250
San Diego, CA 92108

Project:
180428P4.1
Miramar Landfill SW Basin #SC0957-19-01 Lab Testing - Geosyntec
5180 Convoy Street
San Diego, CA 92111

SAMPLE DETAILS

Sample Number: 51902 **Sample Date:** 02/14/2020 **Sampled By:** Client

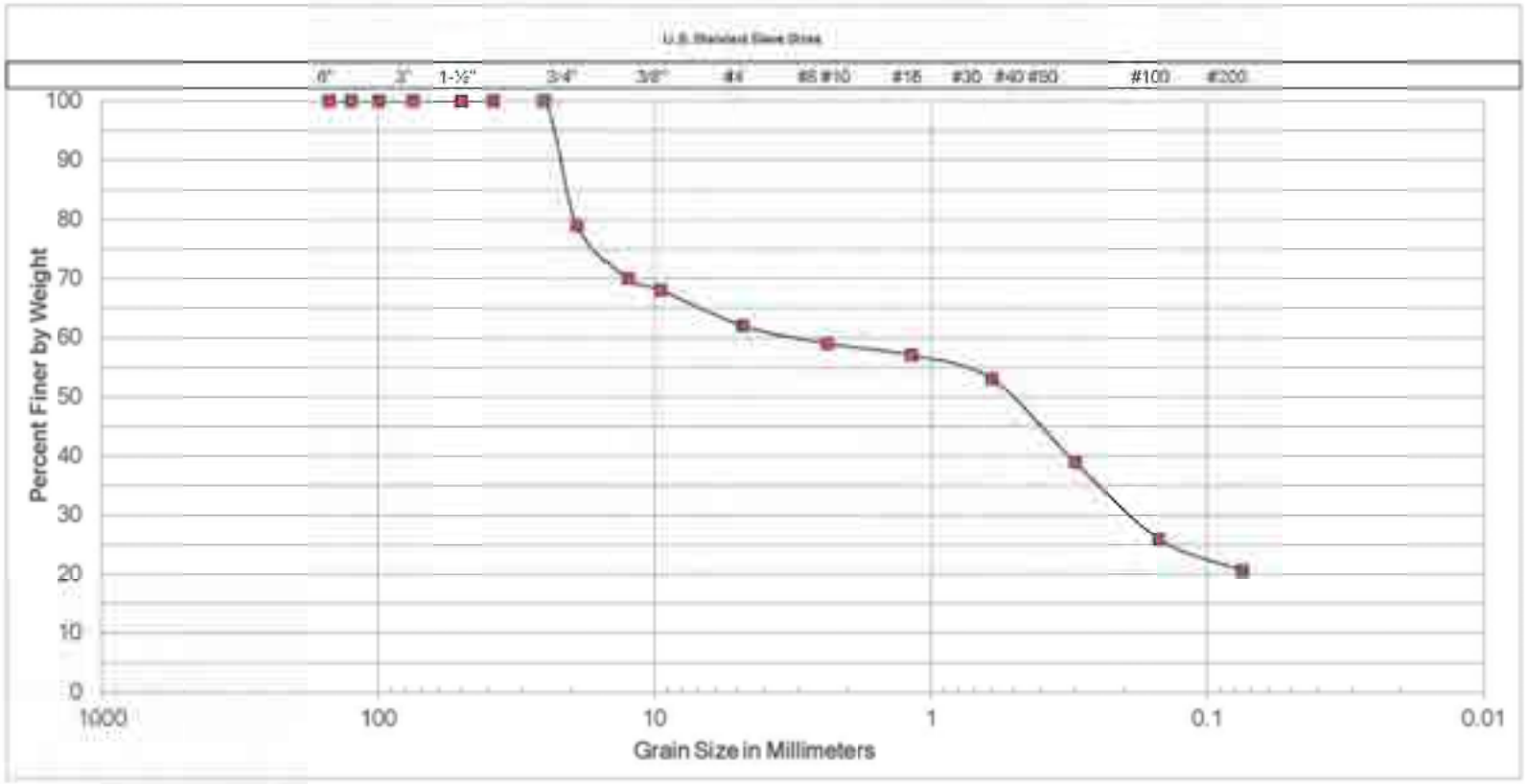
Sample Location: B-1-1 at 2½ to 4 Feet (Miramar) 33% Recovery

TEST DETAILS

Test Date: 02/28/2020 **Tested By:** Laboratory, SCST

Notes:
Weights before and after sieving differs by less than 0.3% in accordance to ASTM C136 8.7.

See SA 51902.pdf in the documents section at the end of this report.



Cobbles	Gravel		Sand			Silt or Clay
	Coarse	Fine	Coarse	Medium	Fine	

SAMPLE LOCATION
B-1-1 at 2½ to 4 Feet
SAMPLE NUMBER
61902

UNIFIED SOIL CLASSIFICATION:	
DESCRIPTION	

ATTERBERG LIMITS	
LIQUID LIMIT	
PLASTIC LIMIT	
PLASTICITY INDEX	

ATLAS SCST

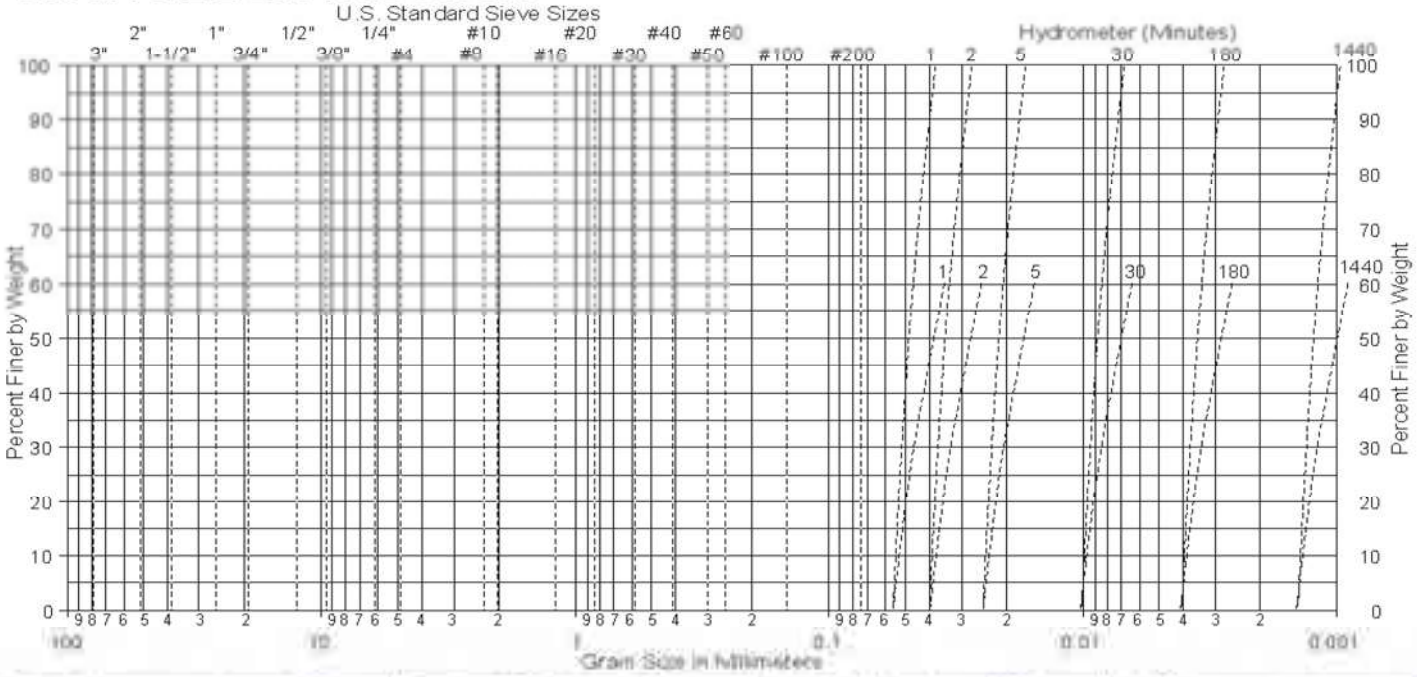
Miramar Landfill SW Basin

Geosyntec

By:	Bartlett, Dale	Date:	2/28/2020
Job Number:	180428P4.1	Figure:	II-1

Project Name:	Miramar Landfill SW Basin	**Project No.:**	180428P4.1
Client:	Geosyntec	**Sample No.:**	51902
Sample Date:	2/5/2042	**Sampled By:**	Client
Test Date:	2/28/2020	**Tested By:**	Bartlett, Dale
Location:	B-1-1 at 2½ to 4 Feet		

GRAIN SIZE DISTRIBUTION



Total + #4	0.0	Total - #4 Dry	228.1	Wet Weight	252.3	-#4 Wet	252.3
Total - #4 Wet	252.3	Total Dry Wt.	228.1	Dry Weight	228.1	-#4 Dry	228.1
				% Moisture	10.6%		

U.S. Standard Sieve

		Wt. Ret.	% Ret.	% Pass	Wt. Ret.	% Ret	% Pass	Specs
150mm	6"	0.0	0%	100%				
125mm	5"	0.0	0%	100%				
100mm	4"	0.0	0%	100%				
75mm	3"	0.0	0%	100%				
50mm	2"	0.0	0%	100%				
38.1mm	1 1/2"	0.0	0%	100%				
25mm	1"	0.0	0%	100%				
19mm	3/4"	47.3	21%	79%				
12.5mm	1/2"	68.1	30%	70%				
9.5mm	3/8"	72.3	32%	68%				
4.75mm	#4	86.1	38%	62%				
2.36mm	#8	93.3	41%	59%				
1.18mm	#16	98.9	43%	57%				
600µm	#30	107.2	47%	53%				
300µm	#50	139.9	61%	39%				
150µm	#100	168.5	74%	26%				
75µm	#200	181.1	79.4%	20.6%				
.05mm	.05mm							
.005mm	.005mm							
.001mm	.001mm							

Sieve Analysis

ASTMC136 D6913 CT202

Report Date: 2/28/2020

SCST, LLC - San Diego
LEA: 47, Exp: 04/25/2021
6260 Riverdale St
San Diego, CA 92120
Phone: (619) 280-4321
Fax: (619) 280-4717

Client:
Geosyntec Consultants - San Diego Central Office
2355 Northside Dr., Suite 250
San Diego, CA 92108

Project:
180428P4.1
Miramar Landfill SW Basin #SC0957-19-01 Lab Testing - Geosyntec
5180 Convoy Street
San Diego, CA 92111

SAMPLE DETAILS

Sample Number: 51904 **Sample Date:** 02/14/2020 **Sampled By:** Client

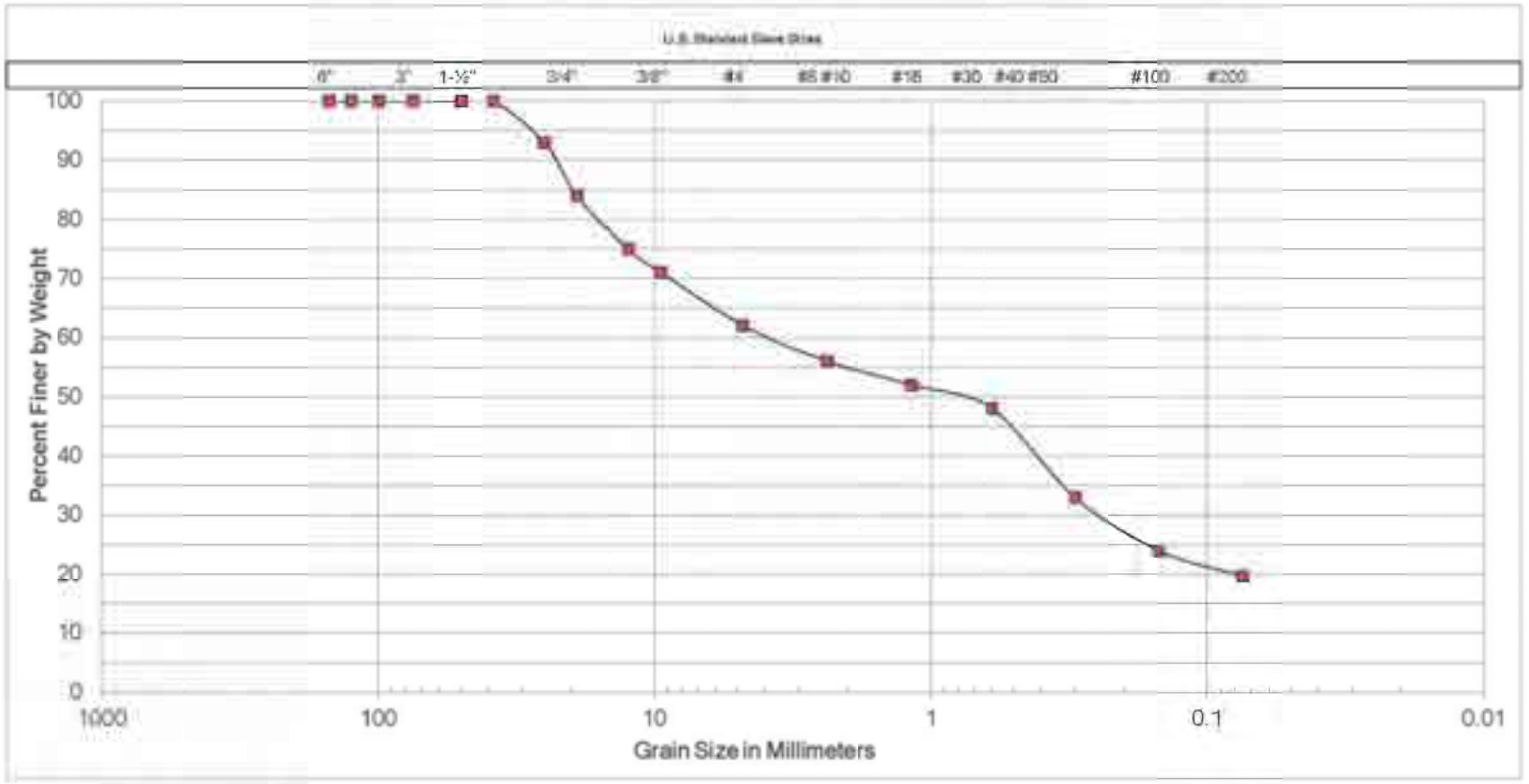
Sample Location: B-2-1 at 2½ to 4 Feet (Miramar) 80% Recovery

TEST DETAILS

Test Date: 02/28/2020 **Tested By:** Laboratory, SCST

Notes:
Weights before and after sieving differs by less than 0.3% in accordance to ASTM C136 8.7.

See SA 51904.pdf in the documents section at the end of this report.



Cobbles	Gravel		Sand			Silt or Clay
	Coarse	Fine	Coarse	Medium	Fine	

SAMPLE LOCATION
B-2-1 at 2½ to 4 Feet
SAMPLE NUMBER
51904

UNIFIED SOIL CLASSIFICATION:	
DESCRIPTION	

ATTERBERG LIMITS	
LIQUID LIMIT	
PLASTIC LIMIT	
PLASTICITY INDEX	

ATLAS SCST

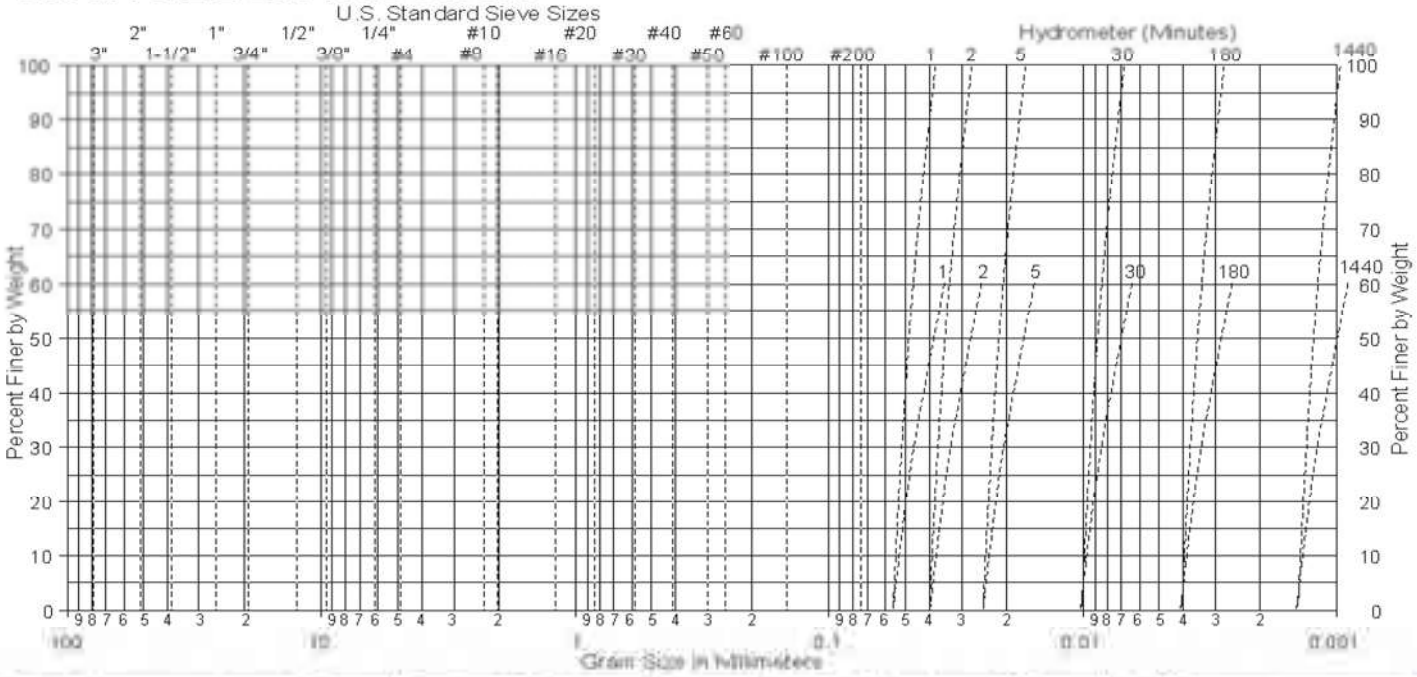
Miramar Landfill SW Basin

Geosyntec

By:	Bartlett, Dale	Date:	2/28/2020
Job Number:	180428P4.1	Figure:	II-1

Project Name:	Miramar Landfill SW Basin	**Project No.:**	180428P4.1
Client:	Geosyntec	**Sample No.:**	51904
Sample Date:	2/5/2042	**Sampled By:**	Client
Test Date:	2/28/2020	**Tested By:**	Bartlett, Dale
Location:	B-2-1 at 2½ to 4 Feet		

GRAIN SIZE DISTRIBUTION



Total + #4	0.0	Total - #4 Dry	470.2	Wet Weight	510.2	-#4 Wet	510.2
Total - #4 Wet	510.2	Total Dry Wt.	470.2	Dry Weight	470.3	-#4 Dry	470.2
				% Moisture	8.5%		

U.S. Standard Sieve

		Wt. Ret.	% Ret.	% Pass	Wt. Ret.	% Ret	% Pass	Specs
150mm	6"	0.0	0%	100%				
125mm	5"	0.0	0%	100%				
100mm	4"	0.0	0%	100%				
75mm	3"	0.0	0%	100%				
50mm	2"	0.0	0%	100%				
38.1mm	1 1/2"	0.0	0%	100%				
25mm	1"	31.2	7%	93%				
19mm	3/4"	77.3	16%	84%				
12.5mm	1/2"	115.9	25%	75%				
9.5mm	3/8"	135.7	29%	71%				
4.75mm	#4	179.8	38%	62%				
2.36mm	#8	205.2	44%	56%				
1.18mm	#16	224.5	48%	52%				
600µm	#30	245.8	52%	48%				
300µm	#50	314.5	67%	33%				
150µm	#100	355.8	76%	24%				
75µm	#200	377.5	80.3%	19.7%				
.05mm	.05mm							
.005mm	.005mm							
.001mm	.001mm							

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Sieve Analysis

ASTM C136 D6913 CT202

Report Date: 2/28/2020

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LEA: 47, Exp: 04/25/2021
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2355 Northside Dr., Suite 250
San Diego, CA 92108

Project:
180428P4.1
Miramar Landfill SW Basin #SC0957-19-01 Lab Testing - Geosyntec
5180 Convoy Street
San Diego, CA 92111

SAMPLE DETAILS

Sample Number: 51905 **Sample Date:** 02/14/2020 **Sampled By:** Client

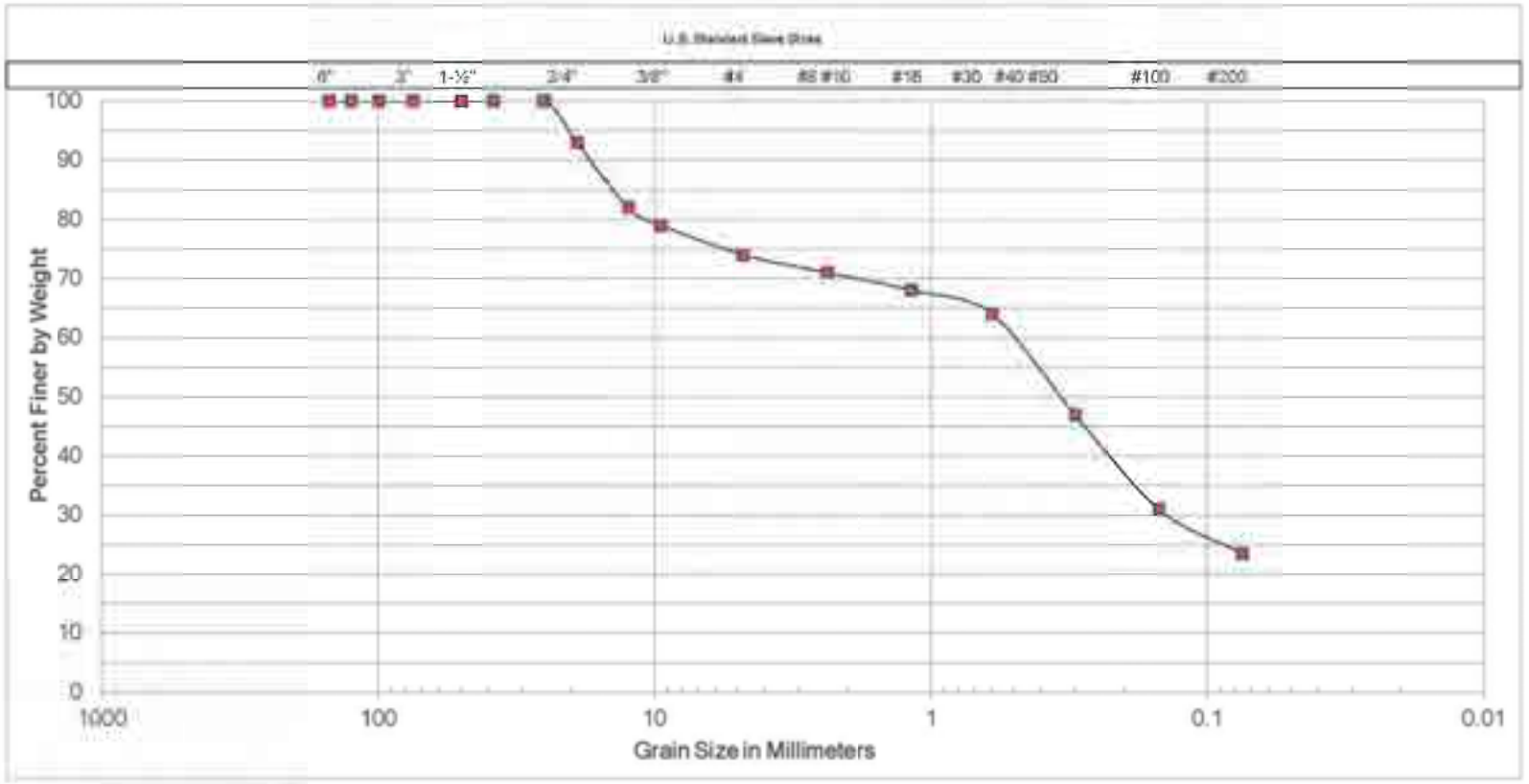
Sample Location: B-2-3 at 10 to 11½ Feet (Miramar) 66% Recovery

TEST DETAILS

Test Date: 02/28/2020 **Tested By:** Laboratory, SCST

Notes:
Weights before and after sieving differs by less than 0.3% in accordance to ASTM C136 8.7.

See SA 51905.pdf in the documents section at the end of this report.



Cobbles	Gravel		Sand			Silt or Clay
	Coarse	Fine	Coarse	Medium	Fine	

SAMPLE LOCATION
B-2-3 at 10 to 11½ Feet
SAMPLE NUMBER
61905

UNIFIED SOIL CLASSIFICATION:	
DESCRIPTION	

ATTERBERG LIMITS	
LIQUID LIMIT	
PLASTIC LIMIT	
PLASTICITY INDEX	

ATLAS SCST

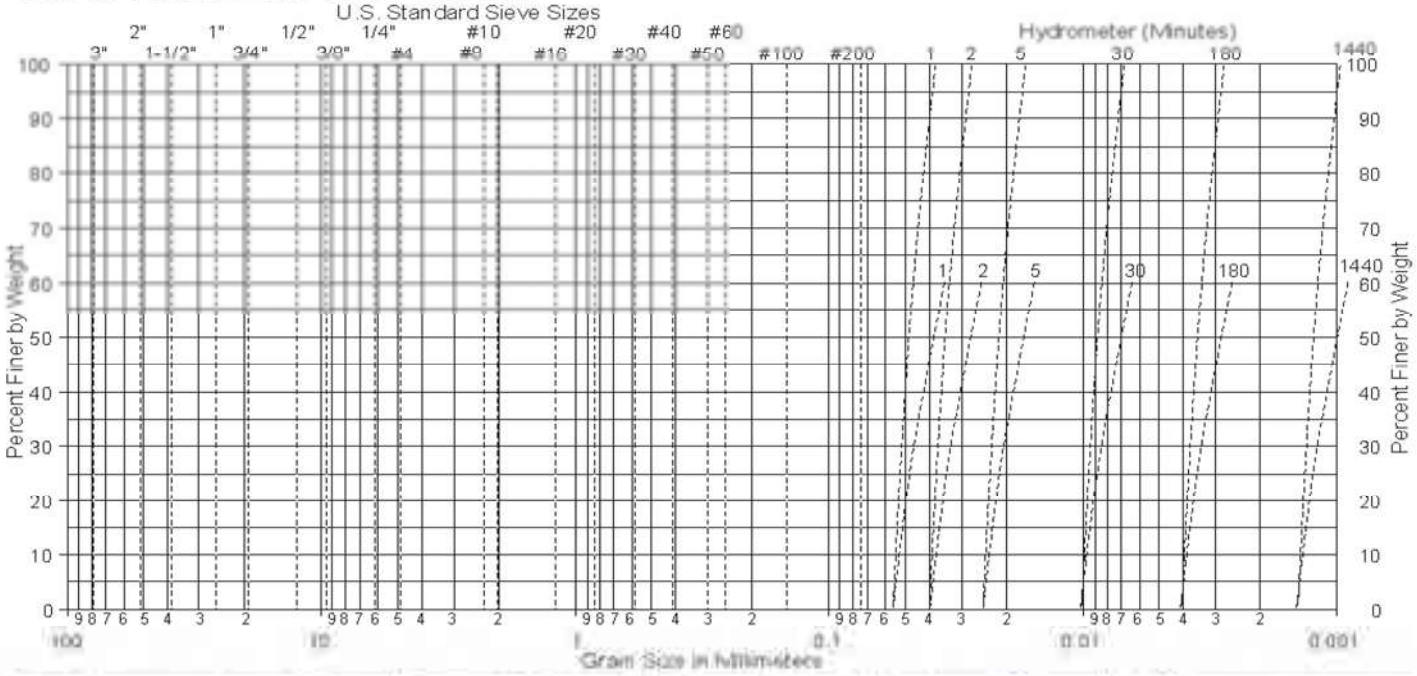
Miramar Landfill SW Basin

Geosyntec

By:	Bartlett, Dale	Date:	2/28/2020
Job Number:	180428P4.1	Figure:	II-1

Project Name:	Miramar Landfill SW Basin	**Project No.:**	180428P4.1
Client:	Geosyntec	**Sample No.:**	51905
Sample Date:	2/5/2042	**Sampled By:**	Client
Test Date:	2/28/2020	**Tested By:**	Bartlett, Dale
Location:	B-2-3 at 10 to 11½ Feet		

GRAIN SIZE DISTRIBUTION



Total + #4	0.0	Total - #4 Dry	377.6	Wet Weight	416.1	-#4 Wet	416.1
Total - #4 Wet	416.1	Total Dry Wt.	377.6	Dry Weight	377.6	-#4 Dry	377.6
				% Moisture	10.2%		

U.S. Standard Sieve

		Wt. Ret.	% Ret.	% Pass	Wt. Ret.	% Ret	% Pass	Specs
150mm	6"	0.0	0%	100%				
125mm	5"	0.0	0%	100%				
100mm	4"	0.0	0%	100%				
75mm	3"	0.0	0%	100%				
50mm	2"	0.0	0%	100%				
38.1mm	1 1/2"	0.0	0%	100%				
25mm	1"	0.0	0%	100%				
19mm	3/4"	26.9	7%	93%				
12.5mm	1/2"	66.9	18%	82%				
9.5mm	3/8"	80.6	21%	79%				
4.75mm	#4	98.5	26%	74%				
2.36mm	#8	110.7	29%	71%				
1.18mm	#16	120.5	32%	68%				
600µm	#30	135.3	36%	64%				
300µm	#50	201.2	53%	47%				
150µm	#100	261.9	69%	31%				
75µm	#200	288.9	76.5%	23.5%				
.05mm	.05mm							
.005mm	.005mm							
.001mm	.001mm							

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Plasticity Index

ASTM D4318, CT 204

Report Date: 3/2/2020

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San Diego, CA 92108

Project:
180428P4.1
Miramar Landfill SW Basin #SC0957-19-01 Lab Testing - Geosyntec
5160 Convoy Street
San Diego, CA 92111

SAMPLE DETAILS

Sample Number: 51901 **Sample Date:** 02/14/2020 **Sampled By:** Client

Sample Location: B-1-B at 2½ to 10 Feet (Miramar)

TEST DETAILS

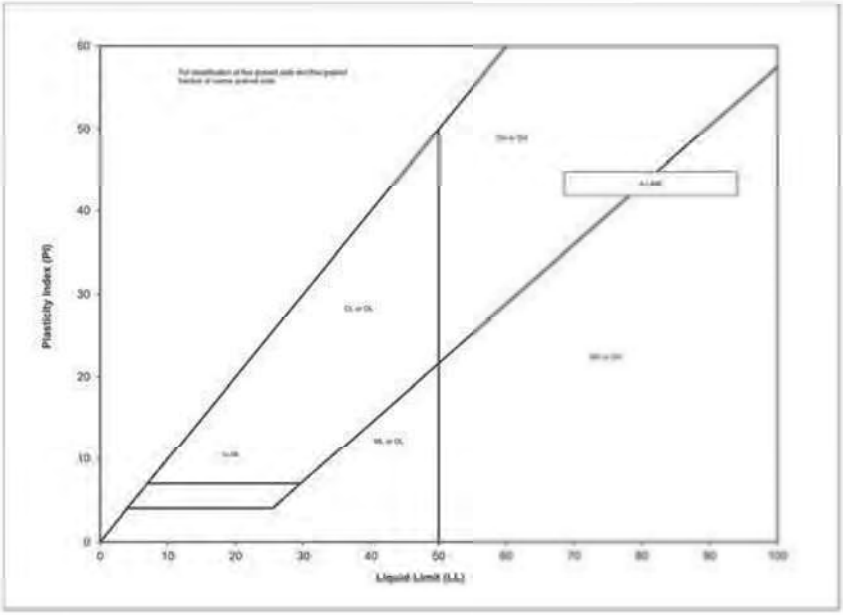
Tested Date: 03/02/2020 **Tested By:** Hill, Austin **Method:** Method B One-point

Inorganic / Organic: Inorganic **Natural Moisture Content (%):**

TEST RESULTS

Liquid Limit:	40
Plastic Limit:	15
Plastic Index:	25
Soil Classification of Fines:	CL

Maximum Plasticity Index Specified **Maximum Liquid Limit Specified:**



Plasticity Index

ASTM D4318, CT 204

Report Date: 2/25/2020

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San Diego, CA 92108

Project:
180428P4.1
Miramar Landfill SW Basin #SC0957-19-01 Lab Testing - Geosyntec
5160 Convoy Street
San Diego, CA 92111

SAMPLE DETAILS

Sample Number: 51903 **Sample Date:** 02/14/2020 **Sampled By:** Client

Sample Location: B-2-B at 2½ to 10 Feet (Miramar)

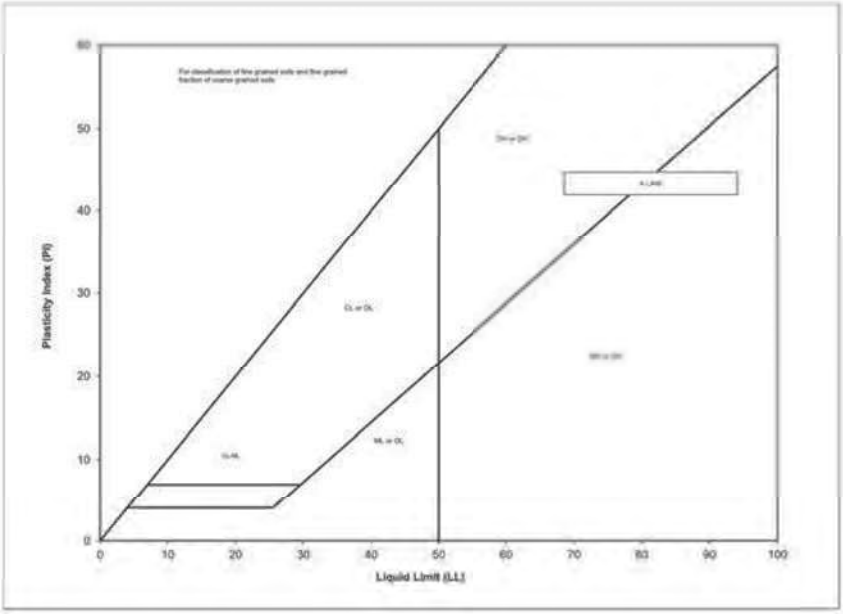
TEST DETAILS

Tested Date: 02/25/2020 **Tested By:** Laboratory, SCST **Method:** Method B One-point

Inorganic / Organic: Inorganic

TEST RESULTS

Liquid Limit:	32
Plastic Limit:	13
Plastic Index:	19
Soil Classification of Fines:	CL



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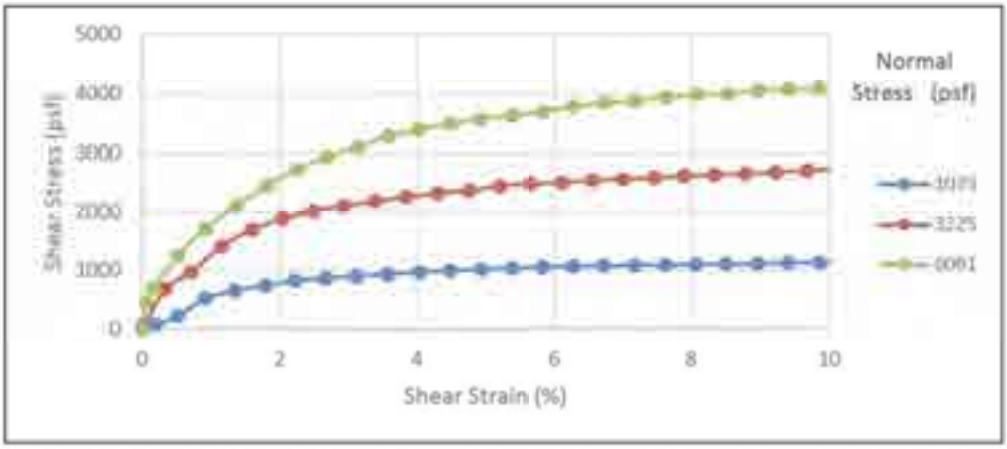
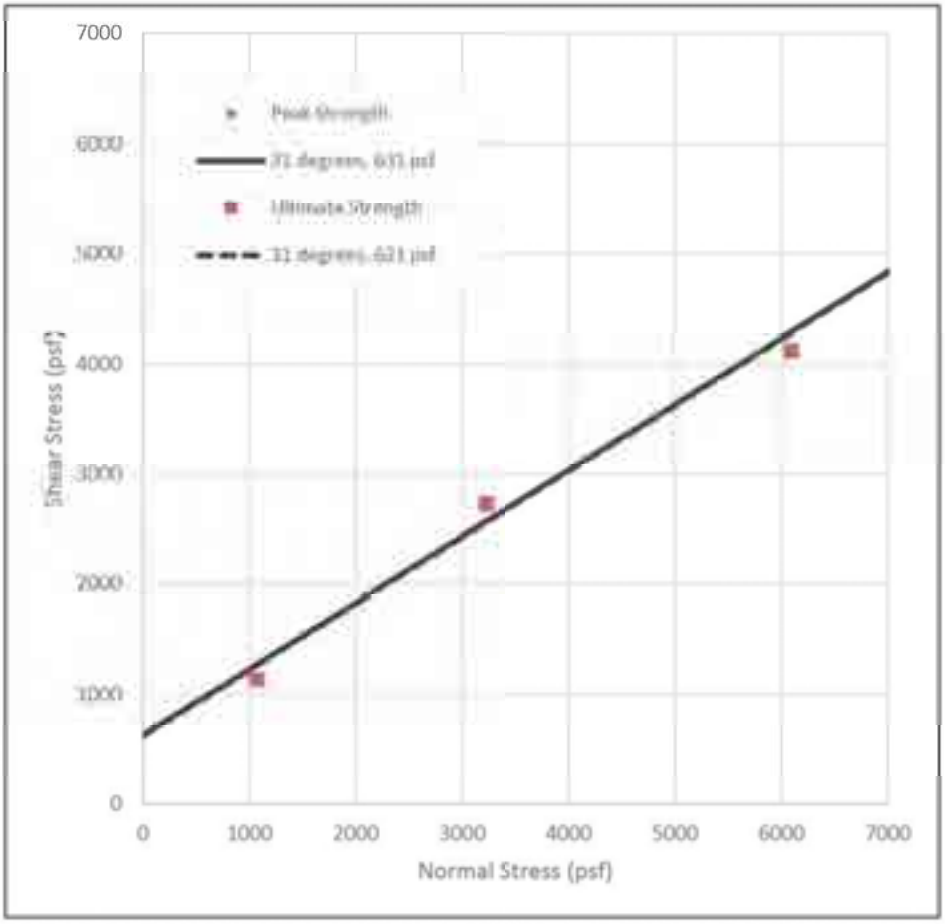
Direct Shear

ASTM D3080

Report Date: 3/3/2020

Client:	Project:
Geosyntec Consultants - San Diego Central Office 2355 Northside Dr., Suite 250 San Diego, CA 92108	180428P4.1 Miramar Landfill SW Basin #SC0957-19-01 Lab Testing - Geosyntec 5180 Convoy Street San Diego, CA 92111





SAMPLE ID: B-1-B at 2.5 to 10 Feet

Light Brown Sandy Clay

NOTES: Remolded

Strain Rate: 0.003 in/min

Sample was consolidated and drained

	Peak	Ultimate
Φ	31 °	31 °
c	631 psf	621 psf
	Initial	Final
γ_d	109.3 pcf	109.3 pcf
w_c	10.8 %	17.9 %
Saturation	55 %	90 %

SCST, LLC

Miramar SW Basin

By:	Bartlett, Dale	Date:	March, 2020
Job Number:	180428P4.1	Figure:	

SCST, LLC - San Diego
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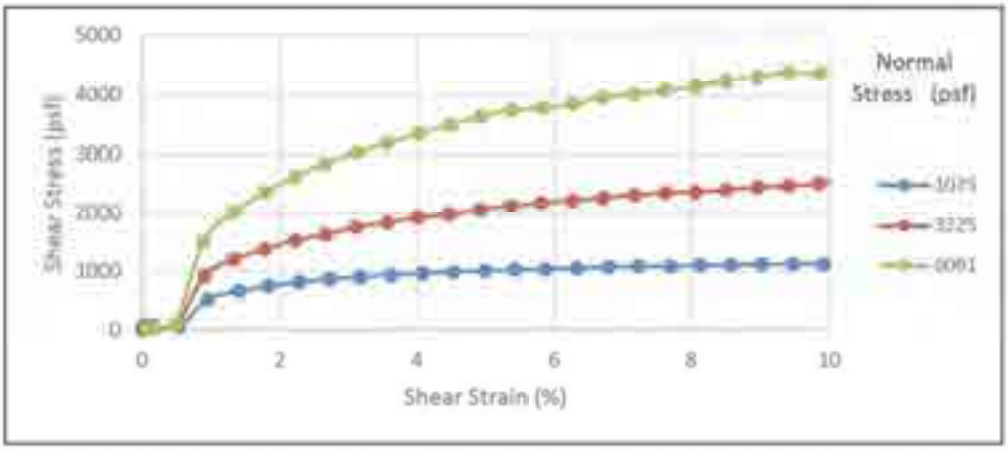
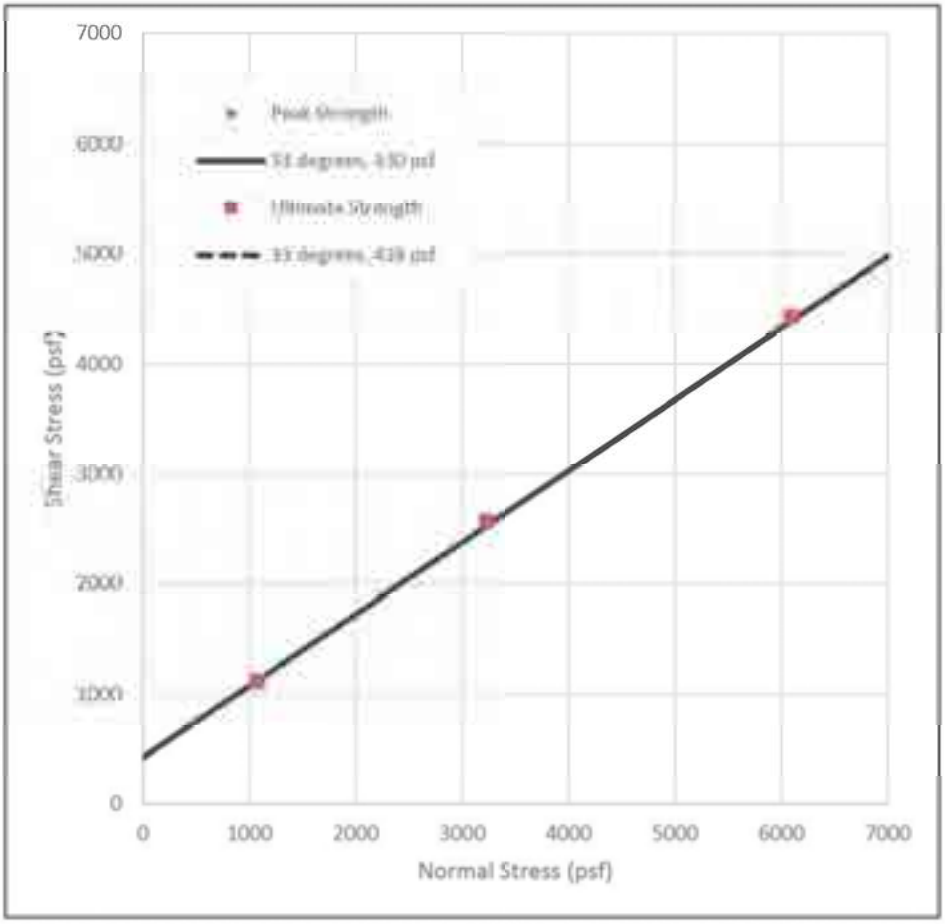
Direct Shear

ASTM D3080

Report Date: 3/3/2020

Client:	Project:
Geosyntec Consultants - San Diego Central Office 2355 Northside Dr., Suite 250 San Diego, CA 92108	180428P4.1 Miramar Landfill SW Basin #SC0957-19-01 Lab Testing - Geosyntec 5180 Convoy Street San Diego, CA 92111





SAMPLE ID: B-2-B at 2.5 to 10 Feet

Light Brown Sandy Clay

NOTES: Remolded

Strain Rate: 0.003 in/min

Sample was consolidated and drained

	Peak	Ultimate
Φ	33 °	33 °
c	430 psf	428 psf

	Initial	Final
γ_d	106.7 pcf	106.7 pcf
w_c	13.4 %	18.2 %
Saturation	63 %	86 %

SCST, LLC

Miramar SW Basin

By:	Bartlett, Dale	Date:	March, 2020
Job Number:	180428P4.1	Figure:	

Geosyntec consultants

ATTACHMENT C

ENGINEERED FILL PROPERTIES

water content after placement. This situation could result from an increase in the groundwater level after construction.

(c) Density control of placed backfill in the field can be facilitated by the use of rapid compaction check tests (para 7-5c). A direct rapid test is the one-point impact compaction test. Rapid indirect tests, such as the Proctor needle penetration for cohesive soils or the cone resistance load for cohesionless soils, can also be used when correlations with CE 55 maximum density have been established.

(3) *Shear strength testing.* When backfill is to be placed behind structure walls or bulkheads or as foundation support for a structure, and when fills are to be placed with unrestrained slopes, shear tests should be performed on representative samples of the backfill materials compacted to expected field densities and water contents to estimate as-constructed shear strengths. The appropriate type of test required for the conditions to be analyzed is presented in TM 5-818-1/AFM 88-3, Chapter 7. Procedures for shear strength testing are described in EM 1110-2-1906.

Table 3-1. Typical Engineering Properties of Compacted Materials[a]

Group Symbol	Soil Type	Range of Maximum Dry Unit Weight, pcf	Range of Optimum Water Content Percent	Typical Value of Compression: At 2.5 ksf (20 psi) Percent of Height	Typical Value of Compression: At 7.2 ksf (50 psi) Percent of Original Height	Typical Strength Characteristics: Cohesion (As Compacted) psf	Cohesion (Saturated) psf	ϕ (Effective Stress Envelope) deg	Typical Coefficient of Permeability ft/min	Range of CBR Values	Range of Subgrade Modulus k lb/cu in.	Potential Frost Action[b]
GW	Well-graded clean gravels, gravel-sand mixtures	125-135	11-8	0.3	0.6	0	0	>38	5×10^{-2}	40-80	300-500	None to very slight
GP	Poorly graded clean gravels, gravel-sand mix	115-125	14-11	0.4	0.9	0	0	>37	10^{-1}	30-60	250-400	None to very slight
GM	Silty gravels, poorly graded gravel-sand-silt	120-135	12-8	0.5	1.1	—	—	>34	$>10^{-6}$	20-60	100-400	Slight to medium
GC	Clayey gravels, poorly graded gravel-sand-clay	115-130	14-9	0.7	1.6	—	—	>31	$>10^{-7}$	20-40	100-300	Slight to medium
SW	Well-graded clean sands, gravelly sands	110-130	16-9	0.6	1.2	0	0	38	$>10^{-3}$	20-40	200-300	None to slight
SP	Poorly graded clean sands, sand-gravel mix	100-120	21-12	0.8	1.4	0	0	37	$>10^{-3}$	10-40	200-300	None to slight
SM	Silty sands, poorly graded sand-silt mix	110-125	16-11	0.8	1.6	1050	420	34	5×10^{-5}	10-40	100-300	Slight to medium
SM-SC	Sand-silt clay mix with slightly plastic fines	110-130	15-11	0.8	1.4	1050	300	33	2×10^{-6}	—		
SC	Clayey sands, poorly graded sand-clay mix	105-125	19-11	1.1	2.2	1300	250	31	5×10^{-7}	5-20	100-200	Slight to high
ML	Inorganic silts and clayey silts	95-120	24-12	0.9	1.7	1400	190	32	10^{-5}	15 or less	100-200	Medium to very high
ML-CL	Mixture of inorganic silt and clay	100-120	22-12	1.0	2.2	1350	460	32	5×10^{-7}	--	100-200	
CL	Inorganic clays of low to medium plasticity	95-120	24-12	1.3	2.5	1800	270	28	10^{-7}	15 or less	50-200	Medium to high
OL	Organic silts and silt-clays, low plasticity	80-100	33-21	—	--	—	--	--	--	5 or less	50-100	Medium to high
MH	Inorganic clayey silts, elastic silts	75-95	40-24	2.0	3.6	1500	420	25	5×10^{-7}	10 or less	50-100	Medium to very high
CH	Inorganic clays of high plasticity	80-105	36-19	2.6	3.9	2150	230	19	10^{-7}	15 or less	50-150	Medium
OH	Organic clays and silty clays	75-100	45-21	--	--	—	--	--	--	5 or less	25-100	Medium

Notes:
1. All properties are for condition of "standard Proctor" maximum density, except values of k and CBR which are for CE55 maximum density.
2. Typical strength characteristics are for effective strength envelopes and are obtained from USBR data.
3. Compression values are for vertical loading with complete lateral confinement.
4. (>) indicates that typical property is greater than the value shown. (--) indicates insufficient data available for an estimate.

[a] After DM-7.
[b] From TM 5-818-2/AFM 88-6, Chapter 4.

Reference: U.S. Army Corps of Engineers (2004). "Backfill for Subsurface Structures", Unified Facilities Criteria UFC 3-220-04FA.

ATTACHMENT D

SEISMIC DESIGN PARAMETERS

OSHPD

Miramar Landfill

Latitude, Longitude: 32.8516, -117.1548

Date	5/19/2020, 10:04:04 AM
Design Code Reference Document	ASCE7-16
Risk Category	II
Site Class	D - Very Dense Soil and Soft Rock

Type	Value	Description
S_S	1.024	MCE_R ground motion. (for 0.2 second period)
S_1	0.362	MCE_R ground motion. (for 1.0s period)
S_{MS}	1.229	Site-modified spectral acceleration value
S_{M1}	0.543	Site-modified spectral acceleration value
S_{DS}	0.819	Numeric seismic design value at 0.2 second SA
S_{D1}	0.362	Numeric seismic design value at 1.0 second SA

Type	Value	Description
SDC	D	Seismic design category
F_a	1.2	Site amplification factor at 0.2 second
F_v	1.5	Site amplification factor at 1.0 second
PGA	0.453	MCE_G peak ground acceleration
F_{PGA}	1.2	Site amplification factor at PGA
PGA_M	0.543	Site modified peak ground acceleration
T_L	8	Long-period transition period in seconds
SsRT	1.024	Probabilistic risk-targeted ground motion. (0.2 second)
SsUH	1.156	Factored uniform-hazard (2% probability of exceedance in 50 years) spectral acceleration
SsD	1.5	Factored deterministic acceleration value. (0.2 second)
S1RT	0.362	Probabilistic risk-targeted ground motion. (1.0 second)
S1UH	0.402	Factored uniform-hazard (2% probability of exceedance in 50 years) spectral acceleration
S1D	0.6	Factored deterministic acceleration value. (1.0 second)
PGAd	0.565	Factored deterministic acceleration value. (Peak Ground Acceleration)
C_{RS}	0.886	Mapped value of the risk coefficient at short periods
C_{R1}	0.901	Mapped value of the risk coefficient at a period of 1 s

Source: https://seismicmaps.org/

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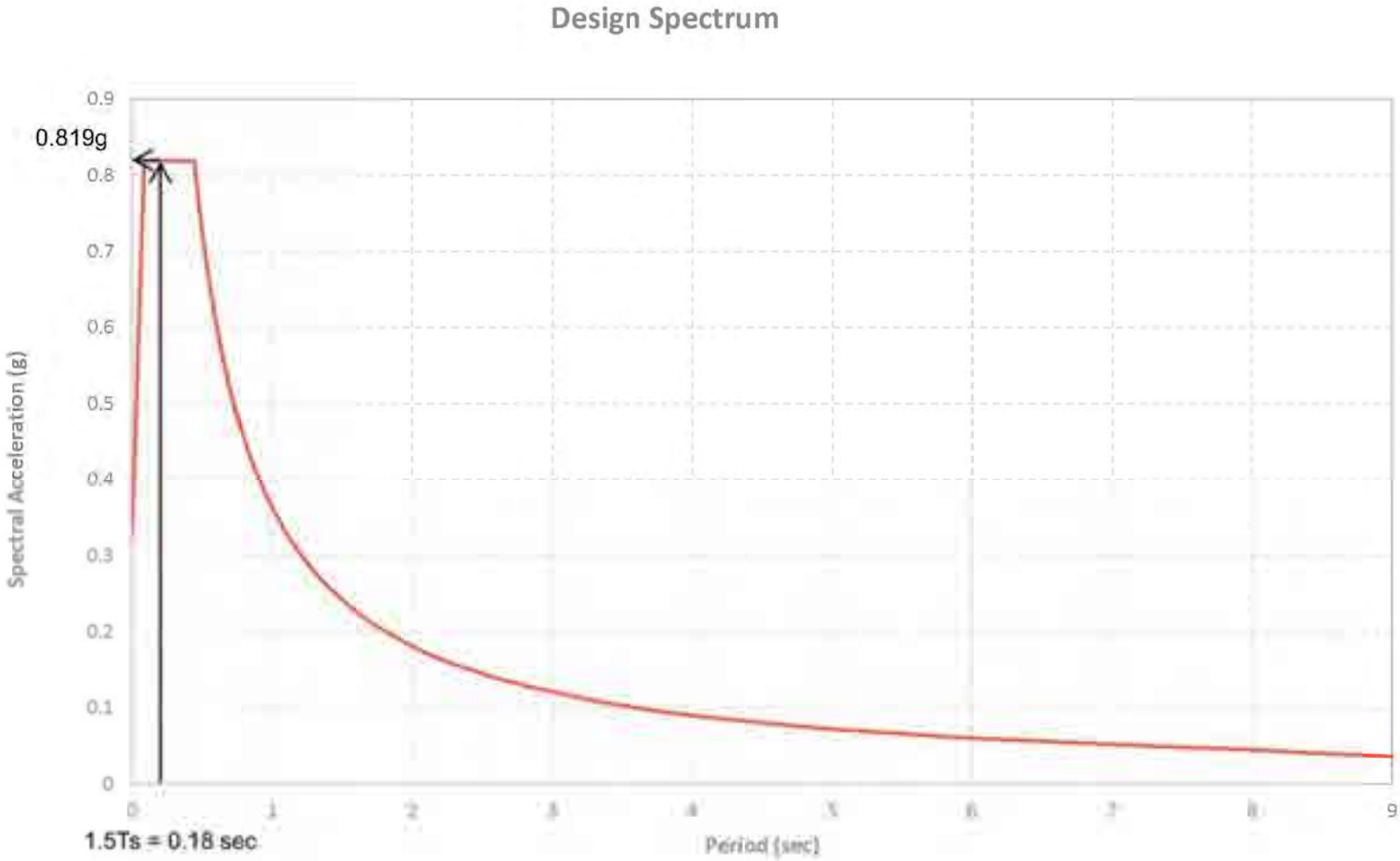


Notes:

1) Design spectrum calculated using: https://earthquake.usgs.gov/ws/designmaps/asce7-16.json?latitude=32.8516&longitude=-117.1588&riskCategory=II&siteClass=C&title=Miramar

2) Moment magnitude of 6.69 estimated for 2 percent probability of exceedance in 50 years (2,475-year return period) using USGS online interactive deaggregation tool

Geosyntec consultants

ATTACHMENT E

SEISMIC DEFORMATION ANALYSIS

SC0957 East Basin Slope Stability Letter.f

Simplified Procedure for Estimating Earthquake Induced Deviatoric Slope Displacements
by Jonathan D. Bray and Thaleia Travasarou
Journal of Geotechnical and Geonvironmental Engineering, ASCE, V. 133(4), pp. 381-392, April 2007

SEE NOTES BELOW FOR GUIDANCE IN THE USE OF SPREADSHEET

Input Parameters			
Yield Coefficient (ky)	0.305		Based on pseudostatic analysis
Initial Fundamental Period (Ts)	0.12	seconds	1D: Ts=4H/Vs 2D: Ts=2.6H/Vs
Degraded Period (1.5Ts)	0.18	seconds	
Moment Magnitude (Mw)	6.7		
Spectral Acceleration (Sa(1.5Ts))	0.819	g	Input the Spectral Acceleration at the base of the sliding mass assuming there is no material above it.

Additional Input Parameters		
Probability of Exceedance #1 (P1)	84	%
Probability of Exceedance #2 (P2)	50	%
Probability of Exceedance #3 (P3)	16	%
Displacement Threshold (d_threshold)	25.4	cm

Intermediate Calculated Parameters			
Non-Zero Seismic Displacement Est (D)	4.06	cm	eq. (5) or (6)
Standard Deviation of Non-Zero Seismic D	0.66		

Results			
Probability of Negligible Displ. (P(D=0))	0.08		eq. (3)
D1	1.7	cm	calc. using eq. (7)
D2	3.8	cm	calc. using eq. (7)
D3	7.5	cm	calc. using eq. (7)
P(D>d_threshold)	0.00		eq. (7)

Notes

1. Values highlighted in blue are input parameters, and results are presented in the table with the yellow heading.
2. Probability of Exceedance is the desired probability of exceeding a particular displacement value.
3. Displacements D1, D2, and D3 correspond to P1, P2, and P3, respectively.
   (e.g., the probability of exceeding displacement D1 is P1)
4. The 16%, 50%, and 84% percentile displacement values at selected ky values are shown to the right.
5. Calculated seismic displacements are due to deviatoric deformation only (add in volumetrically induced movement).
6. ky may range between 0.01 and 0.5, Ts between 0 and 2 s, Sa between 0.002 and 2.7 g, M between 4.5 and 8
7. Rigid slope is assumed for Ts < 0.05 s, i.e. Ts = 0.0. If Ts is just less than 0.05 s, set Ts = 0.0 s and Sa(1.5Ts) can be set to PGA.
8. When a value for D is not calculated, D is < 1cm
9. ky should be estimated with a slope stability program; the simplified equations shown below provide approximate values.
10. Examples of how Ts is estimated are shown below.
11. Vs = weighted avg. shear wave velocity for the sliding mass, e.g., for 2 layers, Vs = [(h1)(Vs1) + (h2)(Vs2)]/(h1 + h2)

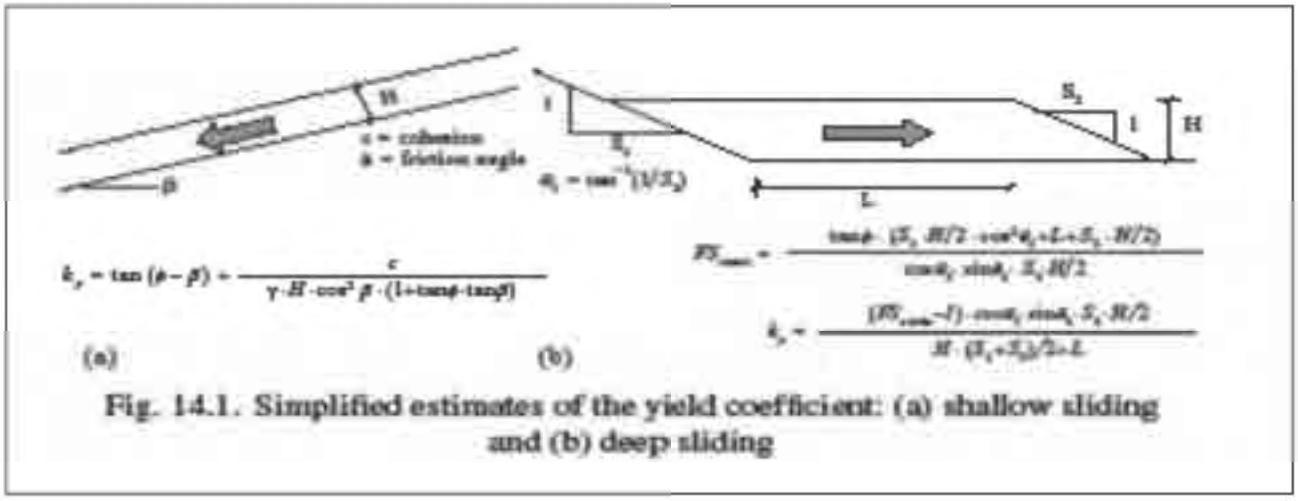


Fig. 14.1. Simplified estimates of the yield coefficient: (a) shallow sliding and (b) deep sliding

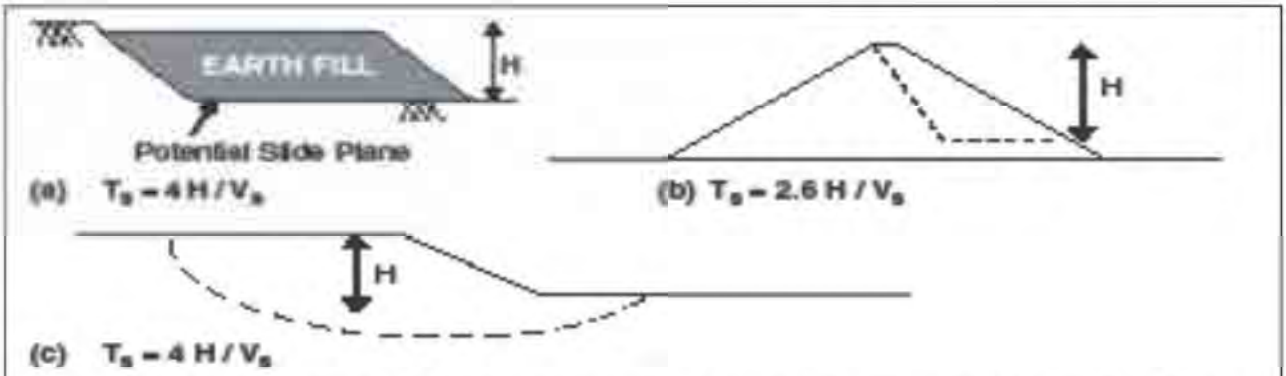


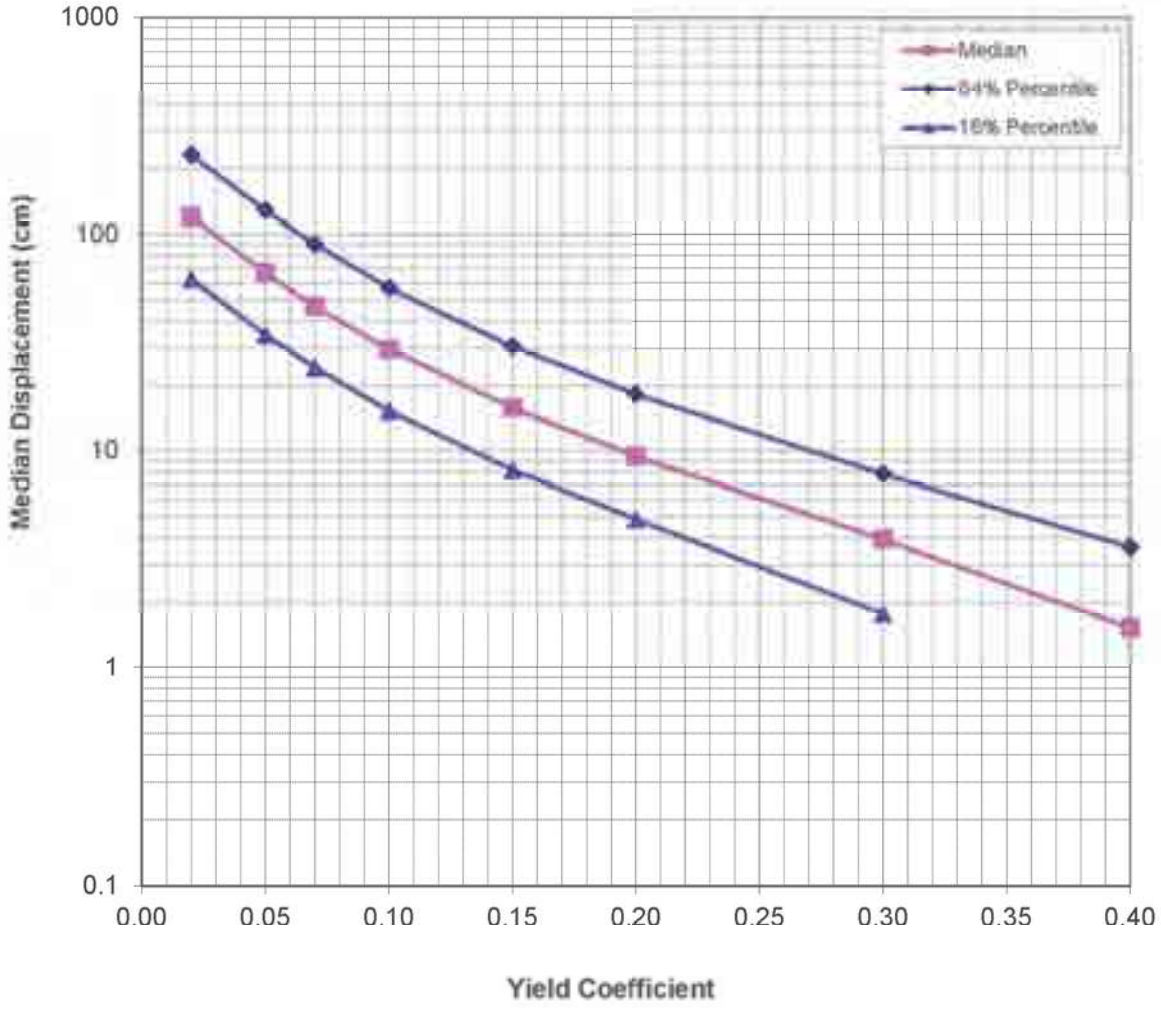
Fig. 14.4. Estimating the initial fundamental period of potential sliding blocks

Figures from Bray, J.D. (2007) "Chapter 14: Simplified Seismic Slope Displacement Procedures," Earthquake Geotechnical Engineering, 4th Inter. Conf. on Earthquake Geotechnical Engineering - Invited Lectures, in Geotechnical, Geological, and Earthquake Engineering Series, Vol. 6, Pitilakis, Kyriazis D., Ed., Springer, Vol. 6, pp. 327-353.

Simplified Procedure for Estimating Earthquake Induced Deviatoric Slope Displacements
by Jonathan D. Bray and Thaleia Travasarou
Journal of Geotechnical and Geonvironmental Engineering, Vol 133, No. 4, pp. 381-392, April 2007

Dependence on ky

ky	P(D="0")	D (cm)	Dmedian (cm)	D-84% (cm)	D-16% (cm)
0.020	0.00	120.5	120.5	232.3	62.5
0.05	0.00	66.9	66.9	128.9	34.7
0.07	0.00	46.8	46.8	90.3	24.3
0.1	0.00	29.5	29.5	57.0	15.3
0.15	0.00	15.8	15.8	30.4	8.2
0.2	0.00	9.5	9.5	18.3	4.9
0.3	0.07	4.2	4.0	7.8	1.8
0.4	0.29	2.2	1.5	3.6	<1



Simplified Procedure for Estimating Earthquake Induced Deviatoric Slope Displacements
by Jonathan D. Bray and Thaleia Travasarou
Journal of Geotechnical and Geonvironmental Engineering, Vol 133, No. 4, pp. 381-392, April 2007

ATTACHMENT F

RESERVED

ATTACHMENT G

CONTRACT AGREEMENT

CONTRACT AGREEMENT

CONSTRUCTION CONTRACT

This contract is made and entered into between THE CITY OF SAN DIEGO, a municipal corporation, herein called "City", and **Dick Miller Inc.**, herein called "Contractor" for construction of **Miramar Landfill Storm Water Basin Improvements**; Bid No. **K-22-2019-DBB-3-A;** in the total amount **ONE MILLION SIX HUNDRED FORTY NINE THOUSAND SIX HUNDRED FORTY NINE DOLLARS ($1,649,649)**, which is comprised of the Base Bid, consisting of an amount not to exceed **ONE MILLION SIX HUNDRED FORTY NINE THOUSAND SIX HUNDRED FORTY NINE DOLLARS ($1,649,649).**

IN CONSIDERATION of the payments to be made hereunder and the mutual undertakings of the parties hereto, City and Contractor agree as follows:

1. The following are incorporated into this contract as though fully set forth herein:

   (a) The attached Faithful Performance and Payment Bonds.

   (b) The attached Proposal included in the Bid documents by the Contractor.

   (c) Reference Standards listed in the Instruction to Bidders and the Supplementary Special Provisions (SSP).

   (d) That certain documents entitled **Miramar Landfill Storm Water Basin Improvements**, on file in the office of the Purchasing & Contracting Department as Document No. **L-18002.3**, as well as all matters referenced therein.

2. The Contractor shall perform and be bound by all the terms and conditions of this contract and in strict conformity therewith shall perform and complete in a good and workmanlike manner **Miramar Landfill Storm Water Basin Improvements**, Bid Number **K-22-2019-DBB-3-A,** San Diego, California.

3. For such performances, the City shall pay to Contractor the amounts set forth at the times and in the manner and with such additions or deductions as are provided for in this contract, and the Contractor shall accept such payment in full satisfaction of all claims incident to such performances.

4. No claim or suit whatsoever shall be made or brought by Contractor against any officer, agent, or employee of the City for or on account of anything done or omitted to be done in connection with this contract, nor shall any such officer, agent, or employee be liable hereunder.

5. This contract is effective as of the date that the Mayor or designee signs the agreement and is approved by the City Attorney in accordance with San Diego Charter Section 40.

IN WITNESS WHEREOF, this Agreement is signed by the City of San Diego, acting by and through its Mayor or designee, pursuant to Municipal Code §22.3102 authorizing such execution.

THE CITY OF SAN DIEGO

By Stephen Samara

Print Name: Stephen Samara
Principal Contract Specialist
Purchasing & Contracting Dept.

Date: 8/2/2022

APPROVED AS TO FORM

Mara W. Elliott, City Attorney

By

Print Name: Corrine Neuffer
Deputy City Attorney

Date: 8.18.22

CONTRACTOR

By

Print Name: Glen F Bullock

Title: President

Date: 5/20/2022

City of San Diego License No.: B2014004558

State Contractor's License No.: 380204

DEPARTMENT OF INDUSTRIAL RELATIONS (DIR) REGISTRATION NUMBER: 1000004547

CERTIFICATIONS AND FORMS

The Bidder, by submitting its electronic bid, agrees to and certifies under penalty of perjury under the laws of the State of California, that the certifications, forms and affidavits submitted as part of this bid are true and correct.

BIDDER'S GENERAL INFORMATION

To the City of San Diego:

Pursuant to "Notice Inviting Bids", specifications, and requirements on file with the City Clerk, and subject to all provisions of the Charter and Ordinances of the City of San Diego and applicable laws and regulations of the United States and the State of California, the undersigned hereby proposes to furnish to the City of San Diego, complete at the prices stated herein, the items or services hereinafter mentioned. The undersigned further warrants that this bid is not made in the interest of, or on behalf of, any undisclosed person, partnership, company, association, organization, or corporation; that the bid is genuine and not collusive or sham; that the bidder has not directly or indirectly induced or solicited any other bidder to put in a false or sham bid, and has not directly or indirectly colluded, conspired, connived, or agreed with any bidder or anyone else to put in a sham bid, or that anyone shall refrain from bidding; that the bidder has not in any manner, directly or indirectly, sought by agreement, communication, or conference with anyone to fix the bid price of the bidder or any other bidder, or to fix any overhead, profit, or cost element of the bid price, or of that of any other bidder, or to secure any advantage against the public body awarding the contract of anyone interested in the proposed contract; that all statements contained in the bid are true; and, further, that the bidder has not, directly or indirectly, submitted his or her bid price or any breakdown thereof, or the contents thereof, or divulged information or data relative thereto, or paid, and will not pay, any fee to any corporation, partnership, company, association, organization, bid depository, or to any member or agent thereof to effectuate a collusive or sham bid.

The undersigned bidder(s) further warrants that bidder(s) has thoroughly examined and understands the entire Contract Documents (plans and specifications) and the Bidding Documents therefore, and that by submitting said Bidding Documents as its bid proposal, bidder(s) acknowledges and is bound by the entire Contract Documents, including any addenda issued thereto, as such Contract Documents incorporated by reference in the Bidding Documents.

NON-COLLUSION AFFIDAVIT TO BE EXECUTED BY BIDDER AND SUBMITTED WITH BID UNDER 23 UNITED STATES CODE 112 AND PUBLIC CONTRACT CODE 7106

State of California

County of San Diego

The bidder, being first duly sworn, deposes and says that he or she is authorized by the party making the foregoing bid that the bid is not made in the interest of, or on behalf of, any undisclosed person, partnership, company, association, organization, or corporation; that the bid is genuine and not collusive or sham; that the bidder has not directly or indirectly induced or solicited any other bidder to put in a false or sham bid, and has not directly or indirectly colluded, conspired, connived, or agreed with any bidder or anyone else to put in a sham bid, or that anyone shall refrain from bidding; that the bidder has not in any manner, directly or indirectly, sought by agreement, communication, or conference with anyone to fix the bid price of the bidder or any other bidder, or to fix any overhead, profit, or cost element of the bid price, or of that of any other bidder, or to secure any advantage against the public body awarding the contract of anyone interested in the proposed contract; that all statements contained in the bid are true; and further, that the bidder has not, directly or indirectly, submitted his or her bid price or any breakdown thereof, or the contents thereof, or divulged information or data relative thereto, or paid, and will not pay, any fee to any corporation, partnership, company association, organization, bid depository, or to any member or agent thereof to effectuate a collusive or sham bid.

CONTRACTOR CERTIFICATION

COVID-19 VACCINATION ORDINANCE

CERTIFICATION OF COMPLIANCE

I hereby certify that I am familiar with the requirements of San Diego Ordinance No. O-21398 implementing the City's Mandatory COVID-19 Vaccination Policy.

TERMS OF COMPLIANCE

The City's Mandatory COVID-19 Vaccination Policy, outlined in San Diego Ordinance O-21398 (Nov. 29, 2021), requires ALL City contractors, who interact in close contact with City employees while providing contracted services indoors in City facilities or while performing bargaining unit work while indoors, to be fully vaccinated against COVID-19, effective January 3, 2022, as a condition for provision or continued provision of contracted services.

1. "City contractor" means a person who has contracted with the City of San Diego to provide public works, goods, services, franchise, or consultant services for or on behalf of the City, and includes a subcontractor, vendor, franchisee, consultant, or any of their respective officers, directors, shareholders, partners, managers, employees, or other individuals associated with the contractor, subcontractor, consultant, or vendor. "Person" means any natural person, firm, joint venture, joint stock company, partnership, association, club, company, corporation business trust or organization.

2. "Fully vaccinated" means a person has received, at least 14 days prior, either the second dose in a two-dose COVID-19 vaccine series or a single-dose COVID-19 vaccine, or otherwise meets the criteria for full vaccination against COVID-19 as stated in applicable public health guidance, orders, or law. Acceptable COVID-19 vaccines must be approved by the U.S. Food and Drug Administration (FDA) or authorized for emergency use by the FDA or the World Health Organization.

3. "Close contact" means a City contractor is **within 6 feet** of a City employee for a **cumulative total of 15 minutes or more over a 24-hour period** (for example, three individual 5-minute exposures for a total of 15 minutes).

4. City contractors who interact in close contact with City employees must fully comply with the City's Mandatory COVID-19 Vaccination Policy,which may include a reporting program that tracks employee vaccination status.

5. City contractors with employees or subcontractors who interact in close contact with City employees must certify that those members of their workforce, and subcontractors regardless of tier, who work indoors at a City facility, are fully vaccinated and that the City contractor has a program to track employee compliance.

6. City contractors that have an Occupational Safety and Health Administration compliant testing program for members of their workforce, as a reasonable accommodation, may be considered for compliance.

Non-compliance with the City's Mandatory COVID-19 Vaccination Policy may result in termination of a contract for cause, pursuant to the City's General Terms and Provisions, Reference Standards, and the San Diego Municipal Code.

CONTRACTOR CERTIFICATION

DRUG-FREE WORKPLACE

I hereby certify that I am familiar with the requirements of San Diego City Council Policy No. 100-17 regarding Drug-Free Workplace as outlined in the WHITEBOOK, Section 5-1.3, "Drug-Free Workplace", of the project specifications, and that;

This company has in place a drug-free workplace program that complies with said policy. I further certify that each subcontract agreement for this project contains language which indicates the subcontractor's agreement to abide by the provisions of subdivisions a) through c) of the policy as outlined.

CONTRACTOR CERTIFICATION

AMERICANS WITH DISABILITIES ACT (ADA) COMPLIANCE CERTIFICATION

I hereby certify that I am familiar with the requirements of San Diego City Council Policy No. 100-4 regarding the Americans With Disabilities Act (ADA) outlined in the WHITEBOOK, Section 5-1.2, "California Building Code, California Code of Regulations Title 24 and Americans with Disabilities Act", of the project specifications, and that:

This company has in place workplace program that complies with said policy. I further certify that each subcontract agreement for this project contains language which indicates the subcontractor's agreement to abide by the provisions of the policy as outlined.

CONTRACTOR CERTIFICATION

CONTRACTOR STANDARDS – PLEDGE OF COMPLIANCE

I declare under penalty of perjury that I am authorized to make this certification on behalf of the company submitting this bid/proposal, that as Contractor, I am familiar with the requirements of City of San Diego Municipal Code § 22.3004 regarding Contractor Standards as outlined in the WHITEBOOK, Section 5-1.4, ("Contractor Standards and Pledge of Compliance"), of the project specifications, and that Contractor has complied with those requirements.

I further certify that each of the Contractor's subcontractors has completed a Pledge of Compliance attesting under penalty of perjury of having complied with City of San Diego Municipal Code § 22.3004.

CONTRACTOR CERTIFICATION

EQUAL BENEFITS ORDINANCE CERTIFICATION

I declare under penalty of perjury that I am familiar with the requirements of and in compliance with the City of San Diego Municipal Code § 22.4300 regarding Equal Benefits Ordinance.

CONTRACTOR CERTIFICATION

EQUAL PAY ORDINANCE CERTIFICATION

Contractor shall comply with the Equal Pay Ordinance (EPO) codified in the San Diego Municipal Code (SDMC) at section 22.4801 through 22.4809, unless compliance is not required based on an exception listed in SDMC section 22.4804.

Contractor shall require all of its subcontractors to certify compliance with the EPO in their written subcontracts.

Contractor must post a notice informing its employees of their rights under the EPO in the workplace or job site.

By signing this Contract with the City of San Diego, Contractor acknowledges the EPO requirements and pledges ongoing compliance with the requirements of SDMC Division 48, section 22.4801 et seq., throughout the duration of this Contract.

CONTRACTOR CERTIFICATION

PRODUCT ENDORSEMENT

I declare under penalty of perjury that I acknowledge and agree to comply with the provisions of City of San Diego Administrative Regulation 95.65, concerning product endorsement. Any advertisement identifying or referring to the City as the user of a product or service requires the prior written approval of the City.

AFFIDAVIT OF DISPOSAL

(To be submitted upon completion of Construction pursuant to the contracts Certificate of Completion)

WHEREAS, on the _____ DAY OF _____, 2_____ the undersigned entered into and executed a contract with the City of San Diego, a municipal corporation, for:

Miramar Landfill Storm Water Basin Improvements
(Project Title)

as particularly described in said contract and identified as Bid No. **K-22-2019-DBB-3-A**; SAP No. (WBS) **L-18002.3**; and **WHEREAS**, the specification of said contract requires the Contractor to affirm that "all brush, trash, debris, and surplus materials resulting from this project have been disposed of in a legal manner"; and **WHEREAS**, said contract has been completed and all surplus materials disposed of:

_____

_____

NOW, THEREFORE, in consideration of the final payment by the City of San Diego to said Contractor under the terms of said contract, the undersigned Contractor, does hereby affirm that all surplus materials as described in said contract have been disposed of at the following location(s)

_____

_____

and that they have been disposed of according to all applicable laws and regulations.

Dated this _____ DAY OF _____, _____.

By:_____
Contractor

ATTEST:

State of _____ County of _____

On this_____ DAY OF _____, 2_____, before the undersigned, a Notary Public in and for said County and State, duly commissioned and sworn, personally appeared_____ known to me to be the _____ Contractor named in the foregoing Release, and whose name is subscribed thereto, and acknowledged to me that said Contractor executed the said Release.

Notary Public in and for said County and State

LIST OF SUBCONTRACTORS

***** PROVIDED FOR ILLUSTRATIVE PURPOSES ONLY *** TO BE SUBMITTED IN ELECTRONIC FORMAT ONLY*** SEE INSTRUCTIONS TO BIDDERS, FOR FURTHER INFORMATION**

In accordance with the requirements of the "Subletting and Subcontracting Fair Practices Act", Section 4100, of the California Public Contract Code (PCC), the Bidder is to list below the name, address and license number of each Subcontractor who will perform work, labor, render services or specially fabricate and install a portion [type] of the work or improvement, in an amount of or in excess of 0.5% of the Contractor's total Bid. Failure to comply with this requirement may result in the Bid being rejected as non-responsive. The Contractor is to list only one Subcontractor for each portion of the Work. The Bidder's attention is directed to the Special Provisions - Section 3-2, "SELF-PERFORMANCE", which stipulates the percentage of the Work to be performed with the Bidder's own forces. The Bidder is to also list all SLBE, ELBE, DBE, DVBE, MBE, WBE, OBE, SDB, WoSB, HUBZone, and SDVOSB Subcontractors for which the Bidders are seeking recognition towards achieving any mandatory, voluntary, or both subcontracting participation percentages.

NAME, ADDRESS AND TELEPHONE NUMBER OF SUBCONTRACTOR	CONSTRUCTOR OR DESIGNER	SUBCONTRACTOR LICENSE NUMBER	TYPE OF WORK	DOLLAR VALUE OF SUBCONTRACT	MBE, WBE, DBE, DVBE, OBE, ELBE, SLBE, SDB, WoSB, HUBZone, OR SDVOSB①	WHERE CERTIFIED②	CHECK IF JOINT VENTURE PARTNERSHIP
Name:_____ Address:_____ City:_____ State:_____ Zip:_____ Phone:_____ Email:_____							
Name:_____ Address:_____ City:_____ State:_____ Zip:_____ Phone:_____ Email:_____							

① As appropriate, Bidder shall identify Subcontractor as one of the following and shall include a valid proof of certification (except for OBE, SLBE and ELBE):

Certified Minority Business Enterprise	MBE	Certified Woman Business Enterprise	WBE
Certified Disadvantaged Business Enterprise	DBE	Certified Disabled Veteran Business Enterprise	DVBE
Other Business Enterprise	OBE	Certified Emerging Local Business Enterprise	ELBE
Certified Small Local Business Enterprise	SLBE	Small Disadvantaged Business	SDB
Woman-Owned Small Business	WoSB	HUBZone Business	HUBZone
Service-Disabled Veteran Owned Small Business	SDVOSB		

② As appropriate, Bidder shall indicate if Subcontractor is certified by:

City of San Diego	CITY	State of California Department of Transportation	CALTRANS
California Public Utilities Commission	CPUC		
State of California's Department of General Services	CADoGS	City of Los Angeles	LA
State of California	CA	U.S. Small Business Administration	SBA

The Bidder will not receive any subcontracting participation percentages if the Bidder fails to submit the required proof of certification.

NAMED EQUIPMENT/MATERIAL SUPPLIER LIST

***** PROVIDED FOR ILLUSTRATIVE PURPOSES ONLY *** TO BE SUBMITTED IN ELECTRONIC FORMAT ONLY *** SEE INSTRUCTIONS TO BIDDERS FOR FURTHER INFORMATION**

NAME, ADDRESS AND TELEPHONE NUMBER OF VENDOR/SUPPLIER	MATERIALS OR SUPPLIES	DOLLAR VALUE OF MATERIAL OR SUPPLIES	SUPPLIER (Yes/No)	MANUFACTURER (Yes/No)	MBE, WBE, DBE, DVBE, OBE, ELBE, SLBE, SDB, WoSB, HUBZone, OR SDVOSB①	WHERE CERTIFIED②
Name:_____ Address:_____ City:_____ State:_____ Zip:_____ Phone:_____ Email:_____						
Name:_____ Address:_____ City:_____ State:_____ Zip:_____ Phone:_____ Email:_____						

① As appropriate, Bidder shall identify Vendor/Supplier as one of the following and shall include a valid proof of certification (except for OBE, SLBE and ELBE):

Certified Minority Business Enterprise	MBE	Certified Woman Business Enterprise	WBE
Certified Disadvantaged Business Enterprise	DBE	Certified Disabled Veteran Business Enterprise	DVBE
Other Business Enterprise	OBE	Certified Emerging Local Business Enterprise	ELBE
Certified Small Local Business Enterprise	SLBE	Small Disadvantaged Business	SDB
Woman-Owned Small Business	WoSB	HUBZone Business	HUBZone
Service-Disabled Veteran Owned Small Business	SDVOSB		

② As appropriate, Bidder shall indicate if Vendor/Supplier is certified by:

City of San Diego	CITY	State of California Department of Transportation	CALTRANS
California Public Utilities Commission	CPUC		
State of California's Department of General Services	CADoGS	City of Los Angeles	LA
State of California	CA	U.S. Small Business Administration	SBA

The Bidder will not receive any subcontracting participation percentages if the Bidder fails to submit the required proof of certification.

ELECTRONICALLY SUBMITTED FORMS

FAILURE TO FULLY COMPLETE AND SUBMIT ANY OF THE FOLLOWING FORMS WILL DEEM YOUR BID NON-RESPONSIVE.

PLANETBIDS WILL NOT ALLOW FOR BID SUBMISSIONS WITHOUT THE ATTACHMENT OF THESE FORMS

The following forms are to be completed by the bidder and submitted (uploaded) electronically with the bid in PlanetBids.

A. **BID BOND – See Instructions to Bidders, Bidders Guarantee of Good Faith (Bid Security) for further instructions**

B. **CONTRACTOR'S CERTIFICATION OF PENDING ACTIONS**

C. **MANDATORY DISCLOSURE OF BUSINESS INTERESTS FORM**

D. **DEBARMENT AND SUSPENSION CERTIFICATION FOR PRIME CONTRACTOR**

E. **DEBARMENT AND SUSPENSION CERTIFICATION FOR SUBCONTRACTORS, SUPPLIERS AND MANUFACTURERS**

BID BOND

See Instructions to Bidders, Bidder Guarantee of Good Faith
(Bid Security)

KNOW ALL MEN BY THESE PRESENTS,

That Dick Miller, Inc. as Principal, and The Ohio Casualty Insurance Company as Surety, are held and firmly bound unto The City of San Diego hereinafter called "OWNER," in the sum of **10% OF THE TOTAL BID AMOUNT** for the payment of which sum, well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents.

WHEREAS, said Principal has submitted a Bid to said OWNER to perform the WORK required under the bidding schedule(s) of the OWNER's Contract Documents entitled

Miramar Landfill Storm Water Basin Improvements; K-22-2019-DBB-2

NOW THEREFORE, if said Principal is awarded a contract by said OWNER and, within the time and in the manner required in the "Notice Inviting Bids" enters into a written Agreement on the form of agreement bound with said Contract Documents, furnishes the required certificates of insurance, and furnishes the required Performance Bond and Payment Bond, then this obligation shall be null and void, otherwise it shall remain in full force and effect. In the event suit is brought upon this bond by said OWNER and OWNER prevails, said Surety shall pay all costs incurred by said OWNER in such suit, including a reasonable attorney's fee to be fixed by the court.

SIGNED AND SEALED, this 22nd day of April, 2022

Dick Miller, Inc. (SEAL)
(Principal)

By: _____
(Signature)

The Ohio Casualty Insurance Company (SEAL)
(Surety)

By: _____
(Signature)
Bart Stewart, Attorney-In-Fact

(SEAL AND NOTARIAL ACKNOWLEDGEMENT OF SURETY)

This Power of Attorney limits the acts of those named herein, and they have no authority to bind the Company except in the manner and to the extent herein stated.

Liberty Mutual. SURETY

Liberty Mutual Insurance Company
The Ohio Casualty Insurance Company
West American Insurance Company

Certificate No. 8206236 - 060558

POWER OF ATTORNEY

KNOWN ALL PERSONS BY THESE PRESENTS: That The Ohio Casualty Insurance Company is a corporation duly organized under the laws of the State of New Hampshire, that Liberty Mutual Insurance Company is a corporation duly organized under the laws of the State of Massachusetts, and West American Insurance Company is a corporation duly organized under the laws of the State of Indiana (herein collectively called the "Companies"), pursuant to and by authority herein set forth, does hereby name, constitute and appoint, [illegible] Stewart

all of the city of [illegible] state of [illegible] each individually if there be more than one named, its true and lawful attorney-in-fact to make, execute, seal, acknowledge and deliver, for and on its behalf as surety and as its act and deed, any and all undertakings, bonds, recognizances and other surety obligations, in pursuance of these presents and shall be as binding upon the Companies as if they have been duly signed by the president and attested by the secretary of the Companies in their own proper persons.

IN WITNESS WHEREOF, this Power of Attorney has been subscribed by an authorized officer or official of the Companies and the corporate seals of the Companies have been affixed thereto this 3rd day of September, 2021.

Liberty Mutual Insurance Company
The Ohio Casualty Insurance Company
West American Insurance Company

By: David M. Carey, Assistant Secretary

Not valid for mortgage, note, loan, letter of credit, currency rate, interest rate or residual value guarantees.

For bond and/or Power of Attorney (POA) verification inquiries, please call 610-832-8240 or email HOSUR@libertymutual.com

State of PENNSYLVANIA ss
County of MONTGOMERY

On this 3rd day of September, 2021 before me personally appeared David M. Carey, who acknowledged himself to be the Assistant Secretary of Liberty Mutual Insurance Company, The Ohio Casualty Company, and West American Insurance Company, and that he, as such, being authorized so to do, execute the foregoing instrument for the purposes therein contained by signing on behalf of the corporations by himself as a duly authorized officer.

IN WITNESS WHEREOF, I have hereunto subscribed my name and affixed my notarial seal at King of Prussia, Pennsylvania, on the day and year first above written.

Commonwealth of Pennsylvania - Notary Seal
Teresa Pastella, Notary Public
Montgomery County
My commission expires March 28, 2025
Commission number 1126044
Member, Pennsylvania Association of Notaries

By: Teresa Pastella, Notary Public

This Power of Attorney is made and executed pursuant to and by authority of the following By-laws and Authorizations of The Ohio Casualty Insurance Company, Liberty Mutual Insurance Company, and West American Insurance Company which resolutions are now in full force and effect reading as follows:

ARTICLE IV – OFFICERS: Section 12. Power of Attorney.
Any officer or other official of the Corporation authorized for that purpose in writing by the Chairman or the President, and subject to such limitation as the Chairman or the President may prescribe, shall appoint such attorneys-in-fact, as may be necessary to act in behalf of the Corporation to make, execute, seal, acknowledge and deliver as surety any and all undertakings, bonds, recognizances and other surety obligations. Such attorneys-in-fact, subject to the limitations set forth in their respective powers of attorney, shall have full power to bind the Corporation by their signature and execution of any such instruments and to attach thereto the seal of the Corporation. When so executed, such instruments shall be as binding as if signed by the President and attested to by the Secretary. Any power or authority granted to any representative or attorney-in-fact under the provisions of this article may be revoked at any time by the Board, the Chairman, the President or by the officer or officers granting such power or authority.

ARTICLE XIII – Execution of Contracts: Section 5. Surety Bonds and Undertakings.
Any officer of the Company authorized for that purpose in writing by the chairman or the president, and subject to such limitations as the chairman or the president may prescribe, shall appoint such attorneys-in-fact, as may be necessary to act in behalf of the Company to make, execute, seal, acknowledge and deliver as surety any and all undertakings, bonds, recognizances and other surety obligations. Such attorneys-in-fact subject to the limitations set forth in their respective powers of attorney, shall have full power to bind the Company by their signature and execution of any such instruments and to attach thereto the seal of the Company. When so executed such instruments shall be as binding as if signed by the president and attested by the secretary.

Certificate of Designation – The President of the Company, acting pursuant to the Bylaws of the Company, authorizes David M. Carey, Assistant Secretary to appoint such attorneys-in-fact as may be necessary to act on behalf of the Company to make, execute, seal, acknowledge and deliver as surety any and all undertakings, bonds, recognizances and other surety obligations.

Authorization – By unanimous consent of the Company's Board of Directors, the Company consents that facsimile or mechanically reproduced signature of any assistant secretary of the Company, wherever appearing upon a certified copy of any power of attorney issued by the Company in connection with surety bonds, shall be valid and binding upon the Company with the same force and effect as though manually affixed.

I, Renee C. Llewellyn, the undersigned, Assistant Secretary, The Ohio Casualty Insurance Company, Liberty Mutual Insurance Company, and West American Insurance Company do hereby certify that the original power of attorney of which the foregoing is a full, true and correct copy of the Power of Attorney executed by said Companies, is in full force and effect and has not been revoked.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed the seals of said Companies this 22nd day of April, 2022.

By: Renee C. Llewellyn, Assistant Secretary

CALIFORNIA ACKNOWLEDGMENT CIVIL CODE § 1189

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California
County of San Diego }

On APR 22 2022 before me, Genevieve Sistar, Notary Public,
Date *Here Insert Name and Title of the Officer*

personally appeared Bart Stewart
Name(s) of Signer(s)

who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

GENEVIEVE SISTAR
Notary Public - California
San Diego County
Commission # 2341051
My Comm. Expires Jan 8, 2025

Place Notary Seal and/or Stamp Above

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature Genevieve Sistar
Signature of Notary Public

OPTIONAL

Completing this information can deter alteration of the document or fraudulent reattachment of this form to an unintended document.

Description of Attached Document

Title or Type of Document: _____

Document Date: _____ Number of Pages: _____

Signer(s) Other Than Named Above: _____

Capacity(ies) Claimed by Signer(s)

Signer's Name: _____	Signer's Name: _____
■ Corporate Officer – Title(s): _____	■ Corporate Officer – Title(s): _____
■ Partner – ■ Limited ■ General	■ Partner – ■ Limited ■ General
■ Individual ■ Attorney in Fact	■ Individual ■ Attorney in Fact
■ Trustee ■ Guardian or Conservator	■ Trustee ■ Guardian or Conservator
■ Other: _____	■ Other: _____
Signer is Representing: _____	Signer is Representing: _____

CALIFORNIA ALL- PURPOSE CERTIFICATE OF ACKNOWLEDGMENT

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California }

County of San Diego }

On 04/28/2022 before me, Norma A. Garcia, Notary Public
(Here insert name and title of the officer),

personally appeared Glen F. Bullock,
who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s)(is)are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

NORMA A. GARCIA
Commission No. 2269007
NOTARY PUBLIC-CALIFORNIA
SAN DIEGO COUNTY
My Comm. Expires DECEMBER 1, 2022

Norma A Garcia
Notary Public Signature (Notary Public Seal)

ADDITIONAL OPTIONAL INFORMATION

DESCRIPTION OF THE ATTACHED DOCUMENT

Bid Bond
(Title or description of attached document)

(Title or description of attached document continued)

Number of Pages ____ Document Date ____

CAPACITY CLAIMED BY THE SIGNER

- ☐ Individual (s)
- ☐ Corporate Officer
  (Title)
- ☐ Partner(s)
- ☐ Attorney-In-Fact
- ☐ Trustee(s)
- ☐ Other ____

www.NotaryClasses.com 800-873-9865

INSTRUCTIONS FOR COMPLETING THIS FORM

This form complies with current California statutes regarding notary wording and, if needed, should be completed and attached to the document. Acknowledgments from other states may be completed for documents being sent to that state so long as the wording does not require the California notary to violate California notary law.

- State and County information must be the State and County where the document signer(s) personally appeared before the notary public for acknowledgment.
- Date of notarization must be the date that the signer(s) personally appeared which must also be the same date the acknowledgment is completed.
- The notary public must print his or her name as it appears within his or her commission followed by a comma and then your title (notary public).
- Print the name(s) of document signer(s) who personally appear at the time of notarization.
- Indicate the correct singular or plural forms by crossing off incorrect forms (i.e. he/she/~~they~~- is /are) or circling the correct forms. Failure to correctly indicate this information may lead to rejection of document recording.
- The notary seal impression must be clear and photographically reproducible. Impression must not cover text or lines. If seal impression smudges, re-seal if a sufficient area permits, otherwise complete a different acknowledgment form.
- Signature of the notary public must match the signature on file with the office of the county clerk.
  - Additional information is not required but could help to ensure this acknowledgment is not misused or attached to a different document.
  - Indicate title or type of attached document, number of pages and date.
  - Indicate the capacity claimed by the signer. If the claimed capacity is a corporate officer, indicate the title (i.e. CEO, CFO, Secretary).
- Securely attach this document to the signed document with a staple.

CONTRACTOR'S CERTIFICATION OF PENDING ACTIONS

As part of its bid or proposal (Non-Price Proposal in the case of Design-Build contracts), the Bidder shall provide to the City a list of all instances within the past 10 years where a complaint was filed or pending against the Bidder in a legal or administrative proceeding alleging that Bidder discriminated against its employees, subcontractors, vendors or suppliers, and a description of the status or resolution of that complaint, including any remedial action taken.

CHECK ONE BOX ONLY.

☒ The undersigned certifies that within the past 10 years the Bidder has NOT been the subject of a complaint or pending action in a legal administrative proceeding alleging that Bidder discriminated against its employees, subcontractors, vendors or suppliers.

☐ The undersigned certifies that within the past 10 years the Bidder has been the subject of a complaint or pending action in a legal administrative proceeding alleging that Bidder discriminated against its employees, subcontractors, vendors or suppliers. A description of the status or resolution of that complaint, including any remedial action taken and the applicable dates is as follows:

DATE OF CLAIM	LOCATION	DESCRIPTION OF CLAIM	LITIGATION (Y/N)	STATUS	RESOLUTION/REMEDIAL ACTION TAKEN

Contractor Name: DICK MILLER INC.

Certified By: JOHN MARTINEZ (Name) Title: SR. ESTIMATOR

(Signature) Date: 5/4/2022

USE ADDITIONAL FORMS AS NECESSARY

Mandatory Disclosure of Business Interests Form

BIDDER/PROPOSER INFORMATION

Legal Name		DBA	
GLEN F. BULLOCK		DICK MILLER INC.	
Street Address	City	State	Zip
930 BOARDWALK	SAN MARCOS	CA.	92078
Contact Person, Title		Phone	Fax
JOHN MARTINEZ SR. ESTIMATOR		760-471-6842	760-471-6178

Provide the name, identity, and precise nature of the interest* of all persons who are directly or indirectly involved** in this proposed transaction (SDMC § 21.0103).

* The precise nature of the interest includes:
- the percentage ownership interest in a party to the transaction,
- the percentage ownership interest in any firm, corporation, or partnership that will receive funds from the
- transaction, the value of any financial interest in the transaction,
- any contingent interest in the transaction and the value of such interest should the contingency be satisfied, and any
- philanthropic, scientific, artistic, or property interest in the transaction.

** Directly or indirectly involved means pursuing the transaction by:
- communicating or negotiating with City officers or employees,
- submitting or preparing applications, bids, proposals or other documents for purposes of contracting with the City,
- or directing or supervising the actions of persons engaged in the above activity.

Name	Title/Position
GLEN F. BULLOCK	PRESIDENT
City and State of Residence	Employer (if different than Bidder/Proposer)
SAN MARCOS, CA.	
Interest in the transaction	
100%	

Name	Title/Position
City and State of Residence	Employer (if different than Bidder/Proposer)
Interest in the transaction	

*** Use Additional Pages if Necessary ***

Under penalty of perjury under the laws of the State of California, I certify that I am responsible for the completeness and accuracy of the responses contained herein, and that all information provided is true, full and complete to the best of my knowledge and belief. I agree to provide written notice to the Mayor or Designee within five (5) business days if, at any time, I learn that any portion of this Mandatory Disclosure of Business Interests Form requires an updated response. Failure to timely provide the Mayor or Designee with written notice is grounds for Contract termination.

JOHN MARTINEZ SR. ESTIMATOR — Print Name, Title

Signature

5/4/2022 — Date

Failure to sign and submit this form with the bid/proposal shall make the bid/proposal non-responsive. In the case of an informal solicitation, the contract will not be awarded unless a signed and completed Mandatory Disclosure of Business Interests Form is submitted.

DEBARMENT AND SUSPENSION CERTIFICATION

PRIME CONTRACTOR

FAILURE TO COMPLETE AND SUBMIT AT TIME OF BID SHALL RENDER BID NON-RESPONSIVE

EFFECT OF DEBARMENT OR SUSPENSION
To promote integrity in the City's contracting processes and to protect the public interest, the City shall only enter into contracts with responsible- bidders and contractors. In accordance with San Diego Municipal Code §22.0814 (a): *Bidders* and *contractors* who have been *debarred* or *suspended* are excluded from submitting bids, submitting responses to requests for proposal or qualifications, receiving *contract* awards, executing *contracts*, participating as a *subcontractor*, employee, agent or representative of another *person* contracting with the City.

As part of its bid or proposal (Non-Price Proposal in the case of Design-Build contracts), the Bidder shall provide to the City a list of Names of the Principal Individual owner(s).

The names of all persons interested in the foregoing proposal as Principals are as follows:

NAME	TITLE
GLEN F. BULLOCK	PRESIDENT

IMPORTANT NOTICE: If Bidder or other interested person is a corporation, state secretary, treasurer, and manager thereof; if a co-partnership, state true name of firm, also names of all individual co-partners composing firm; if Bidder or other interested person is an individual, state first and last names in full.

The Bidder, under penalty of perjury, certifies that, except as noted below, he/she or any person associated therewith in the capacity of owner, partner, director, officer, manager:

- is not currently under suspension, debarment, voluntary exclusion, or determination of ineligibility by any Federal, State or local agency;
- has not been suspended, debarred, voluntarily excluded or determined ineligible by any Federal, State or local agency within the past 3 years;
- does not have a proposed debarment pending; and
- has not been indicted, convicted, or had a civil judgment rendered against it by a court of competent jurisdiction in any matter involving fraud or official misconduct within the past 3 years.

If there are any exceptions to this certification, insert the exceptions in the following space.

Exceptions will be considered in determining bidder responsibility. For any exception noted above, indicate below to whom it applies, initiating agency, and dates of action.

Contractor Name: DICK MILLER INC.

Certified By: JOHN MARTINEZ Title: SR. ESTIMATOR

Name

Signature

Date: 5/4/2022

NOTE: Providing false information may result in criminal prosecution or administrative sanctions.

DEBARMENT AND SUSPENSION CERTIFICATION

SUBCONTRACTORS, SUPPLIERS AND MANUFACTURERS

TO BE COMPLETED BY BIDDER

FAILURE TO COMPLETE AND SUBMIT AT TIME OF BID SHALL RENDER BID NON-RESPONSIVE

Names of the Principal individual owner(s)

As part of its bid or proposal (Non-Price Proposal in the case of Design-Build contracts), the Bidder shall provide to the City a list of Names of the Principal Individual owner(s) for their subcontractor/supplier/manufacturers.

Please indicate if principal owner is serving in the capacity of **subcontractor**, **supplier**, and/or **manufacturer**.

☒ SUBCONTRACTOR ☐ SUPPLIER ☐ MANUFACTURER

NAME	TITLE
BOB PUDLIK	PRESIDENT

☐ SUBCONTRACTOR ☐ SUPPLIER ☐ MANUFACTURER

NAME	TITLE

☐ SUBCONTRACTOR ☐ SUPPLIER ☐ MANUFACTURER

NAME	TITLE

☐ SUBCONTRACTOR ☐ SUPPLIER ☐ MANUFACTURER

NAME	TITLE

Contractor Name: SATURN ELECTRIC

Certified By: John MARTINEZ (Name) Title: ESTIMATOR

(Signature) Date: 5/4/2022

USE ADDITIONAL FORMS AS NECESSARY

DEBARMENT AND SUSPENSION CERTIFICATION

SUBCONTRACTORS, SUPPLIERS AND MANUFACTURERS

TO BE COMPLETED BY BIDDER

FAILURE TO COMPLETE AND SUBMIT AT TIME OF BID SHALL RENDER BID NON-RESPONSIVE

Names of the Principal individual owner(s)

As part of its bid or proposal (Non-Price Proposal in the case of Design-Build contracts), the Bidder shall provide to the City a list of Names of the Principal individual owner(s) for their subcontractor/supplier/manufacturers.

Please indicate if principal owner is serving in the capacity of **subcontractor**, **supplier**, and/or **manufacturer**.

☒ SUBCONTRACTOR ☐ SUPPLIER ☐ MANUFACTURER

NAME	TITLE
JEFF BIRD	President

☐ SUBCONTRACTOR ☐ SUPPLIER ☐ MANUFACTURER

NAME	TITLE

☐ SUBCONTRACTOR ☐ SUPPLIER ☐ MANUFACTURER

NAME	TITLE

☐ SUBCONTRACTOR ☐ SUPPLIER ☐ MANUFACTURER

NAME	TITLE

Contractor Name: FORE FRONT DEEP FOUNDATIONS

Certified By JOHN MARTINEZ Title ESTIMATOR

Name

Signature Date 5/4/2022

USE ADDITIONAL FORMS AS NECESSARY*

DEBARMENT AND SUSPENSION CERTIFICATION

SUBCONTRACTORS, SUPPLIERS AND MANUFACTURERS

TO BE COMPLETED BY BIDDER

FAILURE TO COMPLETE AND SUBMIT AT TIME OF BID SHALL RENDER BID NON-RESPONSIVE

Names of the Principal individual owner(s)

As part of its bid or proposal (Non-Price Proposal in the case of Design-Build contracts), the Bidder shall provide to the City a list of Names of the Principal Individual owner(s) for their subcontractor/supplier/manufacturers.

Please indicate if principal owner is serving in the capacity of **subcontractor**, **supplier**, and/or **manufacturer**.

☒ SUBCONTRACTOR ☐ SUPPLIER ☐ MANUFACTURER

NAME	TITLE
JACOB WHALL	OWNER

☐ SUBCONTRACTOR ☐ SUPPLIER ☐ MANUFACTURER

NAME	TITLE

☐ SUBCONTRACTOR ☐ SUPPLIER ☐ MANUFACTURER

NAME	TITLE

☐ SUBCONTRACTOR ☐ SUPPLIER ☐ MANUFACTURER

NAME	TITLE

Contractor Name: AMERICAN HYDROSEED

Certified By JOHN MARTINEZ Title ESTIMATOR

Name

Signature Date 4/5/2022

USE ADDITIONAL FORMS AS NECESSARY*

DEBARMENT AND SUSPENSION CERTIFICATION

SUBCONTRACTORS, SUPPLIERS AND MANUFACTURERS

TO BE COMPLETED BY BIDDER

FAILURE TO COMPLETE AND SUBMIT AT TIME OF BID SHALL RENDER BID NON-RESPONSIVE

Names of the Principal individual owner(s)

As part of its bid or proposal (Non-Price Proposal in the case of Design-Build contracts), the Bidder shall provide to the City a list of Names of the Principal individual owner(s) for their subcontractor/supplier/manufacturers.

Please indicate if principal owner is serving in the capacity of **subcontractor, supplier,** and/or **manufacturer**:

☒ SUBCONTRACTOR ☐ SUPPLIER ☐ MANUFACTURER

NAME	TITLE
BRIAN PRATT	OWNER

☐ SUBCONTRACTOR ☐ SUPPLIER ☐ MANUFACTURER

NAME	TITLE

☐ SUBCONTRACTOR ☐ SUPPLIER ☐ MANUFACTURER

NAME	TITLE

☐ SUBCONTRACTOR ☐ SUPPLIER ☐ MANUFACTURER

NAME	TITLE

Contractor Name: PRATT EQUIPMENT

Certified By: JOHN MARTINEZ (Name) Title: SR.ESTIMATOR

Signature: _____ Date: 5/4/2022

USE ADDITIONAL FORMS AS NECESSARY*

Bid Results

Bidder Details

Vendor Name	Dick Miller Inc.
Address	930 Boardwalk, Suite H San Marcos, California 92078 United States
Respondee	JOHN MARTINEZ
Respondee Title	SR.ESTIMATOR
Phone	951-216-4070
Email	jmartinez@dmiusa.net
Vendor Type	CADIR, DVBE, SDVSB, SLBE, PQUAL, MALE, CAU
License #	380204
CADIR	1000004547

Bid Detail

Bid Format	Electronic
Submitted	05/04/2022 1:28 PM (PDT)
Delivery Method	
Bid Responsive	
Bid Status	Submitted
Confirmation #	290203

Respondee Comment

Buyer Comment

Attachments

File Title	File Name	File Type
BOND.pdf	BOND.pdf	BID BOND
PENDING ACTIONS.pdf	PENDING ACTIONS.pdf	CONTRACTOR'S CERTIFICATION OF PENDING ACTIONS
MDOBI.pdf	MDOBI.pdf	MANDATORY DISCLOSURE OF BUSINESS INTERESTS FORM
DEBAR PRIME.pdf	DEBAR PRIME.pdf	DEBARMENT AND SUSPENSION CERTIFICATION FOR PRIME CONTRACTOR
DEBAR SUBS.pdf	DEBAR SUBS.pdf	DEBARMENT AND SUSPENSION CERTIFICATION FOR SUBCONTRACTORS, SUPPLIERS AND MANUFACTURERS
BOND.pdf	BOND.pdf	Bid Bond

Subcontractors

Showing 4 Subcontractors

Name & Address	Desc	License Num	CADIR	Amount	Type
American Hydroseed 28545 Old Town Front Street Ste 201A Temecula, California 92590	EROSION CONTROL AREA 1 & 2, MONITORING AND MAINTENANCE, CONTRACTOR	888164	1000397799	$190,672.00	CAU, MALE, CADIR
Forefront Deep Foundations 2618 San Miguel Drive, Ste. 196 Newport Beach, California 92660	driven wood piles, CONTRACTOR	1010819	1000048820	$66,800.00	CADIR, WOSB, DBE
Pratt Equipment Corp. PO Box 2546 Vista, California 92085	GRADING, OVER EX, CLEAN FILL SLBE CONTRACTOR	847624	1000016735	$235,000.00	SDB, SLBE, Local
Saturn Electric, Inc. 7552 Trade Street San Diego, California 92121	electrical & generator, SLBE CONTRACTOR	219097	1000007128	$85,268.00	PQUAL, Local

Line Items

Discount Terms No Discount

Item #	Item Code	Type	Item Description	UOM	QTY	Unit Price	Line Total	Response	Comment
Main Bid							$1,649,649.00		
1	524126		Bonds (Payment and Performance)	LS	1	$22,570.00	$22,570.00	Yes	
2	541330		SWPPP Development	LS	1	$10,000.00	$10,000.00	Yes	
3	237310		SWPPP Implementation	LS	1	$18,000.00	$18,000.00	Yes	
4	541330		SWPPP Permit Fee (EOC Type I)	AL	1	$3,700.00	$3,700.00	Yes	
5	238910		Mobilization	LS	1	$45,000.00	$45,000.00	Yes	
6			Field Orders (EOC Type II)	AL	1	$250,000.00	$250,000.00	Yes	
7	238910		Hawthorne Basin Demolition	LS	1	$15,725.00	$15,725.00	Yes	
8	238910		West Basin Demolition	LS	1	$4,700.00	$4,700.00	Yes	
9	238910		East Basin Demolition	LS	1	$19,000.00	$19,000.00	Yes	
10	238910		Hawthorne Basin Grading, Embankment, Access Ramp, and Coarse Aggregate Drainage Channel	LS	1	$174,300.00	$174,300.00	Yes	
11	237990		Hawthorne Basin Spillway, Outlet Structure, and Skimmer	LS	1	$131,000.00	$131,000.00	Yes	
12	237990		Hawthorne Basin Down Drain, Gravel Surfacing, Inlet Protection, Headwall, and Type 2 Energy Dissipaters	LS	1	$42,850.00	$42,850.00	Yes	
13	332323		West Basin Outlet Structure	LS	1	$286,100.00	$286,100.00	Yes	
14	238210		West Basin Generator	LS	1	$89,500.00	$89,500.00	Yes	
15	238910		West Basin Maintenance Pad	LS	1	$5,250.00	$5,250.00	Yes	
16	238910		East Basin Grading and Access Ramp	LS	1	$120,400.00	$120,400.00	Yes	
17	238910		East Basin Outlet Structure and Skimmer	LS	1	$52,500.00	$52,500.00	Yes	
18	238910		East Basin Down Drain and Flume	LS	1	$22,000.00	$22,000.00	Yes	
19	561730		Erosion Control Area 1	LS	1	$22,700.00	$22,700.00	Yes	
20	561730		Erosion Control Area 2	ACRE	53	$5,338.00	$282,914.00	Yes	
21	238910		Over Excavation of Waste Material and Clean Fill Placement	CY	400	$48.60	$19,440.00	Yes	
22	561730		Erosion Control Area 1 Monitoring and Maintenance	WEEK	12	$1,000.00	$12,000.00	Yes	

Line Item Subtotals

Section Title	Line Total
Main Bid	$1,649,649.00
Grand Total	$1,649,649.00

Line Totals (Unit Price * Quantity)								
Item Num	**Section**	**Item Code**	**Description**	**Reference**	**Unit of Measure**	**Quantity**	**Dick Miller Inc. - Unit Price**	**Dick Miller Inc. - Line Total**
1	Main Bid	524126	Bonds (Payment and Performance)	**1-7.2.1**	LS	1	$22,570.00	$22,570.00
2	Main Bid	541330	SWPPP Development	**1001-3.7**	LS	1	$10,000.00	$10,000.00
3	Main Bid	237310	SWPPP Implementation	**1001-3.7**	LS	1	$18,000.00	$18,000.00
4	Main Bid	541330	SWPPP Permit Fee (EOC Type I)	**1001-3.7**	AL	1	$3,700.00	$3,700.00
5	Main Bid	238910	Mobilization	**7-3.4.1**	LS	1	$45,000.00	$45,000.00
6	Main Bid		Field Orders (EOC Type II)	**7-3.9**	AL	1	$250,000.00	$250,000.00
7	Main Bid	238910	Hawthorne Basin Demolition	**Sections 02 41 00 31 10 00**	LS	1	$15,725.00	$15,725.00
8	Main Bid	238910	West Basin Demolition	**Sections 02 41 00 31 10 00**	LS	1	$4,700.00	$4,700.00
9	Main Bid	238910	East Basin Demolition	**Sections 02 41 00 31 10 00**	LS	1	$19,000.00	$19,000.00
10	Main Bid	238910	Hawthorne Basin Grading, Embankment, Access Ramp, and Coarse Aggregate Drainage Channel	**Sections 31 14 13.16 31 22 19 31 35 19.16 31 37 00 32 15 00 33 40 00 40 05 13.11**	LS	1	$174,300.00	$174,300.00

11	Main Bid	237990	Hawthorne Basin Spillway, Outlet Structure, and Skimmer	**Sections** **03 11 00** **03 15 00** **03 20 00** **03 30 00** **31 14 13.16** **31 22 19** **31 37 00** **32 15 00** **33 40 00** **40 05 13.11** **40 05 13.15** **40 05 23**	LS	1	$131,000.00	$131,000.00
12	Main Bid	237990	Hawthorne Basin Down Drain, Gravel Surfacing, Inlet Protection, Headwall, and Type 2 Energy Dissipaters	**Sections** **03 11 00** **03 15 00** **03 20 00** **03 30 00** **31 14 13.16** **31 22 19** **31 35 19.16** **31 37 00** **32 15 00** **33 40 00** **40 05 13.11**	LS	1	$42,850.00	$42,850.00

13	Main Bid	332323	West Basin Outlet Structure	**Section 03 11 00 03 15 00 03 20 00 03 30 00 05 01 00 05 52 00 05 53 00 31 14 13.16 31 22 19 31 62 00 35 51 00 40 05 13.11 43 21 39**	LS	1	$286,100.00	$286,100.00
14	Main Bid	238210	West Basin Generator	**Section 26 32 13.13**	LS	1	$89,500.00	$89,500.00
15	Main Bid	238910	West Basin Maintenance Pad	**Section 31 14 13.16 31 22 19 32 15 00**	LS	1	$5,250.00	$5,250.00
16	Main Bid	238910	East Basin Grading and Access Ramp	**Section 31 14 13.16 31 22 19 32 15 00 33 40 00**	LS	1	$120,400.00	$120,400.00

17	Main Bid	238910	East Basin Outlet Structure and Skimmer	**Section 03 11 00 03 15 00 03 20 00 03 30 00 31 37 00 33 40 00 40 05 13.11 40 05 13.15 40 05 23**	LS	1	$52,500.00	$52,500.00
18	Main Bid	238910	East Basin Down Drain and Flume	**Section 31 14 13.16 31 22 19 31 35 19.16 31 37 00 33 40 00**	LS	1	$22,000.00	$22,000.00
19	Main Bid	561730	Erosion Control Area 1	**Section 31 22 19 31 25 00**	LS	1	$22,700.00	$22,700.00
20	Main Bid	561730	Erosion Control Area 2	**Section 31 25 00**	ACRE	53	$5,338.00	$282,914.00
21	Main Bid	238910	Over Excavation of Waste Material and Clean Fill Placement	**Section 31 20 00**	CY	400	$48.60	$19,440.00
22	Main Bid	561730	Erosion Control Area 1 Monitoring and Maintenance	**Section 31 25 00**	WEEK	12	$1,000.00	$12,000.00
							Subtotal	$1,649,649.00
							Total	$1,649,649.00