APPENDIX A

PHASE II POST-CLOSURE LAND USE PROPOSAL

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19-AK-0084 F-508

POST-CLOSURE LAND USE PROPOSAL
DAVENPORT PARK PHASE II (SWIS NO.: 19-AK-0084E)
(FORMER 55TH WAY LANDFILL)
SEPTEMBER 2014

Prepared for:
City of Long Beach
Department of Public Works, Engineering Bureau
333 W. Ocean Boulevard, 9th Floor
Long Beach, California 90802

Presented by:
SWT Engineering
800-C South Rochester Avenue
Ontario, CA 91761

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DAVENPORT PARK PHASE II

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ACRONYM LIST

LIST OF ACRONYMS AND ABBREVIATIONS

ACGIH	American Conference of Governmental Industrial Hygienists
AQMD	Air Quality Management District
ASTM	American Society for Testing and Materials
B(a)P	Benzo(a)pyrene
bgs	below ground surface
BMP	Best Management Practices
BTEX	Benzene, Toluene, Ethylbenzene, Xylenes
CAA	Clean Air Act
CalRecycle	California Department Of Resources Recycling And Recovery
CAM	California Assessment Method
CAP	Corrective Action Plan
CCR	California Code of Regulations
CDWR	California Department of Water Resources
CFR	Code of Federal Regulations
CEQA	California Environmental Quality Act
cfs	cubic foot per second
City	City of Long Beach
CIWMB	California Integrated Waste Management Board
COC	Constituent of Concern
County	County of Los Angeles, Department of Health Services, Solid Waste Bureau
DCA	dichloroethane
DMP	Detection Monitoring Program
EE	Ecology and Environmental, Inc.
EIR	Environmental Impact Report
EMP	Evaluation Monitoring Program
EPA	Environmental Protection Agency, United States
GAC	Granular Activated Carbon
g/cm^3	gram per cubic centimeter
gpm	gallon per minute

GCL	Geosynthetic Clay Liner
HASP	health and safety plan
Hg	mercury
HHRA	Human Health Risk Assessment
ICS	Incident Command System
LARWQCB	Los Angeles Regional Water Quality Control Board
LandGEM	Landfill Gas Emissions Model
LBHHS/EH	Long Beach Department of Health and Human Services/Environmental Health
LBMC	Long Beach Municipal Code
LEA	Local Enforcement Agency
LEL	lower explosive limit
LFG	landfill gas
MSWLF	Municipal Soil Waste Landfill
m^3/Mg	cubic meter per mega-gram
NMOC	Non-methane Organic Compound
NOI	Notice of Intent
NOP	Notice of Preparation
NOT	Notice of Termination
NPDES	National Pollution Discharge Elimination System
OSHA	Occupational Safety and Health Association
PAH	polycyclic aromatic hydrocarbon
pcf	pound per cubic foot
PCB	Polychlorinated biphenyl
PCLUP	Post-Closure Land Use Proposal
PCMMP	Post-Closure Monitoring and Maintenance Plan
ppm	part per million
ppmv	part per million-by volume
PRG	preliminary remediation goal
PVC	polyvinyl chloride
ROWD	Report of Waste Discharge
SCAQMD	South Coast Air Quality Management District
SCS	SCS Engineers, Inc.

SM	silty sand
SUSMP	Standard Urban Storm Water Mitigation Plan
SVOC	semivolatile organic compound
SWAT	Solid Waste Assessment Test
SWIS	Solid Waste Information System
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TDS	total dissolved solids
TPH	total petroleum hydrocarbons
UNSATH	Unsaturated Soil Water and Heat Flow Model
USDA	United States Department of Agriculture
UST	underground storage tank
$\mu g/m^3$	micrograms per cubic meter
VOC	volatile organic compound

SECTION 1.0

INTRODUCTION

1.0 INTRODUCTION

This Post-Closure Land Use Proposal (PCLUP) describes Phase II activities to be conducted to convert property overlying the former 55th Way Landfill, Solid Waste Information System (SWIS) Number 19-AK-0084, into a public park and recreational space (Davenport Park). The Phase I PCLUP is dated March 17, 2004 (Earth Tech March 17, 2004) and was approved by the County of Los Angeles Solid Waste Management Program/Local Enforcement Agency (LEA) on May 11, 2004. Phase I (5.92 acres) was completed on August 26, 2006.

The Phase II PCLUP addresses expansion of Davenport Park to a 4.52 acre parcel purchased by the City of Long Beach (City) from Cal Coast Packing and Crating Company Inc. in April 2006. The 4.52 acre parcel was formerly used for commercial and industrial land uses. Phase II will complete the full development of Davenport Park, a substantial accomplishment toward meeting the City's General Plan goal to provide parkland conveniently accessible to all residents, and in particular to the surrounding economically disadvantaged and open space deficient neighborhood. A site vicinity and location map is presented as Figure II-1.

The Phase II PCLUP was prepared in accordance with Title 27, California Code of Regulations (27 CCR), Division 2, Chapter 3, Subchapters 3, 4 and 5. Applicability of the Phase II PCLUP is pursuant to 27 CCR Sections 21100(b)(2) and 21190 which apply to new postclosure activities that may jeopardize the integrity of previously closed disposal sites or pose a potential threat to public health and safety or the environment.

Specifically, 27 CCR 21190 (a) requires that proposed postclosure land uses shall be designed and maintained to:

(1) Protect public health and safety and prevent damage to structures, roads, utilities and gas monitoring and control systems;

(2) Prevent public contact with waste, landfill gas and leachate; and

(3) Prevent landfill gas explosions.

Furthermore, 27 CCR 21190(c) requires that all proposed postclosure land uses, other than non-irrigated open space, on sites implementing closure or on closed sites shall be submitted to the LEA, RWQCB, local air district and local land use agency (City of Long Beach). The LEA shall review and approve proposed postclosure land uses if the project involves structures within 1,000 feet of the disposal area, structures on top of waste, modification of the low permeability layer, or irrigation over waste.

This PCLUP was prepared for LEA approval in accordance with 27 CCR 21190 and provides a detailed project description, an implementation schedule, and updated Postclosure Maintenance and Monitoring Plan (PCMMP). In addition to being submitted to the LEA, the Phase II PCLUP will be submitted to the Los Angeles Regional Water Quality Control Board (LARWQCB) and the South Coast Air Quality Management District (SCAQMD) for review and comment. The City is currently implementing a park community involvement and California

Environmental Quality Act (CEQA) process to finalize the Phase II plans and local approvals. Upon completion of these processes, this document will be amended and updated accordingly.

The Phase II PCLUP is consistent with the Phase I PCLUP and focuses on updates and changes applicable to Phase II. Phase I PCLUP (Earth Tech March 17, 2004) is incorporated by reference to the extent appropriate to minimize redundancy. Electronic file copies of the Phase I PCLUP and this Phase II PCLUP are also included with the Phase II PCLUP hard copies to facilitate review.

1.1 Background

Background for the site and postclosure land use with respect to the City's Open Space and Recreation Element (the "Open Space Element") of the City's General Plan is described in Section 1.1 of the approved Phase I PCLUP (Earth Tech March 17, 2004) and incorporated herein by reference.

1.2 Project Goals

Goals of this PCLUP is to expand on the Phase I project and complete the design of the full park for benefit to the local community, in particular the surrounding economically disadvantaged and open space deficient neighborhood, and to significantly enhance protection of public health and safety and the environment from that of the former industrial and commercial land uses.

SECTION 2.0

ENVIRONMENTAL SETTING

2.0 ENVIRONMENTAL SETTING

The Environmental Setting of the site is described in Section 2.0 of the Phase I PCLUP (Earth Tech March 17, 2004) and incorporated herein by reference.

2.1 Physiographic Location

The physiographic location of the site is described in Section 2.1 of the Phase I PCLUP (Earth Tech March 17, 2004) and incorporated herein by reference.

2.2 Regional Geology and Hydrogeology

The regional geology and hydrology of the site is described in Section 2.2 and Figures 4A and 4B of the Phase I PCLUP (Earth Tech March 17, 2004) and incorporated herein by reference.

2.3 Groundwater Production Wells

Groundwater production wells within 1-mile of the site are described in Section 2.3 and Appendix A of the Phase I PCLUP (Earth Tech March 17, 2004) and incorporated herein by reference.

SECTION 3.0

PROJECT DESCRIPTION

3.0 PROJECT DESCRIPTION

The proposed Phase II expansion comprises the approximately 4.52-acre North Paramount Boulevard frontage parcel (Figure II-1). The total Phase I and II property to be converted to Davenport Park will comprise approximately 11.6 acres of the former 17.4-acre 55th Way Solid Waste Landfill. Phase II will complete buildout of the full park and improve vehicle access and safety by realigning 55th Way through the Phase II property. The realignment will be to the current traffic light intersection of Langport Avenue and North Paramount Boulevard.

The Phase II property will be converted from a former commercial and industrial facility to recreation and open space uses. No permanent structures are planned to be on top of the Phase II property. Existing recreation and open space uses of Phase I include a lighted grass multi-purpose field, two lighted basketball half-courts, a skateboard plaza, a toddler play lot (tot-lot), passive and active open space, minimal hardscape including a gazebo, benches and tables, sun shelters, a restroom (partially enclosed) and surface parking with a drop-off area. Existing Phase I structures (restrooms and storage buildings) include vented roofs and walls and methane alarm systems. Phase II will include, but not be limited to, soccer fields, picnic areas, and parking areas. Site access will be secured by fencing. Hours of operation are anticipated to be from 6:00 AM to 10:00 PM.

To the extent appropriate, approved Phase I environmental monitoring and control system design components will be applied to Phase II. The Phase I final cover design was initially proposed as an irrigated evapotranspirative system and was changed to incorporate a GCL based system. The Phase II PCLUP proposes a final cover foundation layer of compacted onsite material and a GCL or geomembrane (LLDPE) barrier layer. A geocomposite blanket and/or horizontal trench based gas collection system is also proposed under the barrier layer. Approximately 15,000 cubic yards of clean soil will be imported to the site to provide a minimum 2-foot thick layer of vegetative soil. In areas with trees, the cover thickness is a minimum of 4-ft. Limited passive open space areas will include some drought tolerant vegetation and other non-invasive plantings to protect the landfill cover. Grading activities will be conducted pursuant to an approved grading plan. The City is currently evaluating options for a geosynthetic based turf system to avoid the need for irrigation other than a minimal amount for heat control. A geocomposite lateral drainage layer is proposed to overly the barrier layer to minimize water infiltration into the refuse layer.

The proposed Phase II design will provide additional landfill gas monitoring and collection components and provide flexibility for a passive venting system which can accommodate a low flow blower and Granular Active Carbon (GAC) treatment system. Phase I passive landfill gas vents/extraction wells (three), as approved under the Phase I PCLUP, were capped in response to a Notice to Comply (NTC) issued by the SCAQMD on November 11, 2011. There are concerns that landfill gas may be accumulating under the Phase I cap since the vents were capped. Additional discussions with SCAQMD are being undertaken for measures to allow for the vents to be reopened. A temporary portable extraction and carbon treatment system may be utilized to evaluate and establish equilibrium landfill gas conditions for the vents/extraction wells. Additional measures will include a GAC canister system for continued passive venting which can be modified to add in a low flow blower if required by SCAQMD pursuant to Rule 1150.1. More detailed discussion of landfill gas monitoring and control is provided in Section 4.0.

3.1 Site Location and Description

The Phase II expansion of Davenport Park is located at 5550 North Paramount Boulevard (Figure II-1). The Phase II property comprises approximately 4.52 acres in the northeast corner of the former 55th Way Landfill and is located in a mixed commercial, residential and industrial area of the City (Figure II-1). The property is currently a vacant lot. Phase I and II properties are bounded on the north by a former easterly extension of the northerly line of 55th Way, on the east by the boundary line of the City of Lakewood (and former southerly extension of the easterly line of Obispo Avenue), on the south by an existing mobile home park, and on the west by a former southerly extension of the easterly line of Paramount Boulevard. The site is relatively flat, with the topography gently sloping to the west.

The Phase II site is bordered on the east by the Phase I Davenport Park, on the west, north, and northwest by single-family dwellings, on the south by the Friendly Village Mobile Home Park (residential), and on the northeast by the Paramount Petroleum Lakewood Tank Farm. The site is located in Range 12W and Township 4S, in the northeast corner of Section 5.

The 17.4-acre 55th Way Landfill (SWIS Number 19-AK-0084) is located at the northeast corner of Paramount Boulevard and Candlewood Street in Long Beach, California (Figure II-1). The landfill is subdivided into five separate parcels (Figure II-3), designated 19-AA-0084A (55th Way Frontage Road), 19-AA-0084B (Phase I Davenport Park), 19-AK-0084C (Grassy Knolls south of Friendly Village Mobile Home Park), 19-AK-0084D (Friendly Village Mobile Home Park), and 19-AK-0084E (Phase II Davenport Park). A county assessor's parcel map is included in Appendix B of the Phase I PCLUP (Earth Tech March 17, 2004) and incorporated herein by reference. The Phase II property is located in Tract 22516, Block 34, Lot 1 (Assessor's Parcel Number 7157-006-005). Copies of county assessor's parcel maps and property deed amendments are also included in Appendix B of the Phase I PCLUP (Earth Tech March 17, 2004) and incorporated herein by reference.

3.2 Site History

The detailed site history is described in Section 3.2 and Appendices C and D of the Phase I PCLUP (Earth Tech March 17, 2004) and incorporated herein by reference. Description of subsequent site history is as follows.

The Phase I PCLUP for Davenport Park was submitted on September 26, 2002. The City Planning Commission approved the PCLUP on February 5, 2004. Approvals by the City Planning Commission occurred on February 5, 2004 and City Council on March 6, 2004. The LEA approved the Phase I PCLUP on May 11, 2004. The Phase II parcel acquisition by the City was completed on April 24, 2006 and Phase I construction was completed on August 26, 2006. The Phase I Davenport Park is currently utilized by the Public. The Phase II property is currently a fenced vacant lot with no structures and minimal surface vegetation. Structures have recently been demolished and removed from the Phase II property and additional debris and foundation slabs remain to be removed or incorporated as final cover foundation material.

3.2.1 Waste Disposal History

Description of the waste disposal history of the site is provided in Section 3.2.1 and Appendix C of the Phase I PCLUP (Earth Tech March 17, 2004) and incorporated herein by reference.

3.2.2 Summary of Environmental Assessments

A detailed summary of site environmental assessment is described in Section 3.2.2 of the Phase I PCLUP (Earth Tech March 17, 2004) and incorporated herein by reference. Related environmental assessments performed subsequent to the Phase I PCLUP are summarized as follows.

<u>Phase I PCLUP Installation and Monitoring of Landfill Gas Monitoring Probes (2004)</u>

The locations of existing Phase I PCLUP and proposed new Phase II landfill gas monitoring probes are shown in Figure II-4 (see also Section 5.1). Appendix II-C includes information on landfill gas monitoring probes installed and monitored in 2003. The City installed five landfill gas monitoring probes (GW-7 through GW-11) in accordance with the Phase I PCLUP (Earth Tech October 21, 2004). These monitoring probes supplement six additional dual cluster probes (GW-1 through GW-6) installed in May and June 2003. Landfill gas was analyzed by field instruments and laboratory samples taken and analyzed for VOCs, TVPH, and fixed gases. Methane concentrations for GW-1 through GW-6 from sampling in 2002-2003 were previously reported in Table 1 of the Phase I PCLUP (Earth Tech October 21, 2004). Results were less than the 5% LEL except for GW-1 (probe within refuse boundary; 12-20%) and GW-4 (probe 5-10 feet at 5.0%).

<u>Solid Waste Assessment Test (SWAT) Groundwater Monitoring Program (2004- present)</u>

The City implements an ongoing Solid Waste Assessment Test (SWAT) groundwater monitoring program for the 55th Way Landfill pursuant to LARWQCB Waste Discharge Requirements Order R4-2004-0157 issued October 12, 2004 and General Monitoring and Reporting Program Order No. CI-8372. The current Phase I ongoing monitoring program will address both the Phase I and II areas. The locations of current SWAT groundwater monitoring wells and piezometers is shown on Figure II-5. SWAT monitoring reports consistently conclude that the upgradient monitoring point (PZ-1) has the highest mean concentrations of monitoring constituents to assess potential release and that one of the two downgradient points (MW-1, MW-2) has the lowest mean concentrations. Based on these observations the monitoring reports conclude that it does not appear that an unregulated release is occurring from the landfill. Furthermore, based on review of analytical results and information for the upgradient Paramount Petroleum Lakewood Tank Farm (property adjoins the northeast part of the Phase I parcel) the types of constituents detected are similar to those detected in samples from the Tank Farm property, which include BTEX and other gasoline related constituents (Earth Tech October 21, 2004).

Additional groundwater investigations are being requested by the LARWQCB as part of the Tank Farm investigation. The Tank Farm owner is seeking access to the City property for the investigation. Additional groundwater investigations and remediation, if required by the LARWQCB, will continue to be conducted for the Tank Farm and City properties separate from the Phase II PCLUP project.

Phase I Environmental Assessment (2006)

A Phase I Environmental Assessment was completed in February 2006 (SCS Engineers) for the Phase II 4.52 acre parcel purchased by the City from Cal Coast Packing and Crating Company Inc. in April 2006 (APN-7157-006-005). This assessment noted the presence of the Paramount Landfill beneath and adjacent to the property. No further investigations were recommended, although constraints to development with regards to settlement and landfill gas control were recognized.

CalRecycle Site Investigation of the Adjacent Friendly Village Mobile Home Park Property (2009-2011)

In November 2010, the State Department of Resources, Recycling and Recovery (CalRecycle) completed a landfill gas site investigation of the Friendly Village Mobile Home Park located on a separate parcel adjacent and south of the separate Phase I and II parcels (CalRecycle 2010. CalRecycle conducted follow-up landfill gas monitoring in January 2011 of 28 monitoring probes at the mobile home park and 8 probes at Davenport Park (CalRecycle March 23, 2011).

3.2.3 Regulatory Agency Inspections, Permitting and Enforcement

Regulatory agency inspections, permitting, and enforcement activities since approval of the PCLUP Phase I in 2004 are summarized as follows.

Los Angeles Solid Waste Management Program/Local Enforcement Agency (LEA)

The LEA has conducted regular inspections of properties constituting the 55th Way Landfill, Solid Waste Information System (SWIS) Number 19-AK-0084. Currently the property is in compliance with state minimum standards and no enforcement orders have been issued. However, periodically there are violations of site security and dumping of trash and debris on the former Cal Coast property vacant lot. The LEA routinely conducts methane monitoring using field instruments. Methane exceeding the 5% methane by volume standard is not found at the surface, in utilities, or in cracks. Methane exceeding 5% is commonly found in subsurface probes within waste underlying the Phase I and Phase II properties. Recent LEA inspection reports and probe monitoring results are included in Appendix II-C. Based on an inspection conducted June 18, 2014, perimeter boundary probes GW-4, GW-5, and GW-6 are in compliance with the 5% methane by volume standard (highest level was 60% of the LEL (3% methane by volume) in shallow probe GW-4).

South Coast Air Quality Management District (SCAQMD)

The SCAQMD periodically inspects the 55th Way Landfill properties for compliance with SCAQMD Rule 1150.1. Exceedances of the 200 part per million by volume (ppmv) have periodically been determined by SCAQMD inspectors and Notices to Comply issued. Where located in surface cracks in soil or in pavement or pavement edges, mitigation has been completed with additional cover material and compaction. However, on November 30, 2011 exceedances were determined at the three passive vents and the vents/extraction wells were subsequently and remain capped to address compliance with the NTC (see additional discussion of landfill gas in Section 4.0 and Appendix II-D).

The SCAQMD also requires and has issued Rule 1150.1 Excavation Permits for Phase I construction and Phase II demolition activities. The most recent Excavation Permit issued in 2010 expired and a new Permit application will be submitted for the remaining Phase II construction activities.

Los Angeles Regional Water Quality Control Board (LARWQCB)

The LARWQCB has issued Waste Discharge Requirements Order No. R4-2004-0157 and General Monitoring and Reporting Program Order No. CI-8372 which apply to the City for the 55th Way Landfill. The City conducts routine periodic groundwater monitoring to comply with these orders.

Additionally, the Paramount Petroleum Lakewood Tank Farm is subject to Cleanup and Abatement Order No 94-040 for cleanup of soil and groundwater contamination which also impacts the City property. The Tank Farm owner has conducted various soil and groundwater investigations and is implementing a free product and vapor recovery remediation system.

3.3 CEQA and Risk Assessment

The City certified an Environmental Impact Report (SCH 2003041141) for the Phase I PCLUP. Description of the Phase I CEQA initial process is described in Section 3.4 of the Phase I PCLUP (Earth Tech March 17, 2004) and incorporated herein by reference. The human health risk assessment is included in Exhibit I of the Phase I PCLUP which is also incorporated herein by reference.

The City is currently implementing community involvement and CEQA processes for the Phase II PCLUP (see Section 7.0 for implementation schedule). Upon completion of the processes, the Phase II PCLUP will be amended accordingly.

SECTION 4.0

PROJECT LAYOUT AND DESIGN

4.0 PROJECT LAYOUT AND DESIGN

The City is implementing a community involvement process to finalize the Phase II park project layout and design (see Section 2.3). The draft conceptual layout is included in Figure II-2. The final layout will be updated and incorporated in Appendix II-E. The process includes a subcommittee meeting involving various departments within the City (Property Services; Redevelopment Agency; Planning & Development; Parks, Recreation and Marine; Environmental Health; Public Works; Hazardous Materials; and Engineering). Draft layouts are selected for presentation to the community. Based on the feedback received from the community, a final design option is selected and updated to incorporate comments from the community.

The following drawings were included in the Phase I PCLUP to address the Phase I layout and design:

- G-1 Title Sheet, Location Map and Vicinity Map
- C-1 Existing Grades/Site Plan
- C-2 Final Grading Plan
- C-3 Utility Plan
- C-4 Horizontal Control Plan
- C-5 Cross Section
- C-6 Catch Basin and Miscellaneous Details
- C-7 Miscellaneous Details
- C-8 Drainage Details
- L-1 Planting Plan and Planting List
- L-2 Irrigation Plan

Preliminary design drawings for the Phase II PCLUP are included in Figures II-4 (existing and proposed subsurface boundary monitoring probe locations), II-6 (preliminary design for gas collection system), and II-7 (preliminary design details). Additional drawings and specifications for construction based on the Phase I PCLUP will be prepared as appropriate for Phase II and the Phase II PCLUP amended upon completion of the public review and design process.

4.1 Final Cover System

The Phase I PCLUP provided substantial analyses, pilot tests, and UNSAT-H Version 3.01 (Fayer 2000) modeling to demonstrate a proposed monolithic soil evapotranspiration alternative final cover system. The proposed final cover slope was 1.12 percent on top of the former landfill, and up to a 5:1 (horizontal:vertical) slope along the eastern boundary. Conceptually, the landfill cover was proposed to be constructed of a 4-foot-thick monolithic final compacted soil cap on top of the existing cover/soil layer, which is 4 to 8 feet thick.

The Phase I PCLUP final cover was revised to a Geosynthetic Clay Liner (GCL) cover system. A Technical Memorandum for the design of the GCL system was prepared by AES and dated July 21, 2005. The GCL cover system is documented in the Record Drawings and Specifications and consists of the following components:

- Vegetative Soil: Minimum 2-foot thick layer of vegetative cover soil placed to a relative compaction of 85 percent (as per ASTM D1557). In areas with trees, the cover thickness is 4 feet.
- Lateral Drainage Layer: Geocomposite drainage layer
- Barrier Layer: Geosynthetic Clay Liner (GCL)
- Foundation: Minimum 2-foot thick foundation layer.

The GCL and geocomposite layer were designed and constructed with a minimum slope of 1.9 percent. The finished surface was graded with slopes ranging from 1.9 percent to 10 percent. The City is currently evaluating options for a geosynthetic turf based system to avoid the need for irrigation other than a minimal amount needed for heat control (see Section 4.5).

The Phase II PCLUP proposes to replace the GCL barrier layer with a more cost effective and higher protection geomembrane based system consisting of the following components (see Figures II-6 and II-7):

- Geosynthetic turf (for soccer fields if irrigated turf system not included).
- Vegetative Soil: Minimum 2-foot thick layer of vegetative cover soil placed to a relative compaction of 85 percent (as per ASTM D1557). In areas with trees, the cover thickness is 4 feet.
- Lateral Drainage Layer: Geosynthetic drainage/liner protection layer (final design will depend on irrigated or non-irrigated turf).
- Barrier Layer: Linear low density polyethylene (LLDPE).
- Foundation: Minimum 2-foot thick foundation layer which may include onsite inert waste material processed as necessary and placed in accordance with 27 CCR 21090(a)(1).
- Gas Collection System: Horizontal trench gas collection system (constructed in foundation layer and not in waste) and grid geocomposite strip drains.

4.1.1 Soil Import, Placement, and Compaction

Approximately 15,000 cubic yards of material will be transported to the site to create a 2-foot-thick vegetative layer for the Phase II area. Clean on-site soil may also be used for the vegetative layer. An estimated 50 truckloads per day, each consisting of approximately 18 to 20 cubic yards, will be delivered to the site during construction activities. An estimated 20 to 25 days will be necessary to deliver the soil required to construct the vegetative layer. Equipment used to construct the final cover will be selected by the qualified contractor, including, but not limited to:

- Caterpillar 950G front-end loader or equivalent (1 to 2);
- Caterpillar 825 sheep's-foot compactor or equivalent (2 to 3);
- Grader (1 to 2);
- Water truck (1 to 2).

Soil cover material will be compacted to 85 percent maximum dry density as determined by ASTM Methods D2992 and D3017. A minimum of one pass (two coverages per pass) will be made over each lift by the compactor. Construction personnel will perform the testing following the first pass of each lift. A water truck will be on site to facilitate moisture conditioning of soil materials and control dust during construction. The field engineer will determine appropriate moisture levels to achieve specified compaction levels. Following compaction, the surface of the cover will be graded with a motor grader, allowing for a fine finish for placement of vegetation and construction of the proposed park.

4.1.2 Grading and Drainage

Currently, the site is relatively flat with a 3-foot elevation drop from east to west, and very little elevation difference (estimated 1 foot) from north to south. Minimal rough grading is proposed for the subject site prior to placement of the final cover and importation of vegetative soil. Existing structures have been removed and remaining foundation slabs, pavement, and surface debris will be removed from the site or processed and compacted in place for the foundation layer. The surface will be graded relatively level (rough grade) and compacted prior to placement of the final cover. Care will be taken to preserve existing landfill gas monitoring probes and groundwater monitoring wells.

Surface water (runoff) will be transported around the perimeter of the landfill via a constructed drainage swale (v-ditch) and subgrade storm water line (reinforce concrete pipe) to the northwest corner of the facility. Surface water will be collected in a storm water interceptor positioned off the northwest corner of the site adjacent to 55th Way. From the storm water interceptor, collected surface water will be transported to the municipal storm water sewer system along Paramount Boulevard via a subsurface 15-inch (estimated) reinforced concrete pipe.

4.1.2.1 Drainage System

A drainage system consisting of concrete v-ditches and underground storm drainpipes is proposed for installation to collect and control runoff from the landfill cover. The site landfill will be graded to direct runoff from the landfill cover to existing drainage structures (Drawing C-2 of the Phase I PCLUP (Earth Tech March 17, 2004) and incorporated herein by reference). Storm water drainage v-ditches and storm drains are proposed to be built around the perimeter of the site to transport water to the northwest corner of the facility. The existing storm water conveyance system has a high velocity interceptor equipped with a gravity separation system to control the discharge of pollutants to waters complies with National Pollution Discharge Elimination System (NPDES) and City Standard Urban Storm Water Mitigation Plan (SUSMP) regulation (Ordinance No. C-7703), and associated Best Management Practice (BMP) for removal of oil and grease, sediment, and debris and other pollutants from water flows entering the drainage system. Drainage, storm water interceptor, and catch basin details are shown in Drawings C-6, C-7, and C-8 of the Phase I PCLUP (Earth Tech March 17, 2004) and incorporated herein by reference.

The storm water interceptor was sized to handle a maximum storm event accordance with 27 CCR 20365 State requirements and City and County regulations. Following City and Los Angeles County regulations, the peak mitigated runoff rate was calculated. Approximately 130,000 square feet (77,000 Phase I and 53,000 Phase II) of the full Phase I and II site has an impenetrable surface (asphalt, concrete, or other pavement), which represents approximately 25 percent of the total surface area for the site. The City provides a calculation for determining peak runoff for a 0.75 inch rainfall. Assuming duration (Tc) is 5 minutes (worst case) for 0.75 inch of rainfall, a Soil Type 3 (Los Angeles County Department of Public Works–Long Beach Hydrologic Map), and a 4 percent impervious surface, the peak mitigated flow rate (Q_{PM}) factor is 0.189 (Long Beach City, Ordinance No. C-7703, NPDES & SUSMP, Appendix A, Table 4.1).

Thus:

- Q_{PM} = 11.6 (acres) × 0.189 cubic foot per second (cfs) / acre = 2.1924 cfs

Which equals to:

- Q_{PM} = 2.1924 cfs × 7.48 Gallons / cf * 60 sec / min
- Q_{PM} = 1.0395 × 7.48 × 60 gallons per minute (gpm)
- Q_{PM} = 984 gpm

In order to have a minimum retention time of 5 minutes, the size of the storm water interceptor is:

- Interceptor Capacity = 984 gpm × 5 minutes = 4,920 gallons

Based on the considerations described below, the calculated size is doubled:

- Interceptor Capacity = 4,920 gallons × 2 = 9,839 Gallons

Finally, the closest standard interceptor size is:

- 10,000 Gallons

Based on these flow rates, the storm water interceptor should have a conservative capacity of 10,000 gallons. As this was a conservative calculation procedure, the existing interceptor should have remaining capacity to handle additional surface flow from vegetation areas where rainfall rates exceed infiltration rates creating storm water runoff during a large storm event. Also, this interceptor could be used if the impervious surface area of the park is expanded. The existing interceptor capacity will be verified during the construction document development phase of the project. If additional elements or modifications to the existing system are necessary, they will be included in the Phase II Project final design.

Periodic visual inspections of the overall (Phase I & II) drainage system will be conducted, including catch basins and v-ditches, for debris, obstructions and damages to the system, and identification of areas where vegetation is overgrown or other conditions are impairing the function of the drainage system. Maintenance activities may include removal of wind-blown soil, debris, and overgrowth; repair of damaged structures; and removal of settlement, floating debris, or residual oil that has collected in the storm water separator.

4.1.2.2 Stormwater Pollution Prevention Plan (SWPPP)

Due to the size of the construction site (disturbance of soil greater than 1 acre), the contractor will be required to prepare a construction-related Storm Water Pollution Prevention Plan (SWPPP) for the Phase II project before starting construction activities. In addition, once construction has been completed, a facility SWPPP will be prepared and implemented at the site for post-construction treatment controls, until a Notice of Termination (NOT) is approved by the RWQCB. Detailed description of the SWPPP is included in Section 3.1.2.2 of the Phase I PCLUP (Earth Tech March 17, 2004) and incorporated herein by reference.

4.2 Utilities

Minimal utilities will be required at the site. Utilities will be run from the northwest corner of the site, or from the north through an existing right-of-way, and will include electrical, water, and sewer to the restroom building in Phase I. The electrical panel and meter will be placed on the north side of the storage shed and connected via overhead lines to the electrical supply line near the existing right-of-way. Additional electrical lines will also be run subsurface to the light poles and irrigation control valves. Subsurface utilities, including water and sewer lines, will be placed in pipes with flexible joint fittings and will not penetrate the existing landfill cover.

4.3 Park Construction

Preliminary park layout and features to be constructed are presented in Figure II-2. After reviewing various park layout options with the City and the community, the layout and features for Phase II will be finalized and final drawings prepared accordingly. Park construction will commence after rough grading, soil importation, compaction, final grading, drainage system construction, and utility installation. In general, construction will consist of preparing the subgrade, placing the asphalt parking lot, and pouring the concrete walking paths, building of any partially enclosed park features (i.e., gazebo, canopy, shade structures, skate plaza, basketball courts, and/or picnic areas), and landscaping. Park construction will be coordinated with realignment of 55th Way. No smoking signs will also be installed. The following subsections provide details on park features/structures, parking, and security.

4.3.1 Park Features and Structures

Any construction of structures on top of the landfill will comply with 27 CCR 21190(c–g). Restroom and storage shed buildings were constructed in accordance with 27 CCR 21190 for Phase I. No additional structures are currently planned for Phase II but if added they will likewise be constructed in accordance with the standard. Additionally, methane sensors are placed inside restroom and storage shed buildings, and periodic methane gas monitoring is performed inside the partially enclosed structures as part of post-closure maintenance and monitoring.

The restroom for Phase I is placed on a concrete slab (6 inches thick) with a sub-slab geomembrane layer with low permeability to landfill gas in accordance with 22 CCR

21190(g)(1). The restroom building has roof ventilation, an open upper-wall with a canopy type roof to maximize ventilation, and an open lower-wall gap between the wall and concrete slab (6 inches minimum) for ventilating the building surface (see photos of Pathway Series 3, 4, and 6 in Appendix I of the Phase I PCLUP). A permeable layer below the concrete slab with perforated piping for passive and/or active venting is not necessary due to the highly ventilated open-air design of the partially enclosed restroom/storage building and the low-permeability layer below the concrete slab. No pilings will be required or installed as part of park construction; therefore, implementation measures concerning installation of pilings outlined in 27 CCR 21190(e)(6–7) do not apply.

The restroom is an "off-the-shelf" design, multi-person restroom. The storage shed is constructed to match the restroom design and is positioned along the east wall of the restroom (Drawing C-4 of the Phase I PCLUP). The conceptual restroom design, layout, and a photograph of the proposed building are provided in Appendix I of the Phase I PCLUP. The structure Pathway Series 3 is fabricated by Super Secure Manufacturing Co.; this structure, is used at various park sites throughout City. Other minor structures that penetrate the landfill cover (12 inches maximum) include a gazebo (no walls), benches on concrete pads, fencing with footings, light footings, picnic benches on concrete pads, and basketball court posts. Each of the minor structures is either be placed directly on the surface or on spread footings to prevent penetrating the new landfill cover greater than 12 inches. Any new footings, concrete slabs, and retaining walls will be designed by a licensed structural engineer after approval of the PCLUP and prior to construction.

4.3.2 Parking Facilities

The parking lot for the Phase II property will be constructed similar to the parking lot for Phase 1 using in general 6- to 10-inches aggregate base covered by a bituminous prime coat and 4 inches of asphalt concrete pavement. Final specifications will be developed for the parking lot before start of construction. Based on the size of the site and access constraints, 95 parking spaces are proposed for the Phase II PCLUP (93 standard spaces and 4 handicap spaces). However, Table 41-1C of Chapter 21.41 of the City Municipal Code (LBMC) will be consulted to verify that the correct number of spaces is provided based on park usage.

Vehicle parking space size will be constructed as per the LBMC. Standard parking space dimensions will meet or exceed the LBMC, with a standard space equaling 9 feet by 20 feet and a handicapped space dimension of 10 feet by 20 feet with an 8-foot access strip between the two handicap parking spaces (therefore, a total of 14 feet in width per handicap space). Each parking space located adjacent to a fence, wall, or landscaped area will be constructed with wheel stops.

4.3.3 Realignment of East 55th Way

Realignment of East 55th Way will be conducted under standard City roadway construction standards and reflected in applicable Drawings and final plans and specifications.

4.3.4 Site Security

Fencing and site access gates for Friendly Village residents will be constructed along the boundaries of the site in accordance with the final project layout. The fence will be periodically inspected to maintain site security. The fence will be inspected for breaks, integrity, holes, corrosion, rust, and damage. The single and double gates at the site entrance and the south gate into the mobile home park will be inspected to ensure that adequate movement is provided and that locks are intact. Any necessary repairs including replacement of illegible signs will be documented in monitoring reports.

4.4 Revegetation Plan

The conceptual Planting Plan and Planting List for Phase II will be similar to Phase I and will be provided in final drawings as appropriate. Additional description of the revegetation plan is provided in Section 4.4 of the Phase I PCLUP (Earth Tech March 17, 2004) and incorporated herein by reference.

4.5 Irrigation System

The City is currently evaluating options for a geosynthetic based turf system to avoid the need for irrigation other than a minimal amount needed for heat control. If an irrigated turf system equivalent to Phase I is incorporated, the design of the irrigation system will be based on the water balance model for Phase I to regulate the timing and duration of all watering cycles, including natural rainfall. The controlled irrigation system, if incorporated will be equivalent to Phase I PCLUP and is presented as Drawing L-2 and C-3 of the Phase I PCLUP. Additional description of the irrigation plan is provided in Section 4.4 of the Phase I PCLUP (Earth Tech March 17, 2004) and incorporated herein by reference.

4.5.1 Irrigation System Design Elements

The proposed components of the CalSense irrigation control system for Phase II (if applicable) are equivalent to Phase I and described in Section 4.4 of the Phase I PCLUP (Earth Tech March 17, 2004) incorporated herein by reference. Specifications are included in PCLUP Appendix J.

SECTION 5.0

LANDFILL GAS

5.0 LANDFILL GAS

Figure 5A of the Phase I PCLUP (Earth Tech March 17, 2004) incorporated herein by reference, illustrates methane isoconcentrations in soil gas at 10 feet bgs from a soil gas survey in January 2002. Based on the soil gas survey, three passive landfill gas vents/extraction wells were installed for the Phase I PCLUP (Figures II-4 and II-6). The extraction wells were screened beneath the final cover through waste. Two vents/extraction wells are located in the eastern portion of the property, and one near the western boundary with Phase II located where the highest known levels of landfill gases have been found. Landfill gases (including methane) will migrate to the surface, vent, and be released at the top of a 15-foot-high post. The design of the Phase I passive vent is included in Figure II-7. Based on the existing landfill gas concentrations, age of the landfill, the air dispersion model results, and HHRA, an active landfill gas collection and treatment system was determined not necessary for Phase I.

The proposed Phase II design will provide additional landfill gas monitoring and collection components which can accommodate a low flow blower and Granular Active Carbon (GAC) treatment system. Phase I passive landfill gas vents were capped in response to a Notice to Comply (NTC) issued by the SCAQMD on November 11, 2011. There are concerns that landfill gas may be accumulating under the Phase I cap since the vents were capped. Additional discussions with SCAQMD are being undertaken for measures to allow for the vents to be reopened. A temporary portable extraction and carbon treatment system may be utilized to evaluate and establish equilibrium landfill gas conditions for the vents. Additional measures may include a GAC canister system for continued passive venting which can be modified to add in a low flow blower if required by SCAQMD based on 1150.1 monitoring. Additional discussion of landfill gas monitoring and control is provided in Section 4.0.

5.1 Subsurface Monitoring Probes

Figure II-4 provides the locations of existing and proposed new Phase II landfill gas monitoring probes. Appendix II-C includes additional information on landfill gas monitoring probes. The Phase II PCLUP proposes to install three dual completion landfill gas monitoring probes (GW-12, GW-13, and GW-14) along the north and west boundary of Phase II. These probes will supplement perimeter boundary compliance dual completion probes GW-4, GW-5, and GW-6 (note: all other probes are within waste and monitored not as compliance probes but to assess landfill gas control conditions). An additional dual completion well may be constructed (and abandonment of the existing probe) to replace GW-3 (northwest corner Phase I) if verified to be no longer functional. Existing probes constructed by CalRecycle on the Friendly Village Mobile Home Park (from southwest corner of Phase II- LFG-3, LFG-2 and LFG-18) provide monitoring points along the property boundary. Landfill gas monitoring probes will be constructed in accordance with 27 CCR 20925. Well permits will be obtained from the City prior to installation.

Existing probes are summarized as follows and sample results are summarized on Tables 1 and 2 of the Phase I PCLUP (Earth Tech March 17, 2004) incorporated herein by reference. The City installed five landfill gas monitoring probes (GW-7 through GW-11) in accordance with the Phase I PCLUP (Earth Tech October 21, 2004). These monitoring probes supplement six additional dual cluster probes (GW-1 through GW-6) installed in May and June 2003. Landfill gas was analyzed by field instruments and samples taken were analyzed for VOCs, TVPH, and fixed gases. Methane concentrations for GW-1 through GW-6 from sampling in 2002-2003 were previously reported in Table 1 of the Phase I PCLUP (Earth Tech October 21, 2004). Results were less than the 5% LEL except for GW-1 (probe within refuse boundary; 12-20%) and GW-4 (probe 5-10 feet at 5.0%). The highest concentrations of VOCs were detected in the sample collected from landfill gas monitoring probe GW-2 located at the northern boundary of the site. BTEX concentrations were detected at each of the five landfill gas boundary monitoring probes except GW-3.

5.2 SCAQMD Requirements

Under SCAQMD Rule 1150.1 *"Control of Gaseous Emissions from Municipal Solid Waste Landfills,"* each active and inactive landfill is required to install, operate, and maintain emission control systems in order to reduce methane and non-methane non-ethane organic compounds (NMEOCs) to prevent public nuisance and possible detriment to public health caused by exposure to these emissions.

Methane is controlled primarily as a surrogate (for NMEOC and VOC emissions which may be ozone precursors or toxic air contaminants). Older inactive landfills commonly do not require emission control systems because the age and amount of waste are such that landfill gas is not significantly generated. However, these landfills are subject to control of surface emissions based on methane concentration (as Total Organic Carbon (TOC) based on Rule 1150.1 detection equipment). Mitigation is typically addressed by adding and compacting soil to close cracks and interfaces.

Recently Rule 1150.1 emission standard was reduced from 500 ppmbv to 200 ppmbv. The reduction was based on ARB's Landfill Methane Rule (LMR) to control greenhouse gas emissions. However, note that while Rule 1150.1 now applies the 200 ppmbv standard, ARB's LMR would not apply to the 55th Way Landfill because the site ceased accepting waste prior to the effective date, has less than 450,000 tons waste in place, and has a heat capacity index lower than ARB's threshold. Furthermore, based on data from investigations conducted at the site and the results of the HHRA, exemption from Rule 1150.1 control requirements is also appropriate based on NMEOCs, VOCs, and toxic air contaminants.

However, recent discussions with SCAQMD indicate that the 200 ppmbv compliance standard applies to vents from landfills without emissions control systems. With an emission control system such as GAC, regardless if used in a passive or active system, will require an authority to construct permit from SCAQMD. Therefore, as part of the Phase II PCLUP, a permit application will be submitted if after a temporary extraction and GAC treatment investigation is conducted and the 200 ppmbv standard cannot be achieved. The permit application if required by SCAQMD pursuant to Rule 1150.1, will include flexibility for addition of a low flow blower (see Figure II-6 and II-7).

5.3 Landfill Gas Dispersion Model from Passive Vent

The Phase I PCLUP included landfill emissions and dispersion models and human health risk assessment (HHRA) to demonstrate passive venting of landfill gas would not exceed thresholds for protection of human health and the environment. Detailed documentation for the models and risk assessment are provided in Exhibit I and Appendices L and N of the Phase I PCLUP (Earth Tech March 17, 2004) incorporated herein by reference.

Annual NMOC and methane generation were estimated using the EPA Landfill Gas Emissions Model (LandGEM), Version 2.01. The Clean Air Act (CAA) default values for methane generation rate (k) and potential methane generation capacity (L_o) were adopted. The default value for k equals 0.05 per year, and the default value for L_o equals 170 cubic meters per mega-gram (m^3/Mg). A 40 percent methane concentration in the landfill gas was used as a conservative estimate for modeling purposes, which is substantially greater than actual soil gas sampling results.

Following a conservative methodology, ambient air methane concentrations were modeled using Dispersion Factors included in Air Quality Management District (AQMD) risk assessment procedures for Rules 1401 and 212. The model assumes that concentration of a gas decreases as it travels away from the point of release (the passive vent) and spreads out or "disperses". Dispersion factors (X/Q) are numerical estimates of the amount of dispersion that occurs under specific conditions. The amount of dispersion depends on the distance traveled, the height of release and meteorological conditions such as wind speed and atmospheric stability. The dispersion factors give the estimated annual average ground level concentration (micrograms per cubic meter [$\mu g/m^3$]) resulting from a source emitting one ton per year of a compound.

Based on the results of the model using conservative assumptions, a vent stack that releases landfill gas at 15 feet above ground surface will vent concentrations of NMOCs and other VOCs below risk-based levels at the surface based on the HHRA.

SECTION 6.0

POST-CLOSURE MONITORING AND MAINTENANCE PLAN (PCMMP)

6.0 POST-CLOSURE MONITORING AND MAINTENANCE PLAN (PCMMP)

This PCMMP describes activities to be conducted to ensure post-closure performance for both the Phase I and II properties of Davenport Park. This section includes a description of existing environmental monitoring and control systems, and presents proposed maintenance, monitoring and operational procedures to be implemented at the site following construction of the proposed park.

6.1 Purpose and Objectives

The purpose of post closure maintenance and monitoring at the site is to ensure the integrity of the landfill cover, vegetative cover, drainage systems, and site access restriction structures; provide a means for settlement detection; and provide a means of detecting contaminants should they reach groundwater or the atmosphere. This PCMMP is intended to define maintenance and monitoring activities required for the site.

The objective of the final cover inspection and maintenance program is to ensure the integrity of landfill cover vegetation, the final cover, and the drainage system. The objective of the landfill settlement monitoring program is to determine whether settlement that may impact the integrity of landfill control structures is occurring. The objective of the groundwater monitoring and sampling program is to determine groundwater quality parameters and evaluate the performance of systems installed to protect groundwater quality. The objective of the landfill gas monitoring and sampling program is to determine whether landfill gases are accumulating beneath the landfill cover and in the immediate vicinity of the landfill.

6.2 Inspection and Maintenance Program

Five elements of the final cover and storm water management system require periodic inspection and maintenance. These elements are the final cover system, landfill settlement, vegetative cover, the drainage system, and site access restriction structures. Inspection and maintenance frequencies for the different elements are summarized in Table 2 below:

Table 2: Postclosure Inspection and Maintenance Schedule

Element	Quarterly	Annually	Additional Notes
Final Cover System	√		And following significant events*
Settlement		√	And following significant events
Vegetative Cover	√		And following significant events
Drainage System	√		And following significant events
Site Access Restriction Structures	√		And following significant events

Note:
*A significant event is defined as more than 2 inches of rainfall in 24 hours, an earthquake with significant ground shaking, or other events that may affect the site.

In addition to the inspection and maintenance frequencies in Table 2, most elements of the final cover and storm water management system will be inspected following significant events. Significant events include storm events with more than 2 inches of rainfall in 24 hours, earthquakes with significant ground shaking (typically magnitude 3.0 or greater), and other events that may affect the site.

Competent personnel will perform the monitoring and minor maintenance activities. Major maintenance activities will be performed by a qualified contractor.

The following subsections describe the inspection and maintenance program in more detail.

6.2.1 Inspection and Maintenance of Landfill Cover

A GCL based final cover system was constructed for the Phase I property. A geomembrane based cover system is proposed for the Phase II property final cover system. A monitoring and maintenance plan for the GCL final cover system is included in Appendix II-E which will be updated for the Phase II geomembrane based system upon final design plans and specifications.

Inspection and maintenance of the final landfill cover and Phase I retaining wall includes periodic visual inspection of the cover system for cracks, eroded areas, localized depressions, and damage from burrowing animals. If erosion rills have a potential for exposing the underlying waste (more than 6 inches deep) or ponding is observed on the landfill cover surface, then maintenance activities will be performed, including filling cracks and eroded areas with soil and compacting the soil according to the specifications of the vegetative cover layer. The repaired areas of the landfill will then be revegetated in accordance with the planting plan to match its former condition.

The landfill cover will be inspected and maintained as follows:

- The landfill cover will be inspected quarterly as well as following significant events including storm events with more than 2 inches of rainfall in 24 hours, earthquakes with significant ground shaking (typically magnitude 3.0 or greater), and other events that may affect the integrity or performance of the final cover.
- Evidence of significant erosion, settlement, or other deterioration will be recorded.
- Gullies, depressions, or crevices will be filled to grade with replacement material and vegetated in accordance with project specifications.
- The presence of linear crevices and their reappearance in subsequent months will be noted. If significant crevices appear during three consecutive inspections, an investigative and remedial course of action will be taken. Engineers experienced with landfills and slope stability will investigate the cause of slope instability and recommend an appropriate corrective action.
- Detection of landfill gas exceeding SCAQMD requirements may indicate a penetration through the final cover barrier system. If a penetration is identified a case-specific repair plan will be prepared and implemented.
- The presence of minor cracks in soil, pavement, or hard scape interfaces resulting in exceedance of the SCAQMD Rule 1150.1 surface emissions standard (200 ppmbv) will be repaired by addition of compacted soil or filling cracks by elastomeric filler.

6.2.2 Landfill Settlement Inspection and Maintenance

Settlement or subsidence of the refuse and the fill materials, resulting from refuse decomposition and/or static and dynamic loading, can damage the components of the final cover. Settlement can cause cracks, differential displacement, or zones of depression visible on the soil cover. The landfill cover will be periodically inspected for signs of settlement. However, due to the age of the landfill (more than 50 years since closure) and limited structures and infrastructure proposed for the site, future landfill settlement should be relatively insignificant (less than 3 percent).

Groundwater monitoring wells, active piezometers, and landfill gas monitoring probes located near the landfill (Figures II- 4 and II-5) will be used as survey monuments to provide control and tracking of potential differential settlement at the site. Each groundwater well, piezometer, and landfill gas monitoring probe has been surveyed by a licensed land surveyor to document northing, easting, and elevations above mean sea level and tied into the bench-mark located at the centerline of Paramount Boulevard. Survey monuments (wells and monitoring probes) will be inspected routinely during monitoring to verify their condition.

The procedure for inspection and tracking potential differential settlement include:

- Inspect each settlement monument for damage;
    - Report any change in the position or elevation of a settlement monument. Accuracy for horizontal and vertical measurements should be ±0.01 foot;
    - Repair damage immediately and resurvey the monument;
    - Fill in settlement cracks and depressions with soil compacted in accordance with project specifications;

6.2.3 Inspection and Maintenance of Vegetative Cover

The City Department of Parks, Recreation and Marine will perform maintenance of the vegetation at the landfill. A botanist, agronomist, or other qualified professional will recommend the frequency and schedule for watering the vegetative growth based on limitations outlined by the UNSAT-H results (approximately 42 inches per year of irrigation). Slopes and eroded areas will be monitored and areas of dead or dying vegetation will be visually identified. The cause of the die-off will be determined and mitigated, and the areas of dead vegetation will be reseeded or replanted in accordance with the planting plan. If the planting plan is modified, the modifications must conform to evapotranspiration landfill cover construction specifications and requirements and be noted in the monitoring report.

The vegetative cover on the landfill is designed to reduce erosion caused by wind or water. When fully established, the vegetative cover will require little maintenance. Maintenance of the vegetative cover will be performed in accordance with project specifications.

The vegetative cover will be inspected and maintained as follows:

- The vegetative cover will be inspected for overall health and coverage. Signs of stressed vegetation, dead vegetation, and bare spots will be visually identified.

- The cause of vegetation die-off will be determined and mitigated to the greatest extent possible.
- Areas of dead vegetation will be reseeded in accordance with project specifications. Maintenance of reseeded areas will include periodic watering, spot weeding, application of fertilizer (if needed), and protection of the affected area from traffic/use until vegetation is established.
- Noxious weeds and trees and shrubs with deep roots that may damage the final cover will not be planted and if growing naturally will be removed.

A geosynthetic turf system may be incorporated in Phase II. Inspection and maintenance of the turf system, if constructed, will be in accordance with manufacturer specifications and incorporated as appropriate in an amendment to the Phase II PCLUP.

6.2.4 Inspection and Maintenance of Drainage System

The drainage system will consist of concrete v-ditches, underground storm drain structures, and surface grading features to collect runoff from the landfill cover. The site will be graded to direct runoff from the landfill cover to the drainage structures. Drainage structures include catch basins, underground pipe, and a storm water interceptor equipped with a gravity separation system for removal of oil and grease, sediment, debris, and other pollutants.

The drainage system will be inspected and maintained as follows:

- Periodic visual inspection will be conducted of the drainage system, including catch basins, v-ditches, underground pipes, and surface grading features. The system will be inspected for cracks, root intrusion, overtopping, erosion, debris, sediment collection, other obstructions and breaks, and where vegetation is overgrown or other conditions are impairing the function of the drainage features.
- The drainage system will be inspected following significant events, including storms with more than 2 inches of precipitation in 24 hours, earthquakes with significant ground shaking (typically magnitude 3.0 or greater), or other events that may affect the integrity of the drainage features.
- Maintenance activities may include the repair of cracks, breaks, and eroded areas, and the removal of debris, sediments, or other obstructions.

6.2.5 Inspection and Maintenance of Site Access Restriction Structures

A minimum 6-foot-high concrete block and decorative metal fence is installed along the boundaries of the Phase I property (see Drawing C-8 Phase I PCLUP). Additional fencing will be installed for Phase II. Fences will be periodically inspected to maintain site security. The fence will be inspected for breaks, integrity, holes, corrosion, rust, and damage. The single and double gates at the site entrances and the south gate into the mobile home park will be inspected to ensure that adequate movement is provided and that locks are intact. Any necessary repairs including replacement of illegible signs will be documented in monitoring reports.

6.3 Landfill Gas Monitoring and Control

Detailed description of the landfill gas monitoring and control requirements under 27 CCR Sections 20917-20945 are provided in Sections 6.33 of the Phase I PCLUP (Earth Tech March 17, 2004) and incorporated herein by reference. Additionally, Section 5.2 above provides additional description of current SCAQMD Rule 1150.1 requirements, which include a recent change of the methane surface emission standard from 500 ppmbv to 200 ppmbv.

If methane or trace gases exceed threshold levels, short term measures will be implemented to protect public health and safety and the environment. These measures include, but are not limited to, additional soil cover and compaction (exceedances at surface cracks or interfaces) and investigation and repair of final cover if penetrations are the cause. Additionally, interim measures may include extraction of landfill gases using a blower and off-gas treatment system (i.e., GAC, thermal oxidation or other appropriate means that meet SCAQMD requirements). Furthermore, in the unlikely event of imminent threats from landfill gas, the park may close and not be reopened until concentrations are below regulatory levels.

The gas collection system for Phase I includes three passive vents/extraction wells (Figure 6) of the Phase I PCLUP Earth Tech 2004 herein incorporated by reference). Additional gas collection system components for Phase II are provided in Figures II-6 and II-7.

6.3.1 Landfill Gas Monitoring Procedures

Landfill gas monitoring for methane, oxygen, and hydrogen sulfide is routinely conducted using field instruments during quarterly inspections by the LEA. Landfill gas monitoring including field and laboratory analyses and trace gases will be conducted by the City on a case-by-case basis as required by the LEA or SCAQMD.

Detailed description of the landfill gas monitoring procedures and sample collection for laboratory analysis are provided in Sections 6.34 and 6.35 of the Phase I PCLUP (Earth Tech March 17, 2004) and incorporated herein by reference.

6.4 Groundwater Monitoring

The City implements an ongoing Solid Waste Assessment Test (SWAT) groundwater monitoring program for the 55th Way Landfill pursuant to LARWQCB Waste Discharge Requirements Order R4-2004-0157 issued October 12, 2004 and General Monitoring and Reporting Program Order No. CI-8372.

More detailed description of the groundwater monitoring program is provided in Sections 5.4.1 through 5.45 and of the Phase I PCLUP (Earth Tech March 17, 2004) and incorporated herein by reference.

SECTION 7.0

HEALTH AND SAFETY

7.0 HEALTH AND SAFETY

A Health and Safety Plan (HASP) will be prepared by the City contractor(s) prior to starting construction and post-closure monitoring and maintenance activities. Contractors responsible for performing construction and monitoring/maintenance tasks are responsible for preparing their own site-specific HASP and implementing appropriate health and safety programs and procedures.

7.1 Applicability

The HASP should address all applicable elements as presented in Title 8 of the CCR §5192 (b)(4). Applicable elements include those items that are identified as part of the scope of work as potential workplace hazards that may be encountered during the performance of planned work activities.

7.2 References

The Health and Safety Plan is subject to requirements specified in applicable U.S. Department of Labor OSHA and USEPA regulations. The HASP should follow the guidelines established by the regulatory agencies in the following documents:

- *Safety and Health Requirements Manual*, EM-385-1-1, U.S. Army Corps of Engineers
- *Title 8 of the California Code of Regulations*, Chapter 4, Subchapter 4, Construction Safety Orders
- *Title 8 of the California Code of Regulations*, Chapter 4, Subchapter 7, General Industry Safety Orders
- *Standard Operating Safety Guides*, USEPA, June 1992

The following document provides technical information to aid in the protection from chemical substances:

- *Threshold Limits Values and Biological Exposure Indices for 2002*, American Conference of Governmental Industrial Hygienists (ACGIH).

SECTION 8.0

IMPLEMENTATION SCHEDULE

8.0 IMPLEMENTATION SCHEDULE

A preliminary project schedule for the Phase II PCLUP is included in Table 1. The schedule incorporates the City's community involvement and CEQA processes and will be updated as the processes move forward.

SECTION 9.0

EMERGENCY RESPONSE PLAN

9.0 EMERGENCY RESPONSE PLAN

The Emergency Response Plan addresses occurrences at the site that may exceed the design of the site and endanger public health or the environment. The Emergency Response Plan is described in Section 8.0 of the Phase I PCLUP (Earth Tech March 17, 2004) and incorporated herein by reference.

9.1 Response Actions – Medical Emergencies

Emergency Response actions for medical emergencies are described in Section 8.1 of the Phase I PCLUP (Earth Tech March 17, 2004) and incorporated herein by reference.

The local fire department, hospitals, ambulance/paramedic service, and other emergency services may be contacted by calling 911. A public telephone with "emergency – call 911" signs should be included at the site.

9.2 Response Actions – Spill or Release

Emergency Response actions for hazardous materials release to water, soil, or air are described in Section 8.2 of the Phase I PCLUP (Earth Tech March 17, 2004) and incorporated herein by reference.

In case of a hazardous materials release at the site, the City Fire Department or Hazardous Materials Team will be notified. Emergency services may be contacted by calling 911 or (562) 436-8211 for the City Fire Department Dispatch, and notification should be made to the Hazardous Waste Operations Office at (562) 570-4128.

9.3 Response Actions – Catastrophic Events

Emergency Response actions for catastrophic events such as flood, fire, explosion, or earthquake are described in Section 8.3 of the Phase I PCLUP (Earth Tech March 17, 2004) and incorporated herein by reference.

SECTION 10.0

CLOSURE AND POST-CLOSURE COST ESTIMATES

10.0 CLOSURE AND POST-CLOSURE COST ESTIMATES

Cost estimates and financial assurances for closure, postclosure and corrective action of the Phase I and II 55th Way Landfill are not required under 27 CCR because the landfill ceased receiving waste in 1948, well prior to the effective date of January 1, 1988 (27 CCR 22205(b), 22210(b), and 22220(b)).

SECTION 11.0

REFERENCES

11.0 REFERENCES

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TABLES

TABLE II-1

PRELIMINARY PROJECT SCHEDULE

PRELIMINARY PROJECT SCHEDULE
PHASE II DAVENPORT PARK EXPANSION (55TH WAY FRONTAGE PROPERTY)

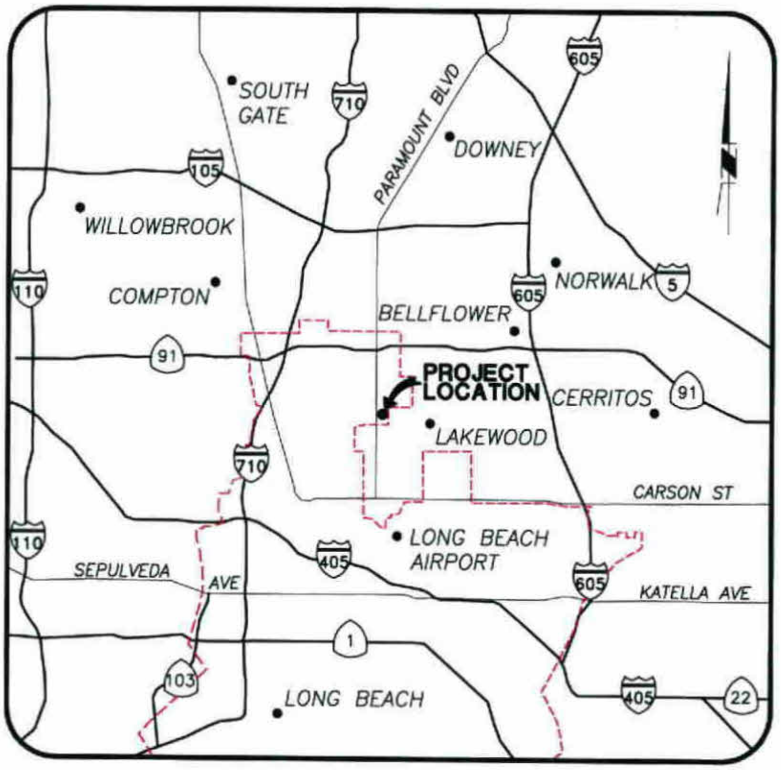
Task Name	Duration	Start	Finish
Notice to Proceed 12/1/13	1 day	12/1/13	12/1/13
Task 1.0 - Data Compilation and Review/Site Review	**188 days**	**10/14/13**	**7/1/14**
Received First Batch of Data 10/14/13 through 11/7/13	19 days	10/14/13	11/7/13
Began Review of Data	130 days	11/1/13	4/30/14
Internal meeting on Approach and Available Background Information	1 day	5/1/14	5/1/14
Second Batch of Data 5/7/14 through 6/3/14	20 days	5/7/14	6/3/14
Review of Data	19 days	6/4/14	6/30/14
Second Internal Meeting on Approach and Available Background Information	1 day	7/1/14	7/1/14
Review/Research of Agency Databases (CalRecycle and LARWQCB)	135 days	12/2/13	6/6/14
Task 2.0 - Prepare PCLU Plan Amendment	**140 days**	**5/19/14**	**11/28/14**
Begin Preparation of PCLU Plan 5/19/14	1 day	5/19/14	5/19/14
Change to Updated Format 5/26/14 - Draft PCLU Plan	**135 days**	**5/26/14**	**11/28/14**
- SWT Draft PCLU Plan	49 days	5/26/14	7/31/14
- City of Long Beach Review PCLU Plan	21 days	8/1/14	8/29/14
- Agency/Public Review of PCLU Plan	45 days	9/1/14	10/31/14
- SWT Finalize PCLU Plan	20 days	11/3/14	11/28/14
Kick-off Meeting with City of Long Beach 6/12/14	1 day	6/12/14	6/12/14
Task 3.0 - Analysis and Recommendations Report for SCAQMD	**78 days**	**6/13/14**	**9/30/14**
Review of Landfill Characterization Data	78 days	6/13/14	9/30/14
Agency Meeting/Discussion (as determined by Agency)	1 day	8/15/14	8/15/14
Task 4.0 - Prepare Permit Application Submittal	**174 days**	**10/1/14**	**6/1/15**
SWT Prepare Permit Application Submittal	23 days	10/1/14	10/31/14
City of Long Beach Review Permit Application Submittal	20 days	11/3/14	11/28/14
SWT Make Necessary Changes to Permit Application Submittal	23 days	12/1/14	12/31/14
Agency/Public Review of Permit Application Submittal	15 days	1/5/15	1/23/15
SWT Make Necessary Changes to Permit Application Submittal	5 days	1/26/15	1/30/15
City of Long Beach Review Final Permit Application Submittal	80 days	2/9/15	5/29/15
Approval of PCLU Plan	1 day	6/1/15	6/1/15
Task 5.0 - Project Coordination/Meetings/Administration	**144 days**	**6/13/14**	**12/31/14**
Communications with Regulatory Agencies	78 days	6/13/14	9/30/14
Regulatory Agency(ies) Meeting(s) (as needed)	1 day	8/15/14	8/15/14
Review Agency Correspondence on LFG and Groundwater	98 days	8/18/14	12/31/14
City (Parks, Recreation and Marine Dept.) Community Meeting-Suggestions for Park Features	1 day	10/15/14	10/15/14
Landfill Closure Preparation (and Demolition)	**156 days**	**4/13/15**	**11/16/15**
Demolition and Debris Removal Plans (SWT or Selected Contractor)	26 days	4/13/15	5/18/15
Prepare Construction Specifications/Details	46 days	4/13/15	6/15/15
Prepare Bid Package for City of Long Beach	46 days	4/13/15	6/15/15
Procurement	110 days	6/16/15	11/16/15
Earthwork, Grading, and Utilities	163 days	11/17/15	6/30/16
Construction and Redevelopment	139 days	12/21/15	6/30/16

Project: City of Long Beach/Paramount/2014 Sched/Project Sched.mpp
Date: 7/17/14
Black Bar = SWT **Blue Bar** = City of Long Beach Grey Bar = Agency/Public Review

Task | Progress | Milestone ◆ | Summary

FIGURES

FIGURES



VICINITY MAP

SCALE: 1"=4 MI

LOCATION MAP

SCALE: 1"=0.5 MI

SITE ADDRESS:
2910 E. 55TH WAY
LONG BEACH, CA 90805
ASSESSOR'S PARCEL NO.
7157-006-005

------ CITY LIMITS

PREPARED BY:

SWT Civil & Environmental **Engineering**

800-C SOUTH ROCHESTER AVENUE
ONTARIO, CALIFORNIA 91761

DAVENPORT PARK PHASE II

FIGURE II-1

SITE VICINITY AND LOCATION MAP

Z:\PROJECTS\LONG BEACH, CITY\DAVENPORT\ACAD\SHEET SET\FIG01 - SITE VICINITY AND LOCATION MAP

LEGEND:

— — — — PROPERTY BOUNDARY

50 25 0 50 100 150

SCALE: 1"=100'

PREPARED BY:

SWT Civil & Environmental Engineering

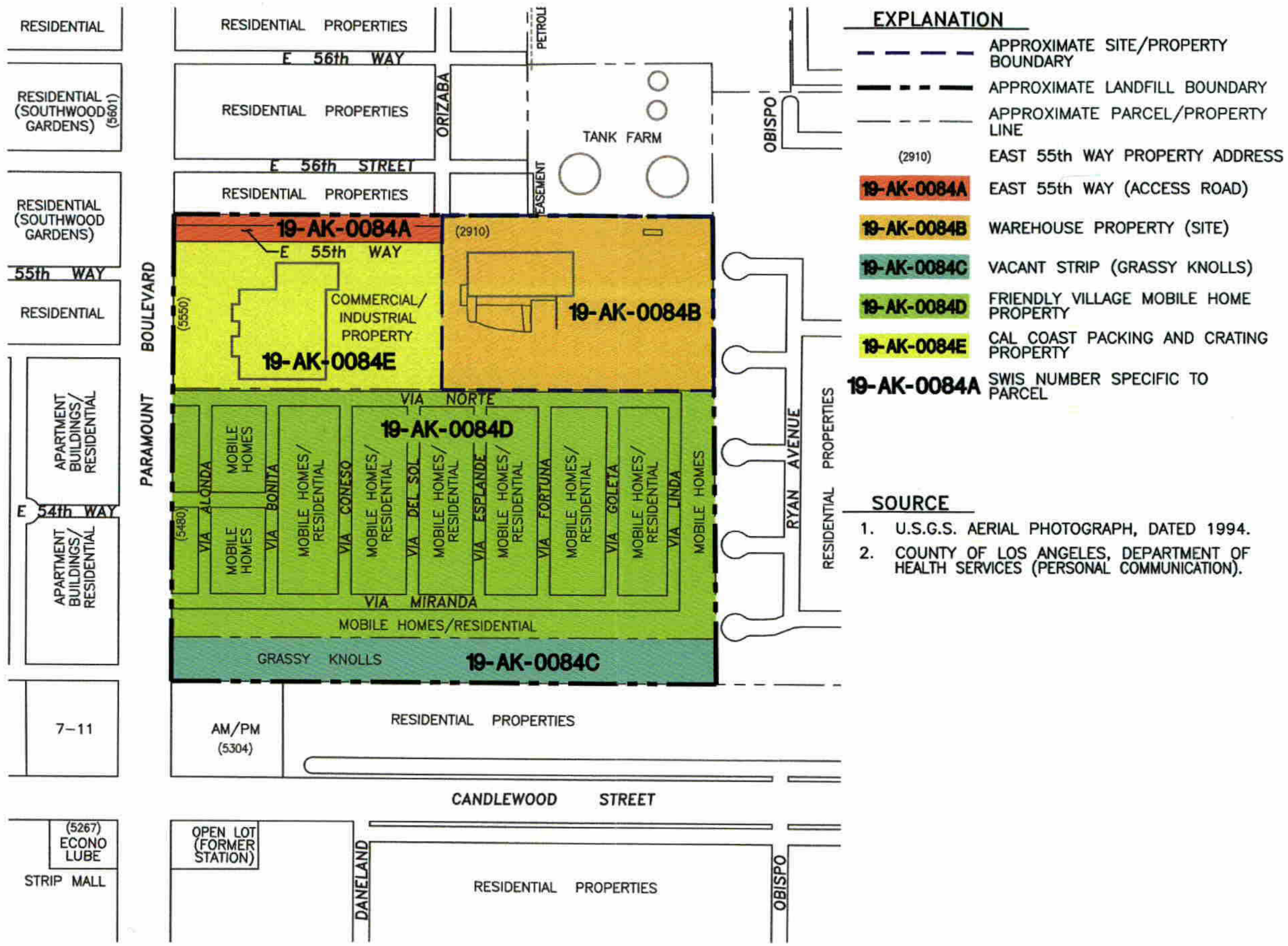
800-C SOUTH ROCHESTER AVENUE
ONTARIO, CALIFORNIA 91761

DAVENPORT PARK PHASE II

FIGURE II-2

PRELIMINARY PHASE II PARK LAYOUT

Z:\PROJECTS\LONG BEACH, CITY\DAVENPORT\ACAD\SHEET SET\FIG02 – PRELIMINARY PHASE II PARK LAYOUT



PREPARED BY:

SWT Civil & Environmental Engineering
800-C SOUTH ROCHESTER AVENUE
ONTARIO, CALIFORNIA 91761

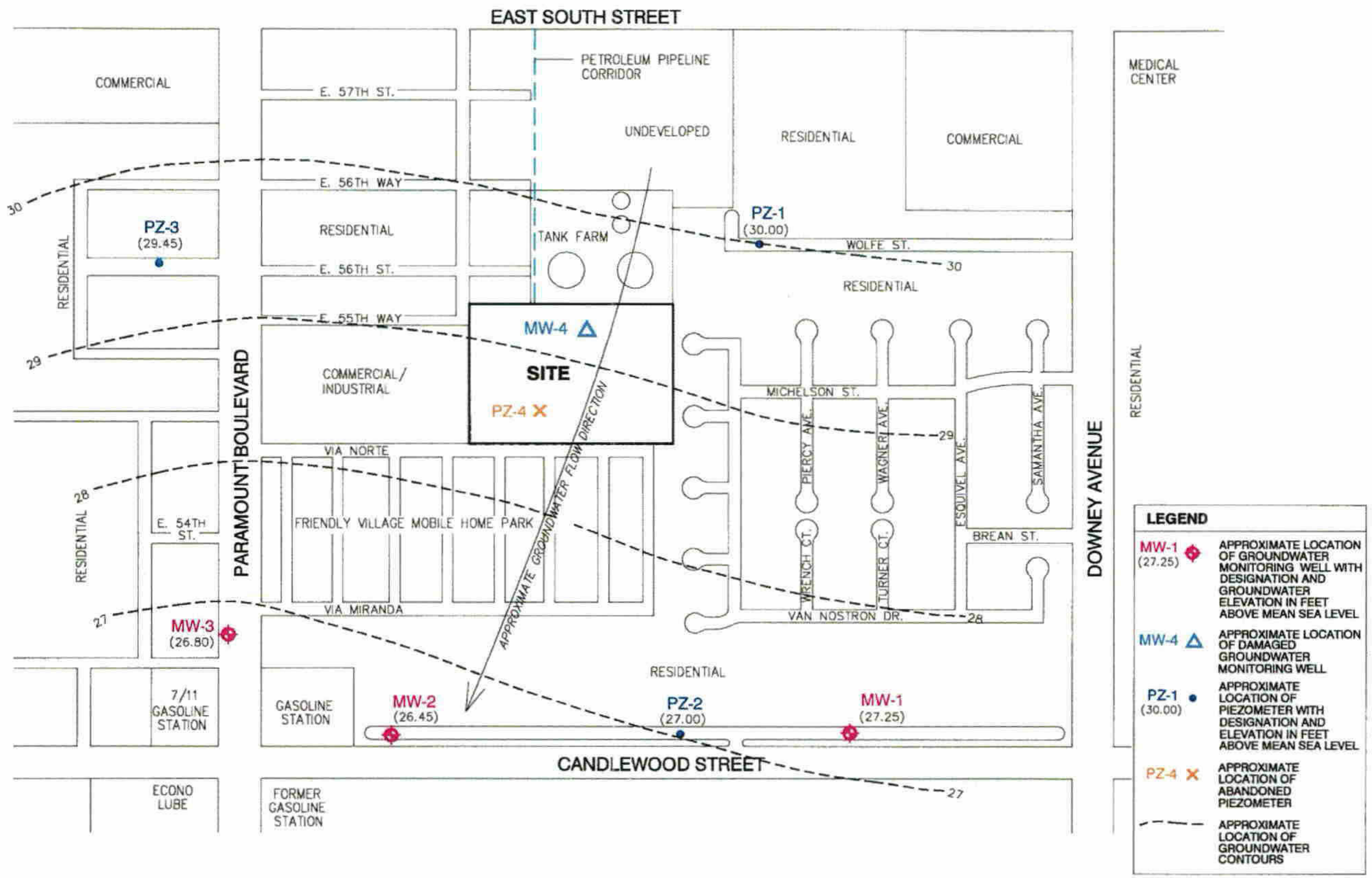
SOURCE: EARTH TECHNOLOGIES

DAVENPORT PARK PHASE II

FIGURE II-3

SWIS PARCEL MAP

Z:\PROJECTS\LONG BEACH, CITY\DAVENPORT\ACAD\SHEET SET\FIG03 – SWIS PARCEL MAP



200 100 0 200 400 600

SCALE: 1"=400'

PREPARED BY:

SWT Civil & Environmental Engineering

800-C SOUTH ROCHESTER AVENUE
ONTARIO, CALIFORNIA 91761

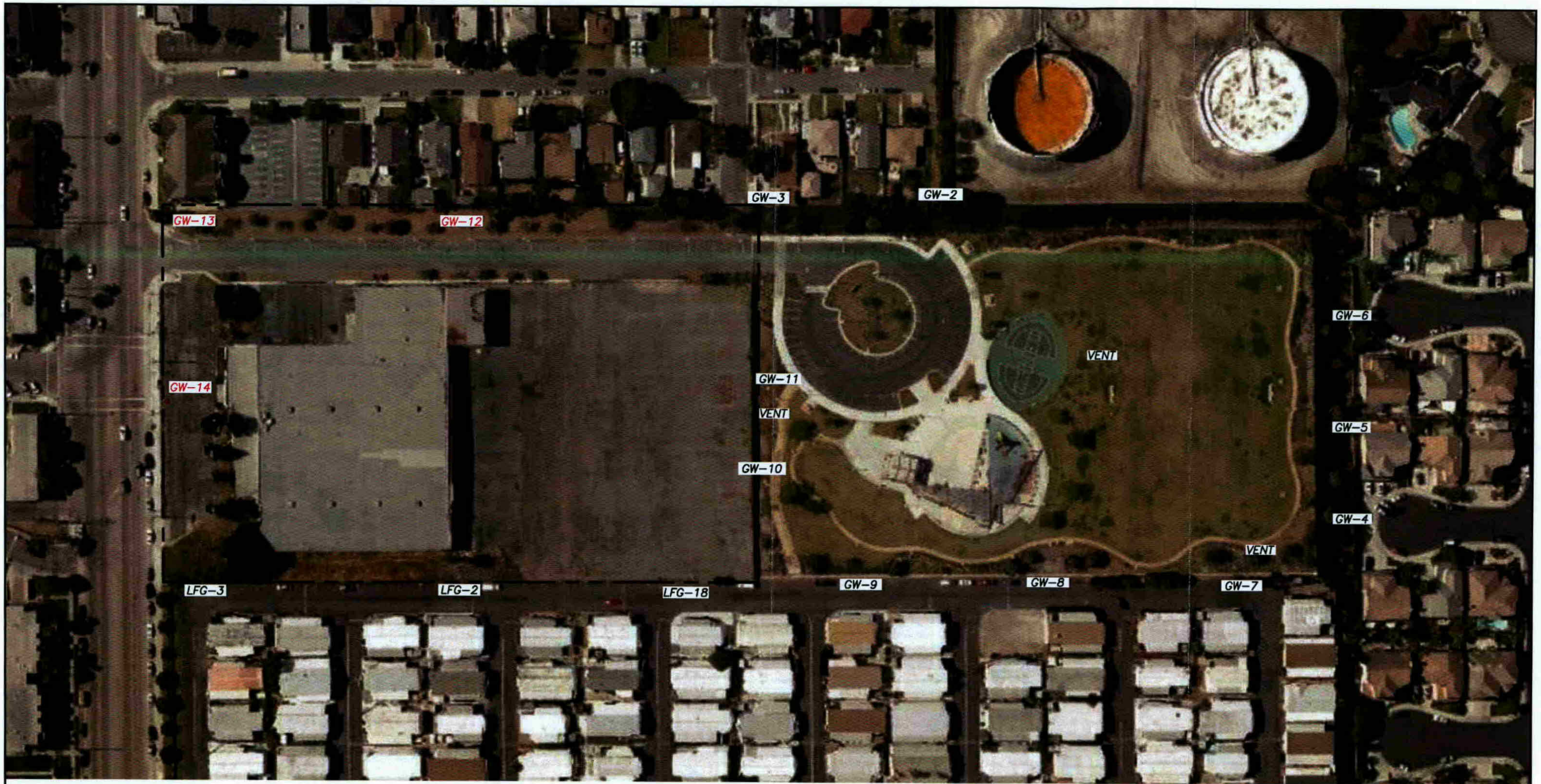
SOURCE: NINYO & MOORE

DAVENPORT PARK PHASE II

FIGURE II-5

GROUNDWATER MONITORING WELL LOCATIONS AND ELEVATION CONTOUR MAP

Z:\PROJECTS\LONG BEACH, CITY\DAVENPORT\ACAD\SHEET SET\FIG05 – GROUNDWATER MONITORING WELL LOCATIONS AND ELEVATION CONTOUR MAP



LEGEND:

— — — —	PROPERTY BOUNDARY
GW-12 ●	PROPOSED LFG MONITORING PROBE
LFG-2/GW-4 ●	EXISTING LFG MONITORING PROBE
VENT ✦	EXISTING LFG VENT/WELL

N

50 25 0 50 100 150

SCALE: 1"=100'

PREPARED BY:

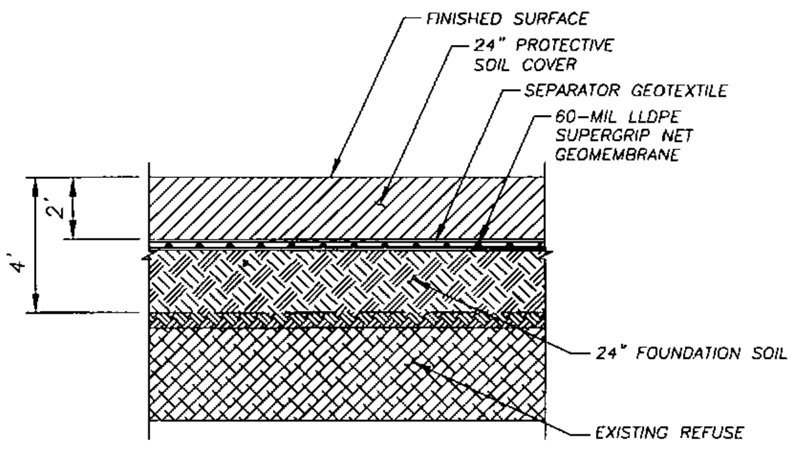
SWT Civil & Environmental Engineering

800-C SOUTH ROCHESTER AVENUE
ONTARIO, CALIFORNIA 91761

DAVENPORT PARK PHASE II

FIGURE II-4
EXISTING AND PROPOSED SUBSURFACE BOUNDARY MONITORING PROBE LOCATIONS

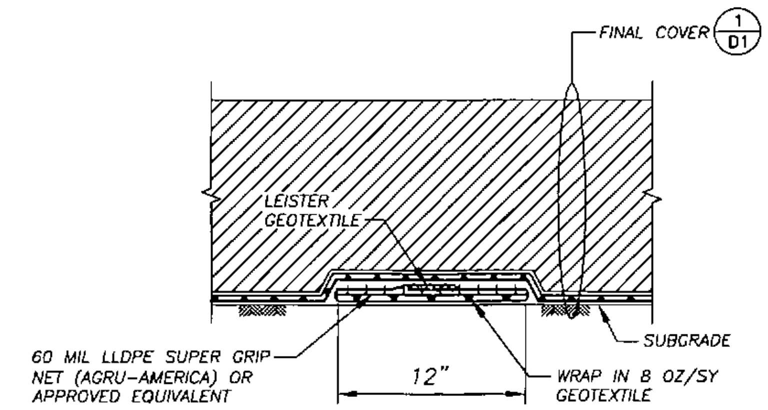
Z:\PROJECTS\LONG BEACH, CITY\DAVENPORT\ACAD\SHEET SET\FIG04 – EXISTING AND PROPOSED SUBSURFACE BOUNDARY MONITORING PROBE LOCATIONS



FINAL COVER SECTION

NTS

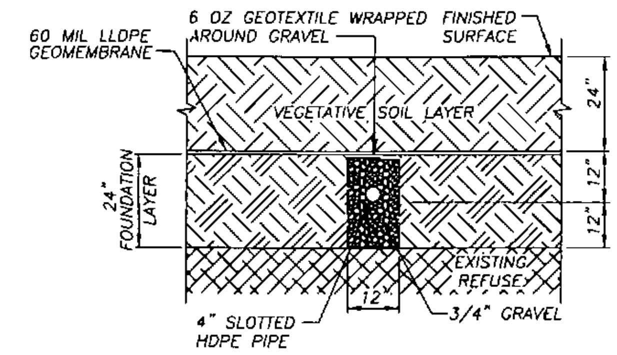
1 / D1



LFG HORIZONTAL COLLECTOR PIPE CROSS SECTION

NTS

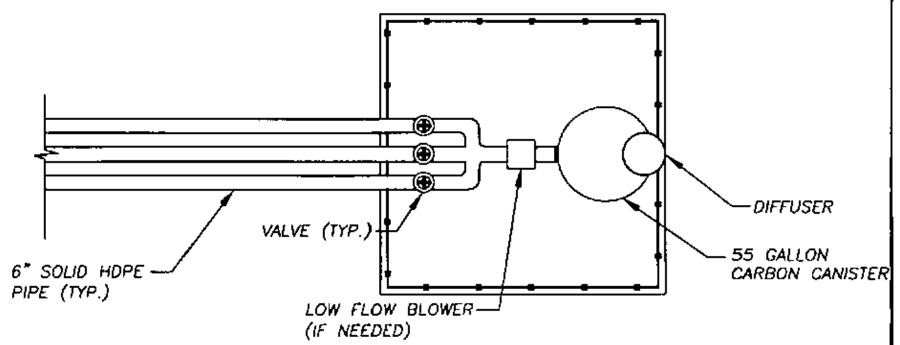
2 / D1



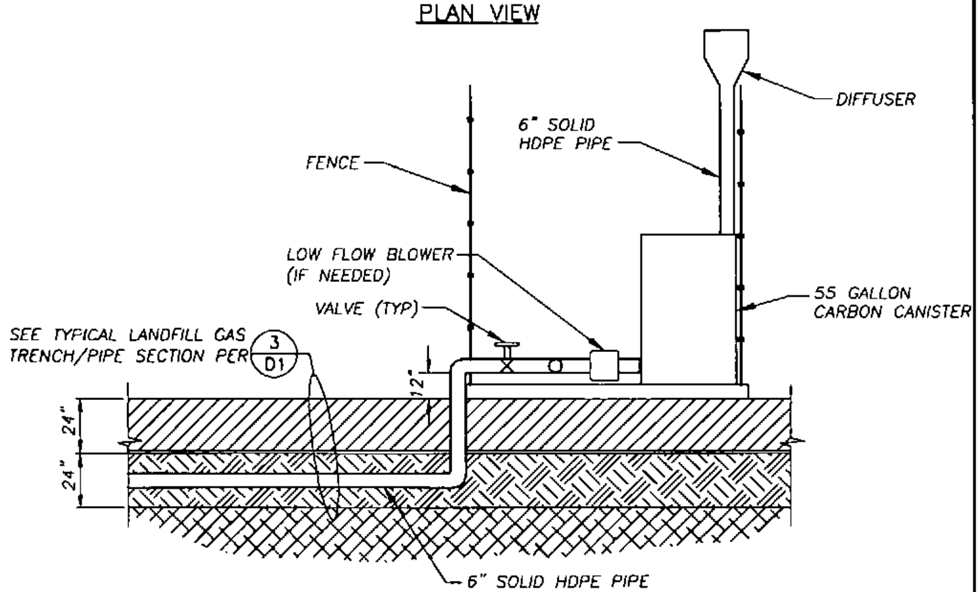
TYPICAL LANDFILL GAS PASSIVE TRENCH/PIPE SECTION

NTS

3 / D1



PLAN VIEW

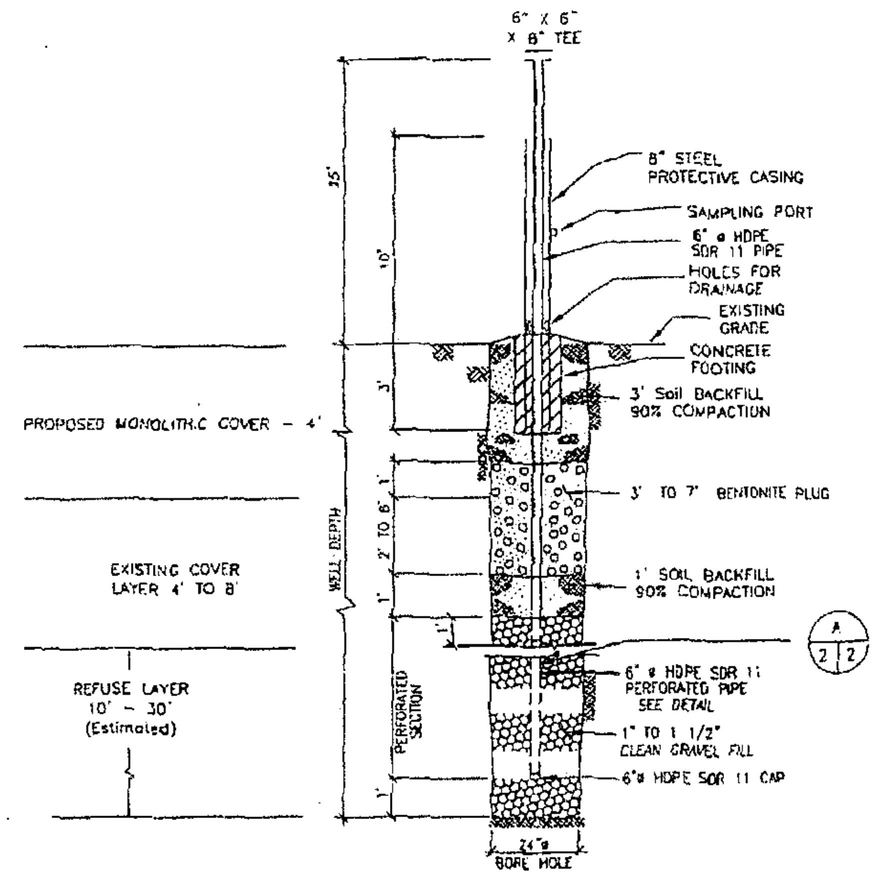


PROFILE VIEW

LFG COLLECTOR PIPE CROSS SECTION

NTS

4 / D1



EXISTING LFG EXTRACTION WELL

NTS

5 / D1

PREPARED BY:

SWT Civil & Environmental Engineering
800-C SOUTH ROCHESTER AVENUE
ONTARIO, CALIFORNIA 91761

DAVENPORT PARK PHASE II

FIGURE II-7

PRELIMINARY DESIGN DETAILS

Z:\PROJECTS\LONG BEACH, CITY\DAVENPORT\ACAD\SHEET SET\FI007 - PRELIMINARY DESIGN DETAILS

LEGEND:

- PROPERTY BOUNDARY
- SOLID HDPE PIPE
- LFG HORIZONTAL COLLECTOR
- LFG COLLECTOR TRENCH/PIPE
- PROPOSED LFG MONITORING PROBE
- EXISTING LFG MONITORING PROBE
- EXISTING LFG VENT/WELL

25 12.5 0 25 50 75

SCALE: 1"=50'

PREPARED BY:

SWT Civil & Environmental Engineering
800-C SOUTH ROCHESTER AVENUE
ONTARIO, CALIFORNIA 91761

DAVENPORT PARK PHASE II

FIGURE II-6
PRELIMINARY DESIGN FOR
GAS COLLECTION SYSTEM

Z:\PROJECTS\LONG BEACH, CITY\DAVENPORT\ACAD\SHEET SET\FIG06 - PRELIMINARY DESIGN FOR GAS COLLECTION SYSTEM

APPENDICES

APPENDICES

A

APPENDIX A
GROUNDWATER MONITORING PROGRAM INFORMATION

GROUNDWATER MONITORING SYSTEM PLAN INCLUDING
CROSS SECTION INDEX AND GRADIENT

GROUNDWATER SYSTEM GEOLOGIC CROSS-SECTION

GROUNDWATER ANNUAL SWAT MONITORING REPORT EXCERPT MARCH 14, 2013

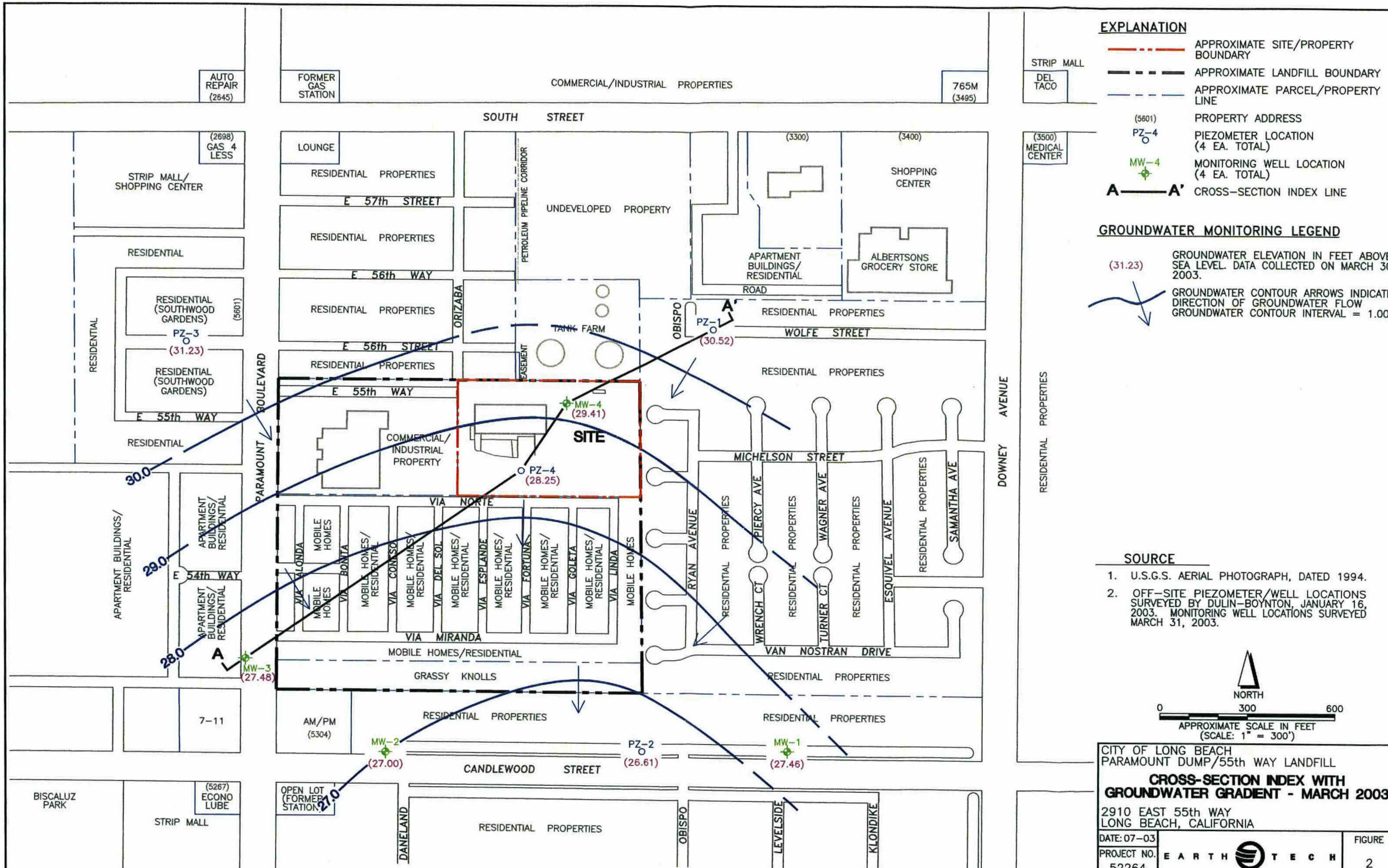
GROUNDWATER SWAT MONITORING REPORT JANUARY 2008

WASTE DISCHARGE REQUIREMENTS (WDRS) PARAMOUNT (55^{TH} WAY) LANDFILL
ORDER R4-2004-0157

MONITORING AND REPORTING PROGRAM (MRP) PARAMOUNT (55^{TH} WAY) LANDFILL
ORDER CI-8372A

STAFF REPORT WDRS AND MRP

GROUNDWATER MONITORING SYSTEM PLAN INCLUDING
CROSS SECTION INDEX AND GRADIENT



CITY OF LONG BEACH
PARAMOUNT DUMP/55th WAY LANDFILL

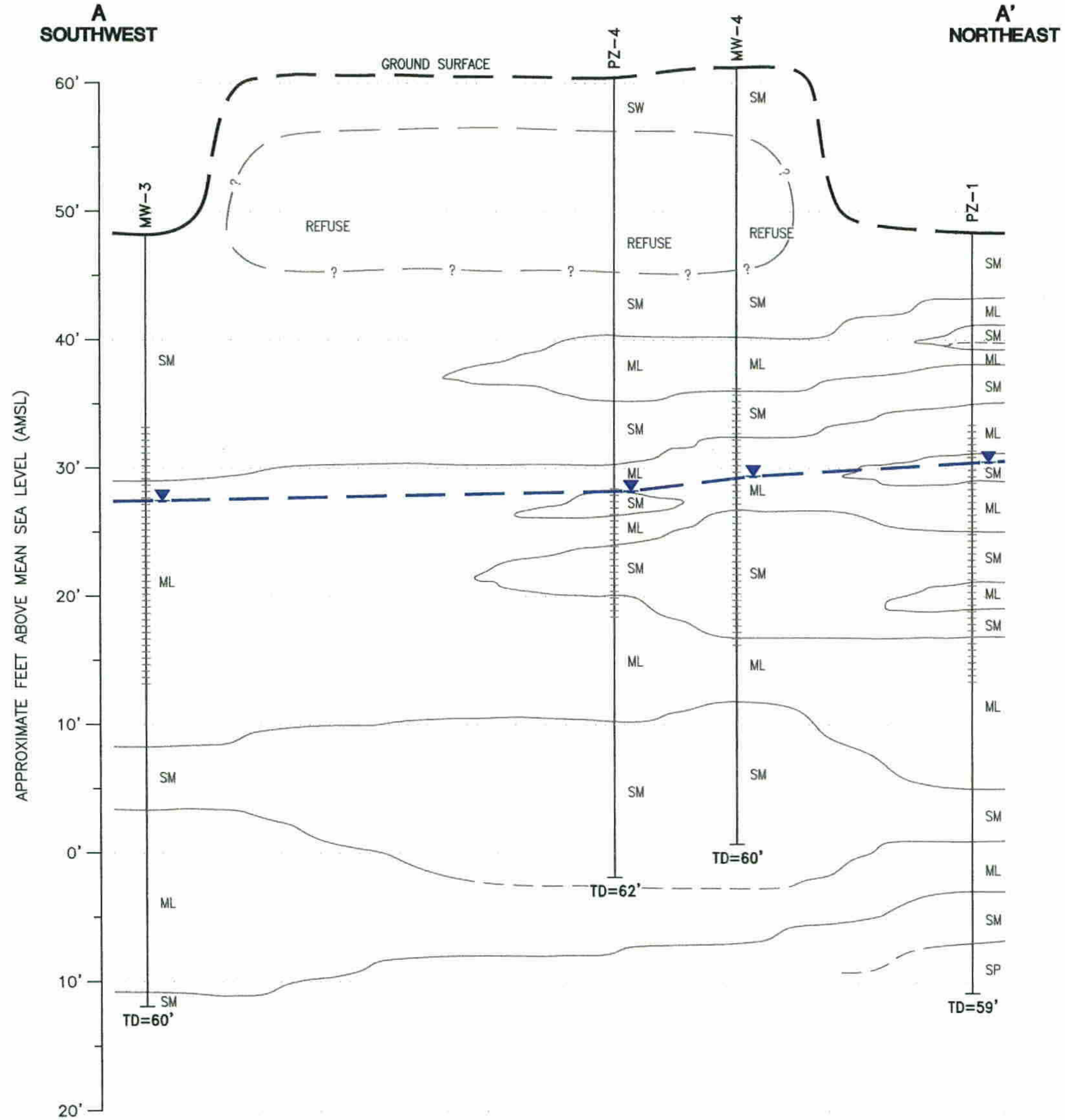
CROSS-SECTION INDEX WITH GROUNDWATER GRADIENT - MARCH 2003

2910 EAST 55th WAY
LONG BEACH, CALIFORNIA

DATE: 07-03
PROJECT NO. 52264
EARTH TECH
FIGURE 2

FILE NAME: 52264GW03-1.0703.DWG (1:1)

GROUNDWATER SYSTEM GEOLOGIC CROSS-SECTION



CROSS-SECTION LEGEND

- BORING/WELL NUMBER
- SURFACE GRADE
- USCS SOIL DESCRIPTION
- LITHOLOGIC BOUNDARY (IF APPLICABLE)
- WELL SCREEN INTERVAL (IF APPLICABLE)
- TOTAL BORING DEPTH
- GROUNDWATER DEPTH OBSERVED DURING DRILLING

USCS LITHOLOGY SYMBOLS

SP	POORLY GRADED SAND
SW	WELL GRADED SAND
SM	SILTY SAND
ML	SILT

APPROXIMATE HORIZONTAL SCALE IN FEET: 1" = 300'
APPROXIMATE VERTICAL SCALE IN FEET: 1" = 10'

CITY OF LONG BEACH
PARAMOUNT DUMP/55th WAY LANDFILL

GEOLOGIC CROSS-SECTION A - A' (VICINITY)

2910 EAST 55th WAY
LONG BEACH, CALIFORNIA

DATE: 07-03
PROJECT NO. 52264
EARTH TECH
FIGURE 4

FILE NAME: 52764CSA.0703.DWG (1:1)

GROUNDWATER ANNUAL SWAT MONITORING REPORT EXCERPT MARCH 14, 2013

CSC TARGHEE, INC.

ENVIRONMENTAL CONSULTING

March 14, 2013

Ms. Sandra J. Gonzales, Manager
City of Long Beach
Planning and Development Bureau
Department of Parks, Recreation and Marine
2760 Studebaker Road
Long Beach, California 90815-1697

Re: Annual Groundwater Solid Waste Assessment Test Report
Former 55th Way Landfill/Paramount Dump
Ed "Pops" Davenport Park
2910 East 55th Way, Long Beach, CA 90805
SWIS No. 19-AK-0084
Compliance File No. CI-8372A
CRWQCB-LA Order No. R4-2004-0157
Reporting Period: April 2012 – March 2013

Dear Ms. Gonzales:

CSC Targhee, Inc. is pleased to provide you with the enclosed report documenting the groundwater monitoring and sampling results from April 2012 through March 2013 for the above-referenced site. Please review the report and have the Department Director sign the Certification. The report can then be forwarded to Mr. Enrique Casas at the California Regional Water Quality Control Board, Los Angeles Region.

If you have any questions or comments, please contact the undersigned at (562) 435-8080.

Sincerely,

Neil McConnell
PG No. 8417

Enclosure

cc: Mr. Enrique Casas
CRWQCB-LA

110 Pine Avenue, Suite 925 • Long Beach, CA 90802-4455 • (562) 435-8080 FAX (562) 590-8795
www.targheeinc.com

CSC TARGHEE, INC.

ENVIRONMENTAL CONSULTING

March 14, 2013

Mr. Enrique Casas
California Regional Water Quality Control Board
Los Angeles Region
320 West 4th Street, Suite 200
Los Angeles, California 90013

Re: Annual Groundwater Solid Waste Assessment Test Report
Former 55th Way Landfill/Paramount Dump
Ed "Pops" Davenport Park
2910 East 55th Way, Long Beach, CA 90805
SWIS No. 19-AK-0084
Compliance File No. CI-8372A
CRWQCB-LA Order No. R4-2004-0157
Reporting Period: April 2012 – March 2013

Dear Mr. Casas:

CSC Targhee, Inc. is pleased to provide you with this annual summary report documenting the Solid Waste Assessment Test ("SWAT") groundwater monitoring at the Former 55th Way Landfill/Paramount Dump located at 2910 East 55th Way, Long Beach, California 90805. The groundwater sampling, laboratory analysis and statistical analysis were conducted in accordance with the Waste Discharge Requirements issued October 12, 2004, to the City of Long Beach by the California Regional Water Quality Control Board, Los Angeles Region ("CRWQCB-LA").

This report summarizes the activities from April 2012 through March 2013 and includes historical data. The results of the laboratory analysis and statistical analysis of the data were reviewed to assess a potential release from the landfill. Sulfates, nitrogen/nitrates, chloride and total dissolved solids ("TDS") show statistically significant differences at the 95 percent confidence level between the upgradient and downgradient groundwater quality and with consideration of the size and limitations of the data set. Analysis of the data for nitrogen/nitrate, sulfate, TDS and TOX reveals that the upgradient monitoring point, PZ-1, has either the highest mean concentration or that one of the two downgradient points (MW-1, MW-2) has the lowest mean concentration. Additionally, the small number of observations (*i.e.*, number of recorded monitoring events) limits the power of the statistical test. Based on these observations, it does not appear that an unregulated release is occurring from the landfill.

If you have any questions or comments, please contact Mr. Neil McConnell at (562) 435-8080.

Sincerely,

Neil McConnell

Neil McConnell
PG No. 8417

Enclosures

Solid Waste Water Quality Assessment Results:

Attachment A – Summary Data
Attachment B – Figures
- Figure 1 Site Location Map
- Figure 2 Site Plot Plan
- Figure 3 Groundwater Elevation Contour Map

Attachment C – Tables and Charts
- Table 1 Summary of Well Construction Information
- Table 2 Sample Matrix
- Table 3 Volatile Organic Compounds in Groundwater
- Table 4 TPH and Oil and Grease in Groundwater
- Table 5 SVOCs in Groundwater
- Table 6 Polychlorinated Biphenyls in Groundwater
- Table 7 Inorganics in Groundwater
- Table 8 Data Used in Parametric ANOVA Test
- Table 9 Groundwater Monitoring Data
- Table 10 Summary of Parametric ANOVA Test Results
- Chart 1 Historical Groundwater Levels
- Chart 2 Detected Concentrations of Chloride
- Chart 3 Detected Concentrations of Nitrogen/Nitrate
- Chart 4 Detected Concentrations of Sulfate
- Chart 5 Detected Concentrations of TDS
- Chart 6 Detected Concentrations of TOC
- Chart 7 Detected Concentrations of TOX
- Chart 8 Detected Concentrations of COD

Attachment D – General Field Procedures
Attachment E – Field Data Sheets
Attachment F – ANOVA Statistical Analysis Data
Attachment G – Laboratory Report with Chain-of-Custody Documentation
Attachment H – Waste Manifest

CERTIFICATION STATEMENT

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that based on my inquiry of those individuals directly responsible for obtaining the information, I believe that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

George Chapjian
Director
Department of Parks, Recreation and Marine

GROUNDWATER SWAT MONITORING REPORT JANUARY 2008

Ninyo & Moore
Geotechnical and Environmental Sciences Consultants

January 29, 2008
Project No. 207069004

Ms. Anna Mendiola
City of Long Beach
Department of Parks, Recreation, and Marine
2760 Studebaker Road
Long Beach, California 90815-1697

Subject: Groundwater Solid Waste Assessment Test Report
Former 55th Way Landfill/Paramount Dump
Ed "Pops" Davenport Park
2910 East 55th Way
Long Beach, California
SWIS No. 19-AK-0084
Compliance File No. CI-8372A
LARWQCB Order No. R4-2004-0157

Dear Ms. Mediola:

Ninyo & Moore is pleased to submit this report documenting the groundwater monitoring and sampling results for the former 55th Way/Paramount Dump, Long Beach, California. Please review the report and have the Department Director sign the Certification. The report can then be forwarded to Mr. Enrique Casas at the Los Angeles Regional Water Quality Control Board.

We appreciate the opportunity to provide service on this project.

Sincerely,
NINYO & MOORE

Denise Alvarez

Denise Alvarez
Project Geologist

PDS/DLA/WRC/emp

Distribution: (4) Addressee

207069004 L Groundwater

January 29, 2008
Project No. 207069004

Mr. Enrique Casas
California Regional Water Quality Control Board
Los Angeles Region
320 West 4th Street, Suite 200
Los Angeles, California 90013

Subject: Groundwater Solid Waste Assessment Test Report
Former 55th Way Landfill/Paramount Dump
Ed "Pops" Davenport Park
2910 East 55th Way
Long Beach, California
SWIS No. 19-AK-0084
Compliance File No. CI-8372A
LARWQCB Order No. R4-2004-0157

Dear Mr. Casas:

Ninyo & Moore is pleased to submit this report documenting the Groundwater Solid Waste Assessment Test (SWAT) at the former Paramount Landfill located at 2910 East 55th Way in Long Beach, California. The groundwater sampling, laboratory analysis, and statistical analysis was conducted in accordance with the Waste Discharge Requirements issued October 12, 2004, to the City of Long Beach by the Los Angeles Regional Water Quality Control Board (LARWQCB).

Results of laboratory analysis and statistical analysis of the data were reviewed to determine whether a release from the landfill has occurred. Sulfates, nitrogen/nitrates, chloride, and total dissolved solids (TDS) show statistically significant differences at he 95 percent confidence level between the upgradient and downgradient groundwater quality parameters measured. However, these results must be reviewed in totality with historical data and with consideration of the size and limitations of the data set. Inspection of the data reveals that the upgradient monitoring point (PZ-1) has either the highest mean concentration or that one of the two downgradient points (MW-1, MW-2) has the lowest mean concentration. Additionally, the small number of observations (i.e., number of recorded monitoring periods) and the inability to collect sufficient groundwater from PZ-1 this period limit the power of the statistical test. Based on these, it does not appear that an unregulated release is occurring from the landfill.

The contents of this report include:

Solid Waste Water Quality Assessment Results:

Attachment A – Summary Data
Attachment B – Figures
Figure 1 – Site Location Map
Figure 2 – Site Plan
Figure 3 – Groundwater Elevation Contour Map – 11/21/2007
Attachment C – Tables and Charts
Table 1 – Summary of Well Construction Information
Table 2 – Sample Matrix
Table 3 – Volatile Organic Compounds in Groundwater
Table 4 – TPH and Oil and Grease in Groundwater
Table 5 – SVOCs in Groundwater
Table 6 – Polychlorinated Biphenyls in Groundwater
Table 7 – Inorganics in Groundwater
Table 8 – Data used in Parametric ANOVA Test
Table 9 – Summary of Parametric ANOVA Test Results
Table 10 – Quarterly Groundwater Monitoring Data
Chart 1 – Historical Groundwater Levels
Chart 2 – Detected Concentrations of Chloride
Chart 3 – Detected Concentrations of Nitrogen/Nitrate
Chart 4 – Detected Concentrations of Sulfate
Chart 5 – Detected Concentrations of TDS
Chart 6 – Detected Concentrations of TOC
Chart 7 – Detected Concentrations of TOX
Chart 8 – Detected Concentrations of COD
Attachment D – General Field Procedures
Attachment E – Field Data Sheets
Attachment F – ANOVA Statistical Analysis Data
Attachment G – Laboratory Report and Chain-of-Custody Documentation
Attachment H – Waste Manifest
Attachment I – Groundwater Solid Waste Assessment Test Summary Report, Semi Annual Monitoring Event, April 2006-September 2006, Earth Tech excerpts 1, 2, and 3

We appreciate the opportunity to provide service on this project.

Sincerely,
NINYO & MOORE

Peter Sims
Staff Environmental Geologist

Denise Alvarez
Project Geologist

Walter R. Crone, P.G. 4350, R.EA.
Principal Environmental Geologist

PROFESSIONAL GEOLOGIST
WALTER R. CRONE
NO. 4350
EXP 09/09
STATE OF CALIFORNIA

PDS/DLA/WRC/jad/emp

Distribution: (4) Addressee

2910 East 55th Way
Long Beach, California

January 29, 2007
Project No. 207069004

CERTIFICATION STATEMENT

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties of submitting false information, including the possibility of fine and imprisonment.

Walter R. Crone, P.G. 4350, R.E.A.
Principal Environmental Geologist

PROFESSIONAL GEOLOGIST
WALTER R. CRONE
NO. 4350
EXP 09/09
STATE OF CALIFORNIA

Phil T. Hester
Director
Department of Parks, Recreation, and Marine
City of Long Beach

ATTACHMENT A

SUMMARY DATA

SUMMARY DATA

SITE INFORMATION			
Former 55th Way Landfill/Paramount Dump **Ed "Pops" Davenport Park** **2910 East 55th Way** **Long Beach, California**		Lead Agency: Agency Order Number: Project Number:	LARWQCB R4-2004-0157 207069004
OVERVIEW			
Reporting Period: Sampling Consultant:	October-March 2007-2008 Ninyo & Moore	Groundwater wells on site: 1 Groundwater wells off site: 3 Piezometers on site: 1 Piezometers off site: 3	
GEOLOGIC INFORMATION			
Source: GeoTracker Surface to ~30 ft bgs – Silty SAND			
FIELD ACTIVITIES			
Groundwater fluid level measurement date (s):		November 21, 2007	
Groundwater sampling date (s):		November 21, 2007	
Groundwater wells measured:		3 - MW-1, MW-2, MW-3	
Groundwater wells sampled:		2 - MW-1, MW-2; Purge method: Peristaltic Pump	
Piezometers Measured:		3 - PZ-1, PZ-2, PZ-3	
Piezometers Sampled:		1- PZ-1; Purge method: Peristaltic pump	
Total gallons disposed:		Approximately 14.5 gallons	
Treatment/disposal method:		Crosby & Overton disposal facility	

LABORATORY ANALYSIS

Groundwater samples were submitted to a state-certified laboratory for the following analyses:
- Chemical Oxygen Demand, using EPA Method 410.4
- Total Organic Halides, using EPA Method 9020
- Total Organic Carbon, using EPA Method 415.1
- Total Dissolved Solids, using EPA Method 160.1
- Chloride, Sulfate, Nitrate, and Nitrite, using EPA Method 300
- Boron, using EPA Method 6010
- VOCs, using EPA Method 8260B
- Semi-volatiles, using EPA Method 8270C
- Sulfides, using EPA Method 376.2
- PCBs, using EPA Method 8082
- Biological Oxygen Demand, using EPA Method 405.1
- Oil and Grease, using EPA Method 413.2

ADDITIONAL INFORMATION

- Groundwater monitoring and sampling were conducted in accordance with Monitoring and Reporting Program No. CI-8372A.
- See Attachment I for background and setting information.
- Field Activities were performed under the direction of a registered professional.
- Due to lack of recharge in PZ-1, sufficient water was not present to complete all analysis listed above (see Table 7).
- Monitoring well lid was missing on MW-3. Replaced missing lid on November 21, 2007.

SUMMARY DATA

SITE INFORMATION

Former 55th Way Landfill/Paramount Dump **Ed "Pops" Davenport Park** **2910 East 55th Way** **Long Beach, California**	Lead Agency: Agency Order Number: Project Number:	LARWQCB R4-2004-0157 207069004

CONCLUSIONS

- The former landfill does not appear to have adversely impacted groundwater below or in the vicinity of the site.

RECOMMENDATIONS

- Continue semi-annual monitoring and sampling.

NOTES

- Elevations are in feet above mean sea level (datum set by previous sampling contractor).

ABBREVIATIONS

LARWQCB	= Los Angeles Regional Water Quality Control Board	ft	= feet
EPA	= Environmental Protection Agency	bgs	= below ground surface
µg/l	= micrograms per liter	msl	= mean sea level
		gw	= groundwater

LIMITATIONS

The environmental services described in this report have been conducted in general accordance with current regulatory guidelines and Ninyo & Moore's opinions and recommendations regarding environmental conditions, as presented in this report, are based on limited The environmental interpretations and opinions contained in this report are based on the results of laboratory tests and analyses intended to detect the presence and concentration of specific chemical or physical constituents in samples collected from the subject site. The testing and analyses have been conducted by an independent laboratory which is certified by the State of California to conduct such tests. Ninyo & Moore has no involvement in, or control over, such testing and analysis. Ninyo & Moore, therefore, disclaims responsibility for any inaccuracy in such laboratory results.

Our conclusions, recommendations, and opinions are based on an analysis of the observed site conditions. It should be understood that the conditions of a site could change with time as a result of natural processes or the activities of man at the subject site or nearby sites. In addition, changes to the applicable laws, regulations, codes, and standards of practice may occur due to government action or the broadening of knowledge. The findings of this report may, therefore, be invalidated over time, in part or in whole, by changes over which Ninyo & Moore has no control.

This document is intended to be used only in its entirety. No portion of the document, by itself, is designed to completely represent any aspect of the project described herein. Ninyo & Moore should be contacted if the reader requires any additional information, or has questions regarding content, interpretations presented, or completeness of this document.

This report is intended exclusively for use by the client. Any use or reuse of the findings, conclusions, and/or recommendations of this report by parties other than the client is undertaken at said parties' sole risk.

ATTACHMENT B

FIGURES

REFERENCE: 2005 THOMAS GUIDE FOR LOS ANGELES/ORANGE COUNTIES, STREET GUIDE AND DIRECTORY

APPROXIMATE SCALE IN FEET

0 2400 4800

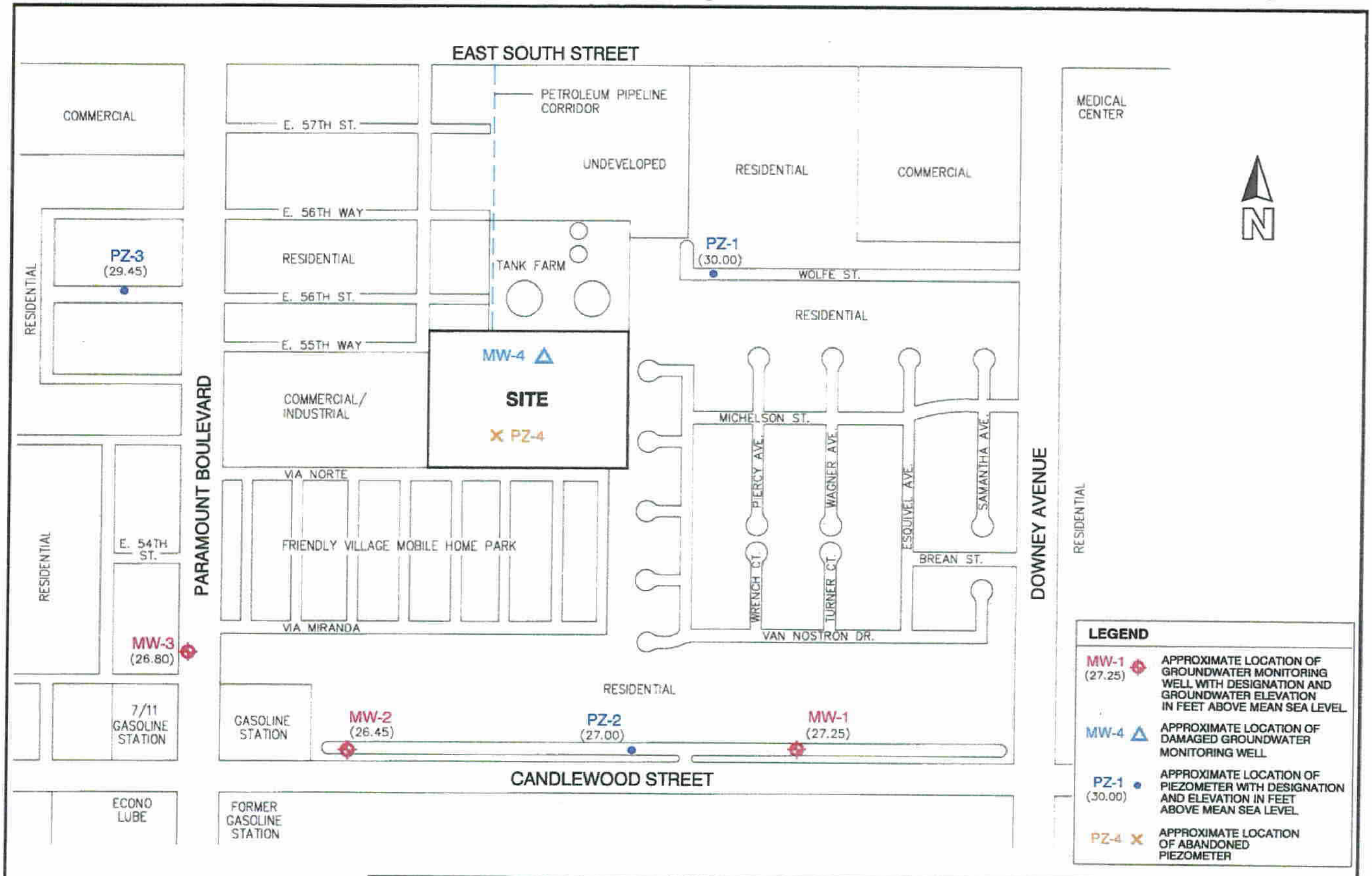
N

NOTE: ALL DIMENSIONS, DIRECTIONS AND LOCATIONS ARE APPROXIMATE

Map © Rand McNally, R.L.07-S-129

207069004-A1.DWG

Ninyo & Moore	SITE LOCATION MAP	FIGURE
PROJECT NO. 207069004 / DATE 1/08	2910 EAST 55TH WAY LONG BEACH, CALIFORNIA	1



LEGEND

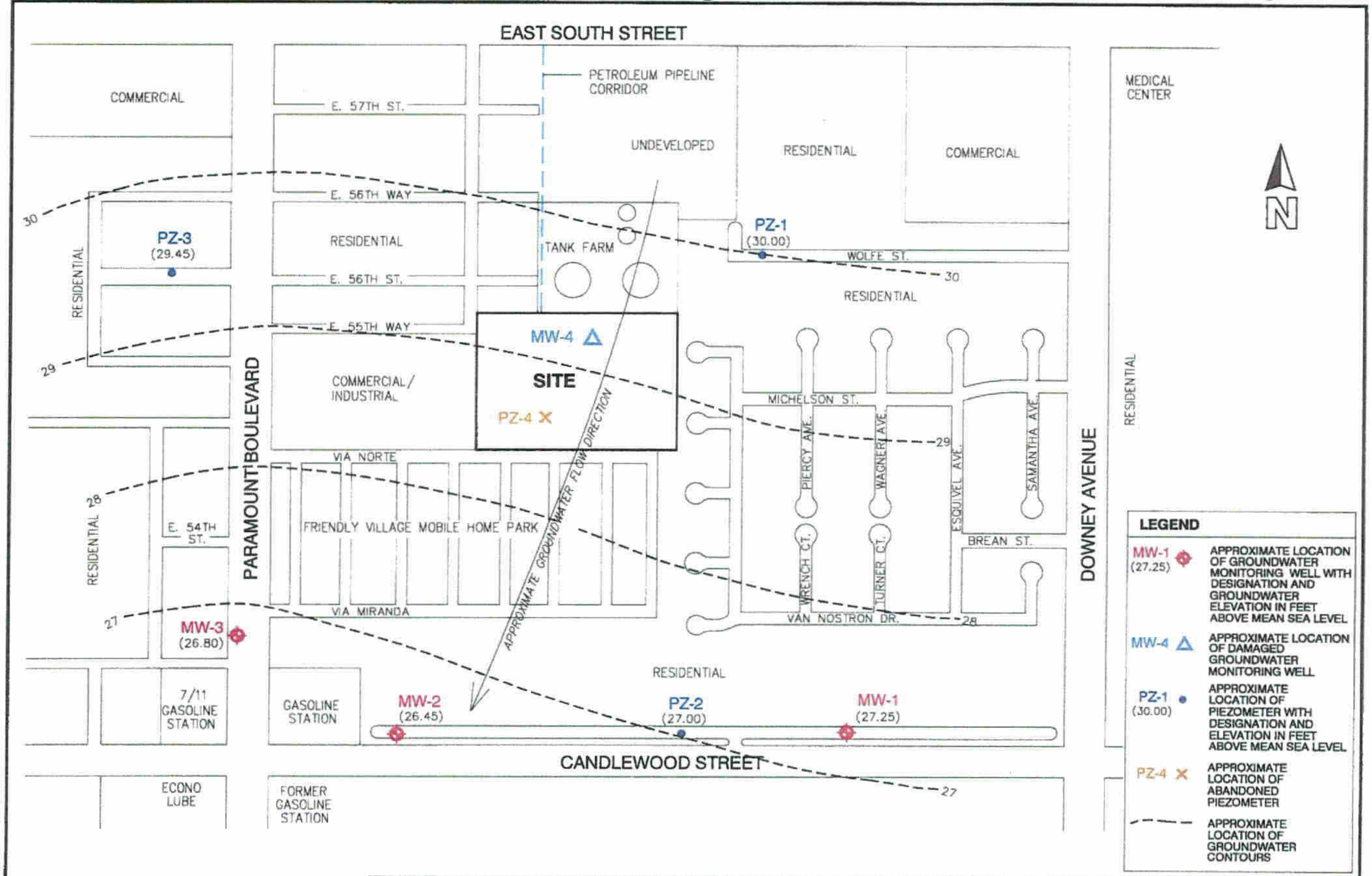
MW-1 (27.25)	APPROXIMATE LOCATION OF GROUNDWATER MONITORING WELL WITH DESIGNATION AND GROUNDWATER ELEVATION IN FEET ABOVE MEAN SEA LEVEL
MW-4	APPROXIMATE LOCATION OF DAMAGED GROUNDWATER MONITORING WELL
PZ-1 (30.00)	APPROXIMATE LOCATION OF PIEZOMETER WITH DESIGNATION AND ELEVATION IN FEET ABOVE MEAN SEA LEVEL
PZ-4	APPROXIMATE LOCATION OF ABANDONED PIEZOMETER

APPROXIMATE SCALE IN FEET

0 400 800

NOTE: ALL DIMENSIONS, DIRECTIONS AND LOCATIONS ARE APPROXIMATE.

Ninyo & Moore		SITE PLAN	FIGURE
PROJECT NO.	DATE	2910 EAST 55TH WAY LONG BEACH, CALIFORNIA	2
207069004	1/08		



APPROXIMATE SCALE IN FEET

0 400 800

NOTE: ALL DIMENSIONS, DIRECTIONS AND LOCATIONS ARE APPROXIMATE.

Ninyo & Moore

PROJECT NO.	DATE
207069004	1/08

GROUNDWATER ELEVATION CONTOUR MAP

2910 EAST 55TH WAY
LONG BEACH, CALIFORNIA

FIGURE

3

ATTACHMENT C

TABLES AND CHARTS

TABLE 1 – SUMMARY OF WELL CONSTRUCTION INFORMATION

Well No.	Date	Well Diameter (inches)	PVC Thickness (Schedule)	Total Boring Depth (feet bgs)	Total Well Depth (feet bgs)	Well Screen Interval (feet bgs)	Well Screen Slot Size (inches)	Comment
PZ-1	1/13/2003	3/4	80	59	35	15-35	0.01	Refusal during drilling at 59 feet bgs.
PZ-2	1/14/2003	3/4	80	62	35	15-35	0.01	
PZ-3	1/14/2003	3/4	80	50	35	15-35	0.01	Refusal during drilling at 50 feet bgs.
PZ-4	1/15/2003	3/4	80	62	42	32-42	0.01	Abandoned during site construction - May/June 2005.
MW-1	12/9/2002	2	40	60	35	15-35	0.01	
MW-2	12/9/2002	2	40	60	35	15-35	0.01	
MW-3	12/9/2002	2	40	60	35	15-35	0.01	
MW-4	12/9/2002	2	40	60	45	25-45	0.01	Damaged during site construction - May/June 2005.

Note:
bgs – below ground surface

TABLE 2 – SAMPLE MATRIX

Well No.	Groundwater Monitoring Event	VOCs	TPHg	TPHd	TPHo	TPH-jet fuel	Oil and Grease	PAHs	Metals	SVOCs	TOC	PCBs	BOD	Nitrite	Boron	Sulfides	COD	TOX	Chloride	Nitrogen/ Nitrate	Sulfate	TDS
EPA Method		8260B	8015M				1664/413 2	8310	CAM 17	8270C/625	9060/415 1/160 1	8082	405 1B	300	6010B	376 2	410 4	9020	300 0			160 1
PZ-1	1st Qtr - 2003	x	x	x	x			x	x	x	x						x	x	x	x	x	x
	1st Qtr - 2005	x								x	x				x	x	x	x	x	x	x	x
	3rd Qtr - 2005	x					x			x	x	x	x	x	x	x	x	x	x	x	x	x
	1st Qtr- 2006	x								x	x				x	x	x	x	x	x	x	x
	3rd Qtr - 2006	x					x			x	x	x	x	x	x	x	x	x	x	x	x	x
	4th Qtr - 2007	x								x	x	x										
PZ-2	1st Qtr - 2003	x	x	x	x			x	x	x	x						x	x	x	x	x	x
PZ-3	1st Qtr - 2003	x	x	x	x			x	x	x	x						x	x	x	x	x	x
PZ-4	1st Qtr - 2003	x	x	x	x			x	x	x	x						x	x	x	x	x	x
	2nd Qtr - 2003																					
	3rd Qtr - 2003	x	x	x	x	x																
	4th Qtr - 2003	x	x	x	x	x			x													
MW-1	1st Qtr - 2003	x	x	x	x			x	x	x	x						x	x	x	x	x	x
	2nd Qtr - 2003	x	x	x	x																	
	3rd Qtr - 2003	x	x	x	x	x			x													
	4th Qtr - 2003	x	x	x	x																	
	1st Qtr - 2005	x								x	x				x	x	x	x	x	x	x	x
	3rd Qtr - 2005	x					x			x	x	x	x	x	x	x	x	x	x	x	x	x
	1st Qtr - 2006	x								x	x				x	x	x	x	x	x	x	x
	3rd Qtr - 2006	x					x			x	x	x	x	x	x	x	x	x	x	x	x	x
	4th Qtr - 2007	x					x			x	x	x	x	x	x	x	x	x	x	x	x	x
MW-2	1st Qtr - 2003	x	x	x	x			x	x	x	x						x	x	x	x	x	x
	2nd Qtr - 2003	x	x	x	x																	
	3rd Qtr - 2003	x	x	x	x	x			x													
	4th Qtr - 2003	x	x	x	x																	
	1st Qtr - 2005	x								x	x				x	x	x	x	x	x	x	x
	3rd Qtr - 2005	x					x			x	x	x	x	x	x	x	x	x	x	x	x	x
	1st Qtr - 2006	x								x	x				x	x	x	x	x	x	x	x
	3rd Qtr - 2006	x					x			x	x	x	x	x	x	x	x	x	x	x	x	x
	4th Qtr - 2007	x					x			x	x	x	x	x	x	x	x	x	x	x	x	x
MW-3	1st Qtr - 2003	x	x	x	x			x	x	x	x						x	x	x	x	x	x
	2nd Qtr - 2003	x	x	x	x																	
	3rd Qtr - 2003	x	x	x	x	x			x													
	4th Qtr - 2003	x	x	x	x																	
MW-4	1st Qtr - 2003	x	x	x	x			x	x	x	x						x	x	x	x	x	x
	2nd Qtr - 2003	x	x	x	x																	
	3rd Qtr - 2003	x	x	x	x	x		x	x	x	x						x	x	x	x	x	x
	4th Qtr - 2003	x	x	x	x	x			x													

Notes:
EPA – United States Environmental Protection Agency
No. – Number
VOCs – Volatile Organic Compounds
TPHg – Total Petroleum Hydrocarbons as gasoline
TPHd – Total Petroleum Hydrocarbons as diesel
TPHo – Total Petroleum Hydrocarbons as oil
TPH – Total Petroleum Hydrocarbons
PAHs – Polycyclic Aromatic Hydrocarbons
SVOCs – Semivolatile Organic Compounds
TOC – Total Organic Compounds
PCBs – Polychlorinated Biphenyls
BOD – Biological Oxygen Demand
COD – Chemical Oxygen Demand
TOX – Total Organic Halides
TDS – Total Dissolved Solids

TABLE 3 – VOLATILE ORGANIC COMPOUNDS IN GROUNDWATER

Well No.	Date	EPA Method 8260B (µg/L)														
		Benzene	Ethyl-benzene	Isopropylbenzene	m,p-Xylenes	o-Xylene	n-Butyl benzene	n-propyl benzene	sec-Butyl benzene	tert-Butyl benzene	Toluene	1,3,5-Trimethyl benzene	1,2,4-Trimethyl benzene	1,2 Dibromo 3-Chloropropane	4-Isopropyl toluene	Naphthalene
PZ-1	1/21/2003	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
	1/12/2005	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
	7/26/2005	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
	1/21/2006	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
	7/26/2006	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
	11/21/2007	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
PZ-2	1/22/2003	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
PZ-3	1/21/2003	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
PZ-4	1/21/2003	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	7	<5.0	8	9
	1/21/2003-dup	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	8	<5.0	9	10
	9/29/2003	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	6	<5.0
	12/2/2003	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
MW-1	3/30/2003	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
	6/16/2003	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
	9/28/2003	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
	12/1/2003	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
	1/12/2005	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	5.0	<5.0	<5.0	<5.0
	7/26/2005	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
	1/21/2006	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
	7/26/2006	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
	11/21/2007	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
MW-2	3/30/2003	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
	6/16/2003	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
	9/28/2003	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
	12/1/2003	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
	1/12/2005	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
	7/26/2005	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
	1/21/2006	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
	7/26/2006	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
	11/21/2007	<5.0	<5.0	<5.0	<10	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0

TABLE 3 – VOLATILE ORGANIC COMPOUNDS IN GROUNDWATER

Well No.	Date	EPA Method 8260B (µg/L)														
		Benzene	Ethyl-benzene	Isopropylbenzene	m,p-Xylenes	o-Xylene	n-Butyl benzene	n-propyl benzene	sec-Butyl benzene	tert-Butyl benzene	Toluene	1,3,5-Trimethyl benzene	1,2,4-Trimethyl benzene	1,2 Dibromo 3-Chloropropane	4-Isopropyl toluene	Naphthalene
MW-3	3/31/2003	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
	6/16/2003	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
	9/28/2003	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
	12/2/2003	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
MW4	3/30/2003	140	190	29	630	260	21	46	11	7	39	87	280	<5.0	17	480
	6/16/2003	49	180	35	120	39	19	50	14	10	<5.0	26	210	<5.0	16	310
	9/29/2003[1]	39	280	84	210	75	130	150	71	35	<25	92	680	<25	77	730
	12/2/2003	31	160	40	180	74	52	67	27	14	<5.0	66	360	7	33	430
Groundwater MCLs (µg/l)		1.0	300	NA	1,750	1,750	NA	NA	NA	NA	150	NA	NA	0.2	NA	NA
Groundwater Als (µg/l)		NA	NA	NA	NA	NA	260	260	260	260	NA	330	330	NA	NA	170

Notes:
EPA – United States Environmental Protection Agency
µg/l – micrograms per liter
MCL – California Department of Health Services Maximum Contaminant Level
AL – California State Department of Health Services Action Level for Drinking Water
[1] – This sample had a dilution factor of 5
NA Not Applicable

TABLE 4 – TPH AND OIL AND GREASE IN GROUNDWATER

Well No.	Date	EPA Method 8015/M				EPA Method 1664
		TPH (Gasoline and Light Hydrocarbons)	TPH (Diesel)	TPH (Motor Oil)	TPH (Jet Fuel)	Oil and Grease
		(mg/l)				
PZ-1	1/21/2003	<0.20	<0.20	<0.20	--	--
	7/26/2005	--	--	--	--	<4.3
	7/26/2006	--	--	--	--	<4.3
	11/21/2007	--	--	--	--	--
PZ-2	1/22/2003	<0.20	<0.20	<0.20	--	--
PZ-3	1/21/2003	<0.20	<0.20	<0.20	--	--
PZ-4	1/21/2003	<0.20	**3.9**	**2.4**	--	--
	9/29/2003	<0.20	**1.6**	**0.66**	**0.44**	--
	12/2/2003	<0.20	**2.2**	**0.95**	**0.78**	--
MW-1	3/30/2003	<0.20	<0.24	<0.24	--	--
	6/16/2003	<0.20	--	--	--	--
	9/29/2003	<0.20	<0.20	<0.20	<0.20	--
	12/1/2003	<0.20	<0.20	<0.20	--	--
	7/26/2005	--	--	--	--	<4.4
	7/26/2006	--	--	--	--	<4.2
	11/21/2007	--	--	--	--	<4.7
MW-2	3/30/2003	<0.20	<0.22	<0.22	--	--
	6/16/2003	<0.20	<0.20	<0.20	--	--
	9/29/2003	<0.20	<0.20	<0.20	<0.20	--
	12/1/2003	<0.20	<0.20	<0.20	--	--
	7/26/2005	--	--	--	--	<4.3
	7/26/2006	--	--	--	--	<4.2
	11/21/2007	--	--	--	--	<4.6
MW-3	3/31/2003	<0.20	<0.22	<0.22	--	--
	6/16/2003	<0.20	<0.20	<0.20	--	--
	9/29/2003	<0.20	<0.20	<0.20	<0.20	--
	12/2/2003	<0.20	**0.48**	<0.20	--	--
MW-4	3/30/2003	**5**	**130**	**0.94**	--	--
	6/16/2003	**3.6**	**96**	**1.7**	--	--
	9/29/2003[1]	**190**	**840**	<80	**730**	--
	12/2/2003[2]	**5.7**	**670**	<100	**610**	--

Notes:
TPH – Total Petroleum Hydrocarbons
mg/l – milligrams per Liter
-- – Not Analyzed
MW – 1 sample collected on 6/16/2003 – one sample bottle damaged during transit.
[1]This sample had a dilution factor of 200
[2]This sample had a dilution factor of 500

TABLE 5 – SVOCS IN GROUNDWATER

Well No.	Date	EPA Method 8270C				
		2-Methyl napthalene	Benzoic Acid	Bis (2-ethylhexyl) phthalate	Naphthalene	Phenol
		(µg/l)				
PZ-1	1/21/2003	<10	<50	<10	<10	<10
	1/12/2005	<10	<50	<10	<10	<10
	7/26/2005	<10	<50	<10	<10	<10
	1/21/2006	<10	<50	<10	<10	<10
	7/26/2006	<10	<50	<10	<10	<10
	11/21/2007	<10	<50	<10	<10	<10
PZ-2	1/22/2003	<10	<50	<10	<10	<10
PZ-3	1/21/2003	<10	<50	<10	<10	<10
PZ-4	1/21/2003[1]	<10	170	<10	<10	30
MW-1	3/30/2003	<12	<59	<12	<12	<12
	1/12/2005	<11	<54	<11	<11	<11
	7/26/2005	<10	<50	<10	<10	<10
	1/21/2006	<10	<50	<10	<10	<10
	11/21/2007	<10	<50	<10	<10	<10
MW-2	3/30/2003	<12	<59	<12	<12	<12
	1/12/2005	<11	<53	<11	<11	<11
	7/26/2005	<10	<50	<10	<10	<10
	1/21/2005	<10	<50	<10	<10	<10
	7/26/2006	<10	<50	<10	<10	<10
	11/21/2007	<10	<50	<10	<10	<10
MW-3	3/31/2003	<11	<56	<11	<11	<11
MW-4	3/30/2003[2]	**1200**	<590	**180**	440	<120
	9/29/2003[3]	**5100**	<5000	<1000	**1600**	<1000
Groundwater AL (µg/l)		**NA**	**NA**	**NA**	**170**	**4200**

Notes:
TPH – Total Petroleum Hydrocarbons
µg/l – micrograms per Liter
<10 – not detected at Minimum Detection Limit (MDL)
-- – Not Analyzed
MW – 1 sample collected on 6/16/2003 - one sample bottle damaged during transit.
[1]This sample had a dilution factor of 5
[2]This sample had a dilution factor of 10
[3]This sample had a dilution factor of 20
AL – California State Department of Health Services Action Level for Drinking Water

TABLE 6 – POLYCHLORINATED BIPHENYLS IN GROUNDWATER

Well No.	Date	EPA Method 3510C/8082 (µg/l)							
		Aroclor 1016	Aroclor 1221	Aroclor 1242	Aroclor 1248	Aroclor 1254	Aroclor 1260	Aroclor 1262	Aroclor 1268
PZ-1	7/26/2006	<0.5	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	11/21/2007	<0.5	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MW-1	7/26/2006	<0.5	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	11/21/2007	<0.5	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MW-2	7/26/2006	<0.5	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	11/21/2007	<0.5	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Groundwater MCLs (µg/L)		**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**	**0.5**

Notes:
µg/l – micrograms per liter
<0.5 – not detected at Method Detection Limit (MDL)
EPA – United States Environmental Protection Agency
MCL – California Department of Health Services Maximum Contaminant Level

TABLE 7 – INORGANICS IN GROUNDWATER

EPA Method:		6010B	300				376	160.1	9060	9020	410	405.1B
Well No.	Date	Boron (mg/l)	Chloride (mg/l)	Nitrite (mg/l)	Nitrogen/ Nitrate (mg/l)	Sulfate (mg/l)	Sulfide, Total (mg/l)	TDS (mg/l)	TOC (mg/l)	TOX (µg/l)	COD (mg/l)	BOD (mg/l)
PZ-1*	1/21/2003	--	540	--	0	1,100	--	3,300	20	25	<5	--
	1/12/2005	7	650	--	23	1,400	<0.05	3,600	5	37	<25	--
	7/26/2005	2	440	<0.10	9	950	<0.05	2,700	16	29	65	<5.0
	1/21/2006	0	500	<1.0	25	1,200	<0.05	3,300	7	130	20	--
	7/26/2006	0	530	<0.10	30	1,200	<0.05	3,600	6.8	23	8.2	<5.0
	11/21/2007	--	--	--	--	--	--	--	<3.0	--	--	--
PZ-2	1/22/2003	--	140	--	0	38	--	1,000	55	<20	<5	--
PZ-3	1/21/2003	--	520	--	0	1,900	--	4,700	52	52	13	--
PZ-4	1/21/2003	--	270	--	0	23	--	2,100	190	49	400	--
MW-1	3/30/2003	--	400	--	1	140	--	1,400	<3.0	<20	590	--
	1/12/2005	31	570	--	0	89	<0.05	2,000	6	<20	880	--
	7/26/2005	<1.0	990	<0.10	2	390	<0.75	3,100	34	26	140	<5.0
	1/21/2006	<0.25	930	<1.0	2	430	<0.05	3,000	12	<20	67	--
	7/26/2006	0	910	<0.10	1.5	410	<0.25	3,800	6.1	<20	89	<5.0
	11/21/2007	0.12	630	<1.0	<1.0	160	<0.05	1,900	<3.0	<20	22	<1.0
MW-2	3/30/2003	--	520	--	1	78	--	1,500	<3.0	32	110	--
	1/21/2005	58	520	--	1	33	<0.05	2,500	6	120	480	--
	7/26/2005	<1.0	510	<0.10	20	120	<0.38	2,000	16	120	110	<5.0
	1/21/2006	<0.12	470	<0.10	7	180	<0.05	1,800	15	92	44	--
	7/26/2006	0	410	<0.10	7.3	190	<0.25	2,000	8.2	24	140	<5.0
	11/21/2007	0.15	470	<0.2	<0.2	33	<0.05	1,400	<3.0	25	22	<1.0
MW-3	3/31/2003	--	260	--	1	260	--	1,300	<3.0	<20	170	--
MW-4	3/30/2003	--	280	--	1	150	--	1,500	21	<20	440	--
	9/29/2003	--	180	--	0	5	--	490	<6.0	28	300	--
Groundwater AL (µg/l)		**1.0**	**250-500**	**1.0**	**45**	**250-500**	**NA**	**500-1,000**	**NA**	**NA**	**NA**	**NA**
LARWQCB Benficial Use		**1.0**	**150**	**1.0**	**10**	**250**	**NA**	**700**	**NA**	**NA**	**NA**	**NA**

Notes:
mg/l – miligrams per Liter
µg/l – micrograms per Liter
TDS – Total Dissolved Solids
TOC – Total Organic Compounds
TOX – Total Organic Halides
COD – Chemical Oxygen Demand
BOD – Biological Oxygen Demand
<5 – not detected at Method Detection Limit (MDL)
NA – Not Applicable
EPA – United States Environmental Protection Agency
-- – Not Analyzed
AL – California State Department of Health Services Action Level for Drinking Water
*Some analysis not completed in PZ-1 due to low grounwater recovery and slow recharge rate.

TABLE 8 – DATA USED IN PARAMETRIC ANOVA TEST

EPA Method:		300			160.1	9060	9020	410
Well No.	Date	Chloride (mg/l)	Nitrogen/ Nitrate (mg/l)	Sulfate (mg/l)	TDS (mg/l)	TOC (mg/l)	TOX (µg/l)	COD (mg/l)
PZ-1	1/21/2003	540	0	1,100	3,300	20	25	<5
	1/12/2005	650	23	1,400	3,600	5	37	<25
	7/26/2005	440	9	950	2,700	16	29	65
	1/21/2006	500	25	1,200	3,300	7	130	20
	7/26/2006	530	30	1,200	3,600	7	23	8
	Arithmetic Mean	532	17	1,170	3,300	11	49	25
MW-1	3/30/2003	400	1	140	1,400	<3.0	<20	590
	1/12/2005	570	0	89	2,000	6	<20	880
	7/26/2005	990	2	390	3,100	34	26	140
	1/21/2006	930	2	430	3,000	12	<20	67
	7/26/2006	910	2	410	3,800	6	<20	89
	11/21/2007	630	<1.0	160	1,900	<3.0	<20	22
	Arithmetic Mean	738	1.3	270	2,533	11	21	298
MW-2	3/30/2003	520	1	78	1,500	<3.0	32	110
	1/21/2005	520	1	33	2,500	6	120	480
	7/26/2005	510	20	120	2,000	16	120	110
	1/21/2006	470	7	180	1,800	15	92	44
	7/26/2006	410	7	190	2,000	8	24	140
	11/21/2007	470	<0.2	33	1,400	<3.0	25	22
	Arithmetic Mean	483	6.0	106	1,867	8.5	69	151

Notes:
EPA – United States Environmental Protection Agency
mg/l – milligrams per Liter
µg/l – micrograms per Liter
ANOVA – Analysis of Variance between groups

TABLE 9 – SUMMARY OF PARAMETRIC ANOVA TEST RESULTS

Analyte	F	F-crit	Is F>F-crit	Significant Difference Between Data Populations
Chloride	4.8	3.70	Yes	Yes
Nitrate, Nitrogen	5.6	3.70	Yes	Yes
Sulfate	96.2	3.70	Yes	Yes
TDS	7.2	3.70	Yes	Yes
TOC	0.1	3.70	No	No
TOX	2.5	3.70	No	No
COD	1.9	3.70	No	No

Notes:

F – The calculated value based on the variance derived from MS between groups and the MS within groups

F-crit – The F test statistic based on the Critical Values of the F distribution (a=0.05).

MS – Mean Square

This table is a statistical tool available in the following reference: "Elementary Statistics, Second Edition, by Robert R. Johnson, Duxbury Press, North Scituate, Massachusetts a division of Wadsworth Publishing Company, Inc. Belmont, California, 1976 - Appendix G, Table 8a Critical Values of the F Distribution."

ANOVA – Analysis of Variance between groups

TABLE 10 – GROUNDWATER MONITORING DATA

Well No.	Date	TOC Elevation (feet MSL)	Total Well Depth (feet bgs)	Depth to Liquid (feet bgs)	Depth to Water (feet bgs)	Product Thickness (feet)	Corrected Groundwater Elevation (feet MSL)	Change in Groundwater Elevation (feet)		Comments
PZ-1	1/16/2003	49	35.00	18.95	18.95	0.00	29.80			
	1/21/2003	49	35.00	18.81	18.81	0.00	29.94	Rise	0.14	
	3/30/2003	49	35.00	18.23	18.23	0.00	30.52	Rise	0.58	
	6/16/2003	49	35.00	18.25	18.25	0.00	30.50	Decrease	-0.02	
	9/29/2003	49	35.00	18.72	18.72	0.00	30.03	Decrease	-0.47	
	12/2/2003	49	35.00	19.22	19.22	0.00	29.53	Decrease	-0.50	
	1/12/2005	49	35.00	19.47	19.47	0.00	29.28	Decrease	-0.25	
	7/26/2005	49	35.00	14.80	14.80	0.00	33.95	Rise	4.67	
	1/21/2006	49	35.00	16.59	16.59	0.00	32.16	Decrease	-1.79	
	7/26/2006	49	35.00	16.20	16.20	0.00	32.55	Rise	0.39	
	11/21/2007	49	33.70	19.00	19.00	0.00	30.00	Decrease	-2.55	
PZ-2	1/16/2003	48	35.00	21.10	21.10	0.00	26.74			
	1/21/2003	48	35.00	21.06	21.06	0.00	26.78	Rise	0.04	
	3/30/2003	48	35.00	21.23	21.23	0.00	26.61	Decrease	-0.17	
	6/16/2003	48	35.00	21.19	21.19	0.00	26.65	Rise	0.04	
	9/29/2003	48	35.00	21.30	21.30	0.00	26.54	Decrease	-0.11	
	12/2/2003	48	35.00	21.70	21.70	0.00	26.14	Decrease	-0.40	
	1/12/2005	48	35.00	19.33	19.33	0.00	28.51	Rise	2.37	
	7/26/2005	48	35.00	18.98	18.98	0.00	28.86	Rise	0.35	
	1/21/2006	48	35.00	19.60	19.60	0.00	28.24	Decrease	-0.62	
	7/26/2006	48	35.00	18.81	18.81	0.00	29.03	Rise	0.79	
	11/21/2007	48	34.95	21.00	21.00	0.00	27.00	Decrease	-2.03	

TABLE 10 – GROUNDWATER MONITORING DATA

Well No.	Date	TOC Elevation (feet MSL)	Total Well Depth (feet bgs)	Depth to Liquid (feet bgs)	Depth to Water (feet bgs)	Product Thickness (feet)	Corrected Groundwater Elevation (feet MSL)	Change in Groundwater Elevation (feet)		Comments
PZ-3	1/16/2003	49	35.00	18.48	18.48	0.00	30.73			
	1/21/2003	49	35.00	19.32	19.32	0.00	29.89	Decrease	-0.84	
	3/30/2003	49	35.00	17.98	17.98	0.00	31.23	Rise	1.34	
	6/16/2003	49	35.00	16.90	16.90	0.00	32.31	Rise	1.08	
	9/29/2003	49	35.00	18.56	18.56	0.00	30.65	Decrease	-1.66	
	12/2/2003	49	35.00	19.47	19.47	0.00	29.74	Decrease	-0.91	
	1/12/2005	49	35.00	18.68	18.68	0.00	30.53	Rise	0.79	
	7/26/2005	49	35.00	16.96	16.96	0.00	32.25	Rise	1.72	
	1/21/2006	49	35.00	--	--	--	--	--	--	Not measured due to a vehicle blocking the well.
	7/26/2006	49	35.00	17.16	17.16	0.00	32.05	Decrease	-0.20	
	11/21/2007	49	33.85	19.55	19.55	0.00	29.45	Decrease	-2.60	
PZ-4	1/16/2003	63	42.00	34.82	34.82	0.00	27.78			
	1/21/2003	63	42.00	34.85	34.85	0.00	27.75	Decrease	-0.03	
	3/30/2003	63	42.00	34.35	34.35	0.00	28.25	Rise	0.50	
	6/16/2003	63	42.00	34.19	34.19	0.00	28.41	Rise	0.16	
	9/29/2003	63	42.00	35.08	35.08	0.00	27.52	Decrease	-0.89	
	12/2/2003	63	42.00	35.41	35.41	0.00	27.19	Decrease	-0.33	
	1/12/2005	63	42.00	30.17	30.17	0.00	32.43	Rise	5.24	
	7/26/2005	63	42.00	--	--	--	--	--	--	Abandoned during site construction

TABLE 10 – GROUNDWATER MONITORING DATA

Well No.	Date	TOC Elevation (feet MSL)	Total Well Depth (feet bgs)	Depth to Liquid (feet bgs)	Depth to Water (feet bgs)	Product Thickness (feet)	Corrected Groundwater Elevation (feet MSL)	Change in Groundwater Elevation (feet)		Comments
MW-1	3/30/2003	47	35.00	19.30	19.30	0.00	27.46			
	6/16/2003	47	35.00	19.22	19.22	0.00	27.54	Rise	0.08	
	9/28/2003	47	35.00	20.30	20.30	0.00	26.46	Decrease	-1.08	
	12/1/2003	47	35.00	21.64	21.64	0.00	25.12	Decrease	-1.34	
	1/12/2005	47	35.00	18.77	18.77	0.00	27.99	Rise	2.87	
	7/26/2005	47	35.00	18.02	18.02	0.00	28.74	Rise	0.75	
	1/21/2006	47	35.00	18.55	18.55	0.00	28.21	Decrease	-0.53	
	7/26/2006	47	35.00	17.75	17.75	0.00	29.01	Rise	0.80	
	11/21/2007	47	32.60	19.75	19.75	0.00	27.25	Decrease	-1.76	
MW-2	3/30/2003	49	35.00	21.72	21.72	0.00	27.00			
	6/16/2003	49	35.00	21.58	21.58	0.00	27.14	Rise	0.14	
	9/28/2003	49	35.00	22.70	22.70	0.00	26.02	Decrease	-1.12	
	12/1/2003	49	35.00	23.11	23.11	0.00	25.61	Decrease	-0.41	
	1/12/2005	49	35.00	19.95	19.95	0.00	28.77	Rise	3.16	
	7/26/2005	49	35.00	19.69	19.69	0.00	29.03	Rise	0.26	
	1/21/2006	49	35.00	20.66	20.66	0.00	28.06	Decrease	-0.97	
	7/26/2006	49	35.00	19.72	19.72	0.00	29.00	Rise	0.94	
	11/21/2007	49	35.60	22.55	22.55	0.00	26.45	Decrease	-2.55	
MW-3	3/30/2003	48	35.00	20.23	20.23	0.00	27.48			
	6/16/2003	48	35.00	20.18	20.18	0.00	27.53	Rise	0.05	
	9/28/2003	48	35.00	20.93	20.93	0.00	26.78	Decrease	-0.75	
	12/2/2003	48	35.00	21.62	21.62	0.00	26.09	Decrease	-0.69	
	1/12/2005	48	35.00	19.47	19.47	0.00	28.24	Rise	2.15	
	7/26/2005	48	35.00	16.79	16.79	0.00	30.92	Rise	2.68	
	1/21/2006	48	35.00	19.60	19.60	0.00	28.11	Decrease	-2.81	
	7/26/2006	48	35.00	18.68	18.68	0.00	29.03	Rise	0.92	
	11/21/2007	48	34.10	21.20	21.20	0.00	26.80	Decrease	-2.23	

TABLE 10 – GROUNDWATER MONITORING DATA

Well No.	Date	TOC Elevation (feet MSL)	Total Well Depth (feet bgs)	Depth to Liquid (feet bgs)	Depth to Water (feet bgs)	Product Thickness (feet)	Corrected Groundwater Elevation (feet MSL)	Change in Groundwater Elevation (feet)		Comments
MW-4	3/30/2003	64	45.00	34.35	34.35	0.00	29.41			
	6/16/2003	64	45.00	*	35.28	*	28.48	Decrease	-0.93	
	9/29/2003	64	45.00	35.10	36.56	1.46	28.37	Decrease	-0.11	
	12/2/2003	64	45.00	36.00	36.50	0.50	28.01	Decrease	-0.36	
	1/12/2005	64	45.00	34.00	34.92	0.92	29.66	Rise	1.65	
	7/26/2005	64	45.00	--	--	--	--	--	--	Damaged during site construction.

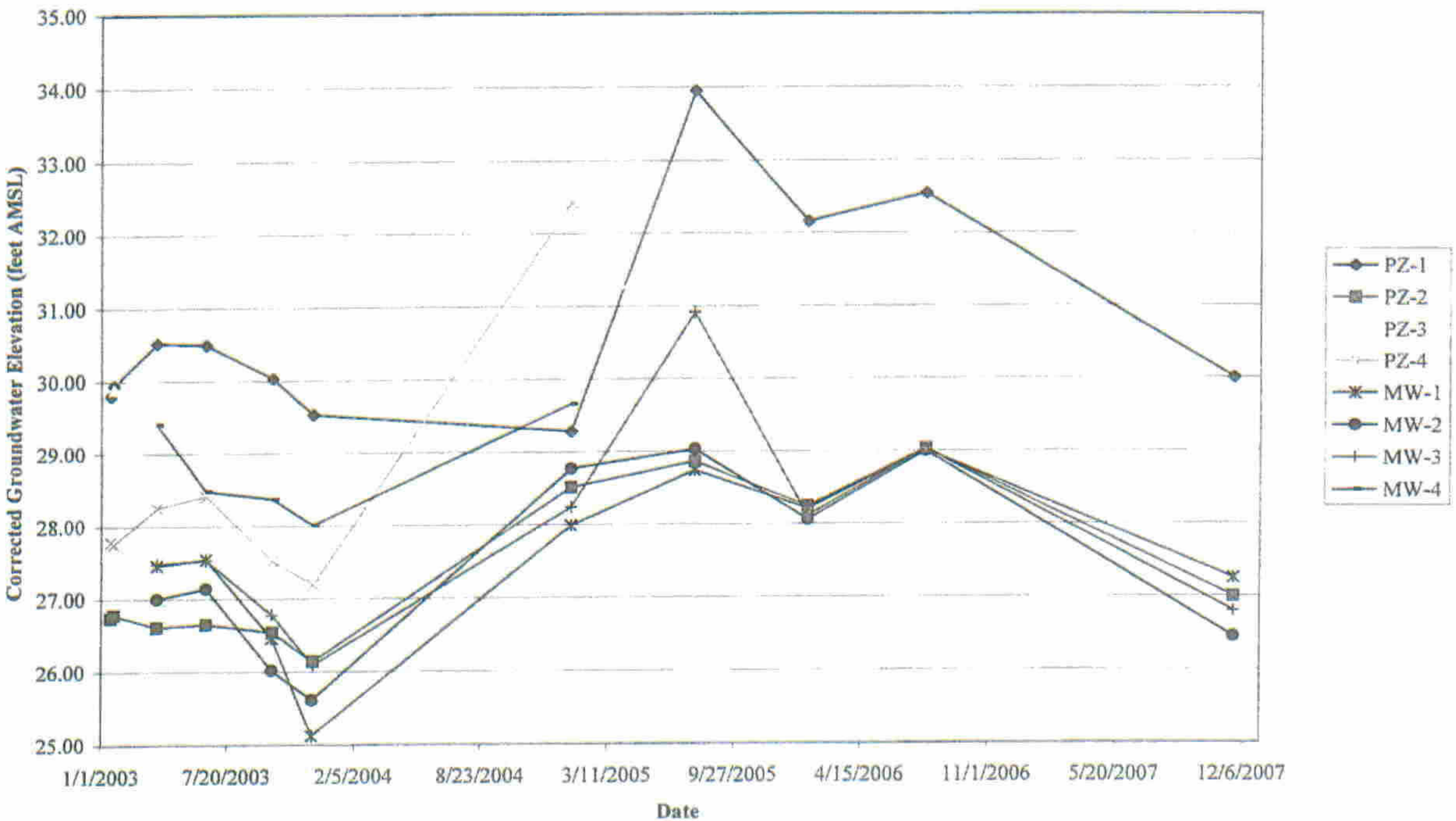
Gradient

	Groundwater Gradient	Groundwater Flow Direction		Average Groundwater Elevation	Average Change in Groundwater Elevation	
	11/21/2007	0.002	SW	27.83	-2.29	

Notes:
MSL – relative to mean sea level. Positive values indicate feet above MSL.
TOC – top of casing
bgs – below ground surface
Product, assumed to have a density of 0.80.
Data prior to 11/21/2007 from 55th Way Landfill SWAT - Semiannual Groundwater Monitoring Event, April 2006 to September 2006, 2910 East 55th Way, Long Beach, California; by EarthTech; dated September 26, 2006.
*Product observed in well during purging (thickness was not measured).

CHART 1 – HISTORICAL GROUNDWATER LEVELS

55th Way Landfill SWAT – Groundwater Monitoring Event



2910 East 55th Way
Long Beach, California

Appendix C
Project No. 207069004

CHART 2 – DETECTED CONCENTRATIONS OF CHLORIDE
55th Way Landfill SWAT – Groundwater Monitoring Event

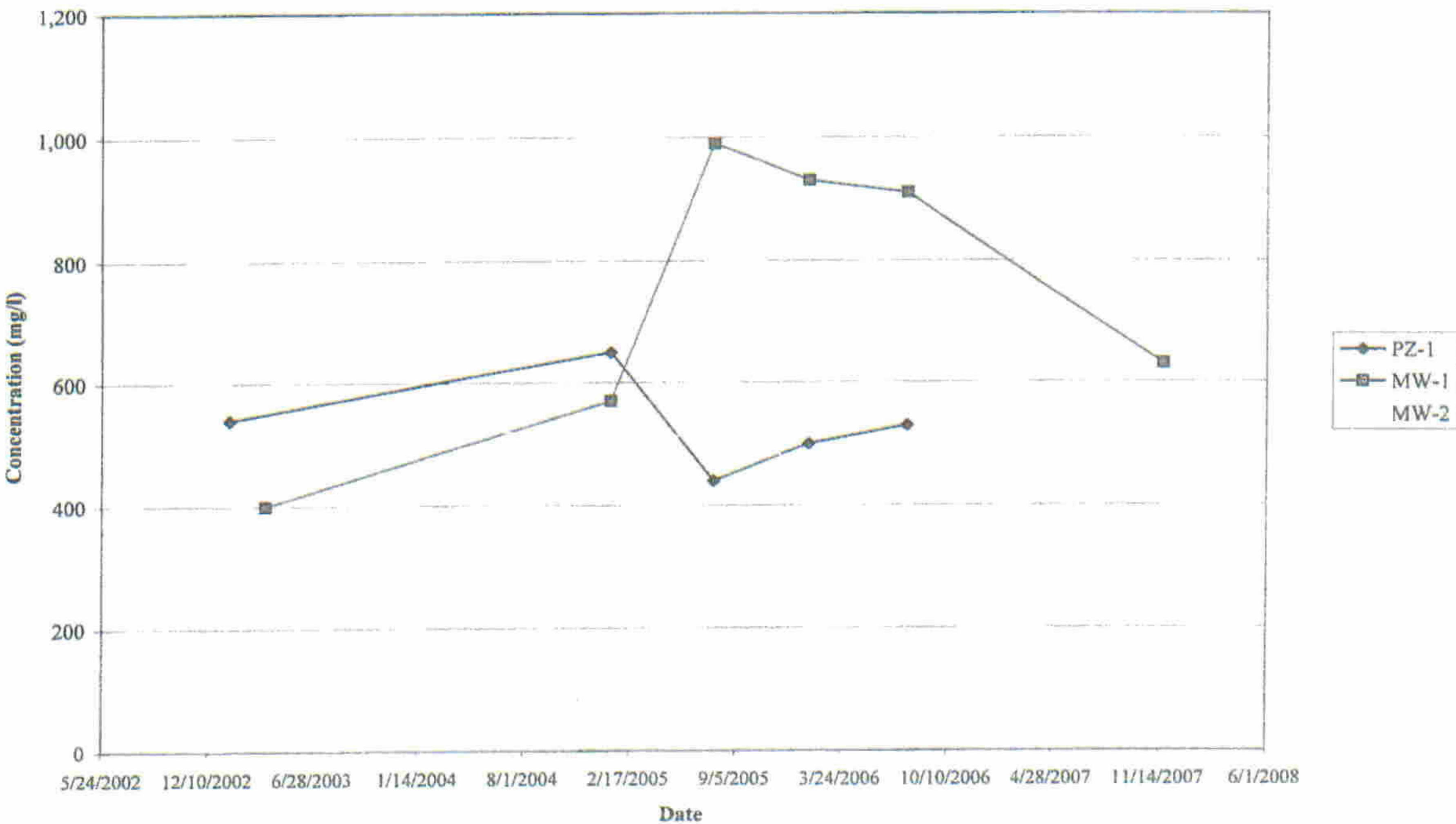


CHART 3 – DETECTED CONCENTRATIONS OF NITROGEN/NITRATE

55th Way Landfill SWAT – Groundwater Monitoring Event

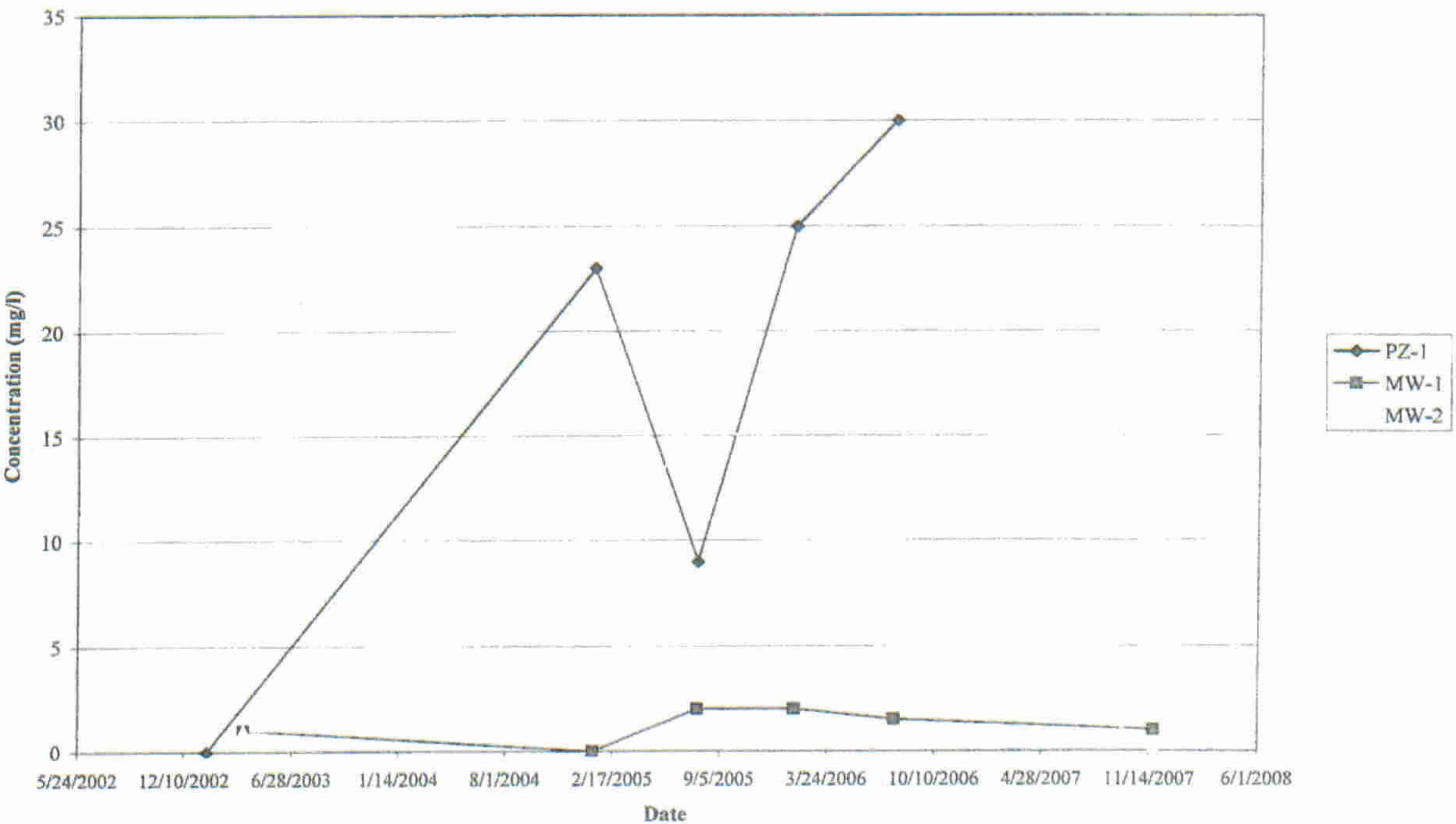


CHART 4 – DETECTED CONCENTRATIONS OF SULFATE
55th Way Landfill SWAT – Groundwater Monitoring Event

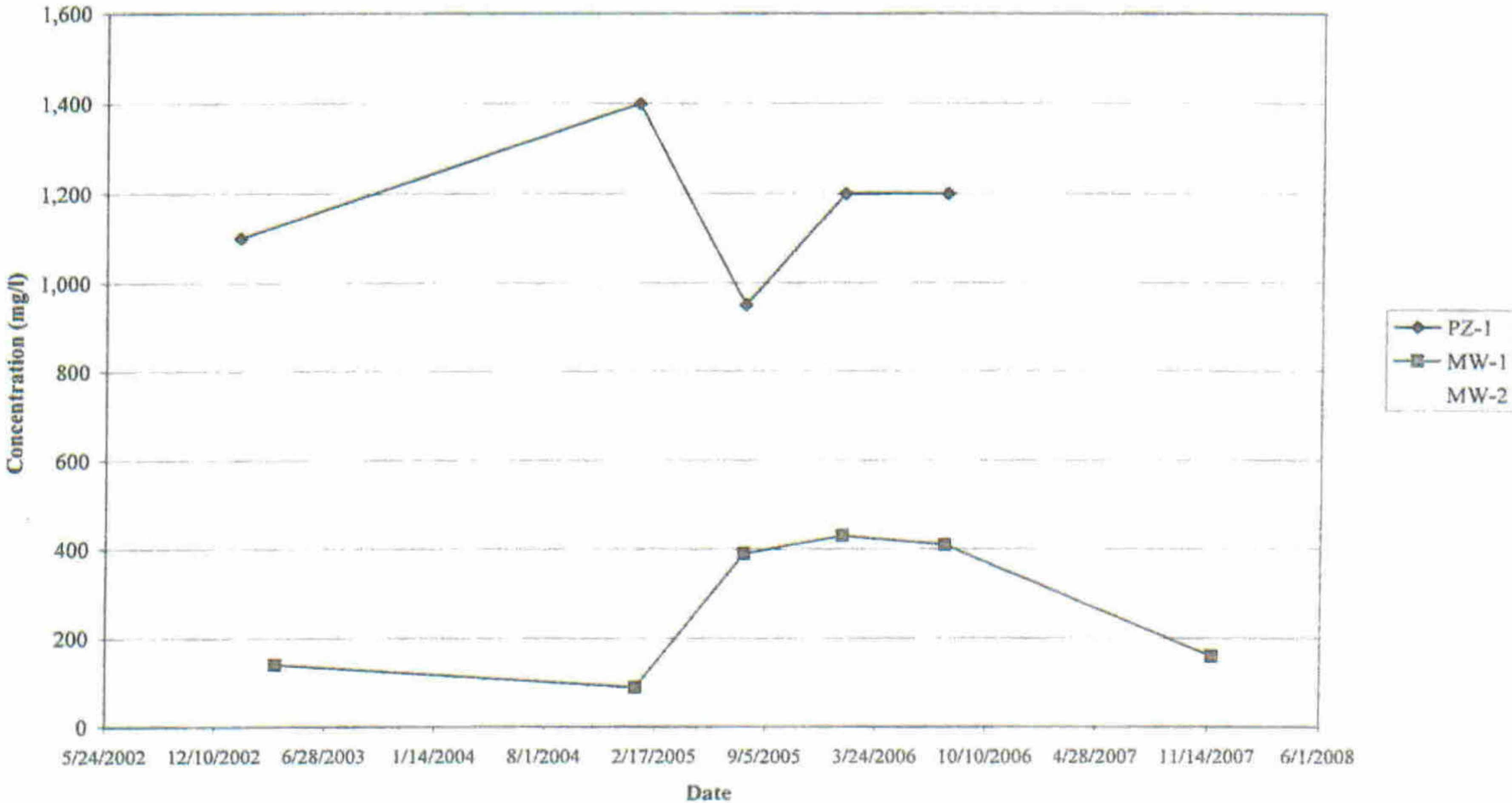


CHART 5 – DETECTED CONCENTRATIONS OF TDS

55th Way Landfill SWAT – Groundwater Monitoring Event

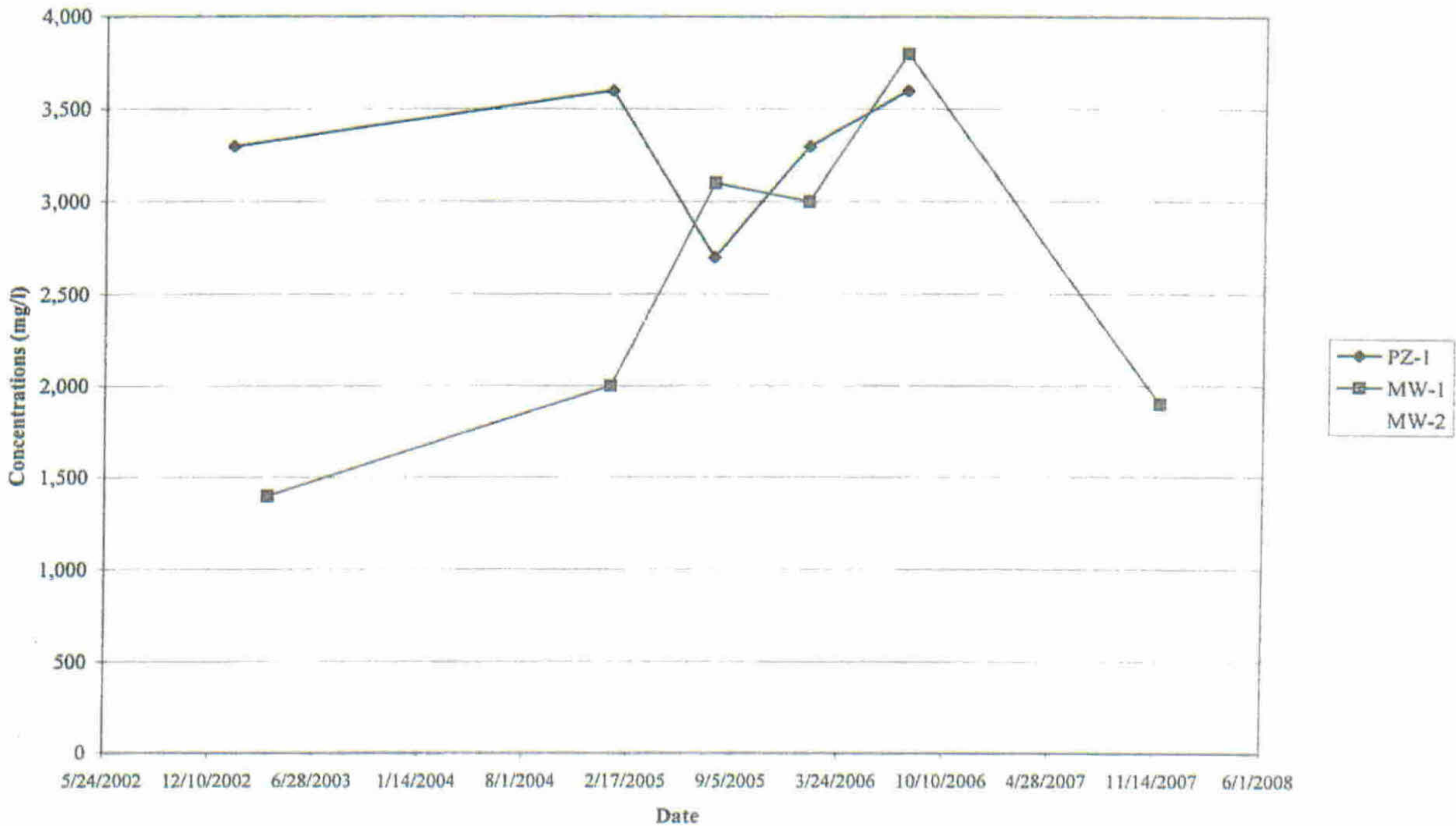


CHART 6 – DETECTED CONCENTRATIONS OF TOC
55th Way Landfill SWAT – Groundwater Monitoring Event

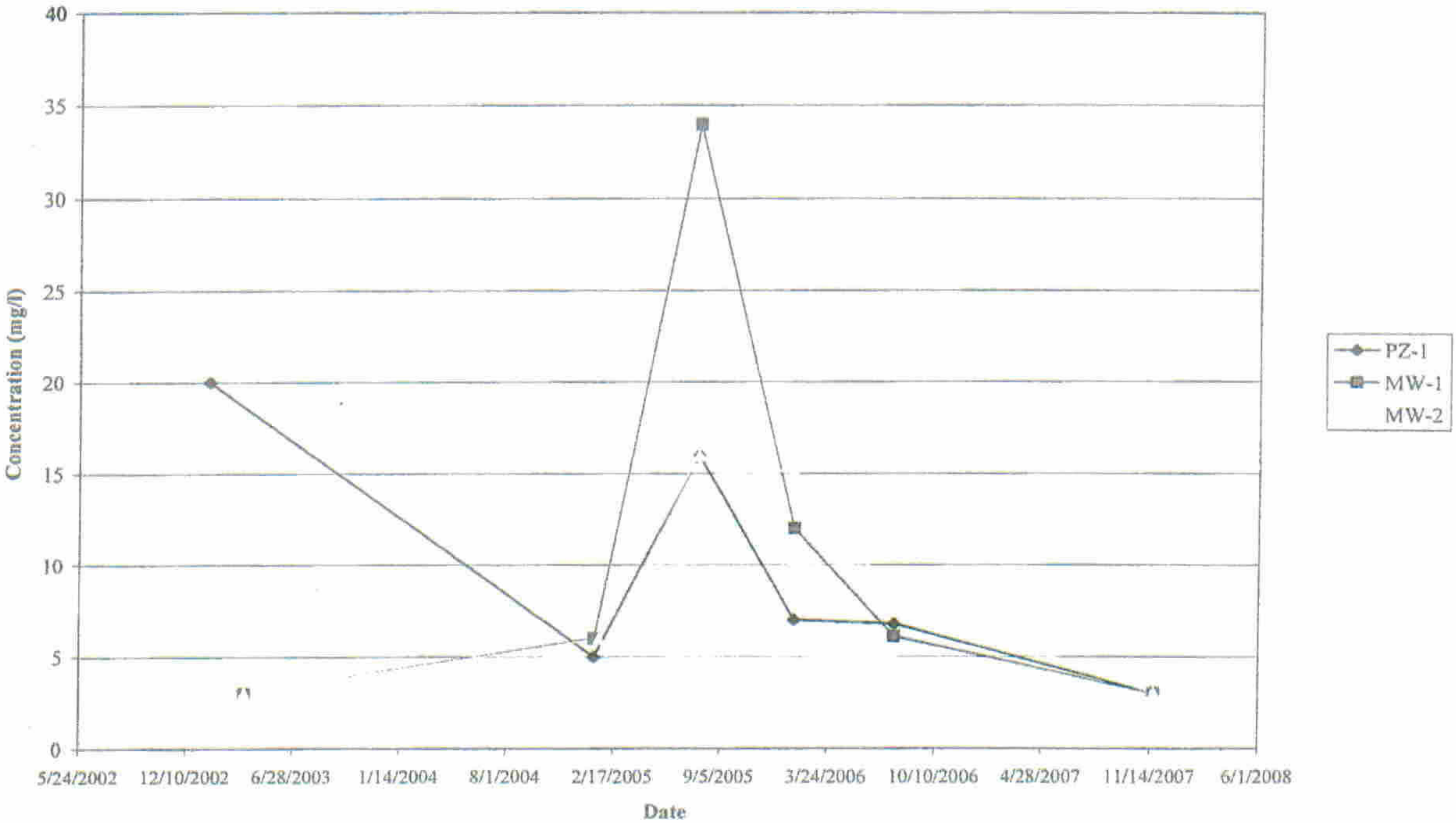


CHART 7 – DETECTED CONCENTRATIONS OF TOX

55th Way Landfill SWAT – Groundwater Monitoring Event

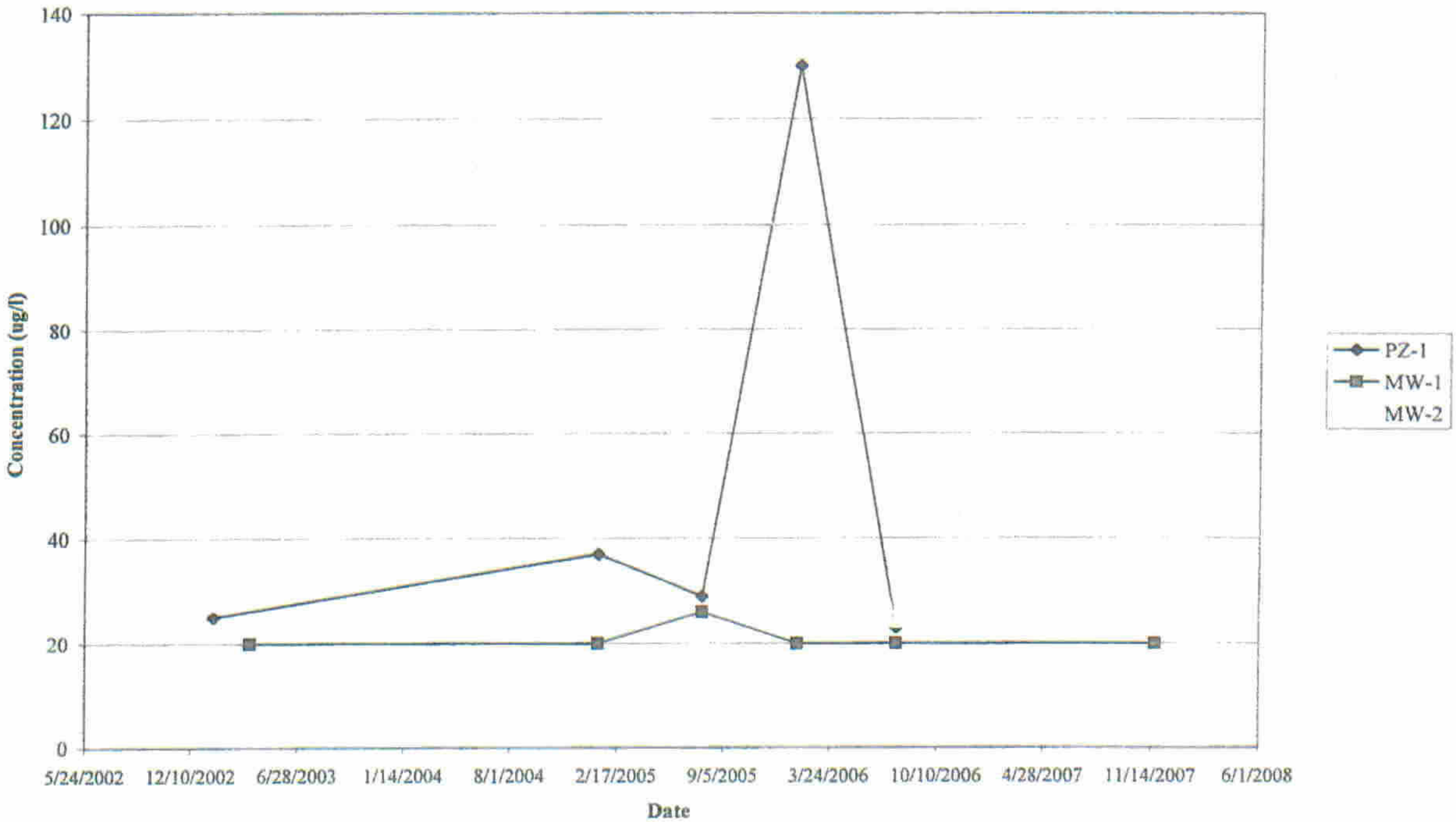
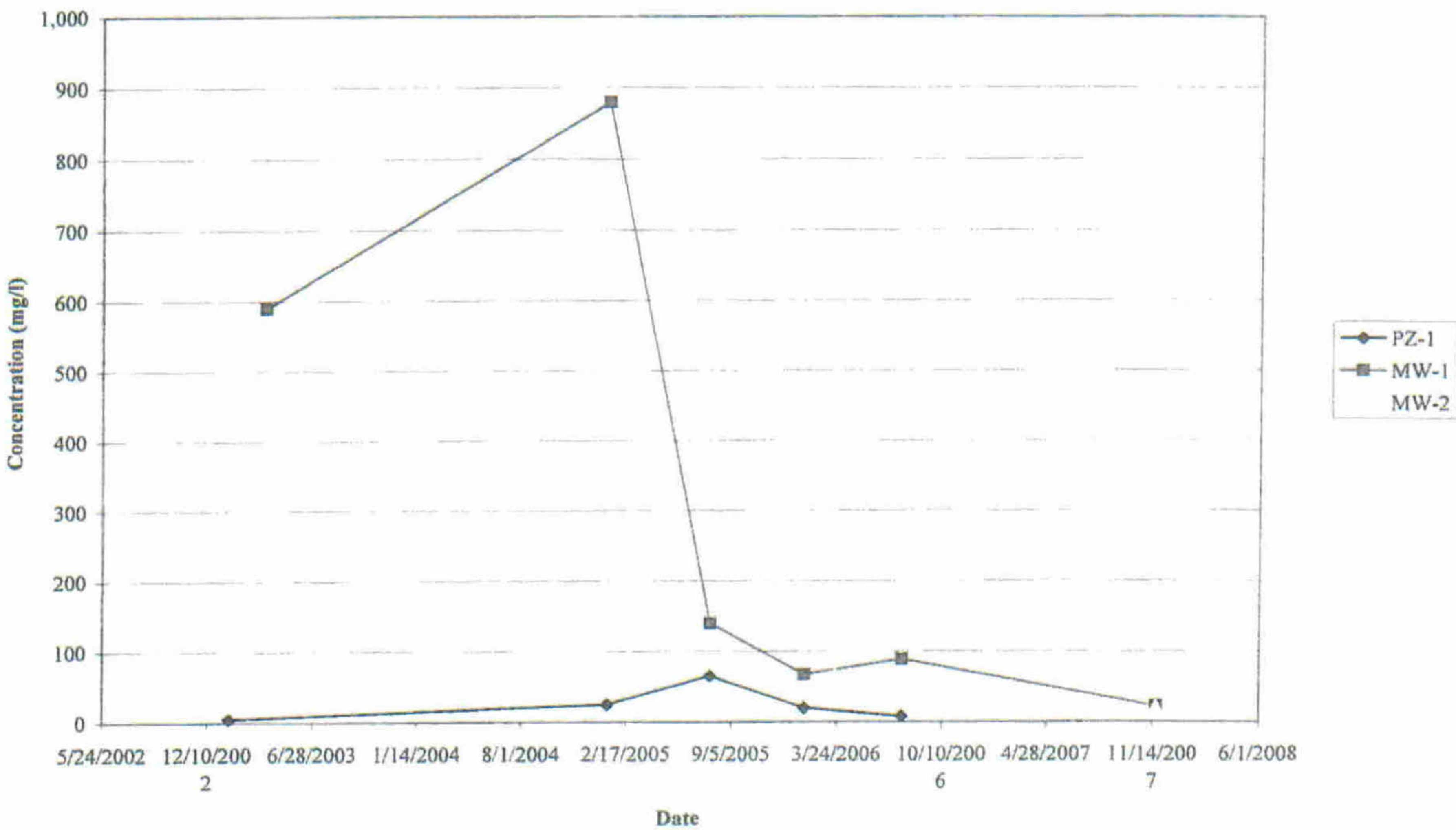


CHART 8 – DETECTED CONCENTRATIONS OF COD
55th Way Landfill SWAT – Groundwater Monitoring Event



ATTACHMENT D

GENERAL FIELD PROCEDURES

GROUNDWATER PURGING AND SAMPLING PROCEDURES FOR WELLS

Prior to measurement and purging, each well was monitored for a floating immiscible layer. Each well was then measured for total depth of well and depth to water. Groundwater depths were measured using an electronic interface probe washed in non-phosphate soap and double-rinsed in distilled water between wells.

Water was purged from the wells using a peristaltic pump. The pump's flow rate was adjusted for a low flow rate of 40 milliliters per minute (ml/minute). The wells were purged of at least three casing volumes of water. Water parameters, including temperature, conductivity, pH, and turbidity, were measured after each casing volume using a Horiba U-10 meter and a flow cell. Upon completion of purging procedures, the wells were allowed to recover for a minimum of two hours or until water levels recovered to 80 percent of the original level.

Water samples from the purged wells were obtained using disposable polyethylene bailers equipped with a bottom-emptying device. The samples were placed unpreserved in 40-milliliter (ml) volatile organic analysis (VOA) vials with Teflon septa for VOC analysis. A 1-liter amber glass jar was used for semi-volatile organic compounds (SVOCs), a 1-liter plastic or glass jar was used for inorganic analysis, and a 500-ml glass jar was used for TOX analysis. Samples were labeled, recorded on a chain-of-custody document, and placed in cold storage pending delivery to the laboratory. Water samples were transported to a certified analytical laboratory under chain-of-custody protocol.

The peristaltic pumps are designed to eliminate cross-contamination by using disposable polyethylene tubing. The pump is placed up hole, and tubing is placed externally around the impellar. Groundwater does not contact any portion of the pump directly.

ATTACHMENT E

FIELD DATA SHEETS

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GROUNDWATER SAMPLING FIELD DATA SHEET

Project Name: Long Beach SWAT
Project No.: 207069004
Monitoring Well ID: PZ-1
Date: 11/21/07
Sampler: Peter Sims
Weather:
Site Location: 2910 E. 55th Way, Long Beach, CA

Casing Diameter: ☐ 2" ☐ 4" ☐ 6" ☑ Other
Casing Material: ☒ SCH80-PVC ☐ Other: S. Steel
Total Depth (ft-TOC): 33.7
Depth to Water (ft-TOC): 19.0
LNAPL Observed?: No
DNAPL Observed?: No
LNAPL Thickness (ft): —
DNAPL Thickness (ft): —
Water Column Height (feet): 14.7 x (1/2" = 0.1, 2" = 0.16, 4" = 0.65) gal/ft = 1.47 x 3.0 = 4.41 Min. Purge Volume (gallons)

Water Level Measurement Equip.: Solinst water level meter — Cleaned: Y
Purging Method/Equipment: Peristaltic Pump — Cleaned: Y
Pump Lines/Bailer Ropes-New or Cleaned?: New

TIME	PURGE VOL. (gallons)	TEMP. (°C)	COND. (µS/cm)	pH Value	COMMENTS (color, turbidity, odor, sheen, etc.):
13:24	0	23.3	5.20	6.81	cloudy
13:35	1	23.1	5.03	6.82	slightly cloudy
13:50	2	23.5	4.97	6.79	slightly cloudy

Total Volume Purged (gallon): 2.5
Time Finished Purging: 14:05
Depth to Water After Purging (ft): 32.0
Percent Recovery:

Sampling Method/Equipment: Peristaltic Pump
Bailer Rope-New or Cleaned?: —
Sample Time: 16:15
Sample ID: PZ-1
Replicate ID (if appl.)

Laboratory: ATL

Comments: Well went dry at 14:04

PARAMETER	USEPA METHOD	CONTAINERS/VOL./ TYPE (VOA/Glass/Plastic)	PRESERVATIVE
PCB	8082	Glass 1L	4°
VOCs	8260B	VOA	HCL/4°
SVOCs	8270C	Glass, 1L	4°
TOC	415.1	Plastic 40ml	H_2SO_4/4°

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GROUNDWATER SAMPLING FIELD DATA SHEET

Project Name: Long Beach SWAT
Date: 11/21/07
Sampler: Peter Sims
Project No.: 207069004
Weather: overcast
Monitoring Well ID: PZ-2
Site Location: 2910 E. 55TH Way, Long Beach, CA

Casing Diameter: ☐ 2" ☐ 4" ☐ 6" ☑ Other
Casing Material: ☒ SCH 80-PVC ☐ Other: S. Steel
Total Depth (ft-TOC): ~~21.0~~ 34.95
LNAPL Observed?: no
DNAPL Observed?: no
Depth to Water (ft-TOC): ~~34.95~~ 21.0
LNAPL Thickness (ft): —
DNAPL Thickness (ft): —

Water Column Height (feet): ______ x 1/2" = 0.1, 2" = 0.16, 4" = 0.65 gal/ft = ______ x 3.0 = ______ Min. Purge Volume (gallons)

Water Level Measurement Equip.: Solinst Water Level Meter
Cleaned: Y
Purging Method/Equipment: —
Cleaned: —
Pump Lines/Bailer Ropes-New or Cleaned?: —

TIME	PURGE VOL. (gallons)	TEMP. (°C)	COND. (µS/cm)	pH Value	COMMENTS (color, turbidity, odor, sheen, etc.):

Total Volume Purged (gallon):
Time Finished Purging:
Depth to Water After Purging (ft):
Percent Recovery:

Sampling Method/Equipment:

Bailer Rope-New or Cleaned?:
Sample Time:
Sample ID:
Replicate ID (if appl.)

Laboratory:

Comments:

PARAMETER	USEPA METHOD	CONTAINERS/VOL./ TYPE (VOA/Glass/Plastic)	PRESER-VATIVE

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GROUNDWATER SAMPLING FIELD DATA SHEET

Project Name: Long Beach SWAT
Date: 11/21/07
Sampler: PDS
Project No.: 207069004
Weather: overcast
Monitoring Well ID: PZ-3
Site Location: 2910 E. 55TH Way, Long Beach, CA

Casing Diameter: ☐ 2" ☐ 4" ☐ 6" ☐ Other
Casing Material: ☒ SCH 80-PVC ☐ Other: S. Steel
Total Depth (ft-TOC): 33.85
LNAPL Observed?: no
DNAPL Observed?: no
Depth to Water (ft-TOC): 19.55
LNAPL Thickness (ft): —
DNAPL Thickness (ft): —

Water Column Height (feet): ______ x (1/2" = 0.1, 2" = 0.16, 4" = 0.65) gal/ft = ______ x 3.0 = ______ Min. Purge Volume (gallons)

Water Level Measurement Equip.: solinst water level meter
Cleaned: y
Purging Method/Equipment: —
Cleaned: —
Pump Lines/Bailer Ropes-New or Cleaned?: —

TIME	PURGE VOL. (gallons)	TEMP. (°C)	COND. (µS/cm)	pH Value	COMMENTS (color, turbidity, odor, sheen, etc.):

Total Volume Purged (gallon):
Time Finished Purging:
Depth to Water After Purging (ft):
Percent Recovery:

Sampling Method/Equipment:

Bailer Rope-New or Cleaned?:
Sample Time:
Sample ID:
Replicate ID (if appl.)

Laboratory:

Comments:

PARAMETER	USEPA METHOD	CONTAINERS/VOL./ TYPE (VOA/Glass/Plastic)	PRESER-VATIVE

Minyo & Moore

GROUNDWATER SAMPLING FIELD DATA SHEET

Project Name: Long Beach SWAT
Date: 11/21/07
Sampler: Peter Sims
Project No.: 207069004
Weather:
Monitoring Well ID: PZ-4
Site Location: 2910 E. 55TH Way, Long Beach, CA

Casing Diameter: ☐ 2" ☐ 4" ☐ 6" ☐ Other
Casing Material: ☒ SCH 80-PVC ☐ Other: S. Steel
Total Depth (ft-TOC):
LNAPL Observed?:
DNAPL Observed?:
Depth to Water (ft-TOC):
LNAPL Thickness (ft):
DNAPL Thickness (ft):
Water Column Height (feet): x 1/2" = 0.1, 2" = 0.16, 4" = 0.65 gal/ft = x 3.0 = Min. Purge Volume (gallons)

Water Level Measurement Equip.: — Cleaned: —
Purging Method/Equipment: — Cleaned: —
Pump Lines/Bailer Ropes-New or Cleaned?: —

TIME	PURGE VOL. (gallons)	TEMP. (°C)	COND. (µS/cm)	pH Value	COMMENTS (color, turbidity, odor, sheen, etc.):

Total Volume Purged (gallon):
Time Finished Purging:
Depth to Water After Purging (ft):
Percent Recovery:

Sampling Method/Equipment:
Bailer Rope-New or Cleaned?:
Sample Time:
Sample ID:
Replicate ID (if appl.)
Laboratory:

PARAMETER	USEPA METHOD	CONTAINERS/VOL./TYPE (VOA/Glass/Plastic)	PRESERVATIVE

Comments: PZ-4 no longer exists as noted in EarthTech figure 2, July 2006

Minyo & Moore

GROUNDWATER SAMPLING FIELD DATA SHEET

Project Name: Long Beach SWAT
Project No.: 0207069004
Monitoring Well ID: MW-1
Date: 11/21/07
Sampler: Peter Sims
Weather:
Site Location: 2910 E. 55th Way, Long Beach, CA

Casing Diameter: ☒ 2" ☐ 4" ☐ 6" ☐ Other
Casing Material: ☒ SCH 40-PVC ☐ Other: S. Steel
Total Depth (ft-TOC): 32.6
LNAPL Observed?: no
DNAPL Observed?: no
Depth to Water (ft-TOC): 19.75
LNAPL Thickness (ft): —
DNAPL Thickness (ft): —

Water Column Height (feet): 12.85 x (1/2" = 0.1; 2" = 0.16; 4" = 0.65) gal/ft = 2.056 x 3.0 = 6.168 Min. Purge Volume (gallons)

Water Level Measurement Equip.: Solinst water level meter — Cleaned: Y
Purging Method/Equipment: peristaltic pump — Cleaned: Y
Pump Lines/Bailer Ropes-New or Cleaned?: new

TIME	PURGE VOL. (gallons)	TEMP. (°C)	COND. (µS/cm)	pH Value	COMMENTS (color, turbidity, odor, sheen, etc.):
9:56	0	22.5	4.35	6.71	cloudy
10:03	1	21.5	3.61	6.54	slightly cloudy
10:10	2	21.4	3.07	6.58	"
10:16	3	22.0	2.92	6.52	"
10:18	4	22.0	2.94	6.51	"
10:21	5	21.9	2.92	6.53	"
10:24	6	21.8	2.87	6.56	"

Total Volume Purged (gallon): 6
Time Finished Purging: 10:24
Depth to Water After Purging (ft): 19.8
Percent Recovery:

Sampling Method/Equipment: Peristaltic Pump
Bailer Rope-New or Cleaned?: —
Sample Time: 11:01
Sample ID: MW-1
Replicate ID (if appl.)
Laboratory: ATL
Comments:

PARAMETER	USEPA METHOD	CONTAINERS/VOL./ TYPE (VOA/Glass/Plastic)	PRESERVATIVE
COD	410.4	100ml Plastic	H_2SO_4 / 4°
PCB	8082	Glass, 1L	4°
VOCs	8260B	VOA	HCL/4°
SVOCs	8270C	Glass, 1L	4°
Boron	6010B	500mL ~~Plastic~~ Glass	HNO_3 / 4°
TOX	9020	500mL Glass	H_2SO_4 / 4°
TOC	415.1	Plastic, 40 ml	H_2SO_4 / 4°
TDS	160.1	200 ml, Plastic	4°
chloride, Sulfate, Nitrate	300	50 ml, plastic	4°
Oil & Grease	413.2	1L glass	H_2SO_4 / 4°
Sulfides	376.2	500 ml, Glass	Zinc Acetate / 4°
BOD	405.1	1 L Glass	4°

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GROUNDWATER SAMPLING FIELD DATA SHEET

Project Name: Long Beach SWAT
Date: 11/21/07
Sampler: Peter Sims
Project No.: 207069004
Weather:
Monitoring Well ID: MW-2
Site Location: 2910 E. 55TH Way, Long Beach, CA

Casing Diameter: ☒ 2" ☐ 4" ☐ 6" ☐ Other
Casing Material: ☒ SCH 40-PVC ☐ Other: S. Steel
Total Depth (ft-TOC): 35.6
LNAPL Observed?: No
DNAPL Observed?: NO
Depth to Water (ft-TOC): 22.55
LNAPL Thickness (ft): —
DNAPL Thickness (ft): —

Water Column Height (feet): 13.05 x (1/2" = 0.1, 2" = 0.16, 4" = 0.65) gal/ft = 2.08 x 3.0 = 6.26 Min. Purge Volume (gallons)

Water Level Measurement Equip.: Solinst water level meter
Cleaned: Y
Purging Method/Equipment: Peristaltic pump
Cleaned: Y
Pump Lines/Bailer Ropes-New or Cleaned?: new

TIME	PURGE VOL. (gallons)	TEMP. (°C)	COND. (µS/cm)	pH Value	COMMENTS (color, turbidity, odor, sheen, etc.):
11:30	0	22.1	2.32	6.68	slightly cloudy
11:35	1	22.4	2.26	6.53	"
11:41	2	22.4	2.29	6.48	clear
11:47	3	22.6	2.25	6.43	"
11:55	4	22.8	2.24	6.43	"
11:59	5	22.7	2.23	6.44	"
12:06	6	22.7	2.23	6.46	"

Total Volume Purged (gallon): 6
Time Finished Purging: 12:06
Depth to Water After Purging (ft): 22.5
Percent Recovery:

Sampling Method/Equipment: Peristaltic Pump
Bailer Rope-New or Cleaned?: —
Sample Time: 12:28
Sample ID: MW-2
Replicate ID (if appl.)
Laboratory: ATL
Comments:

PARAMETER	USEPA METHOD	CONTAINERS/VOL./ TYPE (VOA/Glass/Plastic)	PRESERVATIVE
COD	410.4	100 ml Plastic	H_2SO_4/4°
PCB	8082	Glass, 1L	4°
VOCs	8260B	VOA	HCl/4°
SVOCs	8270C	Glass 1L	4°
Boron	6010B	500ml Glass	HNO_3/4°
TOX	9020	500ml Glass	H_2SO_4/4°
TOC	415.1	Plastic 40ml	H_2SO_4/4°
BOD	405.1	1L Glass	4°
TDS	160.1	200ml plastic	4°
Chloride Sulfate Nitrate Nitrite	300	50ml Plastic	4°
Oil & Grease	413.2	1L glass	H_2SO_4/4°
Sulfides	376.2	500 ml Glass	Zinc Acetate/4°

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GROUNDWATER SAMPLING FIELD DATA SHEET

Project Name: Long Beach SWAT
Project No.: 207069004
Monitoring Well ID: MW-3
Date: 11/21/07
Sampler: Peter Sims
Weather:
Site Location: 2910 E. 55TH Way, Long Beach, CA

Casing Diameter: ☒ 2" ☐ 4" ☐ 6" ☐ Other
Casing Material: ☒ SCH 40-PVC ☐ Other: S. Steel
Total Depth (ft-TOC): 34.1
Depth to Water (ft-TOC): 21.2
LNAPL Observed?: no
DNAPL Observed?: no
LNAPL Thickness (ft): —
DNAPL Thickness (ft): —

Water Column Height (feet): ______ x 1/2" = 0.1, 2" = 0.16, 4" = 0.65 gal/ft = ______ x 3.0 = ______ Min. Purge Volume (gallons)

Water Level Measurement Equip.: solinst water level meter Cleaned: Y
Purging Method/Equipment: Peristaltic Pump Cleaned: Y
Pump Lines/Bailer Ropes-New or Cleaned?: new

TIME	PURGE VOL. (gallons)	TEMP. (°C)	COND. (µS/cm)	pH Value	COMMENTS (color, turbidity, odor, sheen, etc.):

Total Volume Purged (gallon):
Time Finished Purging:
Depth to Water After Purging (ft):
Percent Recovery:

Sampling Method/Equipment:

Bailer Rope-New or Cleaned?:
Sample Time:
Sample ID:
Replicate ID (if appl.)

Laboratory:

PARAMETER	USEPA METHOD	CONTAINERS/VOL./ TYPE (VOA/Glass/Plastic)	PRESER-VATIVE

Comments:
replaced [illegible]

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GROUNDWATER SAMPLING FIELD DATA SHEET

Project Name: Long Beach SWAT
Project No.: 207069004
Monitoring Well ID: MW-4

Date: 11/21/07
Sampler: Peter Sims
Weather:
Site Location: 2910 E. 55TH Way, Long Beach, CA

Casing Diameter: ☒ 2" ☐ 4" ☐ 6" ☐ Other
Casing Material: ☒ SCH 40-PVC ☐ Other: S. Steel
Total Depth (ft-TOC):
Depth to Water (ft-TOC):
LNAPL Observed?:
DNAPL Observed?:
LNAPL Thickness (ft):
DNAPL Thickness (ft):

Water Column Height (feet): ______ x 1/2" = 0.1, 2" = 0.16, 4" = 0.65 gal/ft = ______ x 3.0 = ______ Min. Purge Volume (gallons)

Water Level Measurement Equip.: — Cleaned: —
Purging Method/Equipment: — Cleaned: —
Pump Lines/Bailer Ropes-New or Cleaned?: —

TIME	PURGE VOL. (gallons)	TEMP. (°C)	COND. (μS/cm)	pH Value	COMMENTS (color, turbidity, odor, sheen, etc.):

Total Volume Purged (gallon):
Time Finished Purging:
Depth to Water After Purging (ft):
Percent Recovery:

Sampling Method/Equipment:

Bailer Rope-New or Cleaned?:
Sample Time:
Sample ID:
Replicate ID (if appl.)

Laboratory:

PARAMETER	USEPA METHOD	CONTAINERS/VOL./ TYPE (VOA/Glass/Plastic)	PRESER-VATIVE

Comments: MW-4 no longer exists as noted in EarthTech Figure 2, July 2006

ATTACHMENT F

ANOVA STATISTICAL ANALYSIS DATA

Normality Test (Kolmogorov-Smirnov) Wednesday, January 23, 2008, 1:36:51 PM

Data source: PZ-1 in 207069004 Stats.SNB

Chloride:	K-S Dist. = 0.287	P = 0.128	Passed
Nitrogen/Nitrate:	K-S Dist. = 0.192	P > 0.200	Passed
Sulfate:	K-S Dist. = 0.252	P > 0.200	Passed
TDS:	K-S Dist. = 0.333	P = 0.036	Failed
TOC:	K-S Dist. = 0.251	P > 0.200	Passed
TOX:	K-S Dist. = 0.333	P = 0.036	Failed
COD:	K-S Dist. = 0.289	P = 0.122	Passed

A test that fails indicates that the data varies significantly from the pattern expected if the data was drawn from a population with a normal distribution.
A test that passes indicates that the data matches the pattern expected if the data was drawn from a population with a normal distribution.

Chloride	Nitrogen/Nitrate	Sulfate	TDS	TOC	TOX	COD
540.0000	0.0000	1100.0000	3300.0000	20.0000	25.0000	2.5000
650.0000	23.0000	1400.0000	3600.0000	5.0000	37.0000	12.5000
440.0000	9.0000	950.0000	2700.0000	16.0000	29.0000	65.0000
500.0000	25.0000	1200.0000	3300.0000	7.0000	130.0000	20.0000
530.0000	30.0000	1200.0000	3600.0000	7.0000	23.0000	8.0000
532.0000	17.4000	1170.0000	3300.0000	11.0000	48.8000	24.6000

Normality Test (Kolmogorov-Smirnov) Wednesday, January 23, 2008, 1:38:04 PM

Data source: MW-1 in 207069004 Stats.SNB

Chloride:	K-S Dist. = 0.213	P > 0.200	Passed
Nitrogen/Nitrate:	K-S Dist. = 0.249	P > 0.200	Passed
Sulfate:	K-S Dist. = 0.229	P > 0.200	Passed
TDS:	K-S Dist. = 0.169	P > 0.200	Passed
TOC:	K-S Dist. = 0.295	P = 0.066	Passed
TOX:	K-S Dist. = 0.431	P < 0.001	Failed
COD:	K-S Dist. = 0.260	P = 0.164	Passed

A test that fails indicates that the data varies significantly from the pattern expected if the data was drawn from a population with a normal distribution.
A test that passes indicates that the data matches the pattern expected if the data was drawn from a population with a normal distribution.

Chloride	Nitrogen/Nitrate	Sulfate	TDS	TOC	TOX	COD
400.0000	1.0000	140.0000	1400.0000	1.5000	10.0000	590.0000
570.0000	0.0000	89.0000	2000.0000	6.0000	10.0000	880.0000
990.0000	2.0000	390.0000	3100.0000	34.0000	26.0000	140.0000
930.0000	2.0000	430.0000	3000.0000	12.0000	10.0000	67.0000
910.0000	2.0000	410.0000	3800.0000	6.0000	10.0000	89.0000
630.0000	0.5000	160.0000	1900.0000	1.5000	10.0000	22.0000
738.3333	1.3333	269.8333	2533.3333	10.6667	21.0000	298.0000

Normality Test (Kolmogorov-Smirnov) Wednesday, January 23, 2008, 1:39:49 PM

Data source: MW-2 in 207069004 Stats.SNB

Chloride:	K-S Dist. = 0.223	P > 0.200	Passed
Nitrogen/Nitrate:	K-S Dist. = 0.300	P = 0.056	Passed
Sulfate:	K-S Dist. = 0.165	P > 0.200	Passed
TDS:	K-S Dist. = 0.214	P > 0.200	Passed
TOC:	K-S Dist. = 0.185	P > 0.200	Passed
TOX:	K-S Dist. = 0.233	P > 0.200	Passed
COD:	K-S Dist. = 0.357	P = 0.007	Failed

A test that fails indicates that the data varies significantly from the pattern expected if the data was drawn from a population with a normal distribution.
A test that passes indicates that the data matches the pattern expected if the data was drawn from a population with a normal distribution.

Chloride	Nitrogen/Nitrate	Sulfate	TDS	TOC	TOX	COD
520.0000	1.0000	78.0000	1500.0000	1.5000	32.0000	110.0000
520.0000	1.0000	33.0000	2500.0000	6.0000	120.0000	480.0000
510.0000	20.0000	120.0000	2000.0000	16.0000	120.0000	110.0000
470.0000	7.0000	180.0000	1800.0000	15.0000	92.0000	44.0000
410.0000	7.0000	190.0000	2000.0000	8.0000	24.0000	140.0000
470.0000	0.1000	33.0000	1400.0000	1.5000	25.0000	22.0000
483.3333	6.0333	105.6667	1866.6667	8.5000	68.8333	151.0000

Chloride

PZ-1	MW-1	MW-2
540	400	520
650	570	520
440	990	510
500	930	470
530	910	410
	630	470

Anova: Single Factor

SUMMARY

Groups	Count	Sum	Average	Variance
PZ-1	5	2660	532	5870
MW-1	6	4430	738.333333	56816.6667
MW-2	6	2900	483.333333	1826.66667

ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	217009.216	2	108504.608	4.79659141	0.02590541	3.73889009
Within Groups	316696.667	14	22621.1905			
Total	533705.882	16				

Nitrogen/Nitrate

0	1	1
23	0	1
9	2	20
25	2	7
30	2	7
	1	0.2

Anova: Single Factor

SUMMARY

Groups	Count	Sum	Average	Variance
Nitrogen/Nitrate	5	87	17.4	155.3
	6	8	1.33333333	0.66666667
	6	36.2	6.03333333	56.3266667

ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	730.318039	2	365.15902	5.64159604	0.01596147	3.73889009
Within Groups	906.166667	14	64.7261905			
Total	1636.48471	16				

Sulfate

1100	140	78
1400	89	33
950	390	120
1200	430	180
1200	410	190
	160	33

Anova: Single Factor

SUMMARY

Groups	Count	Sum	Average	Variance
Sulfate	5	5850	1170	27000
	6	1619	269.833333	24272.1667
	6	634	105.666667	4833.86667

ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	3486081.72	2	1743040.86	96.2511575	6.583E-09	3.73889009
Within Groups	253530.167	14	18109.2976			
Total	3739611.88	16				

TDS

3300	1400	1500
3600	2000	2500
2700	3100	2000
3300	3000	1800
3600	3800	2000
	1900	1400

Anova: Single Factor

SUMMARY

Groups	Count	Sum	Average	Variance
TDS	5	16500	3300	135000
	6	15200	2533.33333	822666.667
	6	11200	1866.66667	158666.667

ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	5603921.57	2	2801960.78	7.20210238	0.00706672	3.73889009
Within Groups	5446666.67	14	389047.619			
Total	11050588.2	16				

TOC

20	3	3
5	6	6
16	34	16
7	12	15
7	6	8
3	3	3

Anova: Single Factor

SUMMARY

Groups	Count	Sum	Average	Variance
TOC	6	58	9.66666667	45.4666667
	6	64	10.6666667	141.466667
	6	51	8.5	33.1

ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	14.1111111	2	7.05555556	0.09619755	0.90884034	3.68231667
Within Groups	1100.16667	15	73.3444444			
Total	1114.27778	17				

TOX

25	20	32
37	20	120
29	26	120
130	20	92
23	20	24
	20	25

Anova: Single Factor

SUMMARY

Groups	Count	Sum	Average	Variance
TOX	5	244	48.8	2089.2
	6	126	21	6
	6	413	68.8333333	2212.16667

ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	6917.30784	2	3458.65392	2.48982249	0.11881729	3.73889009
Within Groups	19447.6333	14	1389.11667			
Total	26364.9412	16				

COD

5	590	110
25	880	480
65	140	110
20	67	44
8	89	140
	22	22

Anova: Single Factor

SUMMARY

Groups	Count	Sum	Average	Variance
COD	5	123	24.6	578.3
	6	1788	298	124434
	6	906	151	27962.8

ANOVA

Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	205862.329	2	102931.165	1.88543973	0.1883362	3.73889009
Within Groups	764297.2	14	54592.6571			
Total	970159.529	16				

ATTACHMENT G

LABORATORY REPORT AND CHAIN-OF-CUSTODY DOCUMENTATION

December 03, 2007

Denise Alvarez
Ninyo & Moore
475 Goddard Suite 200
Irvine, CA 92618
TEL: (949) 753-7070
FAX: (949) 753-7071

ELAP No.: 1838
NELAP No.: 02107CA
NEVADA.: CA-401
Arizona: AZ0689
CSDLAC No.: 10196
Workorder No.: 095431

RE: Paramount Dump, 207069004

Attention: Denise Alvarez

Enclosed are the results for sample(s) received on November 21, 2007 by Advanced Technology Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (562)989-4045 if I can be of further assistance to your company.

Sincerely,

Eddie F. Rodriguez
Laboratory Director

Advanced Technology Laboratories

Date: *03-Dec-07*

CLIENT:	Ninyo & Moore
Project:	Paramount Dump, 207069004
Lab Order:	095431

CASE NARRATIVE

The samples for SM5210B (BOD) analysis were subcontracted to Calscience Environmental Laboratories, Inc. with ELAP Cert. 1230.

Advanced Technology Laboratories *3275 Walnut Avenue, Signal Hill, CA 90755* *Tel: 562. 989.4045* *Fax: 562.989.4040*

Advanced Technology Laboratories

ANALYTICAL RESULTS

Print Date: *03-Dec-07*

CLIENT:	Ninyo & Moore	**Client Sample ID:**	MW-1
Lab Order:	095431	**Collection Date:**	11/21/2007 11:01:00 AM
Project:	Paramount Dump, 207069004	**Matrix:**	GROUND WATER
Lab ID:	095431-001		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS						
EPA 3010A				EPA 6010B		
RunID: ICP8_071127C QC Batch: 41565				PrepDate:	11/26/2007	Analyst: HF
Boron	0.12	0.10		mg/L	1	11/27/2007 03:17 PM
OIL & GREASE						
				EPA 1664 _HEM		
RunID: WETCHEM2_071127B QC Batch: 41609				PrepDate:	11/26/2007	Analyst: SER
Oil & Grease	ND	4.7		mg/L	1	11/27/2007
SULFIDE, TOTAL						
				SM4500-S= D		
RunID: WETCHEM3_071123B QC Batch: R87640				PrepDate:		Analyst: RSJ
Sulfide	ND	0.050		mg/L	1	11/23/2007
PCBS BY GC/ECD						
EPA 3510C				EPA 8082		
RunID: GC4_071127B QC Batch: 41612				PrepDate:	11/27/2007	Analyst: VLT
Aroclor 1016	ND	0.50		µg/L	1	11/27/2007 07:38 PM
Aroclor 1221	ND	1.0		µg/L	1	11/27/2007 07:38 PM
Aroclor 1232	ND	0.50		µg/L	1	11/27/2007 07:38 PM
Aroclor 1242	ND	0.50		µg/L	1	11/27/2007 07:38 PM
Aroclor 1248	ND	0.50		µg/L	1	11/27/2007 07:38 PM
Aroclor 1254	ND	0.50		µg/L	1	11/27/2007 07:38 PM
Aroclor 1260	ND	0.50		µg/L	1	11/27/2007 07:38 PM
Aroclor 1262	ND	0.50		µg/L	1	11/27/2007 07:38 PM
Aroclor 1268	ND	0.50		µg/L	1	11/27/2007 07:38 PM
Surr: Decachlorobiphenyl	78.9	29-112		%REC	1	11/27/2007 07:38 PM
Surr: Tetrachloro-m-xylene	87.4	48-120		%REC	1	11/27/2007 07:38 PM
ANIONS BY ION CHROMATOGRAPHY						
				EPA 300.0		
RunID: IC4_071121F QC Batch: R87567				PrepDate:		Analyst: CBB
Chloride	630	25		mg/L	50	11/22/2007 12:40 PM
ANIONS BY ION CHROMATOGRAPHY						
				EPA 300.0		
RunID: IC4_071121G QC Batch: R87568				PrepDate:		Analyst: CBB
Nitrogen, Nitrite	ND	1.0		mg/L	10	11/22/2007 11:00 AM

Qualifiers:
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit

Results are wet unless otherwise specified

Advanced Technology Laboratories *3275 Walnut Avenue, Signal Hill, CA 90755 Tel: 562. 989.4045 Fax: 562.989.4040*

Advanced Technology Laboratories

ANALYTICAL RESULTS

Print Date: *03-Dec-07*

CLIENT: Ninyo & Moore
Lab Order: 095431
Project: Paramount Dump, 207069004
Lab ID: 095431-001

Client Sample ID: MW-1
Collection Date: 11/21/2007 11:01:00 AM
Matrix: GROUND WATER

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY						
				EPA 300.0		
RunID: IC4_071121H	QC Batch: R87569			PrepDate:		Analyst: CBB
Nitrogen, Nitrate (As N)	ND	1.0		mg/L	10	11/22/2007 11:00 AM
ANIONS BY ION CHROMATOGRAPHY						
				EPA 300.0		
RunID: IC4_071121I	QC Batch: R87571			PrepDate:		Analyst: CBB
Sulfate	160	10		mg/L	10	11/22/2007 11:00 AM
SEMIVOLATILE ORGANIC COMPOUNDS BY GC/MS						
EPA 3510C				EPA 8270C		
RunID: MS7_071127A	QC Batch: 41608			PrepDate:	11/27/2007	Analyst: MFR
1,2,4-Trichlorobenzene	ND	10		µg/L	1	11/27/2007 06:16 PM
1,2-Dichlorobenzene	ND	10		µg/L	1	11/27/2007 06:16 PM
1,3-Dichlorobenzene	ND	10		µg/L	1	11/27/2007 06:16 PM
1,4-Dichlorobenzene	ND	10		µg/L	1	11/27/2007 06:16 PM
2,4,5-Trichlorophenol	ND	10		µg/L	1	11/27/2007 06:16 PM
2,4,6-Trichlorophenol	ND	10		µg/L	1	11/27/2007 06:16 PM
2,4-Dichlorophenol	ND	10		µg/L	1	11/27/2007 06:16 PM
2,4-Dimethylphenol	ND	10		µg/L	1	11/27/2007 06:16 PM
2,4-Dinitrophenol	ND	50		µg/L	1	11/27/2007 06:16 PM
2,4-Dinitrotoluene	ND	10		µg/L	1	11/27/2007 06:16 PM
2,6-Dinitrotoluene	ND	10		µg/L	1	11/27/2007 06:16 PM
2-Chloronaphthalene	ND	10		µg/L	1	11/27/2007 06:16 PM
2-Chlorophenol	ND	10		µg/L	1	11/27/2007 06:16 PM
2-Methylnaphthalene	ND	10		µg/L	1	11/27/2007 06:16 PM
2-Methylphenol	ND	10		µg/L	1	11/27/2007 06:16 PM
2-Nitroaniline	ND	50		µg/L	1	11/27/2007 06:16 PM
2-Nitrophenol	ND	10		µg/L	1	11/27/2007 06:16 PM
3,3´-Dichlorobenzidine	ND	20		µg/L	1	11/27/2007 06:16 PM
3-Nitroaniline	ND	50		µg/L	1	11/27/2007 06:16 PM
4,6-Dinitro-2-methylphenol	ND	50		µg/L	1	11/27/2007 06:16 PM
4-Bromophenyl-phenylether	ND	10		µg/L	1	11/27/2007 06:16 PM
4-Chloro-3-methylphenol	ND	50		µg/L	1	11/27/2007 06:16 PM
4-Chloroaniline	ND	20		µg/L	1	11/27/2007 06:16 PM
4-Chlorophenyl-phenylether	ND	10		µg/L	1	11/27/2007 06:16 PM
4-Methylphenol	ND	10		µg/L	1	11/27/2007 06:16 PM
4-Nitroaniline	ND	20		µg/L	1	11/27/2007 06:16 PM
4-Nitrophenol	ND	50		µg/L	1	11/27/2007 06:16 PM

Qualifiers:
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- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit

Results are wet unless otherwise specified

Advanced Technology Laboratories

ANALYTICAL RESULTS

Print Date: *03-Dec-07*

CLIENT:	Ninyo & Moore	**Client Sample ID:**	MW-1
Lab Order:	095431	**Collection Date:**	11/21/2007 11:01:00 AM
Project:	Paramount Dump, 207069004	**Matrix:**	GROUND WATER
Lab ID:	095431-001		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
SEMIVOLATILE ORGANIC COMPOUNDS BY GC/MS						
	EPA 3510C			EPA 8270C		
RunID: MS7_071127A	QC Batch: 41608			PrepDate:	11/27/2007	Analyst: MFR
Acenaphthene	ND	10		µg/L	1	11/27/2007 06:16 PM
Acenaphthylene	ND	10		µg/L	1	11/27/2007 06:16 PM
Anthracene	ND	10		µg/L	1	11/27/2007 06:16 PM
Benzidine (M)	ND	50		µg/L	1	11/27/2007 06:16 PM
Benzo(a)anthracene	ND	10		µg/L	1	11/27/2007 06:16 PM
Benzo(a)pyrene	ND	10		µg/L	1	11/27/2007 06:16 PM
Benzo(b)fluoranthene	ND	10		µg/L	1	11/27/2007 06:16 PM
Benzo(g,h,i)perylene	ND	10		µg/L	1	11/27/2007 06:16 PM
Benzo(k)fluoranthene	ND	10		µg/L	1	11/27/2007 06:16 PM
Benzoic acid	ND	50		µg/L	1	11/27/2007 06:16 PM
Benzyl alcohol	ND	20		µg/L	1	11/27/2007 06:16 PM
Bis(2-chloroethoxy)methane	ND	10		µg/L	1	11/27/2007 06:16 PM
Bis(2-chloroethyl)ether	ND	10		µg/L	1	11/27/2007 06:16 PM
Bis(2-chloroisopropyl)ether	ND	10		µg/L	1	11/27/2007 06:16 PM
Bis(2-ethylhexyl)phthalate	ND	10		µg/L	1	11/27/2007 06:16 PM
Butylbenzylphthalate	ND	10		µg/L	1	11/27/2007 06:16 PM
Chrysene	ND	10		µg/L	1	11/27/2007 06:16 PM
Di-n-butylphthalate	ND	10		µg/L	1	11/27/2007 06:16 PM
Di-n-octylphthalate	ND	10		µg/L	1	11/27/2007 06:16 PM
Dibenz(a,h)anthracene	ND	10		µg/L	1	11/27/2007 06:16 PM
Dibenzofuran	ND	10		µg/L	1	11/27/2007 06:16 PM
Diethylphthalate	ND	10		µg/L	1	11/27/2007 06:16 PM
Dimethylphthalate	ND	10		µg/L	1	11/27/2007 06:16 PM
Fluoranthene	ND	10		µg/L	1	11/27/2007 06:16 PM
Fluorene	ND	10		µg/L	1	11/27/2007 06:16 PM
Hexachlorobenzene	ND	10		µg/L	1	11/27/2007 06:16 PM
Hexachlorobutadiene	ND	20		µg/L	1	11/27/2007 06:16 PM
Hexachlorocyclopentadiene	ND	10		µg/L	1	11/27/2007 06:16 PM
Hexachloroethane	ND	10		µg/L	1	11/27/2007 06:16 PM
Indeno(1,2,3-cd)pyrene	ND	10		µg/L	1	11/27/2007 06:16 PM
Isophorone	ND	10		µg/L	1	11/27/2007 06:16 PM
N-Nitrosodi-n-propylamine	ND	10		µg/L	1	11/27/2007 06:16 PM
N-Nitrosodiphenylamine	ND	10		µg/L	1	11/27/2007 06:16 PM
Naphthalene	ND	10		µg/L	1	11/27/2007 06:16 PM
Nitrobenzene	ND	10		µg/L	1	11/27/2007 06:16 PM
Pentachlorophenol	ND	50		µg/L	1	11/27/2007 06:16 PM

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- E Value above quantitation range
- ND Not Detected at the Reporting Limit

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Advanced Technology Laboratories

ANALYTICAL RESULTS

Print Date: *03-Dec-07*

CLIENT: Ninyo & Moore
Lab Order: 095431
Project: Paramount Dump, 207069004
Lab ID: 095431-001

Client Sample ID: MW-1
Collection Date: 11/21/2007 11:01:00 AM
Matrix: GROUND WATER

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
SEMIVOLATILE ORGANIC COMPOUNDS BY GC/MS						
EPA 3510C				EPA 8270C		
RunID: MS7_071127A	QC Batch: 41608			PrepDate:		11/27/2007 Analyst: **MFR**
Phenanthrene	ND	10		µg/L	1	11/27/2007 06:16 PM
Phenol	ND	10		µg/L	1	11/27/2007 06:16 PM
Pyrene	ND	10		µg/L	1	11/27/2007 06:16 PM
Surr: 1,2-Dichlorobenzene-d4	69.0	47-101		%REC	1	11/27/2007 06:16 PM
Surr: 2,4,6-Tribromophenol	84.4	64-144		%REC	1	11/27/2007 06:16 PM
Surr: 2-Chlorophenol-d4	65.0	46-98		%REC	1	11/27/2007 06:16 PM
Surr: 2-Fluorobiphenyl	80.4	55-104		%REC	1	11/27/2007 06:16 PM
Surr: 2-Fluorophenol	40.7	27-64		%REC	1	11/27/2007 06:16 PM
Surr: 4-Terphenyl-d14	105	59-119		%REC	1	11/27/2007 06:16 PM
Surr: Nitrobenzene-d5	78.4	48-115		%REC	1	11/27/2007 06:16 PM
Surr: Phenol-d5	26.2	13-50		%REC	1	11/27/2007 06:16 PM
TENTATIVELY IDENTIFIED COMPOUNDS BY GC/MS						
EPA 3510C				EPA 8270C		
RunID: MS7_071127A	QC Batch: 41608			PrepDate:		11/27/2007 Analyst: **MFR**
No compounds detected	ND	4.0		µg/L	1	11/27/2007 06:16 PM
TENTATIVELY IDENTIFIED COMPOUNDS BY GC/MS						
				EPA 8260B		
RunID: MS11_071126A	QC Batch: A07VW319			PrepDate:		Analyst: **ML**
no compounds detected	ND	2.5		µg/L	1	11/26/2007 03:37 PM
VOLATILE ORGANIC COMPOUNDS BY GC/MS						
				EPA 8260B		
RunID: MS11_071126A	QC Batch: A07VW319			PrepDate:		Analyst: **ML**
1,1,1,2-Tetrachloroethane	ND	5.0		µg/L	1	11/26/2007 03:37 PM
1,1,1-Trichloroethane	ND	5.0		µg/L	1	11/26/2007 03:37 PM
1,1,2,2-Tetrachloroethane	ND	5.0		µg/L	1	11/26/2007 03:37 PM
1,1,2-Trichloroethane	ND	5.0		µg/L	1	11/26/2007 03:37 PM
1,1-Dichloroethane	ND	5.0		µg/L	1	11/26/2007 03:37 PM
1,1-Dichloroethene	ND	5.0		µg/L	1	11/26/2007 03:37 PM
1,1-Dichloropropene	ND	5.0		µg/L	1	11/26/2007 03:37 PM
1,2,3-Trichlorobenzene	ND	5.0		µg/L	1	11/26/2007 03:37 PM
1,2,3-Trichloropropane	ND	5.0		µg/L	1	11/26/2007 03:37 PM
1,2,4-Trichlorobenzene	ND	5.0		µg/L	1	11/26/2007 03:37 PM
1,2,4-Trimethylbenzene	ND	5.0		µg/L	1	11/26/2007 03:37 PM
1,2-Dibromo-3-chloropropane	ND	5.0		µg/L	1	11/26/2007 03:37 PM

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ANALYTICAL RESULTS

Advanced Technology Laboratories

Print Date: *03-Dec-07*

CLIENT:	Ninyo & Moore	**Client Sample ID:**	MW-1
Lab Order:	095431	**Collection Date:**	11/21/2007 11:01:00 AM
Project:	Paramount Dump, 207069004	**Matrix:**	GROUND WATER
Lab ID:	095431-001		

VOLATILE ORGANIC COMPOUNDS BY GC/MS

EPA 8260B

RunID: MS11_071126A QC Batch: A07VW319 PrepDate: Analyst: **ML**

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
1,2-Dibromoethane	ND	5.0		µg/L	1	11/26/2007 03:37 PM
1,2-Dichlorobenzene	ND	5.0		µg/L	1	11/26/2007 03:37 PM
1,2-Dichloroethane	ND	5.0		µg/L	1	11/26/2007 03:37 PM
1,2-Dichloropropane	ND	5.0		µg/L	1	11/26/2007 03:37 PM
1,3,5-Trimethylbenzene	ND	5.0		µg/L	1	11/26/2007 03:37 PM
1,3-Dichlorobenzene	ND	5.0		µg/L	1	11/26/2007 03:37 PM
1,3-Dichloropropane	ND	5.0		µg/L	1	11/26/2007 03:37 PM
1,4-Dichlorobenzene	ND	5.0		µg/L	1	11/26/2007 03:37 PM
2,2-Dichloropropane	ND	5.0		µg/L	1	11/26/2007 03:37 PM
2-Chlorotoluene	ND	5.0		µg/L	1	11/26/2007 03:37 PM
4-Chlorotoluene	ND	5.0		µg/L	1	11/26/2007 03:37 PM
4-Isopropyltoluene	ND	5.0		µg/L	1	11/26/2007 03:37 PM
Benzene	ND	5.0		µg/L	1	11/26/2007 03:37 PM
Bromobenzene	ND	5.0		µg/L	1	11/26/2007 03:37 PM
Bromodichloromethane	ND	5.0		µg/L	1	11/26/2007 03:37 PM
Bromoform	ND	5.0		µg/L	1	11/26/2007 03:37 PM
Bromomethane	ND	5.0		µg/L	1	11/26/2007 03:37 PM
Carbon tetrachloride	ND	5.0		µg/L	1	11/26/2007 03:37 PM
Chlorobenzene	ND	5.0		µg/L	1	11/26/2007 03:37 PM
Chloroethane	ND	5.0		µg/L	1	11/26/2007 03:37 PM
Chloroform	ND	5.0		µg/L	1	11/26/2007 03:37 PM
Chloromethane	ND	5.0		µg/L	1	11/26/2007 03:37 PM
cis-1,2-Dichloroethene	ND	5.0		µg/L	1	11/26/2007 03:37 PM
Dibromochloromethane	ND	5.0		µg/L	1	11/26/2007 03:37 PM
Dibromomethane	ND	5.0		µg/L	1	11/26/2007 03:37 PM
Dichlorodifluoromethane	ND	5.0		µg/L	1	11/26/2007 03:37 PM
Ethylbenzene	ND	5.0		µg/L	1	11/26/2007 03:37 PM
Hexachlorobutadiene	ND	5.0		µg/L	1	11/26/2007 03:37 PM
Isopropylbenzene	ND	5.0		µg/L	1	11/26/2007 03:37 PM
m,p-Xylene	ND	10		µg/L	1	11/26/2007 03:37 PM
Methylene chloride	ND	5.0		µg/L	1	11/26/2007 03:37 PM
n-Butylbenzene	ND	5.0		µg/L	1	11/26/2007 03:37 PM
n-Propylbenzene	ND	5.0		µg/L	1	11/26/2007 03:37 PM
Naphthalene	ND	5.0		µg/L	1	11/26/2007 03:37 PM
o-Xylene	ND	5.0		µg/L	1	11/26/2007 03:37 PM
sec-Butylbenzene	ND	5.0		µg/L	1	11/26/2007 03:37 PM

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- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit

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Advanced Technology Laboratories *3275 Walnut Avenue, Signal Hill, CA 90755 Tel: 562.989.4045 Fax: 562.989.4040*

Advanced Technology Laboratories

ANALYTICAL RESULTS

Print Date: *03-Dec-07*

CLIENT: Ninyo & Moore
Lab Order: 095431
Project: Paramount Dump, 207069004
Lab ID: 095431-001

Client Sample ID: MW-1
Collection Date: 11/21/2007 11:01:00 AM
Matrix: GROUND WATER

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
VOLATILE ORGANIC COMPOUNDS BY GC/MS						
				EPA 8260B		
RunID: MS11_071126A	QC Batch: A07VW319			PrepDate:		Analyst: ML
Styrene	ND	5.0		µg/L	1	11/26/2007 03:37 PM
tert-Butylbenzene	ND	5.0		µg/L	1	11/26/2007 03:37 PM
Tetrachloroethene	ND	5.0		µg/L	1	11/26/2007 03:37 PM
Toluene	ND	5.0		µg/L	1	11/26/2007 03:37 PM
trans-1,2-Dichloroethene	ND	5.0		µg/L	1	11/26/2007 03:37 PM
Trichloroethene	ND	5.0		µg/L	1	11/26/2007 03:37 PM
Trichlorofluoromethane	ND	5.0		µg/L	1	11/26/2007 03:37 PM
Vinyl chloride	ND	5.0		µg/L	1	11/26/2007 03:37 PM
Surr: 1,2-Dichloroethane-d4	87.9	70-130		%REC	1	11/26/2007 03:37 PM
Surr: 4-Bromofluorobenzene	96.3	70-130		%REC	1	11/26/2007 03:37 PM
Surr: Dibromofluoromethane	95.6	70-130		%REC	1	11/26/2007 03:37 PM
Surr: Toluene-d8	98.7	70-130		%REC	1	11/26/2007 03:37 PM
TOTAL ORGANIC CARBON						
				SM5310B		
RunID: TOC2_071127A	QC Batch: R87693			PrepDate:		Analyst: RSJ
Organic Carbon, Total	ND	3.0		mg/L	1	11/27/2007 03:31 PM
TOTAL ORGANIC HALIDES						
				EPA 9020B		
RunID: TOX1_071127A	QC Batch: R87690			PrepDate:		Analyst: RSJ
Total Organic Halides	ND	20		µg/L	1	11/27/2007
TOTAL FILTERABLE RESIDUE						
				SM2540C		
RunID: WETCHEM_071126C	QC Batch: 41573			PrepDate:	11/26/2007	Analyst: CC
Total Dissolved Solids (Residue, Filterable)	1900	10		mg/L	1	11/26/2007 03:23 PM
CHEMICAL OXYGEN DEMAND						
				EPA 410.4		
RunID: WETCHEM_071126B	QC Batch: 41555			PrepDate:	11/26/2007	Analyst: CC
Chemical Oxygen Demand	22	5.0		mg/L	1	11/26/2007

Qualifiers:
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- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit

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Advanced Technology Laboratories

ANALYTICAL RESULTS

Print Date: *03-Dec-07*

CLIENT:	Ninyo & Moore	**Client Sample ID:**	MW-2
Lab Order:	095431	**Collection Date:**	11/21/2007 12:28:00 PM
Project:	Paramount Dump, 207069004	**Matrix:**	GROUND WATER
Lab ID:	095431-002		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ICP METALS						
EPA 3010A				**EPA 6010B**		
RunID: ICP8_071127C QC Batch: 41565				PrepDate: 11/26/2007		Analyst: HF
Boron	0.15	0.10		mg/L	1	11/27/2007 03:22 PM
OIL & GREASE						
				EPA 1664 _HEM		
RunID: WETCHEM2_071127B QC Batch: 41609				PrepDate: 11/26/2007		Analyst: SER
Oil & Grease	ND	4.6		mg/L	1	11/27/2007
SULFIDE, TOTAL						
				SM4500-S= D		
RunID: WETCHEM3_071123B QC Batch: R87640				PrepDate:		Analyst: RSJ
Sulfide	ND	0.050		mg/L	1	11/23/2007
PCBS BY GC/ECD						
EPA 3510C				**EPA 8082**		
RunID: GC4_071127B QC Batch: 41612				PrepDate: 11/27/2007		Analyst: VLT
Aroclor 1016	ND	0.50		µg/L	1	11/27/2007 08:07 PM
Aroclor 1221	ND	1.0		µg/L	1	11/27/2007 08:07 PM
Aroclor 1232	ND	0.50		µg/L	1	11/27/2007 08:07 PM
Aroclor 1242	ND	0.50		µg/L	1	11/27/2007 08:07 PM
Aroclor 1248	ND	0.50		µg/L	1	11/27/2007 08:07 PM
Aroclor 1254	ND	0.50		µg/L	1	11/27/2007 08:07 PM
Aroclor 1260	ND	0.50		µg/L	1	11/27/2007 08:07 PM
Aroclor 1262	ND	0.50		µg/L	1	11/27/2007 08:07 PM
Aroclor 1268	ND	0.50		µg/L	1	11/27/2007 08:07 PM
Surr: Decachlorobiphenyl	81.5	29-112		%REC	1	11/27/2007 08:07 PM
Surr: Tetrachloro-m-xylene	83.1	48-120		%REC	1	11/27/2007 08:07 PM
ANIONS BY ION CHROMATOGRAPHY						
				EPA 300.0		
RunID: IC4_071121F QC Batch: R87567				PrepDate:		Analyst: CBB
Chloride	470	25		mg/L	50	11/22/2007 02:45 PM
ANIONS BY ION CHROMATOGRAPHY						
				EPA 300.0		
RunID: IC4_071121G QC Batch: R87568				PrepDate:		Analyst: CBB
Nitrogen, Nitrite	ND	0.20		mg/L	2	11/22/2007 02:20 PM

Qualifiers:
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- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit

Results are wet unless otherwise specified

Advanced Technology Laboratories *3275 Walnut Avenue, Signal Hill, CA 90755 Tel: 562. 989.4045 Fax: 562.989.4040*

Advanced Technology Laboratories

ANALYTICAL RESULTS

Print Date: *03-Dec-07*

CLIENT:	Ninyo & Moore	**Client Sample ID:**	MW-2
Lab Order:	095431	**Collection Date:**	11/21/2007 12:28:00 PM
Project:	Paramount Dump, 207069004	**Matrix:**	GROUND WATER
Lab ID:	095431-002		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY						
				EPA 300.0		
RunID: IC4_071121H	QC Batch: R87569			PrepDate:		Analyst: **CBB**
Nitrogen, Nitrate (As N)	ND	0.20		mg/L	2	11/22/2007 02:20 PM
ANIONS BY ION CHROMATOGRAPHY						
				EPA 300.0		
RunID: IC4_071121I	QC Batch: R87571			PrepDate:		Analyst: **CBB**
Sulfate	33	2.0		mg/L	2	11/22/2007 02:20 PM
SEMIVOLATILE ORGANIC COMPOUNDS BY GC/MS						
	EPA 3510C			**EPA 8270C**		
RunID: MS7_071127A	QC Batch: 41608			PrepDate:	11/27/2007	Analyst: **MFR**
1,2,4-Trichlorobenzene	ND	10		µg/L	1	11/27/2007 06:50 PM
1,2-Dichlorobenzene	ND	10		µg/L	1	11/27/2007 06:50 PM
1,3-Dichlorobenzene	ND	10		µg/L	1	11/27/2007 06:50 PM
1,4-Dichlorobenzene	ND	10		µg/L	1	11/27/2007 06:50 PM
2,4,5-Trichlorophenol	ND	10		µg/L	1	11/27/2007 06:50 PM
2,4,6-Trichlorophenol	ND	10		µg/L	1	11/27/2007 06:50 PM
2,4-Dichlorophenol	ND	10		µg/L	1	11/27/2007 06:50 PM
2,4-Dimethylphenol	ND	10		µg/L	1	11/27/2007 06:50 PM
2,4-Dinitrophenol	ND	50		µg/L	1	11/27/2007 06:50 PM
2,4-Dinitrotoluene	ND	10		µg/L	1	11/27/2007 06:50 PM
2,6-Dinitrotoluene	ND	10		µg/L	1	11/27/2007 06:50 PM
2-Chloronaphthalene	ND	10		µg/L	1	11/27/2007 06:50 PM
2-Chlorophenol	ND	10		µg/L	1	11/27/2007 06:50 PM
2-Methylnaphthalene	ND	10		µg/L	1	11/27/2007 06:50 PM
2-Methylphenol	ND	10		µg/L	1	11/27/2007 06:50 PM
2-Nitroaniline	ND	50		µg/L	1	11/27/2007 06:50 PM
2-Nitrophenol	ND	10		µg/L	1	11/27/2007 06:50 PM
3,3'-Dichlorobenzidine	ND	20		µg/L	1	11/27/2007 06:50 PM
3-Nitroaniline	ND	50		µg/L	1	11/27/2007 06:50 PM
4,6-Dinitro-2-methylphenol	ND	50		µg/L	1	11/27/2007 06:50 PM
4-Bromophenyl-phenylether	ND	10		µg/L	1	11/27/2007 06:50 PM
4-Chloro-3-methylphenol	ND	50		µg/L	1	11/27/2007 06:50 PM
4-Chloroaniline	ND	20		µg/L	1	11/27/2007 06:50 PM
4-Chlorophenyl-phenylether	ND	10		µg/L	1	11/27/2007 06:50 PM
4-Methylphenol	ND	10		µg/L	1	11/27/2007 06:50 PM
4-Nitroaniline	ND	20		µg/L	1	11/27/2007 06:50 PM
4-Nitrophenol	ND	50		µg/L	1	11/27/2007 06:50 PM

Qualifiers:
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- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit
- Results are wet unless otherwise specified

Advanced Technology Laboratories

ANALYTICAL RESULTS

Print Date: *03-Dec-07*

CLIENT: Ninyo & Moore
Lab Order: 095431
Project: Paramount Dump, 207069004
Lab ID: 095431-002

Client Sample ID: MW-2
Collection Date: 11/21/2007 12:28:00 PM
Matrix: GROUND WATER

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
SEMIVOLATILE ORGANIC COMPOUNDS BY GC/MS						
EPA 3510C				EPA 8270C		
RunID: MS7_071127A	QC Batch: 41608			PrepDate:	11/27/2007	Analyst: MFR
Acenaphthene	ND	10		µg/L	1	11/27/2007 06:50 PM
Acenaphthylene	ND	10		µg/L	1	11/27/2007 06:50 PM
Anthracene	ND	10		µg/L	1	11/27/2007 06:50 PM
Benzidine (M)	ND	50		µg/L	1	11/27/2007 06:50 PM
Benzo(a)anthracene	ND	10		µg/L	1	11/27/2007 06:50 PM
Benzo(a)pyrene	ND	10		µg/L	1	11/27/2007 06:50 PM
Benzo(b)fluoranthene	ND	10		µg/L	1	11/27/2007 06:50 PM
Benzo(g,h,i)perylene	ND	10		µg/L	1	11/27/2007 06:50 PM
Benzo(k)fluoranthene	ND	10		µg/L	1	11/27/2007 06:50 PM
Benzoic acid	ND	50		µg/L	1	11/27/2007 06:50 PM
Benzyl alcohol	ND	20		µg/L	1	11/27/2007 06:50 PM
Bis(2-chloroethoxy)methane	ND	10		µg/L	1	11/27/2007 06:50 PM
Bis(2-chloroethyl)ether	ND	10		µg/L	1	11/27/2007 06:50 PM
Bis(2-chloroisopropyl)ether	ND	10		µg/L	1	11/27/2007 06:50 PM
Bis(2-ethylhexyl)phthalate	ND	10		µg/L	1	11/27/2007 06:50 PM
Butylbenzylphthalate	ND	10		µg/L	1	11/27/2007 06:50 PM
Chrysene	ND	10		µg/L	1	11/27/2007 06:50 PM
Di-n-butylphthalate	ND	10		µg/L	1	11/27/2007 06:50 PM
Di-n-octylphthalate	ND	10		µg/L	1	11/27/2007 06:50 PM
Dibenz(a,h)anthracene	ND	10		µg/L	1	11/27/2007 06:50 PM
Dibenzofuran	ND	10		µg/L	1	11/27/2007 06:50 PM
Diethylphthalate	ND	10		µg/L	1	11/27/2007 06:50 PM
Dimethylphthalate	ND	10		µg/L	1	11/27/2007 06:50 PM
Fluoranthene	ND	10		µg/L	1	11/27/2007 06:50 PM
Fluorene	ND	10		µg/L	1	11/27/2007 06:50 PM
Hexachlorobenzene	ND	10		µg/L	1	11/27/2007 06:50 PM
Hexachlorobutadiene	ND	20		µg/L	1	11/27/2007 06:50 PM
Hexachlorocyclopentadiene	ND	10		µg/L	1	11/27/2007 06:50 PM
Hexachloroethane	ND	10		µg/L	1	11/27/2007 06:50 PM
Indeno(1,2,3-cd)pyrene	ND	10		µg/L	1	11/27/2007 06:50 PM
Isophorone	ND	10		µg/L	1	11/27/2007 06:50 PM
N-Nitrosodi-n-propylamine	ND	10		µg/L	1	11/27/2007 06:50 PM
N-Nitrosodiphenylamine	ND	10		µg/L	1	11/27/2007 06:50 PM
Naphthalene	ND	10		µg/L	1	11/27/2007 06:50 PM
Nitrobenzene	ND	10		µg/L	1	11/27/2007 06:50 PM
Pentachlorophenol	ND	50		µg/L	1	11/27/2007 06:50 PM

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- E Value above quantitation range
- ND Not Detected at the Reporting Limit

Results are wet unless otherwise specified

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Advanced Technology Laboratories

ANALYTICAL RESULTS

Print Date: *03-Dec-07*

CLIENT:	Ninyo & Moore	**Client Sample ID:**	MW-2
Lab Order:	095431	**Collection Date:**	11/21/2007 12:28:00 PM
Project:	Paramount Dump, 207069004	**Matrix:**	GROUND WATER
Lab ID:	095431-002		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
SEMIVOLATILE ORGANIC COMPOUNDS BY GC/MS						
EPA 3510C				EPA 8270C		
RunID: MS7_071127A	QC Batch: 41608			PrepDate:	11/27/2007	Analyst: MFR
Phenanthrene	ND	10		µg/L	1	11/27/2007 06:50 PM
Phenol	ND	10		µg/L	1	11/27/2007 06:50 PM
Pyrene	ND	10		µg/L	1	11/27/2007 06:50 PM
Surr: 1,2-Dichlorobenzene-d4	69.0	47-101		%REC	1	11/27/2007 06:50 PM
Surr: 2,4,6-Tribromophenol	98.1	64-144		%REC	1	11/27/2007 06:50 PM
Surr: 2-Chlorophenol-d4	67.5	46-98		%REC	1	11/27/2007 06:50 PM
Surr: 2-Fluorobiphenyl	82.6	55-104		%REC	1	11/27/2007 06:50 PM
Surr: 2-Fluorophenol	41.6	27-64		%REC	1	11/27/2007 06:50 PM
Surr: 4-Terphenyl-d14	94.2	59-119		%REC	1	11/27/2007 06:50 PM
Surr: Nitrobenzene-d5	79.5	48-115		%REC	1	11/27/2007 06:50 PM
Surr: Phenol-d5	27.8	13-50		%REC	1	11/27/2007 06:50 PM
TENTATIVELY IDENTIFIED COMPOUNDS BY GC/MS						
EPA 3510C				EPA 8270C		
RunID: MS7_071127A	QC Batch: 41608			PrepDate:	11/27/2007	Analyst: MFR
No compounds detected	ND	4.0		µg/L	1	11/27/2007 06:50 PM
TENTATIVELY IDENTIFIED COMPOUNDS BY GC/MS						
				EPA 8260B		
RunID: MS11_071126A	QC Batch: A07VW319			PrepDate:		Analyst: ML
no compounds detected	ND	2.5		µg/L	1	11/26/2007 03:17 PM
VOLATILE ORGANIC COMPOUNDS BY GC/MS						
				EPA 8260B		
RunID: MS11_071126A	QC Batch: A07VW319			PrepDate:		Analyst: ML
1,1,1,2-Tetrachloroethane	ND	5.0		µg/L	1	11/26/2007 03:17 PM
1,1,1-Trichloroethane	ND	5.0		µg/L	1	11/26/2007 03:17 PM
1,1,2,2-Tetrachloroethane	ND	5.0		µg/L	1	11/26/2007 03:17 PM
1,1,2-Trichloroethane	ND	5.0		µg/L	1	11/26/2007 03:17 PM
1,1-Dichloroethane	ND	5.0		µg/L	1	11/26/2007 03:17 PM
1,1-Dichloroethene	ND	5.0		µg/L	1	11/26/2007 03:17 PM
1,1-Dichloropropene	ND	5.0		µg/L	1	11/26/2007 03:17 PM
1,2,3-Trichlorobenzene	ND	5.0		µg/L	1	11/26/2007 03:17 PM
1,2,3-Trichloropropane	ND	5.0		µg/L	1	11/26/2007 03:17 PM
1,2,4-Trichlorobenzene	ND	5.0		µg/L	1	11/26/2007 03:17 PM
1,2,4-Trimethylbenzene	ND	5.0		µg/L	1	11/26/2007 03:17 PM
1,2-Dibromo-3-chloropropane	ND	5.0		µg/L	1	11/26/2007 03:17 PM

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- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit

Results are wet unless otherwise specified

Advanced Technology Laboratories

ANALYTICAL RESULTS

Print Date: *03-Dec-07*

CLIENT: Ninyo & Moore
Lab Order: 095431
Project: Paramount Dump, 207069004
Lab ID: 095431-002

Client Sample ID: MW-2
Collection Date: 11/21/2007 12:28:00 PM
Matrix: GROUND WATER

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
VOLATILE ORGANIC COMPOUNDS BY GC/MS						
				EPA 8260B		
RunID: MS11_071126A	QC Batch: A07VW319			PrepDate:		Analyst: ML
1,2-Dibromoethane	ND	5.0		µg/L	1	11/26/2007 03:17 PM
1,2-Dichlorobenzene	ND	5.0		µg/L	1	11/26/2007 03:17 PM
1,2-Dichloroethane	ND	5.0		µg/L	1	11/26/2007 03:17 PM
1,2-Dichloropropane	ND	5.0		µg/L	1	11/26/2007 03:17 PM
1,3,5-Trimethylbenzene	ND	5.0		µg/L	1	11/26/2007 03:17 PM
1,3-Dichlorobenzene	ND	5.0		µg/L	1	11/26/2007 03:17 PM
1,3-Dichloropropane	ND	5.0		µg/L	1	11/26/2007 03:17 PM
1,4-Dichlorobenzene	ND	5.0		µg/L	1	11/26/2007 03:17 PM
2,2-Dichloropropane	ND	5.0		µg/L	1	11/26/2007 03:17 PM
2-Chlorotoluene	ND	5.0		µg/L	1	11/26/2007 03:17 PM
4-Chlorotoluene	ND	5.0		µg/L	1	11/26/2007 03:17 PM
4-Isopropyltoluene	ND	5.0		µg/L	1	11/26/2007 03:17 PM
Benzene	ND	5.0		µg/L	1	11/26/2007 03:17 PM
Bromobenzene	ND	5.0		µg/L	1	11/26/2007 03:17 PM
Bromodichloromethane	ND	5.0		µg/L	1	11/26/2007 03:17 PM
Bromoform	ND	5.0		µg/L	1	11/26/2007 03:17 PM
Bromomethane	ND	5.0		µg/L	1	11/26/2007 03:17 PM
Carbon tetrachloride	ND	5.0		µg/L	1	11/26/2007 03:17 PM
Chlorobenzene	ND	5.0		µg/L	1	11/26/2007 03:17 PM
Chloroethane	ND	5.0		µg/L	1	11/26/2007 03:17 PM
Chloroform	ND	5.0		µg/L	1	11/26/2007 03:17 PM
Chloromethane	ND	5.0		µg/L	1	11/26/2007 03:17 PM
cis-1,2-Dichloroethene	ND	5.0		µg/L	1	11/26/2007 03:17 PM
Dibromochloromethane	ND	5.0		µg/L	1	11/26/2007 03:17 PM
Dibromomethane	ND	5.0		µg/L	1	11/26/2007 03:17 PM
Dichlorodifluoromethane	ND	5.0		µg/L	1	11/26/2007 03:17 PM
Ethylbenzene	ND	5.0		µg/L	1	11/26/2007 03:17 PM
Hexachlorobutadiene	ND	5.0		µg/L	1	11/26/2007 03:17 PM
Isopropylbenzene	ND	5.0		µg/L	1	11/26/2007 03:17 PM
m,p-Xylene	ND	10		µg/L	1	11/26/2007 03:17 PM
Methylene chloride	ND	5.0		µg/L	1	11/26/2007 03:17 PM
n-Butylbenzene	ND	5.0		µg/L	1	11/26/2007 03:17 PM
n-Propylbenzene	ND	5.0		µg/L	1	11/26/2007 03:17 PM
Naphthalene	ND	5.0		µg/L	1	11/26/2007 03:17 PM
o-Xylene	ND	5.0		µg/L	1	11/26/2007 03:17 PM
sec-Butylbenzene	ND	5.0		µg/L	1	11/26/2007 03:17 PM

Qualifiers:
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- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit

Results are wet unless otherwise specified

Advanced Technology Laboratories

ANALYTICAL RESULTS

Print Date: *03-Dec-07*

CLIENT: Ninyo & Moore
Lab Order: 095431
Project: Paramount Dump, 207069004
Lab ID: 095431-002

Client Sample ID: MW-2
Collection Date: 11/21/2007 12:28:00 PM
Matrix: GROUND WATER

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
VOLATILE ORGANIC COMPOUNDS BY GC/MS				EPA 8260B		
RunID: MS11_071126A	QC Batch: A07VW319			PrepDate:		Analyst: ML
Styrene	ND	5.0		µg/L	1	11/26/2007 03:17 PM
tert-Butylbenzene	ND	5.0		µg/L	1	11/26/2007 03:17 PM
Tetrachloroethene	ND	5.0		µg/L	1	11/26/2007 03:17 PM
Toluene	ND	5.0		µg/L	1	11/26/2007 03:17 PM
trans-1,2-Dichloroethene	ND	5.0		µg/L	1	11/26/2007 03:17 PM
Trichloroethene	ND	5.0		µg/L	1	11/26/2007 03:17 PM
Trichlorofluoromethane	ND	5.0		µg/L	1	11/26/2007 03:17 PM
Vinyl chloride	ND	5.0		µg/L	1	11/26/2007 03:17 PM
Surr: 1,2-Dichloroethane-d4	84.0	70-130		%REC	1	11/26/2007 03:17 PM
Surr: 4-Bromofluorobenzene	97.2	70-130		%REC	1	11/26/2007 03:17 PM
Surr: Dibromofluoromethane	92.5	70-130		%REC	1	11/26/2007 03:17 PM
Surr: Toluene-d8	98.4	70-130		%REC	1	11/26/2007 03:17 PM
TOTAL ORGANIC CARBON				SM5310B		
RunID: TOC2_071127A	QC Batch: R87693			PrepDate:		Analyst: RSJ
Organic Carbon, Total	ND	3.0		mg/L	1	11/27/2007 03:47 PM
TOTAL ORGANIC HALIDES				EPA 9020B		
RunID: TOX1_071127A	QC Batch: R87690			PrepDate:		Analyst: RSJ
Total Organic Halides	25	20		µg/L	1	11/27/2007
TOTAL FILTERABLE RESIDUE				SM2540C		
RunID: WETCHEM_071126C	QC Batch: 41573			PrepDate:	11/26/2007	Analyst: CC
Total Dissolved Solids (Residue, Filterable)	1400	10		mg/L	1	11/26/2007 03:23 PM
CHEMICAL OXYGEN DEMAND				EPA 410.4		
RunID: WETCHEM_071126B	QC Batch: 41555			PrepDate:	11/26/2007	Analyst: CC
Chemical Oxygen Demand	22	5.0		mg/L	1	11/26/2007

Qualifiers:
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit

Results are wet unless otherwise specified

Advanced Technology Laboratories *3275 Walnut Avenue, Signal Hill, CA 90755* *Tel: 562. 989.4045* *Fax: 562.989.4040*

CLIENT:	Ninyo & Moore	**Client Sample ID:**	PZ-1
Lab Order:	095431	**Collection Date:**	11/21/2007 4:15:00 PM
Project:	Paramount Dump, 207069004	**Matrix:**	GROUND WATER
Lab ID:	095431-003		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
PCBS BY GC/ECD						
EPA 3510C				EPA 8082		
RunID: GC4_071127B	QC Batch: 41612			PrepDate:	11/27/2007	Analyst: VLT
Aroclor 1016	ND	0.50		µg/L	1	11/27/2007 08:37 PM
Aroclor 1221	ND	1.0		µg/L	1	11/27/2007 08:37 PM
Aroclor 1232	ND	0.50		µg/L	1	11/27/2007 08:37 PM
Aroclor 1242	ND	0.50		µg/L	1	11/27/2007 08:37 PM
Aroclor 1248	ND	0.50		µg/L	1	11/27/2007 08:37 PM
Aroclor 1254	ND	0.50		µg/L	1	11/27/2007 08:37 PM
Aroclor 1260	ND	0.50		µg/L	1	11/27/2007 08:37 PM
Aroclor 1262	ND	0.50		µg/L	1	11/27/2007 08:37 PM
Aroclor 1268	ND	0.50		µg/L	1	11/27/2007 08:37 PM
Surr: Decachlorobiphenyl	83.6	29-112		%REC	1	11/27/2007 08:37 PM
Surr: Tetrachloro-m-xylene	94.6	48-120		%REC	1	11/27/2007 08:37 PM
SEMIVOLATILE ORGANIC COMPOUNDS BY GC/MS						
EPA 3510C				EPA 8270C		
RunID: MS7_071127A	QC Batch: 41608			PrepDate:	11/27/2007	Analyst: MFR
1,2,4-Trichlorobenzene	ND	10		µg/L	1	11/27/2007 07:24 PM
1,2-Dichlorobenzene	ND	10		µg/L	1	11/27/2007 07:24 PM
1,3-Dichlorobenzene	ND	10		µg/L	1	11/27/2007 07:24 PM
1,4-Dichlorobenzene	ND	10		µg/L	1	11/27/2007 07:24 PM
2,4,5-Trichlorophenol	ND	10		µg/L	1	11/27/2007 07:24 PM
2,4,6-Trichlorophenol	ND	10		µg/L	1	11/27/2007 07:24 PM
2,4-Dichlorophenol	ND	10		µg/L	1	11/27/2007 07:24 PM
2,4-Dimethylphenol	ND	10		µg/L	1	11/27/2007 07:24 PM
2,4-Dinitrophenol	ND	50		µg/L	1	11/27/2007 07:24 PM
2,4-Dinitrotoluene	ND	10		µg/L	1	11/27/2007 07:24 PM
2,6-Dinitrotoluene	ND	10		µg/L	1	11/27/2007 07:24 PM
2-Chloronaphthalene	ND	10		µg/L	1	11/27/2007 07:24 PM
2-Chlorophenol	ND	10		µg/L	1	11/27/2007 07:24 PM
2-Methylnaphthalene	ND.	10		µg/L	1	11/27/2007 07:24 PM
2-Methylphenol	ND	10		µg/L	1	11/27/2007 07:24 PM
2-Nitroaniline	ND	50		µg/L	1	11/27/2007 07:24 PM
2-Nitrophenol	ND	10		µg/L	1	11/27/2007 07:24 PM
3,3´-Dichlorobenzidine	ND	20		µg/L	1	11/27/2007 07:24 PM
3-Nitroaniline	ND	50		µg/L	1	11/27/2007 07:24 PM
4,6-Dinitro-2-methylphenol	ND	50		µg/L	1	11/27/2007 07:24 PM
4-Bromophenyl-phenylether	ND	10		µg/L	1	11/27/2007 07:24 PM
4-Chloro-3-methylphenol	ND	50		µg/L	1	11/27/2007 07:24 PM

Qualifiers:

- B Analyte detected in the associated Method Blank
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- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit

Results are wet unless otherwise specified

3275 Walnut Avenue, Signal Hill, CA 90755 Tel: 562. 989.4045 Fax: 562.989.4040

CLIENT:	Ninyo & Moore	**Client Sample ID:**	PZ-1
Lab Order:	095431	**Collection Date:**	11/21/2007 4:15:00 PM
Project:	Paramount Dump, 207069004	**Matrix:**	GROUND WATER
Lab ID:	095431-003		

SEMIVOLATILE ORGANIC COMPOUNDS BY GC/MS EPA 3510C EPA 8270C

RunID: MS7_071127A QC Batch: 41608 PrepDate: 11/27/2007 Analyst: MFR

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
4-Chloroaniline	ND	20		µg/L	1	11/27/2007 07:24 PM
4-Chlorophenyl-phenylether	ND	10		µg/L	1	11/27/2007 07:24 PM
4-Methylphenol	ND	10		µg/L	1	11/27/2007 07:24 PM
4-Nitroaniline	ND	20		µg/L	1	11/27/2007 07:24 PM
4-Nitrophenol	ND	50		µg/L	1	11/27/2007 07:24 PM
Acenaphthene	ND	10		µg/L	1	11/27/2007 07:24 PM
Acenaphthylene	ND	10		µg/L	1	11/27/2007 07:24 PM
Anthracene	ND	10		µg/L	1	11/27/2007 07:24 PM
Benzidine (M)	ND	50		µg/L	1	11/27/2007 07:24 PM
Benzo(a)anthracene	ND	10		µg/L	1	11/27/2007 07:24 PM
Benzo(a)pyrene	ND	10		µg/L	1	11/27/2007 07:24 PM
Benzo(b)fluoranthene	ND	10		µg/L	1	11/27/2007 07:24 PM
Benzo(g,h,i)perylene	ND	10		µg/L	1	11/27/2007 07:24 PM
Benzo(k)fluoranthene	ND	10		µg/L	1	11/27/2007 07:24 PM
Benzoic acid	ND	50		µg/L	1	11/27/2007 07:24 PM
Benzyl alcohol	ND	20		µg/L	1	11/27/2007 07:24 PM
Bis(2-chloroethoxy)methane	ND	10		µg/L	1	11/27/2007 07:24 PM
Bis(2-chloroethyl)ether	ND	10		µg/L	1	11/27/2007 07:24 PM
Bis(2-chloroisopropyl)ether	ND	10		µg/L	1	11/27/2007 07:24 PM
Bis(2-ethylhexyl)phthalate	ND	10		µg/L	1	11/27/2007 07:24 PM
Butylbenzylphthalate	ND	10		µg/L	1	11/27/2007 07:24 PM
Chrysene	ND	10		µg/L	1	11/27/2007 07:24 PM
Di-n-butylphthalate	ND	10		µg/L	1	11/27/2007 07:24 PM
Di-n-octylphthalate	ND	10		µg/L	1	11/27/2007 07:24 PM
Dibenz(a,h)anthracene	ND	10		µg/L	1	11/27/2007 07:24 PM
Dibenzofuran	ND	10		µg/L	1	11/27/2007 07:24 PM
Diethylphthalate	ND	10		µg/L	1	11/27/2007 07:24 PM
Dimethylphthalate	ND	10		µg/L	1	11/27/2007 07:24 PM
Fluoranthene	ND	10		µg/L	1	11/27/2007 07:24 PM
Fluorene	ND	10		µg/L	1	11/27/2007 07:24 PM
Hexachlorobenzene	ND	10		µg/L	1	11/27/2007 07:24 PM
Hexachlorobutadiene	ND	20		µg/L	1	11/27/2007 07:24 PM
Hexachlorocyclopentadiene	ND	10		µg/L	1	11/27/2007 07:24 PM
Hexachloroethane	ND	10		µg/L	1	11/27/2007 07:24 PM
Indeno(1,2,3-cd)pyrene	ND	10		µg/L	1	11/27/2007 07:24 PM
Isophorone	ND	10		µg/L	1	11/27/2007 07:24 PM

Qualifiers:
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit

Results are wet unless otherwise specified

CLIENT:	Ninyo & Moore	**Client Sample ID:**	PZ-1
Lab Order:	095431	**Collection Date:**	11/21/2007 4:15:00 PM
Project:	Paramount Dump, 207069004	**Matrix:**	GROUND WATER
Lab ID:	095431-003		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
SEMIVOLATILE ORGANIC COMPOUNDS BY GC/MS EPA 3510C				EPA 8270C		
RunID: MS7_071127A	QC Batch: 41608			PrepDate: 11/27/2007		Analyst: MFR
N-Nitrosodi-n-propylamine	ND	10		µg/L	1	11/27/2007 07:24 PM
N-Nitrosodiphenylamine	ND	10		µg/L	1	11/27/2007 07:24 PM
Naphthalene	ND	10		µg/L	1	11/27/2007 07:24 PM
Nitrobenzene	ND	10		µg/L	1	11/27/2007 07:24 PM
Pentachlorophenol	ND	50		µg/L	1	11/27/2007 07:24 PM
Phenanthrene	ND	10		µg/L	1	11/27/2007 07:24 PM
Phenol	ND	10		µg/L	1	11/27/2007 07:24 PM
Pyrene	ND	10		µg/L	1	11/27/2007 07:24 PM
Surr: 1,2-Dichlorobenzene-d4	81.3	47-101		%REC	1	11/27/2007 07:24 PM
Surr: 2,4,6-Tribromophenol	97.2	64-144		%REC	1	11/27/2007 07:24 PM
Surr: 2-Chlorophenol-d4	77.4	46-98		%REC	1	11/27/2007 07:24 PM
Surr: 2-Fluorobiphenyl	92.2	55-104		%REC	1	11/27/2007 07:24 PM
Surr: 2-Fluorophenol	48.9	27-64		%REC	1	11/27/2007 07:24 PM
Surr: 4-Terphenyl-d14	101	59-119		%REC	1	11/27/2007 07:24 PM
Surr: Nitrobenzene-d5	92.0	48-115		%REC	1	11/27/2007 07:24 PM
Surr: Phenol-d5	33.0	13-50		%REC	1	11/27/2007 07:24 PM
TENTATIVELY IDENTIFIED COMPOUNDS BY GC/MS EPA 3510C				EPA 8270C		
RunID: MS7_071127A	QC Batch: 41608			PrepDate: 11/27/2007		Analyst: MFR
No compounds detected	ND	4.0		µg/L	1	11/27/2007 07:24 PM
TENTATIVELY IDENTIFIED COMPOUNDS BY GC/MS				EPA 8260B		
RunID: MS11_071126A	QC Batch: A07VW319			PrepDate:		Analyst: ML
no compounds detected	ND	2.5		µg/L	1	11/26/2007 01:59 PM
VOLATILE ORGANIC COMPOUNDS BY GC/MS				EPA 8260B		
RunID: MS11_071126A	QC Batch: A07VW319			PrepDate:		Analyst: ML
1,1,1,2-Tetrachloroethane	ND	5.0		µg/L	1	11/26/2007 01:59 PM
1,1,1-Trichloroethane	ND	5.0		µg/L	1	11/26/2007 01:59 PM
1,1,2,2-Tetrachloroethane	ND	5.0		µg/L	1	11/26/2007 01:59 PM
1,1,2-Trichloroethane	ND	5.0		µg/L	1	11/26/2007 01:59 PM
1,1-Dichloroethane	ND	5.0		µg/L	1	11/26/2007 01:59 PM
1,1-Dichloroethene	ND	5.0		µg/L	1	11/26/2007 01:59 PM
1,1-Dichloropropene	ND	5.0		µg/L	1	11/26/2007 01:59 PM

Qualifiers:
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit

Results are wet unless otherwise specified

Advanced Technology Laboratories

ANALYTICAL RESULTS

Print Date: *03-Dec-07*

CLIENT:	Ninyo & Moore	**Client Sample ID:**	PZ-1
Lab Order:	095431	**Collection Date:**	11/21/2007 4:15:00 PM
Project:	Paramount Dump, 207069004	**Matrix:**	GROUND WATER
Lab ID:	095431-003		

VOLATILE ORGANIC COMPOUNDS BY GC/MS — **EPA 8260B**

RunID: MS11_071126A QC Batch: A07VW319 PrepDate: Analyst: **ML**

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
1,2,3-Trichlorobenzene	ND	5.0		µg/L	1	11/26/2007 01:59 PM
1,2,3-Trichloropropane	ND	5.0		µg/L	1	11/26/2007 01:59 PM
1,2,4-Trichlorobenzene	ND	5.0		µg/L	1	11/26/2007 01:59 PM
1,2,4-Trimethylbenzene	ND	5.0		µg/L	1	11/26/2007 01:59 PM
1,2-Dibromo-3-chloropropane	ND	5.0		µg/L	1	11/26/2007 01:59 PM
1,2-Dibromoethane	ND	5.0		µg/L	1	11/26/2007 01:59 PM
1,2-Dichlorobenzene	ND	5.0		µg/L	1	11/26/2007 01:59 PM
1,2-Dichloroethane	ND	5.0		µg/L	1	11/26/2007 01:59 PM
1,2-Dichloropropane	ND	5.0		µg/L	1	11/26/2007 01:59 PM
1,3,5-Trimethylbenzene	ND	5.0		µg/L	1	11/26/2007 01:59 PM
1,3-Dichlorobenzene	ND	5.0		µg/L	1	11/26/2007 01:59 PM
1,3-Dichloropropane	ND	5.0		µg/L	1	11/26/2007 01:59 PM
1,4-Dichlorobenzene	ND	5.0		µg/L	1	11/26/2007 01:59 PM
2,2-Dichloropropane	ND	5.0		µg/L	1	11/26/2007 01:59 PM
2-Chlorotoluene	ND	5.0		µg/L	1	11/26/2007 01:59 PM
4-Chlorotoluene	ND	5.0		µg/L	1	11/26/2007 01:59 PM
4-Isopropyltoluene	ND	5.0		µg/L	1	11/26/2007 01:59 PM
Benzene	ND	5.0		µg/L	1	11/26/2007 01:59 PM
Bromobenzene	ND	5.0		µg/L	1	11/26/2007 01:59 PM
Bromodichloromethane	ND	5.0		µg/L	1	11/26/2007 01:59 PM
Bromoform	ND	5.0		µg/L	1	11/26/2007 01:59 PM
Bromomethane	ND	5.0		µg/L	1	11/26/2007 01:59 PM
Carbon tetrachloride	ND	5.0		µg/L	1	11/26/2007 01:59 PM
Chlorobenzene	ND	5.0		µg/L	1	11/26/2007 01:59 PM
Chloroethane	ND	5.0		µg/L	1	11/26/2007 01:59 PM
Chloroform	ND	5.0		µg/L	1	11/26/2007 01:59 PM
Chloromethane	ND	5.0		µg/L	1	11/26/2007 01:59 PM
cis-1,2-Dichloroethene	ND	5.0		µg/L	1	11/26/2007 01:59 PM
Dibromochloromethane	ND	5.0		µg/L	1	11/26/2007 01:59 PM
Dibromomethane	ND	5.0		µg/L	1	11/26/2007 01:59 PM
Dichlorodifluoromethane	ND	5.0		µg/L	1	11/26/2007 01:59 PM
Ethylbenzene	ND	5.0		µg/L	1	11/26/2007 01:59 PM
Hexachlorobutadiene	ND	5.0		µg/L	1	11/26/2007 01:59 PM
Isopropylbenzene	ND	5.0		µg/L	1	11/26/2007 01:59 PM
m,p-Xylene	ND	10		µg/L	1	11/26/2007 01:59 PM
Methylene chloride	ND	5.0		µg/L	1	11/26/2007 01:59 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

Advanced Technology Laboratories

ANALYTICAL RESULTS
Print Date: *03-Dec-07*

CLIENT:	Ninyo & Moore	**Client Sample ID:**	PZ-1
Lab Order:	095431	**Collection Date:**	11/21/2007 4:15:00 PM
Project:	Paramount Dump, 207069004	**Matrix:**	GROUND WATER
Lab ID:	095431-003		

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
VOLATILE ORGANIC COMPOUNDS BY GC/MS						
				EPA 8260B		
RunID: MS11_071126A	QC Batch: A07VW319			PrepDate:		Analyst: **ML**
n-Butylbenzene	ND	5.0		µg/L	1	11/26/2007 01:59 PM
n-Propylbenzene	ND	5.0		µg/L	1	11/26/2007 01:59 PM
Naphthalene	ND	5.0		µg/L	1	11/26/2007 01:59 PM
o-Xylene	ND	5.0		µg/L	1	11/26/2007 01:59 PM
sec-Butylbenzene	ND	5.0		µg/L	1	11/26/2007 01:59 PM
Styrene	ND	5.0		µg/L	1	11/26/2007 01:59 PM
tert-Butylbenzene	ND	5.0		µg/L	1	11/26/2007 01:59 PM
Tetrachloroethene	ND	5.0		µg/L	1	11/26/2007 01:59 PM
Toluene	ND	5.0		µg/L	1	11/26/2007 01:59 PM
trans-1,2-Dichloroethene	ND	5.0		µg/L	1	11/26/2007 01:59 PM
Trichloroethene	ND	5.0		µg/L	1	11/26/2007 01:59 PM
Trichlorofluoromethane	ND	5.0		µg/L	1	11/26/2007 01:59 PM
Vinyl chloride	ND	5.0		µg/L	1	11/26/2007 01:59 PM
Surr: 1,2-Dichloroethane-d4	85.3	70-130		%REC	1	11/26/2007 01:59 PM
Surr: 4-Bromofluorobenzene	99.4	70-130		%REC	1	11/26/2007 01:59 PM
Surr: Dibromofluoromethane	86.7	70-130		%REC	1	11/26/2007 01:59 PM
Surr: Toluene-d8	97.6	70-130		%REC	1	11/26/2007 01:59 PM
TOTAL ORGANIC CARBON						
				SM5310B		
RunID: TOC2_071127A	QC Batch: R87693			PrepDate:		Analyst: **RSJ**
Organic Carbon, Total	ND	3.0		mg/L	1	11/27/2007 04:06 PM

Qualifiers:

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- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- E Value above quantitation range
- ND Not Detected at the Reporting Limit

Results are wet unless otherwise specified

Advanced Technology Laboratories

Date: *03-Dec-07*

CLIENT: Ninyo & Moore
Work Order: 095431
Project: Paramount Dump, 207069004

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.1_2540C_W

Sample ID: **095431-002H-DUP** SampType: **DUP** TestCode: **160.1_2540C** Units: **mg/L** Prep Date: **11/26/2007** RunNo: **87673**
Client ID: **MW-2** Batch ID: **41573** TestNo: **SM2540C** Analysis Date: **11/26/2007** SeqNo: **1336009**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	1447.000	10						1449	0.138	10	

Sample ID: **MB-41573** SampType: **MBLK** TestCode: **160.1_2540C** Units: **mg/L** Prep Date: **11/26/2007** RunNo: **87673**
Client ID: **PBW** Batch ID: **41573** TestNo: **SM2540C** Analysis Date: **11/26/2007** SeqNo: **1336010**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	ND	10									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: Ninyo & Moore
Work Order: 095431
Project: Paramount Dump, 207069004

ANALYTICAL QC SUMMARY REPORT

TestCode: 1664_HEM_W

Sample ID: **MB-41609** SampType: **MBLK** TestCode: **1664_HEM_W** Units: **mg/L** Prep Date: **11/26/2007** RunNo: **87677**
Client ID: **PBW** Batch ID: **41609** TestNo: **EPA 1664 _H** Analysis Date: **11/27/2007** SeqNo: **1336045**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Oil & Grease	ND	4.0									

Sample ID: **LCS-41609** SampType: **LCS** TestCode: **1664_HEM_W** Units: **mg/L** Prep Date: **11/26/2007** RunNo: **87677**
Client ID: **LCSW** Batch ID: **41609** TestNo: **EPA 1664 _H** Analysis Date: **11/27/2007** SeqNo: **1336046**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Oil & Grease	35.600	4.0	40.00	0	89.0	80	120				

Sample ID: **MB-41609-MS** SampType: **MS** TestCode: **1664_HEM_W** Units: **mg/L** Prep Date: **11/26/2007** RunNo: **87677**
Client ID: **ZZZZZZ** Batch ID: **41609** TestNo: **EPA 1664 _H** Analysis Date: **11/27/2007** SeqNo: **1336055**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Oil & Grease	37.200	4.0	40.00	0	93.0	80	120				

Sample ID: **MB-41609-MSD** SampType: **MSD** TestCode: **1664_HEM_W** Units: **mg/L** Prep Date: **11/26/2007** RunNo: **87677**
Client ID: **ZZZZZZ** Batch ID: **41609** TestNo: **EPA 1664 _H** Analysis Date: **11/27/2007** SeqNo: **1336056**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Oil & Grease	36.100	4.0	40.00	0	90.3	80	120	37.20	3.00	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories 3275 Walnut Avenue, Signal Hill, CA 90755 Tel: 562. 989.4045 Fax: 562.989.4040

CLIENT: Ninyo & Moore
Work Order: 095431
Project: Paramount Dump, 207069004

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CL

Sample ID: MB-R87567	SampType: MBLK	TestCode: 300_W_CL	Units: mg/L	Prep Date:			RunNo: 87567				
Client ID: PBW	Batch ID: R87567	TestNo: EPA 300.0		Analysis Date: 11/22/2007			SeqNo: 1334576				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID: LCS-R87567	SampType: LCS	TestCode: 300_W_CL	Units: mg/L	Prep Date:			RunNo: 87567				
Client ID: LCSW	Batch ID: R87567	TestNo: EPA 300.0		Analysis Date: 11/22/2007			SeqNo: 1334577				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.469	0.50	2.500	0	98.7	90	110				

Sample ID: 095431-001I-DUP	SampType: DUP	TestCode: 300_W_CL	Units: mg/L	Prep Date:			RunNo: 87567				
Client ID: MW-1	Batch ID: R87567	TestNo: EPA 300.0		Analysis Date: 11/22/2007			SeqNo: 1334579				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	627.210	25						628.2	0.153	30	

Sample ID: 095431-001I-MS	SampType: MS	TestCode: 300_W_CL	Units: mg/L	Prep Date:			RunNo: 87567				
Client ID: MW-1	Batch ID: R87567	TestNo: EPA 300.0		Analysis Date: 11/22/2007			SeqNo: 1334580				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	731.090	25	125.0	628.2	82.3	80	120				

Sample ID: 095431-001I-MSD	SampType: MSD	TestCode: 300_W_CL	Units: mg/L	Prep Date:			RunNo: 87567				
Client ID: MW-1	Batch ID: R87567	TestNo: EPA 300.0		Analysis Date: 11/22/2007			SeqNo: 1334581				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	746.455	25	125.0	628.2	94.6	80	120	731.1	2.08	30	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories 3275 Walnut Avenue, Signal Hill, CA 90755 Tel: 562.989.4045 Fax: 562.989.4040

CLIENT: Ninyo & Moore
Work Order: 095431
Project: Paramount Dump, 207069004

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_NO2

Sample ID: **MB-R87568** SampType: **MBLK** TestCode: **300_W_NO2** Units: **mg/L** Prep Date: RunNo: **87568**
Client ID: **PBW** Batch ID: **R87568** TestNo: **EPA 300.0** Analysis Date: **11/22/2007** SeqNo: **1334583**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrite	ND	0.10									

Sample ID: **LCS-R87568** SampType: **LCS** TestCode: **300_W_NO2** Units: **mg/L** Prep Date: RunNo: **87568**
Client ID: **LCSW** Batch ID: **R87568** TestNo: **EPA 300.0** Analysis Date: **11/22/2007** SeqNo: **1334584**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrite	2.730	0.10	2.500	0	109	90	110				

Sample ID: **095431-001I-DUP** SampType: **DUP** TestCode: **300_W_NO2** Units: **mg/L** Prep Date: RunNo: **87568**
Client ID: **MW-1** Batch ID: **R87568** TestNo: **EPA 300.0** Analysis Date: **11/22/2007** SeqNo: **1334586**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrite	ND	1.0						0	0	30	

Sample ID: **095431-001I-MS** SampType: **MS** TestCode: **300_W_NO2** Units: **mg/L** Prep Date: RunNo: **87568**
Client ID: **MW-1** Batch ID: **R87568** TestNo: **EPA 300.0** Analysis Date: **11/22/2007** SeqNo: **1334587**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrite	25.192	1.0	25.00	0	101	80	120				

Sample ID: **095431-001I-MSD** SampType: **MSD** TestCode: **300_W_NO2** Units: **mg/L** Prep Date: RunNo: **87568**
Client ID: **MW-1** Batch ID: **R87568** TestNo: **EPA 300.0** Analysis Date: **11/22/2007** SeqNo: **1334588**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrite	25.388	1.0	25.00	0	102	80	120	25.19	0.775	30	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: Ninyo & Moore
Work Order: 095431
Project: Paramount Dump, 207069004

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_NO3

Sample ID: MB-R87569	SampType: MBLK	TestCode: 300_W_NO3	Units: mg/L	Prep Date:	RunNo: 87569
Client ID: PBW	Batch ID: R87569	TestNo: EPA 300.0		Analysis Date: 11/22/2007	SeqNo: 1334590

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrate (As N)	ND	0.10									

Sample ID: LCS-R87569	SampType: LCS	TestCode: 300_W_NO3	Units: mg/L	Prep Date:	RunNo: 87569
Client ID: LCSW	Batch ID: R87569	TestNo: EPA 300.0		Analysis Date: 11/22/2007	SeqNo: 1334591

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrate (As N)	2.471	0.10	2.500	0	98.8	90	110				

Sample ID: 095431-001I-DUP	SampType: DUP	TestCode: 300_W_NO3	Units: mg/L	Prep Date:	RunNo: 87569
Client ID: MW-1	Batch ID: R87569	TestNo: EPA 300.0		Analysis Date: 11/22/2007	SeqNo: 1334593

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrate (As N)	ND	1.0						0	0	30	

Sample ID: 095431-001I-MS	SampType: MS	TestCode: 300_W_NO3	Units: mg/L	Prep Date:	RunNo: 87569
Client ID: MW-1	Batch ID: R87569	TestNo: EPA 300.0		Analysis Date: 11/22/2007	SeqNo: 1334594

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrate (As N)	24.832	1.0	25.00	0	99.3	80	120				

Sample ID: 095431-001I-MSD	SampType: MSD	TestCode: 300_W_NO3	Units: mg/L	Prep Date:	RunNo: 87569
Client ID: MW-1	Batch ID: R87569	TestNo: EPA 300.0		Analysis Date: 11/22/2007	SeqNo: 1334595

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrogen, Nitrate (As N)	24.964	1.0	25.00	0	99.9	80	120	24.83	0.530	30	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories 3275 Walnut Avenue, Signal Hill, CA 90755 Tel: 562.989.4045 Fax: 562.989.4040

CLIENT: Ninyo & Moore
Work Order: 095431
Project: Paramount Dump, 207069004

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4

Sample ID: MB-R87571	SampType: MBLK	TestCode: 300_W_SO4	Units: mg/L	Prep Date:			RunNo: 87571			
Client ID: PBW	Batch ID: R87571	TestNo: EPA 300.0		Analysis Date: 11/22/2007			SeqNo: 1334597			
Analyte	**Result**	**PQL**	**SPK value**	**SPK Ref Val**	**%REC**	**LowLimit**	**HighLimit**	**RPD Ref Val**	**%RPD**	**RPDLimit**	**Qual**
Sulfate	ND	1.0									

Sample ID: LCS-R87571	SampType: LCS	TestCode: 300_W_SO4	Units: mg/L	Prep Date:			RunNo: 87571				
Client ID: LCSW	Batch ID: R87571	TestNo: EPA 300.0		Analysis Date: 11/22/2007			SeqNo: 1334598				
Analyte	**Result**	**PQL**	**SPK value**	**SPK Ref Val**	**%REC**	**LowLimit**	**HighLimit**	**RPD Ref Val**	**%RPD**	**RPDLimit**	**Qual**
Sulfate	4.988	1.0	5.000	0	99.8	90	110				

Sample ID: 095431-001I-DUP	SampType: DUP	TestCode: 300_W_SO4	Units: mg/L	Prep Date:			RunNo: 87571				
Client ID: MW-1	Batch ID: R87571	TestNo: EPA 300.0		Analysis Date: 11/22/2007			SeqNo: 1334600				
Analyte	**Result**	**PQL**	**SPK value**	**SPK Ref Val**	**%REC**	**LowLimit**	**HighLimit**	**RPD Ref Val**	**%RPD**	**RPDLimit**	**Qual**
Sulfate	161.129	10						158.3	1.76	30	

Sample ID: 095431-001I-MS	SampType: MS	TestCode: 300_W_SO4	Units: mg/L	Prep Date:			RunNo: 87571				
Client ID: MW-1	Batch ID: R87571	TestNo: EPA 300.0		Analysis Date: 11/22/2007			SeqNo: 1334601				
Analyte	**Result**	**PQL**	**SPK value**	**SPK Ref Val**	**%REC**	**LowLimit**	**HighLimit**	**RPD Ref Val**	**%RPD**	**RPDLimit**	**Qual**
Sulfate	213.246	10	50.00	158.3	110	80	120				

Sample ID: 095431-001I-MSD	SampType: MSD	TestCode: 300_W_SO4	Units: mg/L	Prep Date:			RunNo: 87571				
Client ID: MW-1	Batch ID: R87571	TestNo: EPA 300.0		Analysis Date: 11/22/2007			SeqNo: 1334602				
Analyte	**Result**	**PQL**	**SPK value**	**SPK Ref Val**	**%REC**	**LowLimit**	**HighLimit**	**RPD Ref Val**	**%RPD**	**RPDLimit**	**Qual**
Sulfate	213.766	10	50.00	158.3	111	80	120	213.2	0.244	30	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

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CLIENT: Ninyo & Moore
Work Order: 095431
Project: Paramount Dump, 207069004

ANALYTICAL QC SUMMARY REPORT

TestCode: 376.2_4500S2_WT

Sample ID: 095431-002KMS | SampType: MS | TestCode: 376.2_4500S2 | Units: mg/L | Prep Date: | RunNo: 87640
Client ID: MW-2 | Batch ID: R87640 | TestNo: SM4500-S= D | Analysis Date: 11/23/2007 | SeqNo: 1335530

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	0.988	0.050	1.000	0	98.8	70	120				

Sample ID: 095431-002KMSD | SampType: MSD | TestCode: 376.2_4500S2 | Units: mg/L | Prep Date: | RunNo: 87640
Client ID: MW-2 | Batch ID: R87640 | TestNo: SM4500-S= D | Analysis Date: 11/23/2007 | SeqNo: 1335531

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	0.994	0.050	1.000	0	99.4	70	120	0.9880	0.605	20	

Sample ID: LCS-R87640 | SampType: LCS | TestCode: 376.2_4500S2 | Units: mg/L | Prep Date: | RunNo: 87640
Client ID: LCSW | Batch ID: R87640 | TestNo: SM4500-S= D | Analysis Date: 11/23/2007 | SeqNo: 1335532

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	0.992	0.050	1.000	0	99.2	80	120				

Sample ID: MB-R87640 | SampType: MBLK | TestCode: 376.2_4500S2 | Units: mg/L | Prep Date: | RunNo: 87640
Client ID: PBW | Batch ID: R87640 | TestNo: SM4500-S= D | Analysis Date: 11/23/2007 | SeqNo: 1335533

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfide	ND	0.050									

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
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Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

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CLIENT: Ninyo & Moore
Work Order: 095431
Project: Paramount Dump, 207069004

ANALYTICAL QC SUMMARY REPORT

TestCode: 410.4_W

Sample ID: MB-41555	SampType: MBLK	TestCode: 410.4_W	Units: mg/L		Prep Date: 11/26/2007			RunNo: 87611			
Client ID: PBW	Batch ID: 41555	TestNo: EPA 410.4			Analysis Date: 11/26/2007			SeqNo: 1335191			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chemical Oxygen Demand	ND	5.0									

Sample ID: LCS-41555	SampType: LCS	TestCode: 410.4_W	Units: mg/L		Prep Date: 11/26/2007			RunNo: 87611			
Client ID: LCSW	Batch ID: 41555	TestNo: EPA 410.4			Analysis Date: 11/26/2007			SeqNo: 1335192			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chemical Oxygen Demand	493.600	5.0	500.0	0	98.7	80	120				

Sample ID: 095434-001B-MS	SampType: MS	TestCode: 410.4_W	Units: mg/L		Prep Date: 11/26/2007			RunNo: 87611			
Client ID: ZZZZZZ	Batch ID: 41555	TestNo: EPA 410.4			Analysis Date: 11/26/2007			SeqNo: 1335204			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chemical Oxygen Demand	721.200	5.0	500.0	280.8	88.1	80	120				

Sample ID: 095434-001B-MSD	SampType: MSD	TestCode: 410.4_W	Units: mg/L		Prep Date: 11/26/2007			RunNo: 87611			
Client ID: ZZZZZZ	Batch ID: 41555	TestNo: EPA 410.4			Analysis Date: 11/26/2007			SeqNo: 1335205			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chemical Oxygen Demand	710.700	5.0	500.0	280.8	86.0	80	120	721.2	1.47	20	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
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H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: Ninyo & Moore
Work Order: 095431
Project: Paramount Dump, 207069004

ANALYTICAL QC SUMMARY REPORT

TestCode: 415.1_5310B_W

Sample ID: MB-R87693 | SampType: MBLK | TestCode: 415.1_5310B | Units: mg/L | Prep Date: | RunNo: 87693
Client ID: PBW | Batch ID: R87693 | TestNo: SM5310B | Analysis Date: 11/27/2007 | SeqNo: 1336218

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Organic Carbon, Total	0.126	3.0									

Sample ID: LCS-R87693 | SampType: LCS | TestCode: 415.1_5310B | Units: mg/L | Prep Date: | RunNo: 87693
Client ID: LCSW | Batch ID: R87693 | TestNo: SM5310B | Analysis Date: 11/27/2007 | SeqNo: 1336219

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Organic Carbon, Total	19.040	3.0	20.00	0.1258	94.6	80	120				

Sample ID: MBR87693-MS | SampType: MS | TestCode: 415.1_5310B | Units: mg/L | Prep Date: | RunNo: 87693
Client ID: ZZZZZZ | Batch ID: R87693 | TestNo: SM5310B | Analysis Date: 11/27/2007 | SeqNo: 1336223

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Organic Carbon, Total	16.690	3.0	20.00	0.1258	82.8	51	141				

Sample ID: MBR87693-MSD | SampType: MSD | TestCode: 415.1_5310B | Units: mg/L | Prep Date: | RunNo: 87693
Client ID: ZZZZZZ | Batch ID: R87693 | TestNo: SM5310B | Analysis Date: 11/27/2007 | SeqNo: 1336224

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Organic Carbon, Total	16.190	3.0	20.00	0.1258	80.3	51	141	16.69	3.04	20	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
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Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: Ninyo & Moore
Work Order: 095431
Project: Paramount Dump, 207069004

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_W

Sample ID: MB-41565 | SampType: MBLK | TestCode: 6010_W | Units: mg/L | Prep Date: 11/26/2007 | RunNo: 87686
Client ID: PBW | Batch ID: 41565 | TestNo: EPA 6010B EPA 3010A | Analysis Date: 11/27/2007 | SeqNo: 1336132

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	ND	0.10									

Sample ID: LCS-41565 | SampType: LCS | TestCode: 6010_W | Units: mg/L | Prep Date: 11/26/2007 | RunNo: 87686
Client ID: LCSW | Batch ID: 41565 | TestNo: EPA 6010B EPA 3010A | Analysis Date: 11/27/2007 | SeqNo: 1336133

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	10.471	0.10	10.00	0	105	85	115				

Sample ID: 095435-003AMS | SampType: MS | TestCode: 6010_W | Units: mg/L | Prep Date: 11/26/2007 | RunNo: 87686
Client ID: ZZZZZZ | Batch ID: 41565 | TestNo: EPA 6010B EPA 3010A | Analysis Date: 11/27/2007 | SeqNo: 1336147

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	10.632	0.10	10.00	0	106	62	136				

Sample ID: 095435-003AMSD | SampType: MSD | TestCode: 6010_W | Units: mg/L | Prep Date: 11/26/2007 | RunNo: 87686
Client ID: ZZZZZZ | Batch ID: 41565 | TestNo: EPA 6010B EPA 3010A | Analysis Date: 11/27/2007 | SeqNo: 1336148

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Boron	11.156	0.10	10.00	0	112	62	136	10.63	4.81	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: Ninyo & Moore
Work Order: 095431
Project: Paramount Dump, 207069004

ANALYTICAL QC SUMMARY REPORT

TestCode: 8082_W

Sample ID: **MB-41612**	SampType: **MBLK**	TestCode: 8082_W	Units: µg/L	Prep Date: 11/27/2007	RunNo: 87704
Client ID: **PBW**	Batch ID: 41612	TestNo: EPA 8082	EPA 3510C	Analysis Date: 11/27/2007	SeqNo: 1336393

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aroclor 1016	ND	0.50									
Aroclor 1221	ND	1.0									
Aroclor 1232	ND	0.50									
Aroclor 1242	ND	0.50									
Aroclor 1248	ND	0.50									
Aroclor 1254	ND	0.50									
Aroclor 1260	ND	0.50									
Aroclor 1262	ND	0.50									
Aroclor 1268	ND	0.50									
Surr: Decachlorobiphenyl	0.462		0.5000		92.3	29	112				
Surr: Tetrachloro-m-xylene	0.492		0.5000		98.5	48	120				

Sample ID: **LCS-41612**	SampType: **LCS**	TestCode: 8082_W	Units: µg/L	Prep Date: 11/27/2007	RunNo: 87704
Client ID: **LCSW**	Batch ID: 41612	TestNo: EPA 8082	EPA 3510C	Analysis Date: 11/27/2007	SeqNo: 1336394

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aroclor 1016	4.334	0.50	5.000	0	86.7	62	102				
Aroclor 1260	4.310	0.50	5.000	0	86.2	56	109				
Surr: Decachlorobiphenyl	0.444		0.5000		88.9	29	112				
Surr: Tetrachloro-m-xylene	0.468		0.5000		93.5	48	120				

Sample ID: **MB-41612MS**	SampType: **MS**	TestCode: 8082_W	Units: µg/L	Prep Date: 11/27/2007	RunNo: 87704
Client ID: **ZZZZZZ**	Batch ID: 41612	TestNo: EPA 8082	EPA 3510C	Analysis Date: 11/27/2007	SeqNo: 1336395

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aroclor 1016	4.203	0.50	5.000	0	84.1	62	102				
Aroclor 1260	4.337	0.50	5.000	0	86.7	56	109				
Surr: Decachlorobiphenyl	0.456		0.5000		91.2	29	112				
Surr: Tetrachloro-m-xylene	0.476		0.5000		95.1	48	120				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: Ninyo & Moore
Work Order: 095431
Project: Paramount Dump, 207069004

ANALYTICAL QC SUMMARY REPORT

TestCode: 8082_W

Sample ID: MB-41612MSD	SampType: MSD	TestCode: 8082_W	Units: µg/L	Prep Date: 11/27/2007	RunNo: 87704
Client ID: ZZZZZZ	Batch ID: 41612	TestNo: EPA 8082	EPA 3510C	Analysis Date: 11/27/2007	SeqNo: 1336396

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aroclor 1016	4.236	0.50	5.000	0	84.7	62	102	4.203	0.765	20	
Aroclor 1260	4.219	0.50	5.000	0	84.4	56	109	4.337	2.76	20	
Surr: Decachlorobiphenyl	0.434		0.5000		86.8	29	112		0	0	
Surr: Tetrachloro-m-xylene	0.459		0.5000		91.7	48	120		0	0	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: Ninyo & Moore
Work Order: 095431
Project: Paramount Dump, 207069004

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP

Sample ID: A11260707LC1 | SampType: LCS | TestCode: 8260_WP | Units: µg/L | Prep Date: | RunNo: 87656
Client ID: LCSW | Batch ID: A07VW319 | TestNo: EPA 8260B | Analysis Date: 11/26/2007 | SeqNo: 1335765

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1-Dichloroethene	20.230	5.0	20.00	0	101	70	130				
Benzene	20.130	5.0	20.00	0	101	70	130				
Chlorobenzene	20.710	5.0	20.00	0	104	70	130				
MTBE	20.460	5.0	20.00	0	102	70	130				
Toluene	20.420	5.0	20.00	0	102	70	130				
Trichloroethene	21.070	5.0	20.00	0	105	70	130				
Surr: 1,2-Dichloroethane-d4	20.610		25.00		82.4	70	130				
Surr: 4-Bromofluorobenzene	24.970		25.00		99.9	70	130				
Surr: Dibromofluoromethane	23.120		25.00		92.5	70	130				
Surr: Toluene-d8	24.350		25.00		97.4	70	130				

Sample ID: A11260707MB2MS | SampType: MS | TestCode: 8260_WP | Units: µg/L | Prep Date: | RunNo: 87656
Client ID: ZZZZZZ | Batch ID: A07VW319 | TestNo: EPA 8260B | Analysis Date: 11/26/2007 | SeqNo: 1335766

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1-Dichloroethene	20.170	5.0	20.00	0	101	70	130				
Benzene	20.420	5.0	20.00	0	102	70	130				
Chlorobenzene	20.690	5.0	20.00	0	103	70	130				
Toluene	20.500	5.0	20.00	0	103	70	130				
Trichloroethene	21.410	5.0	20.00	0	107	70	130				
Surr: 1,2-Dichloroethane-d4	21.240		25.00		85.0	70	130				
Surr: 4-Bromofluorobenzene	25.010		25.00		100	70	130				
Surr: Dibromofluoromethane	23.620		25.00		94.5	70	130				
Surr: Toluene-d8	24.550		25.00		98.2	70	130				

Sample ID: A11260707MB2MSD | SampType: MSD | TestCode: 8260_WP | Units: µg/L | Prep Date: | RunNo: 87656
Client ID: ZZZZZZ | Batch ID: A07VW319 | TestNo: EPA 8260B | Analysis Date: 11/26/2007 | SeqNo: 1335767

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1-Dichloroethene	19.550	5.0	20.00	0	97.8	70	130	20.17	3.12	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: Ninyo & Moore
Work Order: 095431
Project: Paramount Dump, 207069004

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP

Sample ID: A11260707MB2MSD	SampType: MSD	TestCode: 8260_WP	Units: µg/L	Prep Date:	RunNo: 87656
Client ID: ZZZZZZ	Batch ID: A07VW319	TestNo: EPA 8260B		Analysis Date: 11/26/2007	SeqNo: 1335767

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	20.300	5.0	20.00	0	102	70	130	20.42	0.589	20	
Chlorobenzene	20.780	5.0	20.00	0	104	70	130	20.69	0.434	20	
Toluene	20.230	5.0	20.00	0	101	70	130	20.50	1.33	20	
Trichloroethene	21.010	5.0	20.00	0	105	70	130	21.41	1.89	20	
Surr: 1,2-Dichloroethane-d4	20.360		25.00		81.4	70	130		0	20	
Surr: 4-Bromofluorobenzene	24.780		25.00		99.1	70	130		0	20	
Surr: Dibromofluoromethane	22.140		25.00		88.6	70	130		0	20	
Surr: Toluene-d8	24.530		25.00		98.1	70	130		0	20	

Sample ID: A112607MB2	SampType: MBLK	TestCode: 8260_WP	Units: µg/L	Prep Date:	RunNo: 87656
Client ID: PBW	Batch ID: A07VW319	TestNo: EPA 8260B		Analysis Date: 11/26/2007	SeqNo: 1335768

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1,2-Tetrachloroethane	ND	5.0									
1,1,1-Trichloroethane	ND	5.0									
1,1,2,2-Tetrachloroethane	ND	5.0									
1,1,2-Trichloroethane	ND	5.0									
1,1-Dichloroethane	ND	5.0									
1,1-Dichloroethene	ND	5.0									
1,1-Dichloropropene	ND	5.0									
1,2,3-Trichlorobenzene	ND	5.0									
1,2,3-Trichloropropane	ND	5.0									
1,2,4-Trichlorobenzene	ND	5.0									
1,2,4-Trimethylbenzene	ND	5.0									
1,2-Dibromo-3-chloropropane	ND	5.0									
1,2-Dibromoethane	ND	5.0									
1,2-Dichlorobenzene	ND	5.0									
1,2-Dichloroethane	ND	5.0									
1,2-Dichloropropane	ND	5.0									
1,3,5-Trimethylbenzene	ND	5.0									

Qualifiers:

B Analyte detected in the associated Method Blank
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H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

Advanced Technology Laboratories
3275 Walnut Avenue, Signal Hill, CA 90755 Tel: 562.989.4045 Fax: 562.989.4040

CLIENT: Ninyo & Moore
Work Order: 095431
Project: Paramount Dump, 207069004

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP

Sample ID: A112607MB2	SampType: MBLK	TestCode: 8260_WP	Units: µg/L	Prep Date:		RunNo: 87656
Client ID: PBW	Batch ID: A07VW319	TestNo: EPA 8260B		Analysis Date: 11/26/2007		SeqNo: 1335768

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,3-Dichlorobenzene	ND	5.0									
1,3-Dichloropropane	ND	5.0									
1,4-Dichlorobenzene	ND	5.0									
2,2-Dichloropropane	ND	5.0									
2-Chlorotoluene	ND	5.0									
4-Chlorotoluene	ND	5.0									
4-Isopropyltoluene	ND	5.0									
Benzene	ND	5.0									
Bromobenzene	ND	5.0									
Bromodichloromethane	ND	5.0									
Bromoform	ND	5.0									
Bromomethane	ND	5.0									
Carbon tetrachloride	ND	5.0									
Chlorobenzene	ND	5.0									
Chloroethane	ND	5.0									
Chloroform	ND	5.0									
Chloromethane	ND	5.0									
cis-1,2-Dichloroethene	ND	5.0									
Dibromochloromethane	ND	5.0									
Dibromomethane	ND	5.0									
Dichlorodifluoromethane	ND	5.0									
Ethylbenzene	ND	5.0									
Hexachlorobutadiene	ND	5.0									
Isopropylbenzene	ND	5.0									
m,p-Xylene	ND	10									
Methylene chloride	ND	5.0									
n-Butylbenzene	ND	5.0									
n-Propylbenzene	ND	5.0									
Naphthalene	ND	5.0									
o-Xylene	ND	5.0									

Qualifiers:

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- E Value above quantitation range
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- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: Ninyo & Moore
Work Order: 095431
Project: Paramount Dump, 207069004

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_WP

Sample ID: A112607MB2	SampType: MBLK	TestCode: 8260_WP	Units: µg/L	Prep Date:	RunNo: 87656
Client ID: PBW	Batch ID: A07VW319	TestNo: EPA 8260B		Analysis Date: 11/26/2007	SeqNo: 1335768

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
sec-Butylbenzene	ND	5.0									
Styrene	ND	5.0									
tert-Butylbenzene	ND	5.0									
Tetrachloroethene	ND	5.0									
Toluene	ND	5.0									
trans-1,2-Dichloroethene	ND	5.0									
Trichloroethene	ND	5.0									
Trichlorofluoromethane	ND	5.0									
Vinyl chloride	ND	5.0									
Surr: 1,2-Dichloroethane-d4	21.610		25.00		86.4	70	130				
Surr: 4-Bromofluorobenzene	24.650		25.00		98.6	70	130				
Surr: Dibromofluoromethane	23.150		25.00		92.6	70	130				
Surr: Toluene-d8	24.410		25.00		97.6	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

Advanced Technology Laboratories
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CLIENT: Ninyo & Moore
Work Order: 095431
Project: Paramount Dump, 207069004

ANALYTICAL QC SUMMARY REPORT

TestCode: 8270_W_FULL

Sample ID: LCS-41608	SampType: LCS	TestCode: 8270_W_FUL	Units: µg/L	Prep Date: 11/27/2007	RunNo: 87712
Client ID: LCSW	Batch ID: 41608	TestNo: EPA 8270C	EPA 3510C	Analysis Date: 11/27/2007	SeqNo: 1336623

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,2,4-Trichlorobenzene	86.240	10	100.0	0	86.2	60	102				
1,4-Dichlorobenzene	79.170	10	100.0	0	79.2	53	98				
2,4-Dinitrotoluene	101.390	10	100.0	0	101	63	130				
2-Chlorophenol	82.270	10	100.0	0	82.3	53	95				
4-Chloro-3-methylphenol	111.730	50	100.0	0	112	63	125				
4-Nitrophenol	41.580	50	100.0	0	41.6	16	71				
Acenaphthene	94.510	10	100.0	0	94.5	68	105				
N-Nitrosodi-n-propylamine	105.460	10	100.0	0	105	51	129				
Pentachlorophenol	105.750	50	100.0	0	106	78	123				
Phenol	38.120	10	100.0	0	38.1	20	54				
Pyrene	114.540	10	100.0	0	115	59	122				
Surr: 1,2-Dichlorobenzene-d4	80.290		100.0		80.3	47	101				
Surr: 2,4,6-Tribromophenol	103.100		100.0		103	64	144				
Surr: 2-Chlorophenol-d4	82.190		100.0		82.2	46	98				
Surr: 2-Fluorobiphenyl	92.330		100.0		92.3	55	104				
Surr: 2-Fluorophenol	49.690		100.0		49.7	27	64				
Surr: 4-Terphenyl-d14	90.550		100.0		90.6	59	119				
Surr: Nitrobenzene-d5	96.270		100.0		96.3	48	115				
Surr: Phenol-d5	34.520		100.0		34.5	13	50				

Sample ID: MB-41608MS	SampType: MS	TestCode: 8270_W_FUL	Units: µg/L	Prep Date: 11/27/2007	RunNo: 87712
Client ID: ZZZZZZ	Batch ID: 41608	TestNo: EPA 8270C	EPA 3510C	Analysis Date: 11/27/2007	SeqNo: 1336624

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,2,4-Trichlorobenzene	92.700	10	100.0	0	92.7	60	102				
1,4-Dichlorobenzene	86.260	10	100.0	0	86.3	53	98				
2,4-Dinitrotoluene	99.430	10	100.0	0	99.4	63	130				
2-Chlorophenol	89.080	10	100.0	0	89.1	53	95				
4-Chloro-3-methylphenol	115.220	50	100.0	0	115	63	125				
4-Nitrophenol	42.970	50	100.0	0	43.0	16	71				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: Ninyo & Moore
Work Order: 095431
Project: Paramount Dump, 207069004

ANALYTICAL QC SUMMARY REPORT

TestCode: 8270_W_FULL

Sample ID: MB-41608MS	SampType: MS	TestCode: 8270_W_FUL	Units: µg/L	Prep Date: 11/27/2007	RunNo: 87712
Client ID: ZZZZZZ	Batch ID: 41608	TestNo: EPA 8270C	EPA 3510C	Analysis Date: 11/27/2007	SeqNo: 1336624

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Acenaphthene	98.800	10	100.0	0	98.8	68	105				
N-Nitrosodi-n-propylamine	109.590	10	100.0	0	110	51	129				
Pentachlorophenol	109.210	50	100.0	0	109	78	123				
Phenol	42.520	10	100.0	0	42.5	20	54				
Pyrene	109.970	10	100.0	0	110	59	122				
Surr: 1,2-Dichlorobenzene-d4	83.270		100.0		83.3	47	101				
Surr: 2,4,6-Tribromophenol	100.140		100.0		100	64	144				
Surr: 2-Chlorophenol-d4	87.670		100.0		87.7	46	98				
Surr: 2-Fluorobiphenyl	95.780		100.0		95.8	55	104				
Surr: 2-Fluorophenol	54.190		100.0		54.2	27	64				
Surr: 4-Terphenyl-d14	94.640		100.0		94.6	59	119				
Surr: Nitrobenzene-d5	100.320		100.0		100	48	115				
Surr: Phenol-d5	37.360		100.0		37.4	13	50				

Sample ID: MB-41608MSD	SampType: MSD	TestCode: 8270_W_FUL	Units: µg/L	Prep Date: 11/27/2007	RunNo: 87712
Client ID: ZZZZZZ	Batch ID: 41608	TestNo: EPA 8270C	EPA 3510C	Analysis Date: 11/27/2007	SeqNo: 1336625

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,2,4-Trichlorobenzene	96.500	10	100.0	0	96.5	60	102	92.70	4.02	20	
1,4-Dichlorobenzene	89.270	10	100.0	0	89.3	53	98	86.26	3.43	20	
2,4-Dinitrotoluene	109.660	10	100.0	0	110	63	130	99.43	9.79	20	
2-Chlorophenol	93.290	10	100.0	0	93.3	53	95	89.08	4.62	20	
4-Chloro-3-methylphenol	123.810	50	100.0	0	124	63	125	115.2	7.19	20	
4-Nitrophenol	48.240	50	100.0	0	48.2	16	71	42.97	0	20	
Acenaphthene	104.990	10	100.0	0	105	68	105	98.80	6.07	20	
N-Nitrosodi-n-propylamine	115.270	10	100.0	0	115	51	129	109.6	5.05	20	
Pentachlorophenol	116.600	50	100.0	0	117	78	123	109.2	6.55	20	
Phenol	45.370	10	100.0	0	45.4	20	54	42.52	6.49	20	
Pyrene	118.830	10	100.0	0	119	59	122	110.0	7.74	20	
Surr: 1,2-Dichlorobenzene-d4	85.630		100.0		85.6	47	101		0	20	

Qualifiers:

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ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: Ninyo & Moore
Work Order: 095431
Project: Paramount Dump, 207069004

ANALYTICAL QC SUMMARY REPORT

TestCode: 8270_W_FULL

Sample ID: **MB-41608MSD** SampType: **MSD** TestCode: 8270_W_FUL Units: µg/L Prep Date: 11/27/2007 RunNo: 87712
Client ID: ZZZZZZ Batch ID: 41608 TestNo: EPA 8270C EPA 3510C Analysis Date: 11/27/2007 SeqNo: 1336625

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: 2,4,6-Tribromophenol	107.610		100.0		108	64	144		0	20	
Surr: 2-Chlorophenol-d4	90.870		100.0		90.9	46	98		0	20	
Surr: 2-Fluorobiphenyl	98.960		100.0		99.0	55	104		0	20	
Surr: 2-Fluorophenol	56.590		100.0		56.6	27	64		0	20	
Surr: 4-Terphenyl-d14	101.480		100.0		101	59	119		0	20	
Surr: Nitrobenzene-d5	105.350		100.0		105	48	115		0	20	
Surr: Phenol-d5	40.220		100.0		40.2	13	50		0	20	

Sample ID: **MB-41608** SampType: **MBLK** TestCode: 8270_W_FUL Units: µg/L Prep Date: 11/27/2007 RunNo: 87712
Client ID: **PBW** Batch ID: 41608 TestNo: EPA 8270C EPA 3510C Analysis Date: 11/27/2007 SeqNo: 1336626

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,2,4-Trichlorobenzene	ND	10									
1,2-Dichlorobenzene	ND	10									
1,3-Dichlorobenzene	ND	10									
1,4-Dichlorobenzene	ND	10									
2,4,5-Trichlorophenol	ND	10									
2,4,6-Trichlorophenol	ND	10									
2,4-Dichlorophenol	ND	10									
2,4-Dimethylphenol	ND	10									
2,4-Dinitrophenol	ND	50									
2,4-Dinitrotoluene	ND	10									
2,6-Dinitrotoluene	ND	10									
2-Chloronaphthalene	ND	10									
2-Chlorophenol	ND	10									
2-Methylnaphthalene	ND	10									
2-Methylphenol	ND	10									
2-Nitroaniline	ND	50									
2-Nitrophenol	ND	10									
3,3'-Dichlorobenzidine	ND	20									

Qualifiers:

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- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: Ninyo & Moore
Work Order: 095431
Project: Paramount Dump, 207069004

ANALYTICAL QC SUMMARY REPORT

TestCode: 8270_W_FULL

Sample ID: MB-41608	SampType: MBLK	TestCode: 8270_W_FUL	Units: µg/L	Prep Date: 11/27/2007	RunNo: 87712
Client ID: PBW	Batch ID: 41608	TestNo: EPA 8270C	EPA 3510C	Analysis Date: 11/27/2007	SeqNo: 1336626

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
3-Nitroaniline	ND	50									
4,6-Dinitro-2-methylphenol	ND	50									
4-Bromophenyl-phenylether	ND	10									
4-Chloro-3-methylphenol	ND	50									
4-Chloroaniline	ND	20									
4-Chlorophenyl-phenylether	ND	10									
4-Methylphenol	ND	10									
4-Nitroaniline	ND	20									
4-Nitrophenol	ND	50									
Acenaphthene	ND	10									
Acenaphthylene	ND	10									
Anthracene	ND	10									
Benzidine (M)	ND	50									
Benzo(a)anthracene	ND	10									
Benzo(a)pyrene	ND	10									
Benzo(b)fluoranthene	ND	10									
Benzo(g,h,i)perylene	ND	10									
Benzo(k)fluoranthene	ND	10									
Benzoic acid	ND	50									
Benzyl alcohol	ND	20									
Bis(2-chloroethoxy)methane	ND	10									
Bis(2-chloroethyl)ether	ND	10									
Bis(2-chloroisopropyl)ether	ND	10									
Bis(2-ethylhexyl)phthalate	ND	10									
Butylbenzylphthalate	ND	10									
Chrysene	ND	10									
Di-n-butylphthalate	ND	10									
Di-n-octylphthalate	ND	10									
Dibenz(a,h)anthracene	ND	10									
Dibenzofuran	ND	10									

Qualifiers:

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- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

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CLIENT: Ninyo & Moore
Work Order: 095431
Project: Paramount Dump, 207069004

ANALYTICAL QC SUMMARY REPORT

TestCode: 8270_W_FULL

Sample ID: **MB-41608** SampType: **MBLK** TestCode: **8270_W_FUL** Units: **µg/L** Prep Date: **11/27/2007** RunNo: **87712**
Client ID: **PBW** Batch ID: **41608** TestNo: **EPA 8270C** **EPA 3510C** Analysis Date: **11/27/2007** SeqNo: **1336626**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diethylphthalate	ND	10									
Dimethylphthalate	ND	10									
Fluoranthene	ND	10									
Fluorene	ND	10									
Hexachlorobenzene	ND	10									
Hexachlorobutadiene	ND	20									
Hexachlorocyclopentadiene	ND	10									
Hexachloroethane	ND	10									
Indeno(1,2,3-cd)pyrene	ND	10									
Isophorone	ND	10									
N-Nitrosodi-n-propylamine	ND	10									
N-Nitrosodiphenylamine	ND	10									
Naphthalene	ND	10									
Nitrobenzene	ND	10									
Pentachlorophenol	ND	50									
Phenanthrene	ND	10									
Phenol	ND	10									
Pyrene	ND	10									
Surr: 1,2-Dichlorobenzene-d4	75.470		100.0		75.5	47	101				
Surr: 2,4,6-Tribromophenol	94.220		100.0		94.2	64	144				
Surr: 2-Chlorophenol-d4	71.960		100.0		72.0	46	98				
Surr: 2-Fluorobiphenyl	84.700		100.0		84.7	55	104				
Surr: 2-Fluorophenol	44.190		100.0		44.2	27	64				
Surr: 4-Terphenyl-d14	99.420		100.0		99.4	59	119				
Surr: Nitrobenzene-d5	83.220		100.0		83.2	48	115				
Surr: Phenol-d5	28.750		100.0		28.8	13	50				

Qualifiers:

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- DO Surrogate Diluted Out
- E Value above quantitation range
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- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: Ninyo & Moore
Work Order: 095431
Project: Paramount Dump, 207069004

ANALYTICAL QC SUMMARY REPORT

TestCode: 9020_W

Sample ID: MB-R87690	SampType: MBLK	TestCode: 9020_W	Units: µg/L	Prep Date:	RunNo: 87690
Client ID: PBW	Batch ID: R87690	TestNo: EPA 9020B		Analysis Date: 11/27/2007	SeqNo: 1336195

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Halides	ND	20									

Sample ID: LCS-R87690	SampType: LCS	TestCode: 9020_W	Units: µg/L	Prep Date:	RunNo: 87690
Client ID: LCSW	Batch ID: R87690	TestNo: EPA 9020B		Analysis Date: 11/27/2007	SeqNo: 1336196

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Halides	95.209	20	100.0	0	95.2	80	120				

Sample ID: 095431-002GMS	SampType: MS	TestCode: 9020_W	Units: µg/L	Prep Date:	RunNo: 87690
Client ID: MW-2	Batch ID: R87690	TestNo: EPA 9020B		Analysis Date: 11/27/2007	SeqNo: 1336199

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Halides	127.658	20	100.0	25.05	103	74	122				

Sample ID: 095431-002GMSD	SampType: MSD	TestCode: 9020_W	Units: µg/L	Prep Date:	RunNo: 87690
Client ID: MW-2	Batch ID: R87690	TestNo: EPA 9020B		Analysis Date: 11/27/2007	SeqNo: 1336200

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Halides	127.857	20	100.0	25.05	103	74	122	127.7	0.156	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

Calscience
Environmental
Laboratories, Inc.

December 03, 2007

Rachelle Arada
Advanced Technology Laboratories
3275 Walnut Street
Signal Hill, CA 90755-5225

Subject: **Calscience Work Order No.: 07-11-1750**
Client Reference: 095431

Dear Client:

Enclosed is an analytical report for the above-referenced project. The samples included in this report were received 11/21/2007 and analyzed in accordance with the attached chain-of-custody.

Unless otherwise noted, all analytical testing was accomplished in accordance with the guidelines established in our Quality Systems Manual, applicable standard operating procedures, and other related documentation. The original report of subcontracted analysis, if any, is provided herein, and follows the standard Calscience data package. The results in this analytical report are limited to the samples tested and any reproduction thereof must be made in its entirety.

If you have any questions regarding this report, please do not hesitate to contact the undersigned.

Sincerely,

Amanda Porter

Calscience Environmental
Laboratories, Inc.
Amanda Porter
Project Manager

Calscience Environmental Laboratories, Inc.

Analytical Report

Advanced Technology Laboratories
3275 Walnut Street
Signal Hill, CA 90755-5225

Date Received: 11/21/07
Work Order No: 07-11-1750

Project: 095431

Page 1 of 1

Client Sample Number	Lab Sample Number	Date Collected	Matrix
095431-001A / MW-1	**07-11-1750-1**	**11/21/07**	**Aqueous**

Parameter	Result	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Biochemical Oxygen Demand	ND	1.0	1		mg/L	11/21/07	11/26/07	SM 5210 B

Client Sample Number	Lab Sample Number	Date Collected	Matrix
095431-002A / MW-2	**07-11-1750-2**	**11/21/07**	**Aqueous**

Parameter	Result	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Biochemical Oxygen Demand	ND	1.0	1		mg/L	11/21/07	11/26/07	SM 5210 B

Client Sample Number	Lab Sample Number	Date Collected	Matrix
Method Blank		**N/A**	**Aqueous**

Parameter	Result	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Biochemical Oxygen Demand	ND	1.0	1		mg/L	11/21/07	11/26/07	SM 5210 B

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Quality Control - Duplicate

Advanced Technology Laboratories
3275 Walnut Street
Signal Hill, CA 90755-5225

Date Received: N/A
Work Order No: 07-11-1750

Project: 095431

Matrix: Aqueous

Parameter	Method	QC Sample ID	Date Analyzed	Sample Conc	DUP Conc	RPD	RPD CL	Qualifiers
Biochemical Oxygen Demand	SM 5210 B	095431-002A / MW-2	11/26/07	ND	ND	NA	0-25	

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Glossary of Terms and Qualifiers

Work Order Number: 07-11-1750

Qualifier	Definition
*	See applicable analysis comment.
1	Surrogate compound recovery was out of control due to a required sample dilution, therefore, the sample data was reported without further clarification.
2	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
3	Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to matrix interference. The associated LCS and/or LCSD was in control and, therefore, the sample data was reported without further clarification.
4	The MS/MSD RPD was out of control due to matrix interference. The LCS/LCSD RPD was in control and, therefore, the sample data was reported without further clarification.
5	The PDS/PDSD associated with this batch of samples was out of control due to a matrix interference effect. The associated batch LCS/LCSD was in control and, hence, the associated sample data was reported with no further corrective action required.
A	Result is the average of all dilutions, as defined by the method.
B	Analyte was present in the associated method blank.
C	Analyte presence was not confirmed on primary column.
E	Concentration exceeds the calibration range.
H	Sample received and/or analyzed past the recommended holding time.
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
N	Nontarget Analyte.
ND	Parameter not detected at the indicated reporting limit.
Q	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
U	Undetected at the laboratory method detection limit.
X	% Recovery and/or RPD out-of-range.
Z	Analyte presence was not confirmed by second column or GC/MS analysis.

Advanced Technology Laboratories
3275 Walnut Avenue
Signal Hill, CA 90755-5225
TEL: 5629894045 FAX: 5629894040

CHAIN-OF-CUSTODY RECORD

1750

QC Level: RTNE

Subcontractor:

Calscience Environmental Laboratories, Inc.
7440 Lincoln Way
Garden Grove, CA 928411432

TEL: (714) 895-5494
FAX: (714) 894-7501
Acct #:

21-Nov-07

Sample ID	Matrix	Date Collected	Bottle Type	Requested Tests: SM5210B		
095431-001A / MW-1	Ground Water	11/21/2007 11:01:00 AM	BOZP	1		
095431-002A / MW-2	Ground Water	11/21/2007 12:28:00 PM	BOZP	1		

Amended COC
w/ time of collection

General Comments: Please use PO#: SC02808 Please fax results by: NORMAL TAT

SEND REPORT TO RACHELLE ARADA

		Date/Time			Date/Time
Relinquished by:	[signature]	11/21/07	Received by:		
Relinquished by:			Received by:		

Advanced Technology Laboratories
3275 Walnut Avenue
Signal Hill, CA 90755-5225
TEL: *5629894045* FAX: *5629894040*

CHAIN-OF-CUSTODY RECORD

1750

QC Level: RTNE

Subcontractor:

Calscience Environmental Laboratories, Inc. TEL: (714) 895-5494
7440 Lincoln Way FAX: (714) 894-7501
Garden Grove, CA 928411432 Acct #:

21-Nov-07

Sample ID	Matrix	Date Collected	Bottle Type	Requested Tests SM5210B		
095431-001A / MW-1	Ground Water	11/21/2007	8OZP	1		
095431-002A / MW-2	Ground Water	11/21/2007 12:28:00 PM	8OZP	1		

General Comments: Please use PO#: SC02808 Please fax results by: NORMAL TAT

SEND REPORT TO RACHELLE ARADA

		Date/Time			Date/Time
Relinquished by:		11/21/07	Received by:	Neal Ferguson	11/21/07
Relinquished by:	Neal Ferguson	11/21/07 17:45	Received by:	[illegible] CEL	11/21/07 1745

Calscience Environmental Laboratories, Inc.

WORK ORDER #: 07 - 1 1 - 1 7 5 0

Cooler 1 of 1

SAMPLE RECEIPT FORM

CLIENT: ATL

DATE: 11.21.07

TEMPERATURE – SAMPLES RECEIVED BY:

CALSCIENCE COURIER:

_______ Chilled, cooler with temperature blank provided.
_______ Chilled, cooler without temperature blank.
_______ Chilled and placed in cooler with wet ice.
_______ Ambient and placed in cooler with wet ice.
_______ Ambient temperature.
_______ °C Temperature blank.

LABORATORY (Other than Calscience Courier):

_______ °C Temperature blank.
20.1 °C IR thermometer.
_______ Ambient temperature.

Initial: [signature]

CUSTODY SEAL INTACT:

Sample(s): _______ Cooler: _______ No (Not Intact) : _______ Not Present: ✓

Initial: [signature]

SAMPLE CONDITION:

	Yes	No	N/A
Chain-Of-Custody document(s) received with samples	✓		
Sampler's name indicated on COC		✓	
Sample container label(s) consistent with custody papers	✓		
Sample container(s) intact and good condition	✓		
Correct containers and volume for analyses requested	✓		
Proper preservation noted on sample label(s)	✓		
VOA vial(s) free of headspace.			✓
Tedlar bag(s) free of condensation			✓

Initial: [signature]

COMMENTS:

CHAIN OF CUSTODY RECORD

Advanced Technology Laboratories
3275 Walnut Avenue
Signal Hill, CA 90755
(562) 989-4045 • Fax (562) 989-4040

FOR LABORATORY USE ONLY:

P.O.#:
Logged By: [signature] Date: 11/21/07

Method of Transport: Client ☑ ATL ☐ CA OverN ☐ FEDEX ☐ Other: ____

Sample Condition Upon Receipt: 4.2 4.1 4.5
1. CHILLED Y☑ N☐ 4. SEALED Y☐ N☑
2. HEADSPACE (VOA) Y☐ N☑ 5. # OF SPLS MATCH COC Y☑ N☐
3. CONTAINER INTACT Y☑ N☐ 6. PRESERVED Y☑ N☐

Client: Ninyo & Moore
Attn: Denise Alvarez
Address: 475 Goddard Suite 200
City: Irvine State: CA Zip Code: 92618
TEL: (949) 753-7070
FAX: (949) 753-7071

Project Name: Paramount Dump Project #: 207069004
Sampler: (Printed Name) Peter Sims (Signature) [signature]

Relinquished by: (Signature and Printed Name)	Date	Time	Received by: (Signature and Printed Name)	Date	Time
[signature] Peter Sims	11-21-07	16:55	[signature]	11/21/07	5:1?

I hereby authorize ATL to perform the work indicated below:
Project Mgr /Submitter: Peter Sims (Print Name) 11-21-07 (Date)
[signature] (Signature)

Send Report To: Attn: Denise Alvarez; Co: Ninyo + Moore; Address: 475 Goddard; City: Irvine; State: CA; Zip: 92618

Bill To: Attn: Denise Alvarez; Co: Ninyo + Moore; Address: 475 Goddard; City: Irvine; State: CA; Zip: 92618

Special Instructions/Comments: + All peaks greater than 10% of the internal standard shall be id'd and quantified for gas chromatography analyses. TOC for PZ-1 was sampled.

Sample/Records - Archival & Disposal
Unless otherwise requested by client, all samples will be disposed 45 days after receipt and records will be disposed 1 year after submittal of final report.
Storage Fees (applies when storage is requested):
- Sample : $2.00 / sample / mo (after 45 days)
- Records : $1.00 / ATL workorder / mo (after 1 year)

Circle or Add Analysis(es) Requested; Specify Appropriate Matrix; QA/QC: RTNE ☐ CT ☐ SWRCB ☐ Logcode ___ OTHER ___

ITEM	Lab No. (LAB USE ONLY: Batch #:)	Sample I.D. / Location	Date	Time	~~8081A (Pesticides)~~ COD (410.4)	8082 (PCB) +	8260B (Volatiles) +	8270C SVOCs +	6010B (Total Metal) Boron	~~8015B (GRO) 8020 (BTEX)~~ TOX (9020)	~~8015B (DRO)~~ TOC 415.1	8021 (BTEX) TDS 160.1	~~Title 22 (6010/7000)~~ BOD 405.1	Chloride Sulfate Nitrate Nitrite (300)	Oil and Grease 413.2	Sulfides 376.2	SOIL	WATER	GROUND WATER	WASTEWATER	TAT	#	Type	PRESERVATION	REMARKS
	095431-01	MW-1	11-21-07	11:01	X	X	X	X	X	X	X	X	X	X	X	X		X			E	13	V L P G/P	C	
	-02	MW-2	11-21-07	12:28	X	X	X	X	X	X	X	X	X	X	X	X		X			E	13	V L P G/P	C	
	-03	PZ-1	11-21-07	16:15	*	X	X	X	*	*	X	*	*	*	*	*		X			E	5	V L P G/P	C	* = not sample

• TAT starts 8 a.m. following day if samples received after 3 p.m.

TAT: A= Overnight ≤ 24 hr B= Emergency Next workday C= Critical 2 Workdays D= Urgent 3 Workdays E= Routine 7 Workdays

Container Types: T=Tube V=VOA L=Liter P=Pint J=Jar B=Tedlar G=Glass P=Plastic M=Metal

Preservatives: H=Hcl N=HNO_3 S=H_2SO_4 C=4°C Z=Zn(AC)$_2$ O=NaOH T=$Na_2S_2O_3$

DISTRIBUTION: White with report, Yellow to folder, Pink to submitter.

ATTACHMENT H

WASTE MANIFEST

18260709

NON-HAZARDOUS WASTE MANIFEST	1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Waste Tracking Number
	Not Required	1	(562) 786-6200	40234

5. Generator's Name and Mailing Address
City of Long Beach / Dept. of Parks & Rec.
2760 Studebaker Road Long Beach Ca. 90815

Generator's Site Address (If different than mailing address)
City of Long Beach / Dept. of Parks & Rec.
2760 Studebaker Road Long Beach Ca. 90815

Generator's Phone:

6. Transporter 1 Company Name
KM Industrial, Inc.
U.S. EPA ID Number
CAL000274783

7. Transporter 2 Company Name
U.S. EPA ID Number

8. Designated Facility Name and Site Address
Crosby & Overton
1630 W. 16th St. Long Beach CA 90813
U.S. EPA ID Number
CAD028409019

Facility's Phone: 562-432-5445

9. Waste Shipping Name and Description	10. Containers No.	Type	11. Total Quantity	12. Unit Wt./Vol.
1. Non Hazardous Waste Liquids	1	DM	50	G
2.				
3				
4.				

13. Special Handling Instructions and Additional Information
Wear protective equipment while handling.
Weights or volumes are approximate
24 hour emergency telephone number (562) 786-6200

9b(1) Profile #: 60044 - Groundwater
Appointment #: 122607 Time: 1330 Hours

14. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Generator's/Offeror's Printed/Typed Name: Peter Sims On Behalf of City of Long Beach
Signature: Peter Sims
Month 12 Day 26 Year 07

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter Signature (for exports only): Date leaving U.S.:

16. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: Robert A. Mendez
Signature:
Month 12 Day 26 Year 07

Transporter 2 Printed/Typed Name
Signature
Month Day Year

17. Discrepancy
17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

17b. Alternate Facility (or Generator)
U.S. EPA ID Number

Facility's Phone:

17c. Signature of Alternate Facility (or Generator)
Month Day Year

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a
Printed/Typed Name: [illegible]
Signature
Month 12 Day 27 Year [illegible]

GENERATOR — INT'L — TRANSPORTER — DESIGNATED FACILITY

ATTACHMENT I

GROUNDWATER SOLID WASTE ASSESSMENT TEST SUMMARY REPORT, SEMI ANNUAL MONITORING EVENT, APRIL 2006-SEPTEMBER 2006, EARTH TECH EXCERPTS 1, 2, AND 3

Earth Tech

A tyco International Ltd. Company

GROUNDWATER SOLID WASTE ASSESSMENT TEST (SWAT)
SUMMARY REPORT

SEMI ANNUAL MONITORING EVENT
APRIL 2006 – SEPTEMBER 2006

Former 55th Way Landfill/Paramount Dump
Ed "Pops" Davenport Park
2910 East 55th Way, Long Beach, California
SWIS No.: 19-AK-0084
Compliance File No: CI-8372A
LARWQCB Order No.: R4-2004-0157

Prepared for:

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION
320 West 4th Street, Suite 200
Los Angeles, California 90013

Prepared by:

EARTH TECH INC.
300 Oceangate, Suite 700
Long Beach, California 90802

Date: September 26, 2006
Project No.: 82146.01

SIGNATURE PAGE

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment

Patrick H. West
Executive Officer of Redevelopment Agency
City of Long Beach

PROFESSIONAL GEOLOGIST
EWA M. BURCHARD
No. 8149
Exp. 2/31/08
STATE OF CALIFORNIA

Travis Taylor, REA II 07571, REM 11111
Senior Project Director

Ewa Burchard, PG # 8149
Professional Geologist

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EXECUTIVE SUMMARY

Earth Tech Inc. (Earth Tech) has conducted a Groundwater Solid Waste Assessment Test (SWAT) on behalf of the City of Long Beach at the inactive 55th Way Landfill (Paramount Dump, now called Ed "Pops" Davenport Park) located at 2910 East 55th Way in Long Beach, California (site). The objectives of the investigation were to determine whether landfill refuse had impacted the groundwater beneath, and in the vicinity of, the site and to provide recommendations for post-closure monitoring. The groundwater SWAT was conducted in accordance with the approved *Work Plan for Implementation of Groundwater Solid Waste Assessment Test* (SWAT Work Plan) dated November 6, 2002.

Following the Regional Water Quality Control Board, Los Angeles Region (LARWQCB) approved SWAT Workplan, and the site specific Waste Discharge Requirements (WDR), Order R4-2004-0157 dated October 7, 2004, Earth Tech purged and sampled two groundwater monitoring wells and one piezometer on July 26, 2006, to complete the April 2006 to September 2006 semi-annual groundwater monitoring event.

Groundwater sampling results from previous and current monitoring events indicate that landfill-related contaminants are not present in wells located down gradient of the site. Parametric ANOVA tests indicate that sulfate, nitrogen, chloride and TDS are the analytes with potentially "measurably significant" evidence of a release. However, the data from past five monitoring events are not significant to draw a conclusion on the potential landfill impacts to groundwater downgradient of the site.

1.0 INTRODUCTION

This summary report details the objectives, procedures, and results of the Groundwater Solid Waste Assessment Test (SWAT) April 2006 to September 2006 groundwater monitoring event for the inactive 55th Way Landfill (Paramount Dump) located at 2910 East 55th Way in Long Beach, California (site) (**Figure 1**). This SWAT has been conducted for the entire landfill, including the subject parcel at 2910 East 55th Way, which is currently being redeveloped into a park/recreational facility by the City of Long Beach called Ed "Pops" Davenport Park. The investigation data have been used to indicate whether the landfill refuse has impacted the surrounding groundwater and to provide recommendations for post-closure monitoring. This report includes the relevant elements and procedures of the sampling and analysis conducted for the April 2006 to September 2006 groundwater monitoring event

The Los Angeles Regional Water Quality Control Board (LARWQCB) is the lead agency for this groundwater SWAT project. The groundwater SWAT was conducted in accordance with the *Work Plan for Implementation of Groundwater Solid Waste Assessment Test* dated November 6, 2002, which was approved by the LARWQCB in a letter dated January 8, 2003. Earth Tech submitted the *Groundwater Solid Waste Assessment Test Summary Report, Well Installation and First Quarter Monitoring* dated July 23, 2003, which detailed well and piezometer installation activities and first quarter monitoring results. Site specific Waste Discharge Requirements (WDR) Order No. R4-2004-0157 was approved by the LARWQCB on October 7, 2004. The WDR was implemented upon approval; the April 2006 to September 2006 event is the fourth semi-annual report under the new site specific WDR. Agency correspondence regarding approval of the WDR is attached as **Appendix A**.

1.1 OBJECTIVES

The overall objective of the project is to determine if there are any adverse effects on groundwater quality due to the presence of landfill debris by sampling groundwater piezometers and wells. This investigation has been conducted to achieve the following specific objectives:

- Determine the magnitude and direction of the hydraulic gradient beneath and around the landfill
- Compare groundwater chemical analytical results from upgradient and downgradient wells to evaluate potential landfill impacts on groundwater
- Determine possible future impacts on downgradient receptors (i.e. municipal pumping wells)

For this investigation, data collection has focused on evaluating the groundwater and analyzing for potential contaminants in the vicinity of the site. The investigation data have been used to complete this

Groundwater SWAT April 2006 to September 2006 Monitoring Report for submittal to the LARWQCB.

1.2 SCOPE OF WORK

The investigation scope of work (SOW) for this semi-annual monitoring event at the site included:

- Gauging the depth to groundwater of four piezometers and four groundwater monitoring wells
- Purging a minimum of three well casing volumes from two groundwater monitoring wells and one piezometer before collection of groundwater samples
- Collecting discrete groundwater samples from two groundwater monitoring wells and from one piezometer
- Analyzing groundwater samples following parameters and test methods prescribed in the WDR
- Preparing and submitting this Groundwater SWAT April 2006 to September 2006 Monitoring Report to the LARWQCB

2.0 SITE DESCRIPTION AND HISTORY

2.1 SITE LOCATION AND DESCRIPTION

The site comprises approximately 5.5 acres in the northeast corner of the Paramount Dump and is located in a mixed commercial, residential, and industrial area of Long Beach (**Figure 1** and **Figure 2**). The site is bordered on the east and northwest by single-family dwellings, on the south by the Friendly Village Mobile Home Park (residential), on the north by the Paramount Petroleum Lakewood Tank Farm, and on the west by an industrial/commercial property, Cal Coast Packing & Crating Co. Inc. The southern and western property boundaries of the site border the remainder of the former Paramount Dump. The site is located in Range 12W and Township 4S, in the northeastern quadrant of Section 5.

The 17.4-acre Paramount Dump, which is listed by the California Integrated Waste Management Board (CIWMB) as Solid Waste Information System (SWIS) Number 19-AK-0084, is located at the northeast corner of Paramount Boulevard and Candlewood Street in Long Beach, California (**Figure 1** and **Figure 2**).

2.2 SITE HISTORY

The site was part of the 17.4-acre landfill that was owned and operated by the City of Long Beach from 1945 to 1948 as Long Beach Dump #26. Based on review of available historic aerial photographs, the area appeared to be undisturbed until May 1945. The extent of landfill operations is evident in the 1947 aerial photograph. In 1952, a building existed in the northwest corner of the landfill and vegetation covered the site. In January 1958, a baseball field existed on the western edge of the landfill and adjacent to the site. Disturbed earth and vegetation were present over the remainder of the landfill at that time. A manufacturing and warehouse building had been constructed on the site by 1961.

Through the 1970s, building permit applications filed with the City of Long Beach document a number of owners/tenants of the property, including manufacturing facilities, a diesel repair facility, and a company identified as Artesia Milling. One owner/tenant, Dolphin Trucking, filed an application in 1974 to install two underground storage tanks (USTs) (9,940 gallons and 5,000 gallons), pumps and dispensers at the site. According to the City of Long Beach Fire Department Underground Storage Tank log, Kraus Trucking Company removed two USTs in 1986 without permits. However, documentation concerning the exact location of the USTs and UST removal activities is limited. In 1987, Paul Lai, George Y. Chow, Young Lung Chien, and Long Beach Warehouse Limited Partnership purchased the property from Josef and Helen Kraus and then formed a limited partnership called Fu Mai Limited

Corporation, Long Beach Warehouse Limited Partnership.

In late 1993, the remaining building on the site was declared substandard and a public nuisance. The owners were ordered to demolish or rehabilitate the existing structure by January 15, 1994, which was later extended to July 31, 1994.

Since 1993, the County of Los Angeles, Department of Health Services (County) and the CIWMB have conducted several inspections to measure the generation of landfill gas (LFG). Recent site assessments conducted by the County in 2001 and 2002 indicated very low or undetectable levels of methane gas recorded during the site inspections.

In 1999, the Redevelopment Agency's North Long Beach Project Area Committee (North PAC) identified the site as a priority site for remediation and redevelopment. On July 31, 2001, the Redevelopment Agency unanimously approved the acquisition of the site for redevelopment and conversion to a local park.

In October 2002, a 24,000-square-foot building and loading dock formerly in the northwest corner of the site was demolished and the resulting debris was removed from the site. Previous subsidence of the landfill had caused severe structural damage to the building, rendering the building substandard and a public nuisance. In addition, miscellaneous storage containers, a loading ramp, debris piles and abandoned vehicles were also removed. The site is relatively flat with the topography gently sloping to the west.

During 2004, design activities were performed for redevelopment of the site to a local park. The final design and specification package for the park was submitted to the Department of Public Works in January 2005. Park construction began in Spring 2005 and it was completed in August 2006. Ed "Pops" Davenport Park opened to the general public on August 26, 2006.

2.2.1 Waste Disposal History

During disposal operations, the landfill accepted municipal waste from which food wastes were separated to be sold as agricultural feed supplements; only "inedible" waste was received by the landfill. Reportedly, no liquid wastes were disposed at the Paramount Dump. Assuming an average landfill refuse thickness of 22.5 feet, an estimated 660,000 cubic yards of refuse remains in place at the Paramount Dump, of which approximately 160,000 cubic yards is within the boundaries of the site. Currently, a 4- to 8-foot thick heterogeneous soil cover consisting of assorted silts, sands, rocks, and gravels exists over the estimated 15- to 30-foot thick refuse layer. Historic aerial photographs show the approximate area of the landfill that actually contains municipal wastes. Landfill operations reportedly ceased by 1948 and the site were sold in 1953. Limited information exists concerning actual landfill operation and management practices including method of refuse placement, interim cover techniques (if any), waste treatment, landfill construction (e.g., liner, drainage), operation permits, and inspections and repairs completed at the Paramount Dump.

Estimated refuse thickness, volumes, and depths were based on review of past reports and site documentation. Recent investigations at the site have discovered that the refuse layer underneath the current cover may only be 10 to 15 feet thick. However, evidence to confirm this thickness is limited. Therefore, the more conservative refuse layer estimate (22.5 feet thick) was used to calculate refuse volumes and mass.

2.3 PREVIOUS SITE INVESTIGATIONS

SCS Engineers (SCS) of Long Beach, California, conducted multiple investigations of the landfill from 1985 through 1987, including an Environmental Impact Report (EIR), in connection with proposed development on a section of the site. Borings from the investigations indicated that refuse materials consist of moderately to highly decomposed organic material (wood, paper, etc.), glass, metal, and traces of silty and sandy soils. SCS reported a high degree of degradation of landfill materials and stated that although the LFG generation was past the maximum stage, LFG generation could continue for 10 to 20 more years (SCS, 1987). In 1993 and 1994, the CIWMB conducted various investigations at the site. The CIWMB recommended that a full-scale LFG monitoring program be initiated.

The United States Environmental Protection Agency (USEPA) contracted Ecology and Environmental, Inc. (EE) to perform a Brownfield investigation at the site. EE collected surface soil and soil gas samples between December 4 and December 8, 2000. Field activities and results are summarized in the *55th Way Landfill, Long Beach, California, Targeted Brownfields Assessment Final Report* (EE, 2001). The report concluded that all analytes detected on the site were consistent with known uses of the site:

- Former landfill – methane and other volatile organic compounds (VOCs) typical to LFG, possibly introduced through landfill materials, and naturally occurring levels of metals in cover materials
- Use of the warehouse building by Artesia Milling, Dolphin Trucking, and a diesel repair facility - surficial petroleum contamination, and associated semi-volatile, and volatile constituents

In January and February 2002, Earth Tech conducted a pre-design investigation to support post-closure land use and redevelopment activities at a portion of the 55th Way Landfill (Earth Tech, 2002). Air sampling was completed from January 14 through February 5, 2002. Air sampling included instantaneous surface air measurements, integrated surface air sampling, and 24-hour ambient air sampling at the site perimeter. A total of 35 soil borings were completed between January 22 and January 28, 2002, during which both soil and LFG samples were collected and analyzed. Twenty soil borings were completed as soil vapor probes set at 8 feet below ground surface (bgs) and ten soil borings were completed as LFG probes set between 20 and 35 feet bgs. Four borings were completed as two dual-cluster soil gas monitoring wells, one cluster outside the northern boundary of the landfill and one cluster inside the eastern boundary of the landfill. Investigation activities, results, and findings are included the *Pre-Design Investigation Summary Report* dated March 2002.

In May and June 2003, Earth Tech installed four additional dual cluster subsurface boundary landfill gas monitoring probes (GW-3 through GW-6). GW-3 is screened from 5 to 10 feet bgs and from 20 to 25 feet bgs. GW-4, GW-5, and GW-6 are screened from 5 to 10 feet bgs and from 15 to 20 feet bgs. During drilling at locations GW-4, GW-5, and GW-6, groundwater was encountered at approximately 20 feet bgs. To avoid screening the landfill gas probes beneath groundwater, the deep monitoring points were screened from 15 to 20 feet bgs, rather than from 20 to 25 feet bgs as outlined in South Coast Air Quality Management District Rule 1150.1.

Earth Tech collected landfill gas samples from each of the newly installed probes on June 12, 2003. The highest concentrations of VOCs were detected in the sample collected from landfill gas monitoring probe GW-2 located at the northern boundary of the site. BTEX concentrations were detected at each of the five landfill gas boundary monitoring probes except GW-3. VOC concentrations detected in landfill gas samples collected at the landfill boundary do not appear to be a distinct and separate on-site source (or sources) for those detected contaminants that can be identified and isolated. Monitoring probe installation and sampling details are included the *Final Post-Closure Land Use Proposal* (PCLUP) dated September 2003.

In response to the submittal of the Final PCLUP prepared by Earth Tech on September 26, 2003, the lead enforcement agency (LEA) commented on the need to monitor potential migration of landfill gases to the south and west of the site during and after park construction. Additional subsurface landfill gas monitoring probes were installed as per the requirements of the County and the County of Los Angeles, Department of Public Works (DPW), in correspondences relating to approval of the PCLUP. On August 19, 2004, Earth Tech installed five additional subsurface landfill gas monitoring probes (GW-7 through GW-11). Methane concentrations were detected at each of the landfill gas probe locations, each with detected concentrations greater than 5 percent. The highest concentration of methane, 50 percent, was detected at GW-7 (10 feet bgs). In general, the highest concentrations of TPH, VOCs, and semi-volatile organic compounds (SVOCs) in soil were detected at the northern property line (32 feet bgs) outside of the landfill boundary and adjacent to the tank farm north of the site. The tank farm is currently undergoing remediation of petroleum hydrocarbons and related constituents in the groundwater.

2.3.1 Paramount Petroleum Lakewood Tank Farm

Earth Tech conducted a file review at the LARWQCB in December 2002. Based on the review of various documents, the tank farm is an approximately 4.2 acre site located in an industrial and residential zoned area near the corner of South Street and Paramount Boulevard in the City of Lakewood (**Figure 2**). The tank farm site has been in operation since before 1928, and two, 55,000-barrel storage tanks (Tank Nos. 55001 and 55002) and two-5,000-barrel aboveground storage tanks (Tank Nos. 5001 and 5002) currently exist on-site. A pump house distributes product via underground piping to the Paramount Refinery approximately 7 miles away in the City of Paramount (SECOR, 2002).

According to the *Remedial Action Plan for Hydrocarbon Product Removal* prepared by CET Environmental Services Inc. in 1996:

> "There is no evidence that landfill-impacted groundwater is currently being sampled by monitoring wells MW-1 and MW-2 [tank farm wells adjacent to the northern boundary of the landfill] or the four pilot study test wells (i.e., R-5, MW-5, MW-16, and MW-101). In addition, based on the vapor analytical results from the wells tested during the two-phase pilot study, no evidence of landfill gases in the vapor phase was found. Benzene, toluene, ethylbenzene, and xylenes (BTEX) concentrations detected in the vapor samples are believed to be associated with the hydrocarbon-impacted soils at the tank farm site and not the landfill."

Three vapor sampling probes (VPS-1 to VPS-3) are positioned on the tank farm property approximately 20 feet north of the landfill and are sampled and analyzed for fixed gases quarterly. Based on data included in the Fourth Quarter 2001 report dated February 19, 2002, methane concentrations have not been detected above five percent in any of the three soil vapor probes since November 2000 (VPS-1 at 6.5 percent methane and VPS-3 at 9.4 percent methane). However, it has not been determined if the detected methane is a result of the landfill or generated in the subsurface due to the degrading free product plume below the tank farm property.

The Spills, Leaks, Investigation and Cleanup (SLIC) group at the LARWQCB (SLIC Case No. 240) is actively managing the site. Below is a brief summary of the site history and remedial action activities performed at the site as of December 2002. Information regarding activities conducted at the site since December 2002 have not been reviewed and are not included in this report:

- The tank farm has been used as a petroleum transfer station since before 1928, and actively transports product to the Paramount Refinery (located 7 miles north of the tank farm).
- Paramount Petroleum Corporation (PPC) has operated the site since 1984.
- The site is conducting remedial action under RWQCB Cleanup and Abatement Order (CAO) No. 94-040.
- Crude oil was stored in both 55,000-barrel tanks prior to the 1970's.
- One of the 55,000-barrel tanks (Tank No. 55001, the southwestern-most tank) was used for storage of naphtha-based jet fuel (JP-4) in the early 1970's, which was replaced with kerosene-based jet fuel (JP-5) from 1977 to 1978.
- The other 55,000-barrel tank (Tank No. 55002, the southeastern-most tank) was converted to kerosene-based (JP-5) aviation turbine fuel in 1994.
- Heavy vacuum gas-oil has been stored in both of the larger tanks since 1978.
- The smaller tanks (Tank Nos. 5001 and 5002) are used for water storage.
- Free product was observed in most of the tank farm monitoring wells with a maximum thickness of 25 feet in the center of site (early/mid-1990s). Water levels have risen above the screened intervals of selected monitoring wells and an accurate distribution of the free hydrocarbon product has not been recently determined.
    - Data from the Third Quarter 2001 indicates approximately 12 feet of free product was present in well R-1 which is located an estimated 60 feet north of the landfill boundary (approximately 125 feet north of well MW-4).
    - Based on the Fourth Quarter 2001 report prepared by SECOR, the majority of the hydrocarbons were quantified as diesel range hydrocarbons with some gasoline range hydrocarbons and BTEX detected in samples collected from on-site monitoring wells near the landfill (i.e. tank farm well MW-6).
- In 1996, cone penetrometer testing (CPT) determined that hydrocarbons in soil were confined to a coarse-grained layer approx 5 to 7 feet below the current water table.
- In 2000, dual-phase extraction was implemented at the tank farm site. Product removed from the subsurface is transferred to Paramount Refinery for processing.
    - By the end of 2001, approximately 3,982 gallons of liquid phase hydrocarbons and 10,100 pounds of vapor phase hydrocarbons were removed from the subsurface at the tank farm site.
- Soils consist of sand to sandy and silty clay, with coarse-grained soils occurring as thin lenses beneath the site. West of the tank farm, soils are predominantly coarse-grained.

- Depth to groundwater was estimated at 15 to 17 feet bgs, and groundwater elevation is 25 to 31 feet above mean sea level (msl).
- The hydraulic gradient was calculated at 0.001 foot per foot (ft/ft) with flow direction to the south, or southwest, with occasional groundwater mounding beneath the site during rain events.

2.4 SITE SPECIFIC WDR

In a letter dated February 5, 2004, the City of Long Beach petitioned to change the WDR fee rating category from a 1-B to a 3-C under the existing General WDRs, thereby reducing the amount of the annual fee due. However, since WDR category 3-C sites are specific to landfills that do not contain decomposable wastes (such as burn dump sites), the LARWQCB determined that it would not be appropriate to convert the site to a category 3-C site due to the constraints of the General WDR. As was discussed with LARWQCB representatives at a meeting on February 3, 2004 (Mr. Enrique Casas and Mr. Rod Nelson), and in email correspondence from Mr. Casas dated February 17, 2004, the site could be converted from General WDR to Site-Specific WDR. Additionally, a more appropriate WDR category could be assigned that would be commensurate with the complexity (CPLX) of the site and the potential threat to water quality (TTWQ) resulting from the site.

The Site-Specific WDRs were available for public comment at a meeting on October 7, 2004. After completion of both the LARWQCB and public review, Order number R4-2004-0157 was adopted on October 7, 2004, as communicated to the City of Long Beach in a letter dated October 12, 2004 (provided in **Appendix A**). Under the site-specific WDR, a fee rating category of 3-B was assigned to the landfill.

3.0 ENVIRONMENTAL SETTING

The former 55th Way Landfill site is situated at approximately 61 feet above msl. Site-specific surface drainage is generally from east to west across the landfill platform, based on current survey data. However, ponding within the site boundaries has been observed after rain events. The Los Angeles River channel is approximately 2.5 miles west and the San Gabriel River channel is approximately 3 miles east of the site. At these locations, the Los Angeles and San Gabriel Rivers are completely contained within concrete canals.

3.1 PHYSIOGRAPHIC LOCATION

The site is located in the Central Structural Basin of the Los Angeles Basin. The main features in the site vicinity are the Downey Plain (on which the site is located), the Bouton Plain and Signal Hill to the south, the Los Angeles River to the west, and the San Gabriel River to the east (California Department of Water Resources [CDWR] 1961). The Downey Plain is a depositional feature formed by coalesced alluvial fans of the Los Angeles, Rio Hondo and San Gabriel River systems. Signal Hill consists of sediments that have been folded and uplifted by faulting. The Bouton Plain slopes down gradually to the north from Signal Hill to the Downey Plain. The site is situated between the Los Angeles and San Gabriel Rivers, which are the main drainage channels in the area. Topography in the vicinity of the site slopes gently to the south.

3.2 REGIONAL GEOLOGY AND HYDROGEOLOGY

Regional surface sediments consist of interbedded alluvial deposits from the Los Angeles and San Gabriel Rivers (CDWR, 1961). These sediments consist of unconsolidated sand and gravel that are poorly sorted and stratified. Previous subsurface investigations at the site for the City of Long Beach have shown that the sediments beneath the site consist primarily of interbedded lenses of clayey silts, silty clays, and sandy silts (Ecology and Environment, Inc. [EE] 2001).

The northern Long Beach area is situated in the Central Pressure Basin of the Downey Plain of Los Angeles County. Aquifers of interest in the area, in vertically descending order include the semi-perched, Gaspur (where present), Exposition, Gage (also known as the 200-foot sand), Hollydale, Lynwood (also known as the 400-foot gravel), and Silverado (CDWR, 1961). Beds of fine-grained sediments (aquitards) generally separate each aquifer, but may not be present at all locations.

In this area the aquifers are confined by many aquicludes, only one of which has been named. This is the near surface Bellflower aquiclude, which restricts vertical percolation into the Gaspur and other underlying aquifers. The Recent alluvium consists of sands and gravels 20 to 60 feet thick overlying the Bellflower aquiclude. The Bellflower aquiclude is found throughout the pressure area and is composed mainly of clay and silt; however, there are numerous areas where its effectiveness as an aquiclude is limited. It ranges from a few feet to 160 feet in thickness. The Gaspur aquifer consists of coarse sand and gravel and ranges in thickness from 40 to 100 feet (CDWR, 1961).

The Lakewood formation contains part of the Bellflower aquiclude and the Exposition and Gage aquifers, which are in hydraulic continuity. The Exposition aquifer located approximately 160 feet bgs consists of sands and gravels with local areas of interbedded clay and is approximately 40 feet thick in the area beneath the site. The Gage aquifer (200 feet bgs) consists of fine grained sand and silty sand and is approximately 30 feet thick beneath the area of the site (CDWR 1961).

The Hollydale, Lynwood, Silverado, and Sunnyside aquifers represent the San Pedro Formation in the area beneath the site. The Hollydale aquifer is composed of mostly sand and silty sand with interbedded clays, though some gravel is found locally. It is found 400 feet bgs and is approximately 20 feet in thickness in the area beneath the site. The Lynwood aquifer (700 feet bgs) is composed mainly of coarse-grained sands and gravels, and is approximately 100 feet in thickness in the area of the site. The Silverado aquifer (1,100 feet bgs) is composed largely of sands and gravels, and is approximately 200 feet thick in the area beneath the site. The Sunnyside aquifer is approximately 1,400 feet bgs, but is not fully defined in the area beneath the site (CDWR, 1961).

The major structural features in the vicinity of the site are the Paramount syncline and Los Alamitos fault. These structures appear to be developed only in the San Pedro formation, and they do not affect the overlying younger sediments. The Paramount syncline underlies the City of Paramount and extends northwesterly to the Inglewood fault north of the Baldwin Hills. The Los Alamitos fault appears as an extension of the axis of the Paramount syncline southeast of the City of Paramount (CDWR 1961).

Regional soil survey data is not available for the area immediately surrounding the site. The nearest available published soil survey data is from Orange County (United States Department of Agriculture [USDA], 1977). Coastal plain soils are classified within two soil categories: Hueneme-Bolsa association – nearly level poorly drained, calcareous sand, silt and silty clay loams; Metz-San Emigdio association - nearly level, somewhat excessively drained, calcareous loamy sands and sandy loams. Both soil types are found on alluvial fans and flood plains, with Metz-San Emigdio being generally found on upper flood plains.

WASTE DISCHARGE REQUIREMENTS (WDRS) PARAMOUNT (55TH WAY) LANDFILL
ORDER R4-2004-0157

STATE OF CALIFORNIA
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION

ORDER NO. R4-2004-0157

WASTE DISCHARGE REQUIREMENTS
FOR POST-CLOSURE MAINTENANCE

PARAMOUNT LANDFILL (55TH WAY LANDFILL)
FILE NO. 93-079

The California Regional Water Quality Control Board, Los Angeles Region (Regional Board), finds that:

BACKGROUND

1. The City of Long Beach (Discharger) owned and operated the Paramount Landfill (Landfill) at 2910 East 55th Way (northeast corner of Paramount Boulevard and Candlewood Street) in the City of Long Beach, California (see Figures 1 and 2, attached). The 17.4 acre Landfill was also known as the 55th Way Landfill or the Long Beach Dump #26.

2. The Discharger operated the Landfill from 1945 to 1948. Design records are not available but the Landfill was covered with soil after closure.

3. An estimated quantity of 660,000 cubic yards of municipal waste was disposed of at the Landfill.

4. The Landfill was constructed before the advent of modern landfill containment features such as subdrain systems, compacted clay liners, leachate collection and removal systems, or subsurface barriers.

5. After closure, the Landfill was divided into five parcels. Four of the parcels were sold to different parties, and one parcel was converted into an extension of East 55th Way.

6. The four sold Landfill parcels (see Figure 3, attached) consist of the Friendly Village Mobile Park (central portion), the Cal Coast Packing & Crating Co., Inc. (western portion), the vacant 5400 Paramount Boulevard parcel (southern portion), and a vacant 5.5-acre parcel (northeast portion). The Discharger owns the northeast vacant parcel, herein referred to as "Facility", and proposes to develop it as an active recreation park.

7. The Facility (northeast parcel) is generally bounded on the east and northeast by single-family dwellings, on the south by the Friendly Village Mobile Home Park (residential),

on the north by the Paramount Petroleum Lakewood Tank Farm, and on the west by an industrial/commercial property (Cal Coast Packing & Crating Company). Figure 2 (see attached) shows land uses in the vicinity of the Landfill property.

8. Nonhazardous solid waste landfills have been regulated by the State Water Resources Control Board (State Board) and the Regional Boards since the 1960's through the issuance of waste discharge requirements (WDRs). Applicable regulations governing landfills in California are contained in Division 2 (commencing with § 20005) of title 27 of the California Code of Regulations (27 CCR).

9. Pursuant to 27 CCR § 20080(g), persons responsible for discharges at landfills that are closed, abandoned, or inactive (CAI) may be required to develop and implement a monitoring program. If water quality impairment is found, such persons may be required to develop and implement a corrective action program based on the provisions of chapter 3, subchapter 3, article 1 (Water Quality Monitoring and Response Programs for Solid Waste Management Units) of 27 CCR § 20380 et seq.

10. The following are relevant sections of 27 CCR that define applicable regulatory requirements for closed, abandoned, or inactive landfills.

    a. Pursuant to 27 CCR § 20005(c), CAI landfills, on the effective date of the regulations (November 27, 1984), are not specifically required to be closed in accordance with division 2, subdivision 1, chapter 3, subchapter 5 (Closure and Post-Closure Maintenance) requirements of 27 CCR. However, Pursuant to 27 CCR § 20950(a)(1), the Regional Board may require modification of an existing landfill cover even if the landfill "was completely closed in accordance with an approved closure plan by November 27, 1984", if monitoring data indicate impairment of beneficial uses of ground water.

    b. Pursuant to 27 CCR § 20080(g), persons responsible for discharges at landfills that were closed, abandoned, or inactive on or before November 27, 1984 may be required to develop and implement a monitoring program. If water quality impairment is found, such persons may be required to develop and implement a corrective action program based on the provisions of 27 CCR § 20380 et seq.

    c. Pursuant to 27 CCR § 20005(c), the standards promulgated by the California Integrated Waste Management Board (CIWMB) in chapters 1, 2, 3, and applicable portions of chapter 4 shall apply to all disposal sites meaning active, inactive closed or abandoned, as defined in Public Resources Code (PRC) § 40122 including facilities or equipment used at the disposal sites. Although § 20005(c) is in a portion of 27 CCR standards promulgated by the CIWMB, pursuant to 27 CCR § 20012(a), where necessary to protect water quality, the Regional Board can implement, in coordination with the local enforcement agency (LEA) or, as appropriate, the CIWMB, appropriate standards promulgated by the CIWMB, provided that the action does not duplicate or conflict with any action taken by the LEA (in the case of the Landfill, the Los Angeles County Department of Health Services, Solid Waste Program).

11. In accordance with California Water Code (CWC) § 13263(d) the Regional Board may prescribe requirements although no Report of Waste Discharge (ROWD) has been filed.

12. On October 31, 2002, the Facility was enrolled under Regional Board Order R4-2002-022 (General Waste Discharge Requirements for Post-Closure Maintenance of Inactive Nonhazardous Waste Landfills within the Los Angeles Region).

13. CWC § 13273 requires the State Board to develop a ranked list of all known landfills throughout the state on the basis of the threat to water quality. CWC § 13273 requires the operator of each solid waste disposal site on the ranked list to conduct and submit to the appropriate Regional Board the results of a groundwater Solid Waste Assessment Test (SWAT) report to determine if the site is leaking hazardous waste.

14. A SWAT analysis was completed for the Landfill in 2003 following the initial year of groundwater monitoring after enrollment in Regional Board Order No. R4-2002-022. Results from the SWAT investigation indicated no impact from the Landfill to local groundwater. The monitoring results confirmed a release from the tank farm to the north of the Landfill, which is actively being managed by the Spills, Leaks and Investigations group of the Regional Board.

15. The State Board has developed a fee rating system (title 23 § 2200) for WDRs that considers a discharge's threat to water quality and complexity. The two-dimensional rating system requires the Regional Board to assign each discharge a category of threat to water quality between "1" (most threatening) and "3" (least threatening) based on certain factors. Similarly, the Regional Board must assign each discharge a complexity rating between "A" (most complex) and "C" (least complex).

16. Regional Board Order R4-2002-022 provides that because of the potential impact to groundwater quality, from leaking inactive landfills, landfills with decomposable waste are considered a category "1" threat to water quality and are assigned a complexity ranking of category "B".

17. Specification A.3 of Regional Board Order R4-2002-022 allows for a discharger to apply for and obtain individual waste WDRs with more specific requirements. Based on the SWAT monitoring results for the Landfill, on March 3, 2004 the Discharger requested site-specific WDRs for the vacant parcel, to pursue development as an active recreation park, under revised threat to water quality and complexity ratings. Based on the age of

refuse at the Landfill and recent groundwater monitoring results, a threat to water quality and complexity rating of 3-B is appropriate.

18. CWC § 13263 provides that all WDRs shall be reviewed periodically and, upon such review, may be revised by the Regional Board to comply with changing state or federal laws, regulations, policies, or guidelines. The Discharger's WDRs for the Facility are being revised to include updated findings as well as to update water quality monitoring and post-closure maintenance programs.

ENVIRONMENTAL SETTING

19. The Landfill is located in the Central Basin of the Los Angeles Basin. The main physiographic features of the Landfill area are the Downey Plain (on which the Landfill is located), the Bouton Plain and Signal Hill to the south, the Los Angeles River to the west (approximately 2.5 miles), and the San Gabriel River to the east (approximately three miles). The Downey Plain is a depositional feature formed by coalesced alluvial fans of the Los Angeles, Rio Hondo, and San Gabriel River systems.

20. Regional surface sediments in the area of the Landfill consist of interbedded alluvial deposits from the Los Angeles and San Gabriel Rivers. These sediments consist of unconsolidated sand and gravel that are poorly sorted and stratified. Sediments underlying the Landfill area consist primarily of interbedded lenses of clayey silts, silty clays, and sandy silts.

21. Aquifers of interest in the north Long Beach area include, in vertically descending order, the semi-perched, Gaspur (where present), Exposition, Gage (also known as the 200-foot sand), Hollydale, Lynwood (also known as the 400-foot gravel), and the Silverado. Beds of fine-grained sediment (aquitards) generally separate each aquifer but are not present at all locations.

22. In the area of the Landfill, Recent-aged alluvium consists of sands and gravels 20 to 60 feet thick overlying the Bellflower aquiclude, which restricts vertical percolation into the Gaspur aquifer. The Bellflower aquiclude is found throughout the Central Pressure Basin and is composed mainly of clay and silt, however, there are numerous areas where its effectiveness as an aquiclude is limited.

23. The Regional Board adopted the revised Water Quality Control Plan for the Los Angeles Region (Basin Plan) on June 13, 1994. The Basin Plan contains beneficial uses and water quality objectives for groundwater in the Central Basin. The requirements of this Order, as they are met, are in conformance with the goals of the Basin Plan.

24. The Basin Plan identifies the location of the Landfill as being within in the Central Hydrologic Subarea of the Coastal Plain Hydrologic Area of the Los Angeles – San Gabriel Hydrologic Unit. Existing beneficial uses of Los Angeles River surface water are groundwater recharge, water contact recreation, non-contact water recreation, and warm freshwater habitat. Potential beneficial uses include municipal and domestic supply, industrial service supply, and wildlife habitat.

25. The Basin Plan identifies existing beneficial uses for groundwater in the Central Basin of the Los Angeles Coastal Plain as municipal and domestic supply, industrial service supply, industrial process supply, and agricultural supply.

26. There are no known active faults within 200 feet of the Landfill. Active faults are defined as Holocene Epoch faults that have exhibited surface movement in the last 11,000 years. The Newport-Inglewood Fault Zone dominates the geologic structure of the Long Beach Quadrangle.

27. The Long Beach 7.5 minute quadrangle Seismic Hazard Zone Map (released March 25, 1999) produced by the California Division of Mines and Geology Seismic Hazards Mapping Program (incorporated herein by reference) indicates that the Landfill is located within an identified potential liquefaction zone. The hazard zone map also identifies the Landfill as being outside of an area where the previous occurrence of landslide movement, or local topographic, geological, geotechnical and subsurface water conditions, indicate a potential for permanent ground displacements such that mitigation is required.

28. The Landfill is located within the South Coast Air Basin, which is comprised of a coastal plain with broad valleys, and low hills whose climate is dominated by the semi-permanent, high-pressure climatic conditions of the eastern Pacific zone. The area is characterized by warm, dry summers, mild winters, infrequent rainfall, moderate daytime on-shore breezes and moderate humidity.

29. According to the National Flood Insurance Program, administered by the Federal Emergency Management Agency, the Landfill is outside of a 500-year flood hazard area.

ENVIRONMENTAL MONITORING SYSTEMS

30. The Landfill groundwater monitoring program incorporates semiannual monitoring of one upgradient well and two wells downgradient of the Landfill (see Figure 4, attached). Groundwater monitoring at the Landfill has been conducted since 2002.

31. Landfill gas migration monitoring probes are located along the boundary of the Facility. These probes are monitored on a quarterly basis as described in the Post-Closure

Maintenance and Monitoring Plan (PCMMP) section of the Post-Closure Land Use Plan (PCLUP) approved on October 21, 2003.

ADMINISTRATIVE

32. Revision of the Discharger's WDRs for the Facility constitutes an existing project as defined in § 15301, chapter 3, title 14 of the CCR and is therefore exempt from the provisions of the California Environmental Quality Act (Public Resources Code § 21000 et seq.).

The Regional Board has notified interested agencies and all known interested parties of its intent to issue requirements for post-closure maintenance for the Facility.

The Regional Board in a public meeting heard and considered all comments pertaining to post-closure maintenance for the Facility.

Pursuant to section 13320 of the CWC, any aggrieved party may seek review of this Order by filing a petition with the State Board. The petition must be received by the at the following address within 30 days of the date of this Order is adopted:

State Water Resources Control Board
P.O. Box 100
Sacramento, CA 95812

IT IS HEREBY ORDERED, that the City of Long Beach (Discharger), shall comply with the following at the Paramount Landfill:

A. PROHIBITIONS

1. Discharges of waste to land that have not been specifically described to the Regional Board and for which valid WDRs are not in force, are prohibited.

2. Discharge of waste shall not:

    a. Cause the Regional Board's objectives for the ground or surface waters as established in the Basin Plan, to be exceeded;

    b. Cause pollution, contamination, or nuisance, or adversely affect beneficial uses of ground or surface waters as established in the Basin Plan;

c. Cause the occurrence of coliform or pathogenic organisms in waters pumped from a groundwater basin;

d. Cause the occurrence of objectionable tastes and odors in waters pumped from a groundwater basin;

e. Cause waters pumped from a groundwater basin to foam;

f. Cause the presence of toxic materials in waters pumped from a groundwater basin; or

g. Cause the pH of waters pumped from a groundwater basin to fall below 6.0, or rise above 9.0.

3. Odors, vectors, and other nuisances of waste origin beyond the limits of the Landfill created by the Landfill site are prohibited.

4. The discharge of waste to surface drainage courses is prohibited.

5. Basin Plan prohibitions shall not be violated.

6. The use of pressurized water lines overlying waste is prohibited unless the water lines are designed in accordance with Provisions for Post-Closure Maintenance Specification C.5 (Irrigation Systems Control) discussed below.

B. PROVISIONS FOR GROUNDWATER MONITORING

1. The Discharger shall implement the attached Monitoring and Reporting Program (M&RP) No. CI-8372A and revisions thereto in order to detect, at the earliest opportunity, any discharge of waste constituents from the Facility or any unreasonable impairment of beneficial uses associated with (caused by) discharges of waste to the Facility.

2. At any time, the Discharger may file a written request, including appropriate supporting documents, with the Executive Officer, proposing modifications to M&RP No. CI-8372A. The Discharger shall implement any changes to the revised M&RP approved by the Executive Officer upon receipt of a signed copy of the revised M&RP.

3. The Discharger shall furnish, under penalty of perjury, technical or monitoring program reports in accordance with CWC § 13267. Failure or refusal to furnish these reports or falsifying any information provided therein renders the Discharger

guilty of a misdemeanor and subject to the penalties stated in CWC § 13268. Monitoring reports shall be submitted in accordance with the provisions contained in the attached M&RP No. CI-8372A, as directed by the Executive Officer.

4. The effectiveness of monitoring wells and monitoring devices shall be maintained throughout the Facility's post-closure maintenance period in accordance with acceptable industry standards. The Discharger shall maintain a groundwater monitoring well preventative maintenance program (MWPMP) as described in the approved PCMMP. Elements of the program should include a minimum of periodic visual inspections of well integrity, pump removal and inspection, and appropriate inspection frequencies. If a well or piezometer is found to be inoperative, the Regional Board and other interested agencies shall be so informed in writing within seven days after such discovery, and this notification shall contain a time schedule for returning the well or piezometer to operating order. Changes to the existing program shall be submitted for Executive Officer approval at least 30 days prior to implementing the change(s).

5. If a well or piezometer is proposed to replace an inoperative well or piezometer identified in the M&RP No. CI-8372A, the Discharger shall not delay replacement while waiting for Executive Officer approval. However, a technical report describing the location and construction details shall be submitted to the Executive Officer within 30 days.

6. The Discharger shall provide for proper handling and disposal/recycling of water purged from designated monitoring wells and piezometer at the Landfill during sampling. Water purged from a monitoring well shall not be returned to that well (or any other Landfill monitoring well as part of this program).

7. Any abandoned wells or bore holes under the control of the Discharger, and situated within the Facility boundaries, must be located and properly modified or sealed to prevent mixing of any waters between adjacent water-bearing zones. A notice of intent to decommission a well must be filed with the appropriate regulatory agencies prior to decommissioning. Procedures used to decommission these wells, or to modify wells still in use, must conform to the specifications of the local health department or other appropriate agencies.

8. For any piezometers or monitoring wells installed at the Landfill in the future, the discharger shall submit technical reports for approval by the Executive Officer prior to installation. These technical reports shall be submitted at least 30 days prior to the anticipated date of installation of the wells. These reports shall be accompanied by:

a. Maps and cross sections showing the locations of the monitoring points; and

b. Drawings and data showing construction details of the monitoring points. These data shall include:

i. casing and test hole diameter;
ii. casing materials;
iii. depth of each hole;
iv. the means by which the size and position of perforations shall be determined, or verified, if in the field;
v. method of joining sections of casing;
vi. nature of filter materials;
vii. depth and composition of soils; and
viii. method and length of time of well development.

9. The Discharger shall follow the Water Quality Protection Standards (WQPS) for detection monitoring established by the Regional Board in this Order pursuant to 27 CCR § 20390. WQPS may be modified by the Regional Board based on more recent or complete groundwater monitoring data such as from the monitoring network required by this Order, changes in background water quality, or for any other valid reason. The following are WQPS for the Landfill as established by this Regional Board:

a. Groundwater quality limits for the Landfill are established based on region-wide limits in the Basin Plan or based on site-specific data as allowed in the Basin Plan.

b. The compliance monitoring wells at the Landfill shall consist of those wells listed in Item No. B.1 of M&RP No. CI-8372A. All compliance monitoring wells shall be monitored pursuant to this Order and as directed by the Executive Officer through future revisions of M&RP No. CI-8372A.

c. The Discharger shall use the constituents listed in M&RP No. CI-8372A and revisions thereto, as "monitoring parameters". These monitoring parameters are a short list of constituents and parameters that shall be used for the majority of monitoring activity and are subject to the most appropriate statistical or non-statistical tests under the attached M&RP No. CI-8372A and any revised M&RP approved by the Regional Board's Executive Officer.

d. The concentration limit for each monitoring parameter for each monitoring point shall be that derived from background monitoring points.

e. The compliance period for which WQPSs are applicable shall be the entire post-closure maintenance period.

10. If necessary, the Discharger shall install additional groundwater monitoring devices necessary to comply with M&RP Nos. CI-8372A, as adopted or as revised by the Executive Officer.

C. PROVISIONS FOR POST-CLOSURE MAINTENANCE SPECIFICATIONS

1. The Discharger shall update (as necessary) the post-closure maintenance plan for the Facility within 90 days of the adoption date of this Order, which contains, but is not limited to, the following:

   a. The persons, companies, or agencies responsible for each aspect of Facility maintenance, along with their addresses and phone numbers;

   b. Location map(s) indicating property boundaries and the existing limits of waste, internal roads, and structures within the property boundary.

   c. Location map(s) of current monitoring and control systems including drainage and erosion control systems and Facility gas monitoring and control systems.

   d. A description of the methods, procedures, schedules, and processes that will be used to maintain, monitor and inspect the Facility.

2. The Facility maintenance period shall continue until the Regional Board's Executive Officer determines that remaining wastes in all waste management units (WMUs) at the site will not threaten water quality.

3. Landfilled areas shall be adequately protected from any washout, erosion of wastes or cover materials. The surface drainage system shall be designed to adequately handle the rainfall from a 100-year, 24-hour storm event.

4. The structural integrity and effectiveness of all containment structures and the existing cover shall be maintained as necessary to correct the effects of settlement or other adverse factors.

5. For water lines overlying waste, the design shall consider, but not be limited to,

the following:

a. Flexible connectors;
b. Secondary containment;
c. Moisture sensors;
d. Rain sensors;
e. Annual leak testing;
f. Automatic shutoff valves; and
g. A maintenance plan describing the inspection and maintenance schedule for all mitigation devices (i.e. PCMMP).

Erosion Control

6. Any necessary erosion control measures shall be implemented, and any necessary construction, maintenance, or repairs of precipitation and drainage control facilities shall be completed to prevent erosion, ponding, flooding, or to prevent surface drainage from contacting or percolating through wastes at the facility on an annual basis. The annual erosion control measures shall be completed prior to the anticipated rainy season but not later than September 31. In addition, maintenance and repairs necessitated by changing site conditions shall be made at any time of year.

7. Silt fences, hay bales, and other erosion control measures shall be used to manage surface water runoff from Facility areas where landfill cover has recently been constructed, and from areas where Facility containment system construction is occurring.

8. All areas, including surface drainage courses, shall be maintained to minimize erosion. Landfill cover shall be maintained to minimize percolation of liquids through wastes.

Surface Drainage

9. Surface drainage from tributary areas and internal site drainage from surface and subsurface sources shall not contact or percolate through waste and shall either be contained onsite or be discharged in accordance with applicable storm water regulations.

10. Where flow concentrations result in erosive flow velocities, surface protection such as asphalt, concrete, riprap, silt fences, block walls, lawn/turf, or other erosion control materials shall be used for protection of drainage conveyance structures. Interim bench ditches shall be provided with erosion control material

and riprap to control erosion where necessary.

11. Where high velocities occur at terminal ends of downchutes, or where downchutes cross landfill cover access roads, erosion control material shall be applied to exposed soil surfaces. Energy dissipaters shall be installed to control erosion at locations where relatively high erosive flow velocities are anticipated.

D. PROVISIONS FOR STORMWATER MONITORING

1. Because of the existence of landfill gas at the Facility and its potential for migration, no surface water shall leave the Facility except as permitted by an NPDES permit for release of stormwater from industrial activities issued in accordance with the federal Clean Water Act (CWA) and the California Code of Regulations. Monitoring associated with the permit shall include sampling for volatile organic compounds in the federal monitoring parameter list, Appendix I of title 40 of the Code of Federal Regulations § 258. The Discharger shall maintain and modify, as necessary, a construction related Storm Water Pollution Prevention Plan developed for the Facility during its development into an active recreation park.

E. REPORTING REQUIREMENT

1. The Discharger shall file the following reports in accordance with the following schedule:

   a. Report of Waste Discharge

      The Discharger shall file a new ROWD at least 120 days prior to the following:

      i. Significant change in post-closure maintenance activities not described in the approved PCLUP which would significantly alter existing drainage patterns and slope configurations, or pose a potential threat to the integrity of the site;

      ii. Change in land use other than as described in the findings of this Order and the approved PCLUP;

      iii. Significant change in disposal area, e.g. excavation and relocation of waste on site; or

iv. Any planned change in the regulated facility or activity that may result in noncompliance with this Order.

b. Workplan

The Discharger shall submit a workplan at least 30 days prior to any maintenance activities, for approval by the Executive Officer, which could alter existing surface drainage patterns or change existing slope configurations not described in the approved PCLUP. These activities may include, but not be limited to, significant grading activities, the importation of fill material, the design and installation of soil borings, groundwater monitoring wells and other devices for site investigation purposes.

2. The Discharger shall furnish to the Executive Officer, within a reasonable time, any information which the Executive Officer may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this Order. The Discharger shall also furnish to the Executive Officer, upon request, copies of records required by this Order.

3. The Discharger shall notify the Executive Officer, in writing, at least 30 days in advance of any proposed transfer of this Order's responsibility and coverage between the current owner and new owner for post-closure maintenance of the Facility. This agreement shall include an acknowledgement that the existing owner is liable for violations up to the transfer date and that the new owner is liable from the transfer date on. The agreement shall include an acknowledgement that the new owners shall accept responsibility for compliance with this Order that includes the post-closure maintenance of the Facility.

4. Where the Discharger becomes aware that it failed to submit any relevant facts in a ROWD or submitted incorrect information in a ROWD or in any report to the Regional Board, it shall promptly submit such facts or information.

5. The Discharger shall report any noncompliance that may endanger health or the environment. Any such information shall be provided verbally to the Executive Officer within 24 hours from the time the owner becomes aware of the circumstances. A written submission shall also be provided within seven days of the time the owner becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected; the anticipated time it is expected to continue, and steps taken or planned to reduce, eliminate, or prevent recurrence of the noncompliance. The

Executive Officer, or an authorized representative, may waive the written report on a case-by-case basis if the oral report has been received within 24 hours.

6. The Discharger shall notify the Executive Officer immediately of any slope failure occurring in a waste management unit. Any failure which threatens the integrity of the containment features or the waste management unit shall be promptly corrected after approval of the method and schedule by the Executive Officer.

7. The Discharger shall comply with the attached M&RP CI-8372A. Monitoring results shall be reported at the intervals specified in M&RP CI-8372A.

8. All applications, reports, or information submitted to the Executive Officer shall be signed and certified as follows:

   a. ROWDs shall be signed as follows:

      i. For a corporation - by a principal executive officer of at least the level of vice-president.

      ii. For a partnership or sole proprietorship - by a general partner or the proprietor, respectively.

      iii. For a municipality, state, federal or other public agency - by either a principal executive officer or ranking elected official.

      iv. For a military installation - by the base commander or the person with overall responsibility for environmental matters in that branch of the military.

   b. All other reports required by this Order and other information required by the Executive Officer shall be signed by a person designated in paragraph 8.a of this provision, or by a duly authorized representative of that person. An individual is a duly authorized representative only if:

      i. The authorization is made in writing by a person described in paragraph 8.a of this provision;

      ii. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity; and

      iii. The written authorization is submitted to the Executive Officer.

c. Any person signing a document under this section shall make the following certification:

> "I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment."

9. The Discharger shall submit reports required under this Order and other information requested by the Executive Officer, to:

    California Regional Water Quality Control Board
    Los Angeles Region
    320 W. 4th Street, Suite 200
    Los Angeles, California 90013
    ATTN: Information Technology Unit

10. The Discharger shall perform quarterly inspections of the Facility site and report the results semi-annually. The report shall contain information on the site condition and a discussion of any significant findings with regard to:

    a. General site conditions;
    b. Surface cover and slope;
    c. Drainage facilities;
    d. Groundwater monitoring network;
    e. Methane gas control systems;
    f. Observation of seepage from the site; and
    g. Maintenance activities at the site.

F. GENERAL PROVISIONS

1. This Order includes the *"Standard Provisions Applicable to Waste Discharge Requirements"*, adopted November 7, 1990 (Attachment 1). If there is any conflict between provisions stated herein and the Standard Provisions, these provisions stated herein will prevail.

2. The Discharger shall comply with all conditions of this Order and any additional conditions prescribed by the Regional Board in addenda thereto. Noncompliance with this Order constitutes a violation of the CWC and is grounds for:

    a. enforcement action;

    b. termination, revocation and reissuance, or modification of this Order; or

    c. other actions allowed by law.

3. The Discharger shall take all reasonable steps to minimize or correct any adverse impact on the environment resulting from noncompliance with this Order, including such accelerated or additional monitoring as may be necessary to determine the nature and impact of the noncompliance.

4. The Discharger shall, at all times, properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the Discharger to achieve compliance with conditions of this Order. Proper operation and maintenance includes effective performance, adequate laboratory and process controls including appropriate quality assurance procedures.

5. This Order may be modified, revoked and reissued, or terminated for cause including, but not limited to, the following:

    a. Violation of any terms or conditions of this Order;

    b. Obtaining this Order by misrepresentation or failure to disclose fully all relevant and material facts; or

    c. A change in any condition that requires either a temporary, permanent reduction, or elimination of the authorized discharge.

6. The filing of a request by the Discharger for the modification, revocation and reissuance, or termination of this Order, or notification of planned changes or anticipated noncompliance does not stay any condition of this Order.

7. This Order is not transferable to any person except after notice to the Executive Officer. The Regional Board may require modification or revocation and reissuance of this Order to change the name of the Discharger and incorporate such other requirements as may be necessary under the CWC. The Discharger

shall submit notice of any proposed transfer of this Order's responsibility and coverage as described under Reporting Requirement E.3 of this Order.

8. In accordance with CWC § 13263(g), these requirements shall not create a vested right to continue to discharge. All discharges of waste into the waters of the State are privileges, not rights, and are subject to rescission or modification.

9. The Discharger shall allow the Regional Board, or an authorized representative, upon the presentation of credentials and other documents as may be required by law to:

   a. Enter upon the Discharger's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this Order;

   b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this Order;

   c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Order; and

   d. Sample or monitor at reasonable times, for the purposes of assuring compliance with this Order or as otherwise authorized by the CWC, any substances or parameters at any location.

10. A copy of this Order shall be maintained at the local offices of the Discharger and shall be available to operating personnel at all times.

11. The provisions of this Order are severable, and if any provision of this Order, or the application of any provision of this Order to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this Order, shall not be affected thereby.

12. This Order becomes effective on the date of adoption by this Regional Board.

G. RESCISSIONS

1. Except for enforcement purposes, the discharger's enrollment under general Regional Board Order No. R4-2002-022 is hereby terminated.

I, Jonathan Bishop, Executive Officer, do certify that the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Los Angeles Region, on October 7, 2004.

____
Jonathan Bishop
Executive Officer

WASTE DISCHARGE REQUIREMENTS FOR
POST-CLOSURE MAINTENANCE
PARAMOUNT LANDFILL
ORDER NO. R4-2004-0157

FILE NO. 93-079

FIGURE 1:
PARAMOUNT LANDFILL - LOCATION MAP

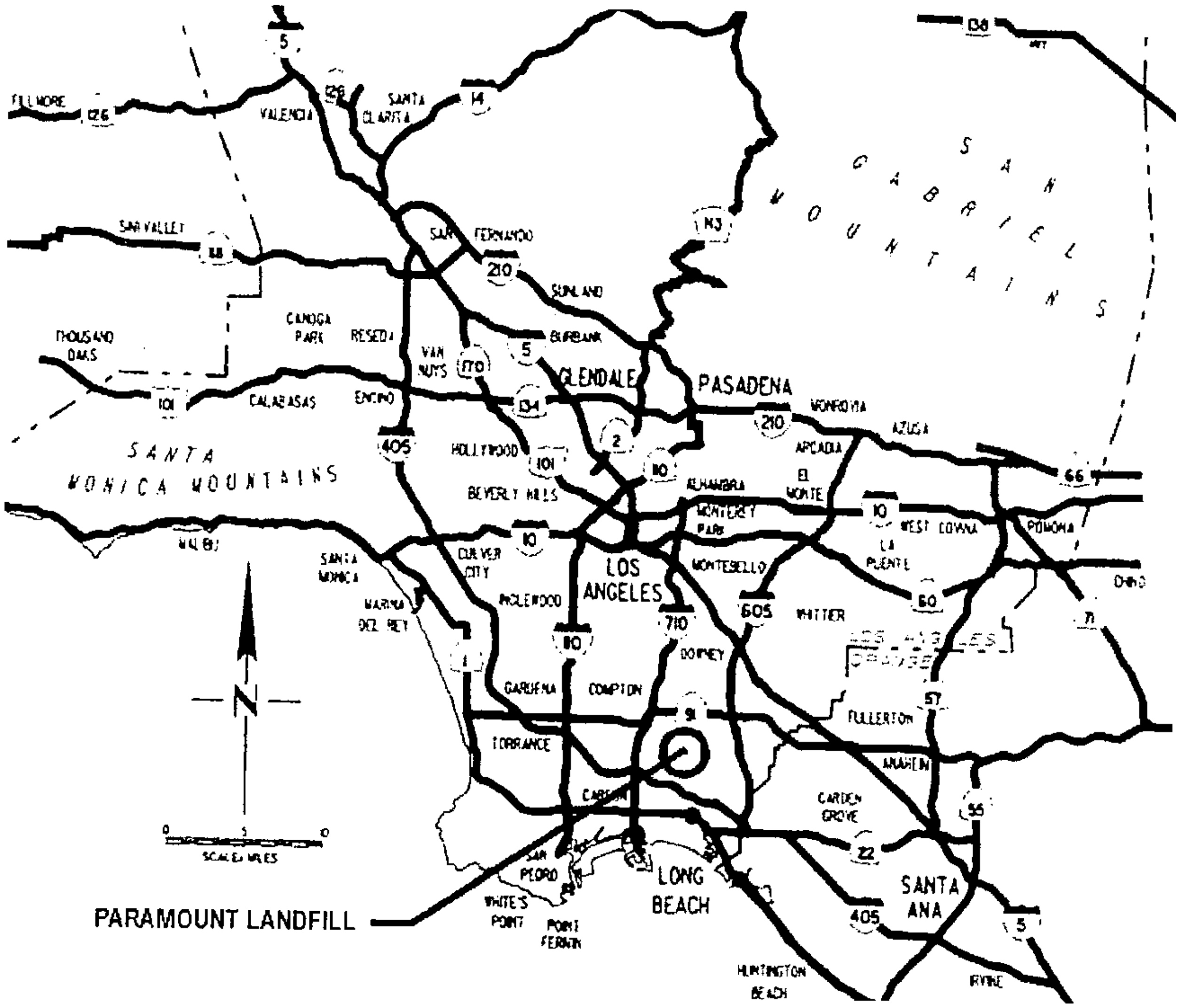


FIGURE 2:
PARAMOUNT LANDFILL - AREA LANDUSE MAP

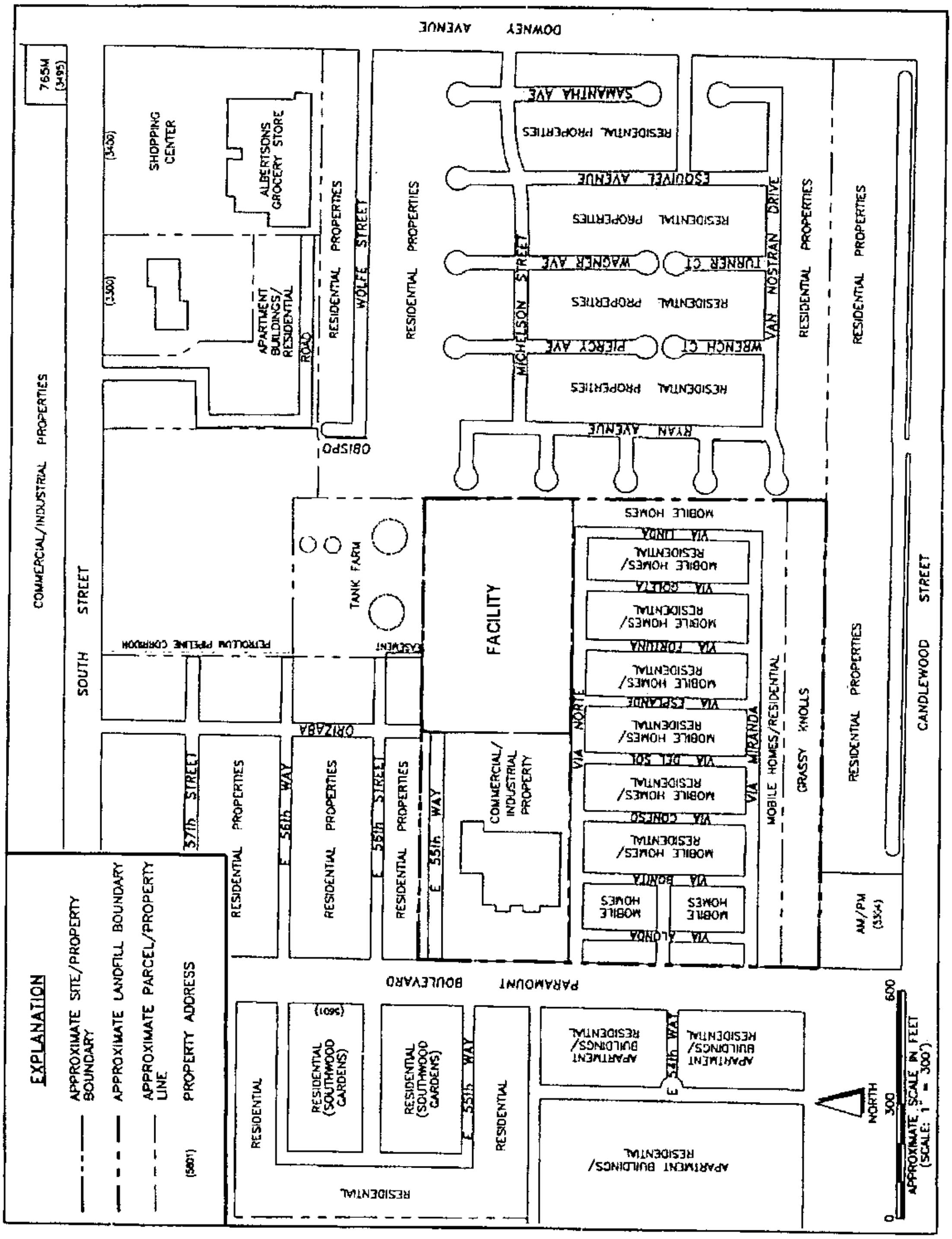


FIGURE 3:
PARAMOUNT LANDFILL - PARCEL MAP

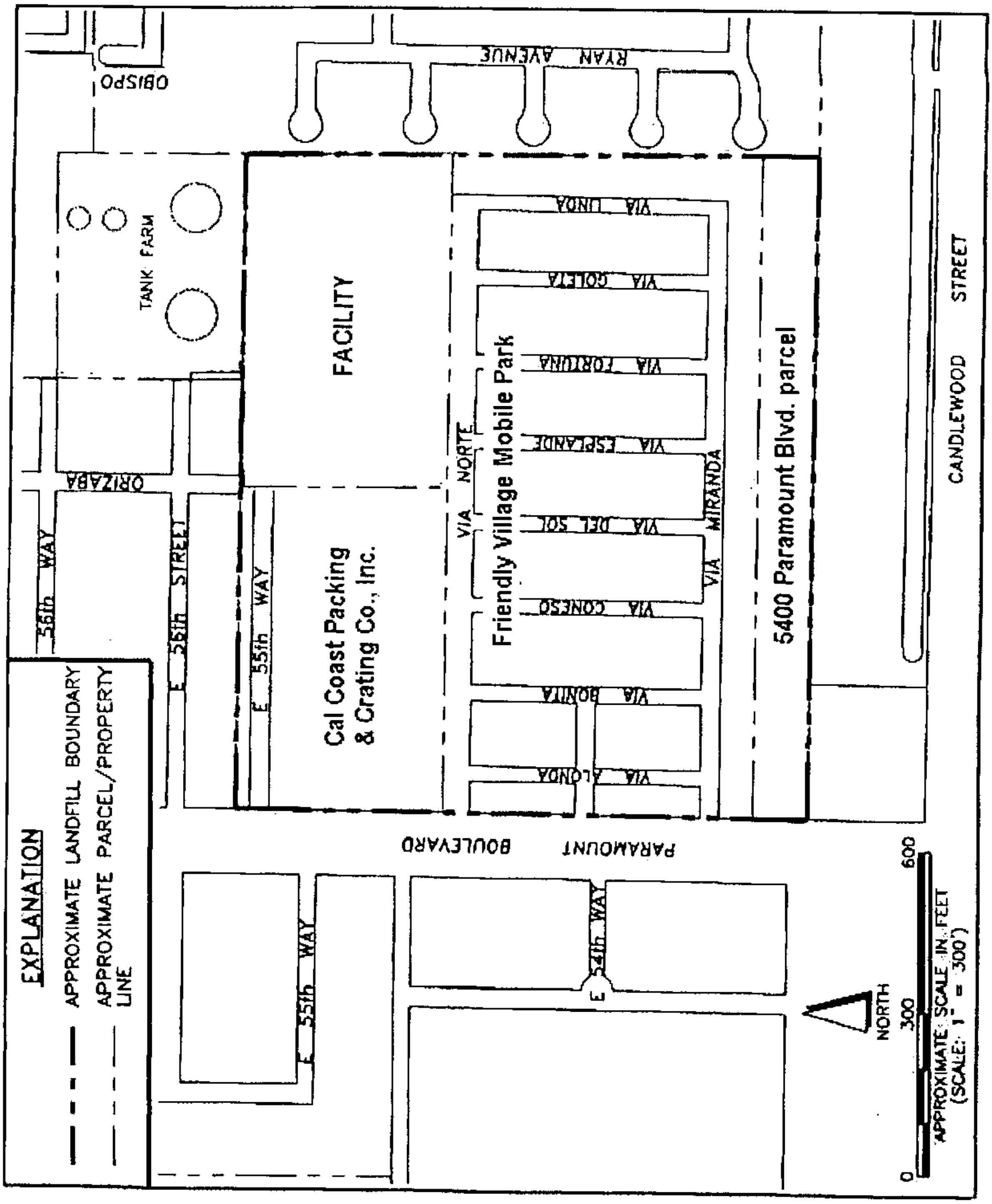
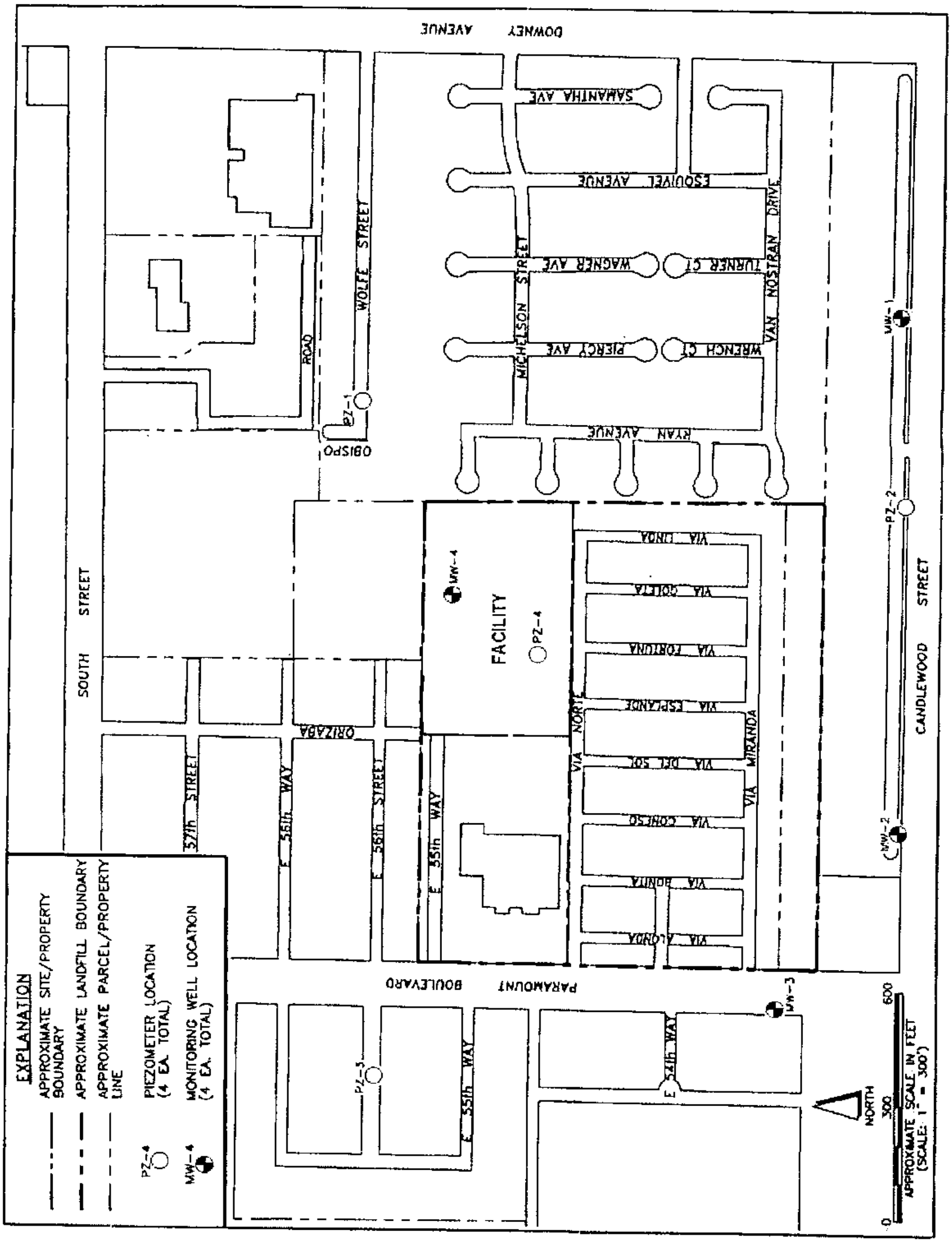


FIGURE 4:
PARAMOUNT LANDFILL - GROUNDWATER MONITORING NETWORK



MONITORING AND REPORTING PROGRAM (MRP) PARAMOUNT (55TH WAY) LANDFILL
ORDER CI-8372A

STATE OF CALIFORNIA
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION

MONITORING AND REPORTING PROGRAM NO. CI-8372A

FOR
POST-CLOSURE MAINTENANCE
PARAMOUNT DUMP (55^{TH} WAY LANDFILL)
FILE NO. 93-079

A. GENERAL

1. Monitoring responsibilities of the City of Long Beach (Discharger) for the Paramount Landfill (Landfill) are specified in California Water Code (CWC) § 13225(a), § 13267(b) and § 13387(b). This self-monitoring program is issued pursuant to California Regional Water Quality Control Board, Los Angeles Region (Regional Board) Order No. R4-2004-0157. The principal purposes of a self-monitoring program by a discharger are:

   a. To document compliance with discharge requirements and prohibitions established by the Regional Board;

   b. To facilitate self-policing by the discharger in the prevention and abatement of pollution arising from waste discharge; and

   c. To prepare water quality analyses.

2. The Discharger shall implement this monitoring and reporting program (M&RP), as described in Section B (Provisions for Groundwater Monitoring) of Regional Board Order No. R4-2004-0157. The Discharger shall implement this M&RP during the first monitoring period immediately following adoption of this Order. The first monitoring report under this program is due by October 30, 2004.

3. The Discharger shall comply with the requirements of 27 CCR § 20415 (General Water Quality Monitoring and System Requirements) for any water quality monitoring program developed to satisfy 27 CCR § 20420 (Detection Monitoring Program), § 20425 (Evaluation Monitoring Program), or § 20430 (Corrective Action Program) and the requirements of this Order.

B. GROUNDWATER MONITORING PROGRAM

1. The compliance groundwater monitoring system at the Landfill includes three monitoring wells (PZ-1, MW-1, and MW-2) (see Figure 1, attached).

2. Monitoring wells existing at the Landfill that are not part of the compliance groundwater monitoring system include PZ-2, PZ-3, PZ-4, MW-3, and MW-4. All existing piezometers and monitoring wells at the Landfill are shown on Figure 1.

3. All analyses shall be performed in a laboratory certified to perform such analyses by the California Department of Health Services or a laboratory approved by the Executive Officer. Specific methods of analysis must be identified. If methods other than the U. S. Environmental Protection Agency (USEPA) approved methods or standard methods are used, the exact methodology must be submitted for review and must be approved by the Executive Officer prior to use. The director of the laboratory whose name appears on the certification shall supervise all analytical work in his/her laboratory and shall sign all reports of such work submitted to the Regional Board.

4. The monitoring parameter list for the Landfill, to be monitored on a semi-annual basis, shall include all constituents listed below:

	Monitoring Parameters	**Test Method**
1.	Chemical Oxygen Demand (COD)	USEPA 410.4
2.	Total Organic Halides (TOX)	USEPA 9020
3.	Total Organic Carbon (TOC)	USEPA 415.1
4.	Total Dissolved Solids (TDS)	USEPA 160.1
5.	Chloride	USEPA 300.0
6.	Sulfate	USEPA 300.0
7.	Boron	USEPA 6010
8.	Volatile Organics	USEPA 8260*
9.	Semi-volatiles*	USEPA 3510/8270
10.	Sulfides	USEPA 376.2
11.	Nitrate (as N)	USEPA 300.0

*All peaks greater than 10% of the internal standard shall be identified and quantified for gas chromatography analyses.

Once each year, during the April-September monitoring period, all wells shall be sampled and also analyzed for the following expanded list of constituents of concern (COCs). COCs are those constituents which are likely to be in the waste in the landfill or which are likely to be derived from waste constituents, in the event of a release.

Monitoring Parameters	Test Method
PCBs*	USEPA 3510/8080

Biological Oxygen Demand	USEPA 405.1
Nitrite	USEPA 300.0
Oil and Grease	USEPA 413.2

*All peaks greater than 10% of the internal standard shall be identified and quantified for gas chromatography analyses.

5. The Discharger shall implement data analysis methods compliant with the requirements of 27 CCR § 20415 (General Water Quality Monitoring and System Requirements) to evaluate any statistically significant indications of a release from the Landfill.

6. Proper chain of custody procedures shall be used.

7. If the Discharger monitors any pollutants more frequently than required by Order No. R4-2004-0157, using the most recent version of Standard USEPA Methods, or as specified in Order No. R4-2004-0157, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the Discharger's monitoring report. The increased frequency of monitoring shall also be reported.

8. The Discharger shall report all instances of noncompliance not reported under Reporting Requirement F.5 of Order No. R4-2004-0157 at the time monitoring reports are submitted. The reports shall contain the information listed in Reporting Requirement F.5.

9. Sample collection, storage, and analysis shall be performed according to the most recent version of Standard USEPA Methods, and in accordance with an approved sampling and analysis plan.

10. All monitoring instruments and equipment which are used by the Discharger to fulfill the prescribed monitoring program shall be properly calibrated and maintained as necessary to ensure their continued accuracy.

11. The Discharger shall retain records of all monitoring information, including all calibration and maintenance records and copies of all reports required Order No. R4-2004-0157. Records shall be maintained for a minimum of five years from the date of the sample, measurement, report or application. This period may be extended during the course of any unresolved litigation regarding this discharge or when requested by the Executive Officer.

12. Records of monitoring information shall include:

a. The date, identity of sample, monitoring point from which it was taken, and time of sampling or measurement;

b. The individual(s) who performed the sampling or measurements;

c. Date and time that analyses were started and completed, and the name of the personnel performing each analysis;

d. The analytical techniques or method used, including method of preserving the sample and the identity and volumes of reagents used;

e. Calculation of results;

f. Results of analyses, and the maximum detection limit (MDL) for each parameter, and

g. Laboratory quality assurance results (e.g. percent recovery, response factor).

8. The monitoring reports shall be signed by an authorized person as required by Reporting Requirement F.8 of Order No. R4-2004-0157.

9. No filtering of samples taken for organics analyses shall be permitted. Samples for organic analyses shall be taken with a sampling method that minimizes volatilization and degradation of potential constituents.

10. The Discharger may submit additional data to the Regional Board not required by this program in order to simplify reporting to other regulatory agencies.

11. Thirty-Day Sample Procurement Limitation:
For any given monitored medium, the samples taken from all monitoring points to satisfy the data analysis requirements for a given reporting period shall all be taken within a span of 30 days, and shall be taken in a manner that insures sample independence to the greatest extent feasible [27 CCR § 20415(e)(12)(B)]. Groundwater sampling shall also include an accurate determination of the groundwater surface elevation and field parameters (temperature, pH, electrical conductivity, turbidity) for that monitoring point [27 CCR § 20415(e)(13)]; groundwater elevations taken prior to purging the well and sampling for monitoring parameters shall be used to fulfill groundwater flow rate/direction analyses required under Item No. B.14 of this M&RP. Statistical analysis shall be carried out as soon as the data is available, in accordance with statistical and non-statistical analyses requirements described in this M&RP.

12. If a measurably significant evidence of a release from the waste management unit is determined, the Discharger shall conduct required monitoring and response programs in accordance with Title 27 section 20385.

13. Prior to sampling monitoring wells, the presence of a floating immiscible layer in all wells shall be determined at the beginning of each sampling event. This shall be done prior to any other activity which may disturb the surface of the water in a monitoring well (e.g. water level measurements). If an immiscible layer is found, this Regional Board shall be notified within 24 hours.

14. For each monitored groundwater body, the Discharger shall measure the water level in each well and determine groundwater flow rate and direction at least semi-annually, including the times of expected highest and lowest elevations of the water level for the respective groundwater body. Groundwater elevations for all background and downgradient wells for a given groundwater body shall be measured within a period of time short enough to avoid temporal variations in groundwater flow which could preclude accurate determination of groundwater flow rate and direction.

C. REPORTS TO BE FILED WITH THE BOARD

1. Required monitoring reports shall be submitted to the Regional Board in accordance with the following schedule:

Report Frequency	Report Period	Report Due
Semiannually	April – September	October 30
	October – March	April 30
Annually	January – December	April 30

In the event monitoring is not performed as above because of unforeseen circumstances, substitute monitoring shall be performed as soon as possible after these times, and the reason for the delay shall be given.

2. Semi-annual groundwater monitoring reports shall be submitted no later than one month following the end of their respective reporting period. The reports shall be comprised of at least the following in addition to the specific contents listed for each respective report type:

    a. Transmittal Letter

A letter summarizing the essential monitoring points shall be submitted with each report. The transmittal letter shall include:

i. A discussion of any requirement violations found since the last such report was submitted and shall describe actions taken or planned for correcting the violations. If the Discharger has previously submitted a detailed time schedule for correcting said requirement violations, a reference to the correspondence transmitting such schedule will be satisfactory. If no violations have occurred since the last submittal, this shall be stated in the transmittal letter; and

ii. A statement certifying that, under penalty of perjury, that to the best of the signer's knowledge the report is true, complete, and correct. This statement shall be signed by an individual that meets the requirements contained in Provision No. E.8 of Order No. R4-2004-0157.

b. Semi-Annual Report

The semi-annual report shall contain, but not be limited to the following:

i. Site maintenance outlined in section B of this monitoring and reporting program.

ii. Groundwater analysis and flow rate outlined in section B of this monitoring and reporting program.

iii. A map (or copy of an aerial photograph) showing the locations of observation stations, monitoring points, and background monitoring points.

iv. Pre-Sampling Purge for Samples Obtained from Wells:

For each monitoring point addressed by the report, a description of the method and time of water level measurement, of the type of pump used for purging and the placement of the pump in the well, and of the method of purging (the pumping rate, the equipment and methods used to monitor field pH, temperature, electrical conductivity and turbidity during purging, the calibration of the field equipment, results of the pH, temperature, electrical conductivity, and turbidity testing, and the well recovery time).

The method of disposal or reuse purpose, if reused of the purge water shall be reported. If no fluid was pumped during the period from any monitoring well, a statement to that effect shall be submitted.

v. Sampling:

For each monitoring point addressed by the report, a description of the type of pump, or other device, used and its placement for sampling, and a detailed description of the sampling procedure (number and description of the samples, field blanks, travel blanks, and duplicate samples taken, the type of containers and preservatives used, the date and time of sampling, the name and qualifications of the person taking the samples, and any other observations).

vi. Laboratory Results

Laboratory results for groundwater required under this M&RP shall be summarized in the report. For each report, include laboratory statements of results of all analyses demonstrating compliance with Item No. A.2 of this M&RP; Unless otherwise approved by the Executive Officer, monitoring reports shall be submitted in PDF or JPEG format (tabular laboratory analytical data may be submitted in MS Excel or Access format) that are recorded in CD-ROMs. The data shall be summarized in such a manner as to clearly illustrate whether the facility is operating in compliance with Order No. R4-2004-0157. Hard copies of the cover letter, the main report text, and any tables and/or figures that are directly quoted in the main report, shall be submitted with the CD-ROM. The hard copies shall be signed by a responsible officer(s) of the Discharger. All original laboratory reports, quality assurance and quality control (QA/QC) data, and filed records that are used to prepare the reports must be kept in the Landfill's operating record. These data must be available for Regional Board staff review, if required. The Regional Board regards the submittal of data in hard copy and on CD-ROMs as "...the form necessary for..." statistical analysis [27 CCR § 20420(h)].

c. Annual Summary Report

The Discharger shall submit an annual report to the Regional Board covering the previous monitoring year.

i. For each monitoring point, submit in graphical format the laboratory analytical data for all monitoring parameters taken within at least the previous five calendar years. Each graph shall plot the concentration of the constituent over time for a given monitoring point, at a scale appropriate to show trends or variations in water quality.

ii. A comprehensive discussion of the compliance record, results of any corrective actions taken or planned which may be needed to bring the Discharger into full compliance with the waste discharge requirements.

iii. A written summary of the monitoring results and monitoring system(s), indicating any changes made or observed since the previous annual report.

iv. A topographic map at appropriate scale, showing the direction of groundwater flow at the landfill site.

Monitoring reports shall be submitted to:

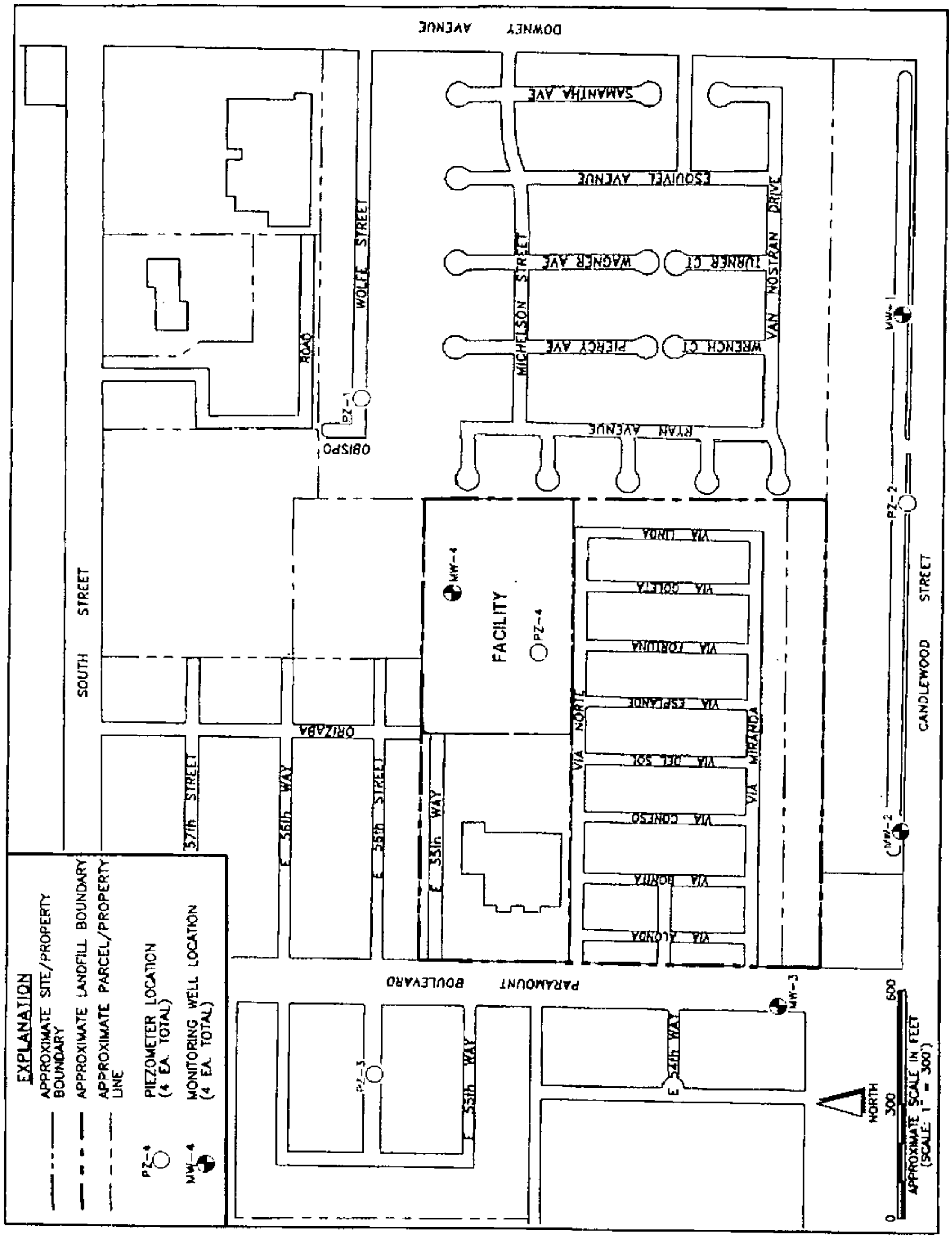
California Regional Water Quality Control Board
Los Angeles Region
320 W. 4th Street, Suite 200
Los Angeles, California 90013
ATTN: Information Technology Unit

Ordered by ______________________________

Jonathan Bishop
Executive Officer

Date: October 7, 2004

FIGURE 1:
PARAMOUNT LANDFILL - GROUNDWATER MONITORING NETWORK



STAFF REPORT WDRS AND MRP

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD,
LOS ANGELES REGION

Metropolitan Water District of Southern California
700 North Alameda Street, Los Angeles, California

October 7, 2004
478th Regular Meeting

ITEM: 12

SUBJECT: WASTE DISCHARGE REQUIREMENTS (NON-NPDES REQUIREMENTS) - For Post-Closure Maintenance of Inactive Paramount Landfill, Long Beach, CA.

BACKGROUND/ ISSUES

There are a large number (in excess of 700) solid waste disposal sites in the Los Angeles Region of which the vast majority are classified in title 27 of the California Code of Regulations (27 CCR) closed, abandoned or inactive ("CAI" units) because they ceased accepting waste prior to November 27, 1984 when there was a major revision to the state's landfill regulations. In heavily developed Southern California, as open land has become more scarce and expensive, there has been an increasing interest in developing CAI sites. Historically, CAI sites have tended to be relatively remote and not have postclosure land uses that posed an immediate environmental threat. As these sites are proposed to be redeveloped, changes in site conditions must to assessed to assure that no environmental threat is exacerbated by the change in land use. With increased redevelopment in the Los Angeles Region, Regional Board staff is increasingly being requested to evaluate groundwater monitoring and post-closure maintenance requirements for these CAI landfills. These circumstances created the need for an expedited system for processing the numerous requests for implementing groundwater monitoring and post-closure maintenance requirements for these CAI landfills so that on January 24, 2002, the Regional Board adopted general Order No. R4-2002-022 (Waste Discharge Requirements for Post-Closure Maintenance of Inactive Nonhazardous Waste Landfills within the Los Angeles Region). The general order established postclosure maintenance activities to be conducted at enrolled CAI landfills to maintain the integrity of containment features, such as, final covers, drainage systems, final grades, and landfill gas systems to name a few, as well as to monitor compliance through a groundwater monitoring and reporting program. On October 31, 2002, the Paramount Landfill (Landfill) was enrolled into general Order No. R4-2002-022 in order to facilitate the development of a vacant parcel of the Landfill into active recreation park.

ISSUE(S):

General Order No. R4-2002-022 makes a distinction for CAI landfills between burn dumps and non-burn dumps because of difference in the amount of decomposable wastes, and thus the potential for being an environmental threat. Because old "cut and cover" landfills, such as the Paramount Landfill, contain biodegradable organic material and pose a greater environmental threat, general Order No. R4-2002-022 requires completion of a Solid Waste Assessment Test (SWAT) to assess whether these sites have impacted groundwater quality. If groundwater contamination is determined, a semi-annual groundwater monitoring program is required for the site with monitoring requirements that are consistent with those adopted for other landfills within the Region. Similarly, regular postclosure maintenance monitoring and reporting are required of site owners. Because of the potential impact to groundwater quality, from leaking inactive landfills, for the purposes of general Order No. R4-2002-022, the Regional Board considers such landfills as a category "1" threat to water quality, in accordance with Title 23, section 2200. As former Class II or Class III waste management facilities, the inactive landfills subject to this Order are assigned a complexity ranking of category "B".

The City of Long Beach (Discharger) has completed a SWAT analysis for the Landfill (see Compliance History) that indicated no impact from the Landfill to local groundwater. Nonetheless, because of the on-going development of the landfill parcel into an active recreation park, groundwater monitoring is continuing. Based on the SWAT monitoring results for the Landfill, on March 3, 2004 the Discharger requested site-specific WDRs for the vacant parcel, to pursue development as an active recreation park, under revised threat to water quality and complexity ratings. Specification A.3 of Regional Board Order R4-2002-022 allows for a discharger to apply for and obtain individual waste discharge requirements (WDRs) with more specific requirements. Based on the age of refuse at the Landfill and recent groundwater monitoring results, a threat to water quality and complexity rating of 3-B is appropriate.

DISCUSSION:

Nonhazardous solid waste landfills have been regulated by the State Water Resources Control Board and the Regional Boards since the 1960' s through the issuance of WDRs. The applicable regulations governing landfills in California, Division 3, Chapter 15 (Discharges of Waste to Land) of Title 23, California Code of Regulations (23 CCR), are now contained in California Code of Regulations Title 27 (27 CCR). Pursuant to 27 CCR Section 20080(g), landfills that are closed, abandoned, or inactive on the effective date of these regulations (November 1984) are not specifically required to be closed in accordance with Article 8 requirements of 27 CCR Section 20950. However, these landfills are subject to post-closure maintenance requirements in accordance with 27 CCR Section 20080(g).

The postclosure maintenance and groundwater monitoring requirements adopted in general Order No. R4-2002-022 and incorporated into the proposed WDRs are comparable to others adopted previously for solid waste dischargers. The WDRs, as they are met, are in conformance with the goals of this Board's Water Quality Control Plan.

COMPLIANCE — See attached.

DISCHARGE REQUIREMENTS/ MONITORING COSTS: — Discharge requirements are consistent with those adopted for other landfills within the Region.

COMMENTS RECEIVED: — No comments received.

RECOMMENDATION: — The tentative Order be adopted.

ATTACHMENTS:

- Compliance History
- Discharge Requirements / Monitoring Program Cost Summary
- Tentative Waste Discharge Requirements
- Standard Provisions Applicable to Waste Discharge Requirements
- Tentative Monitoring and Reporting Program
- Comments Received
- Response to Comments
- Regional Board General Order No. R4-2002-022

B

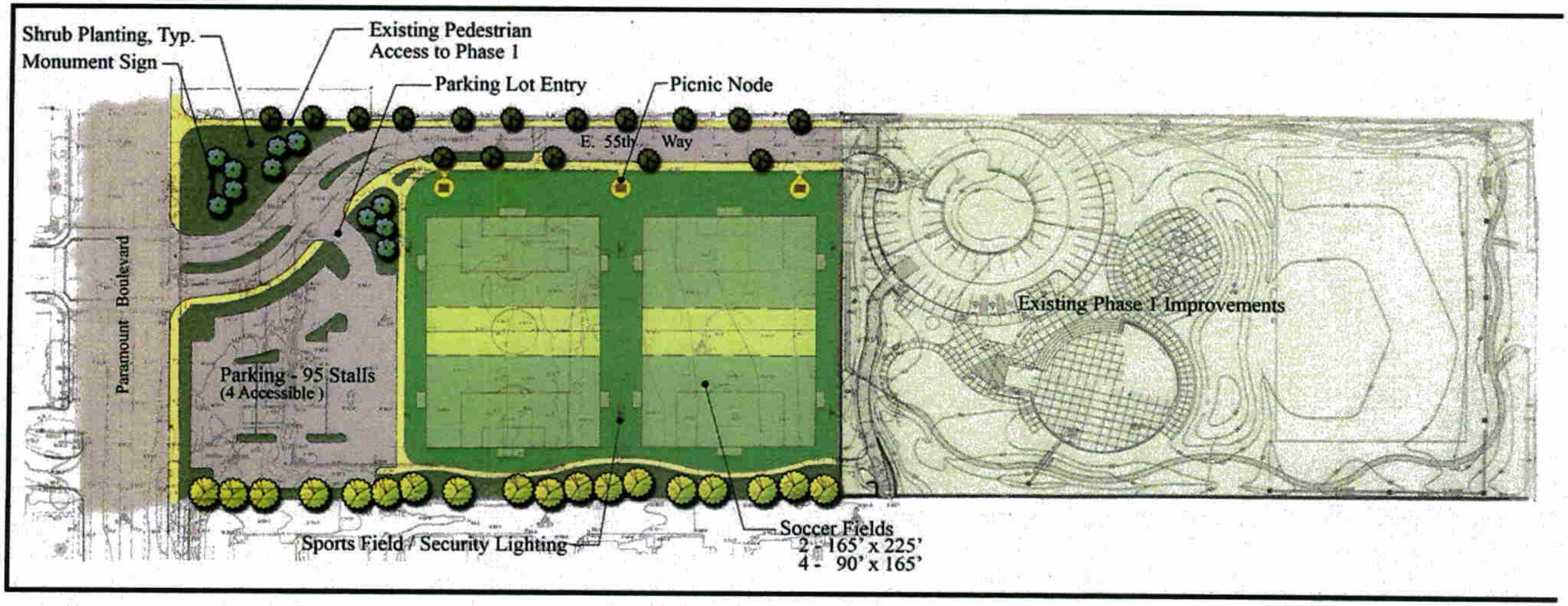
APPENDIX II-B
DRAFT CONCEPTUAL DAVENPORT PARK LAYOUT

PRELIMINARY MASTER PLAN POPS DAVENPORT PARK PHASE 2

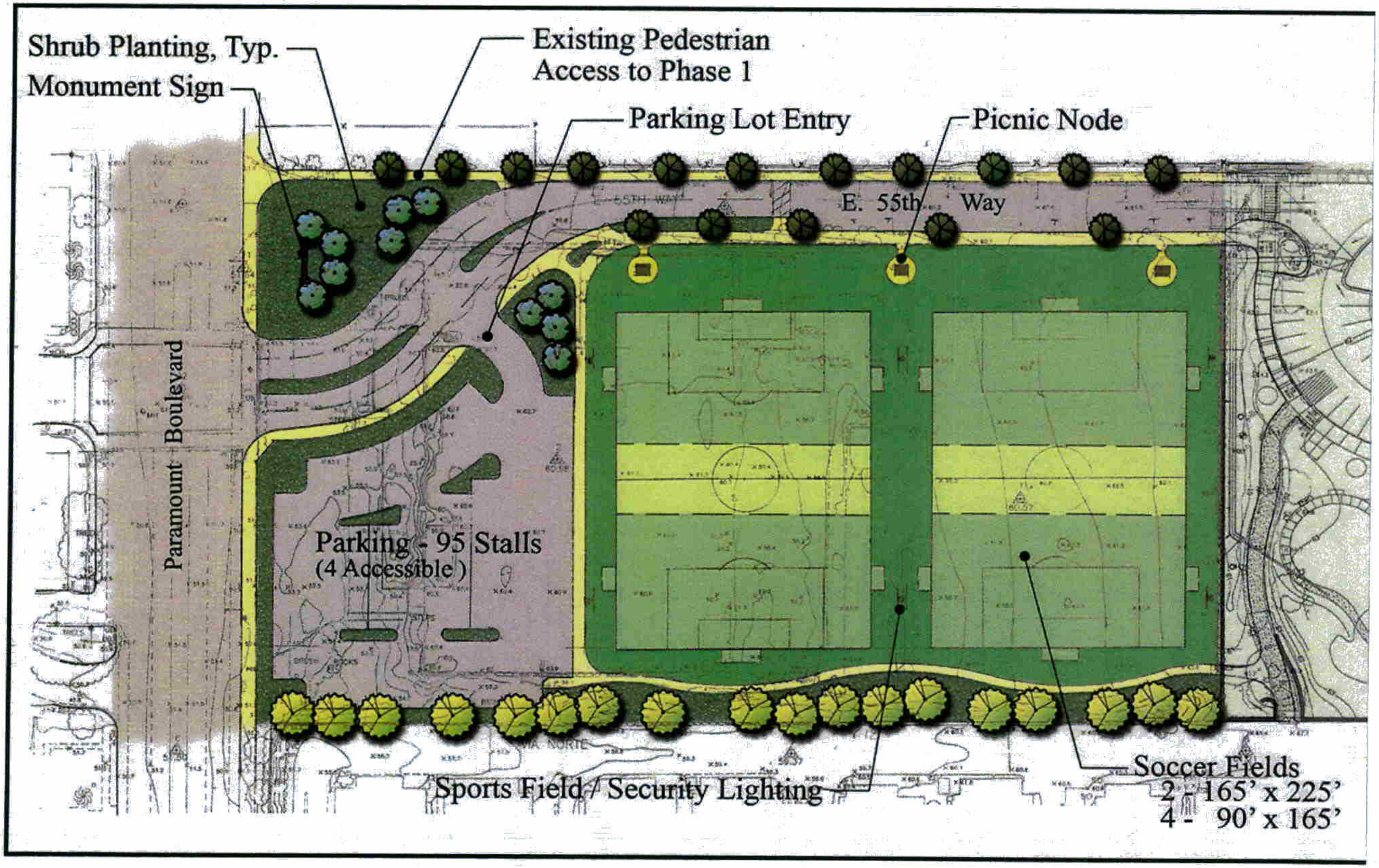
JULY 2010 CONCEPTUAL DESIGN POPS DAVENPORT PARK PHASE 2

NOVEMBER 2003 REVISED PHASE I DESIGN

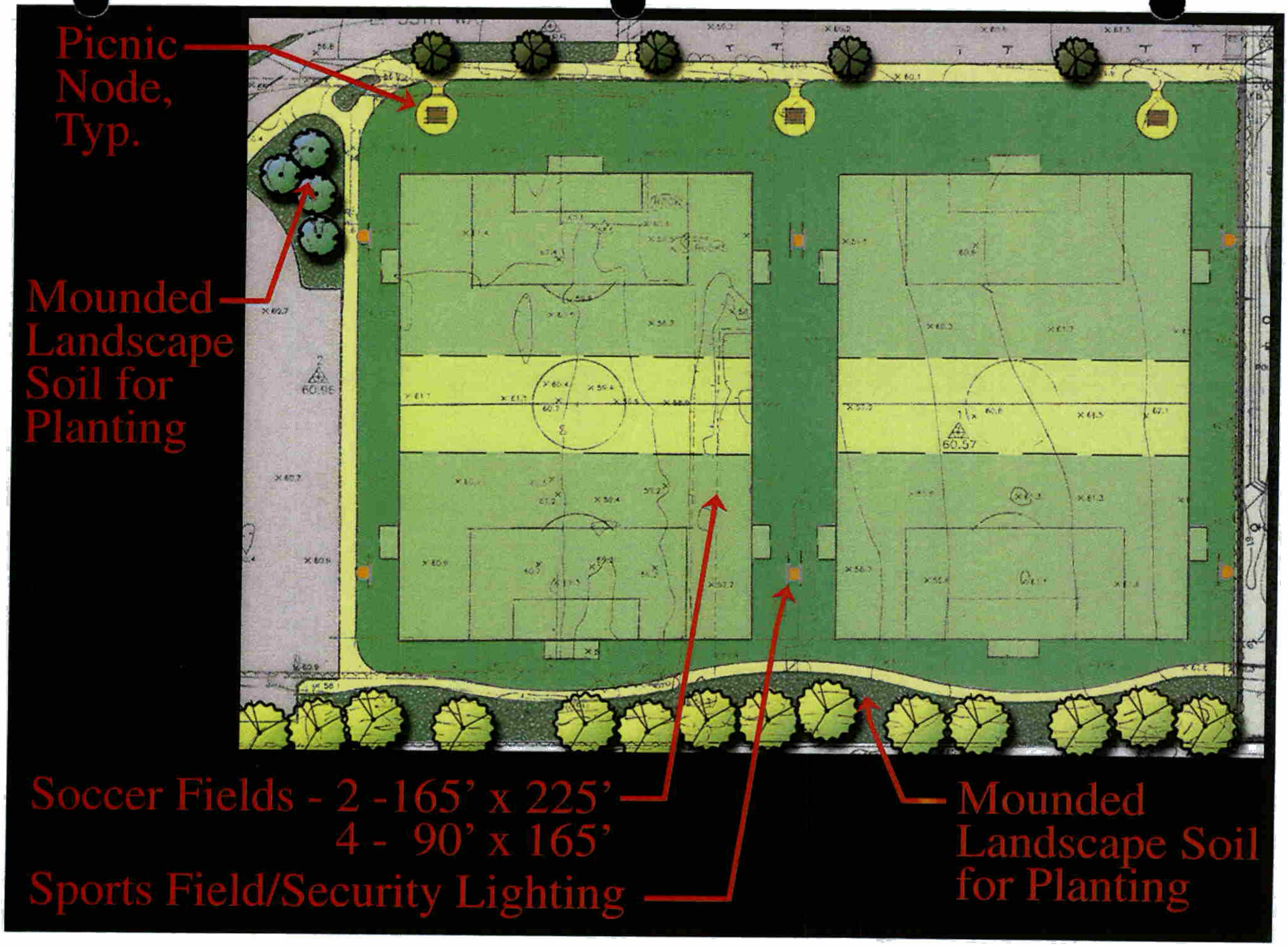
PRELIMINARY MASTER PLAN POPS DAVENPORT PARK PHASE 2



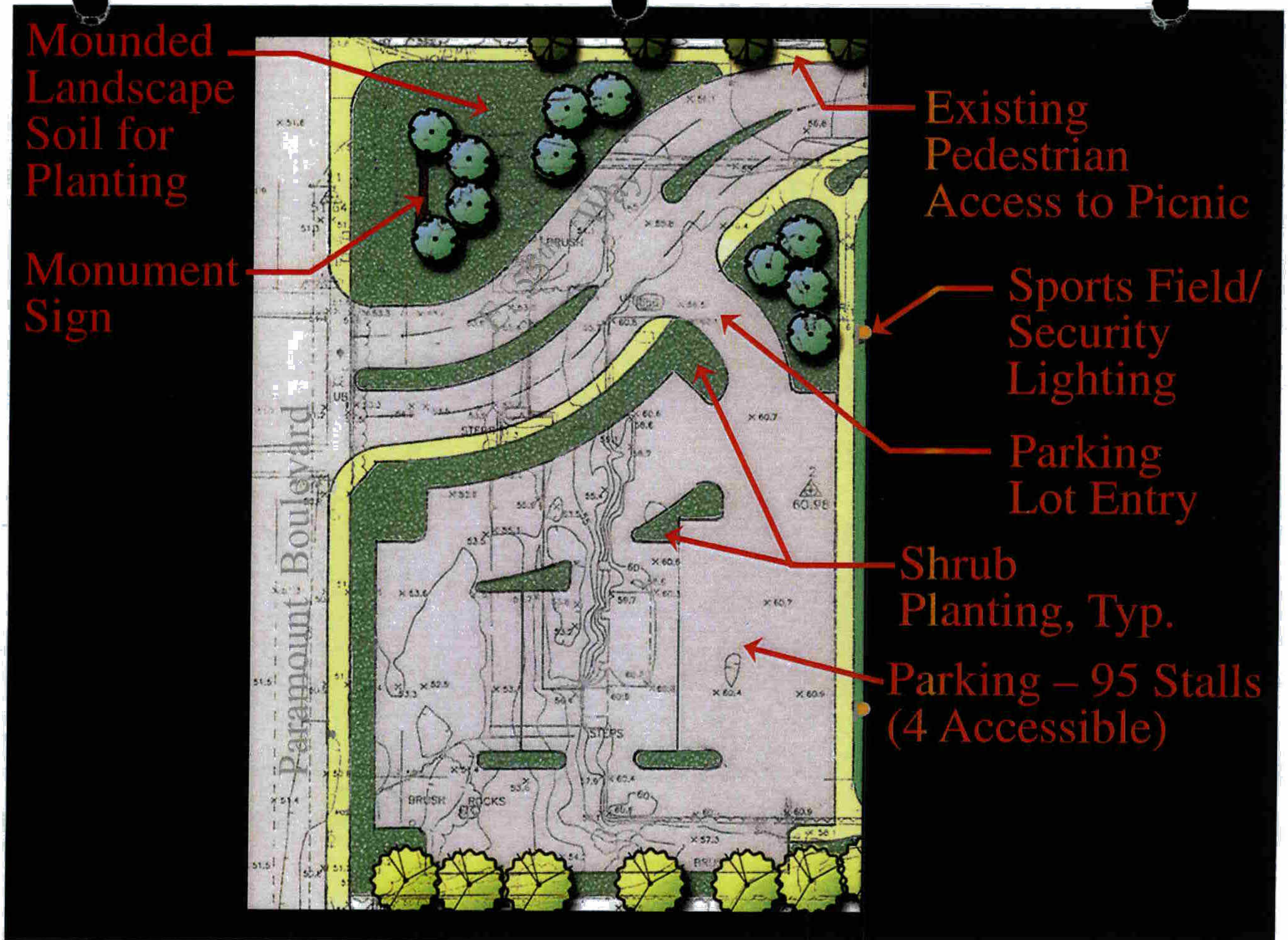
Preliminary Master Plan



Pops Davenport Park – Phase 2

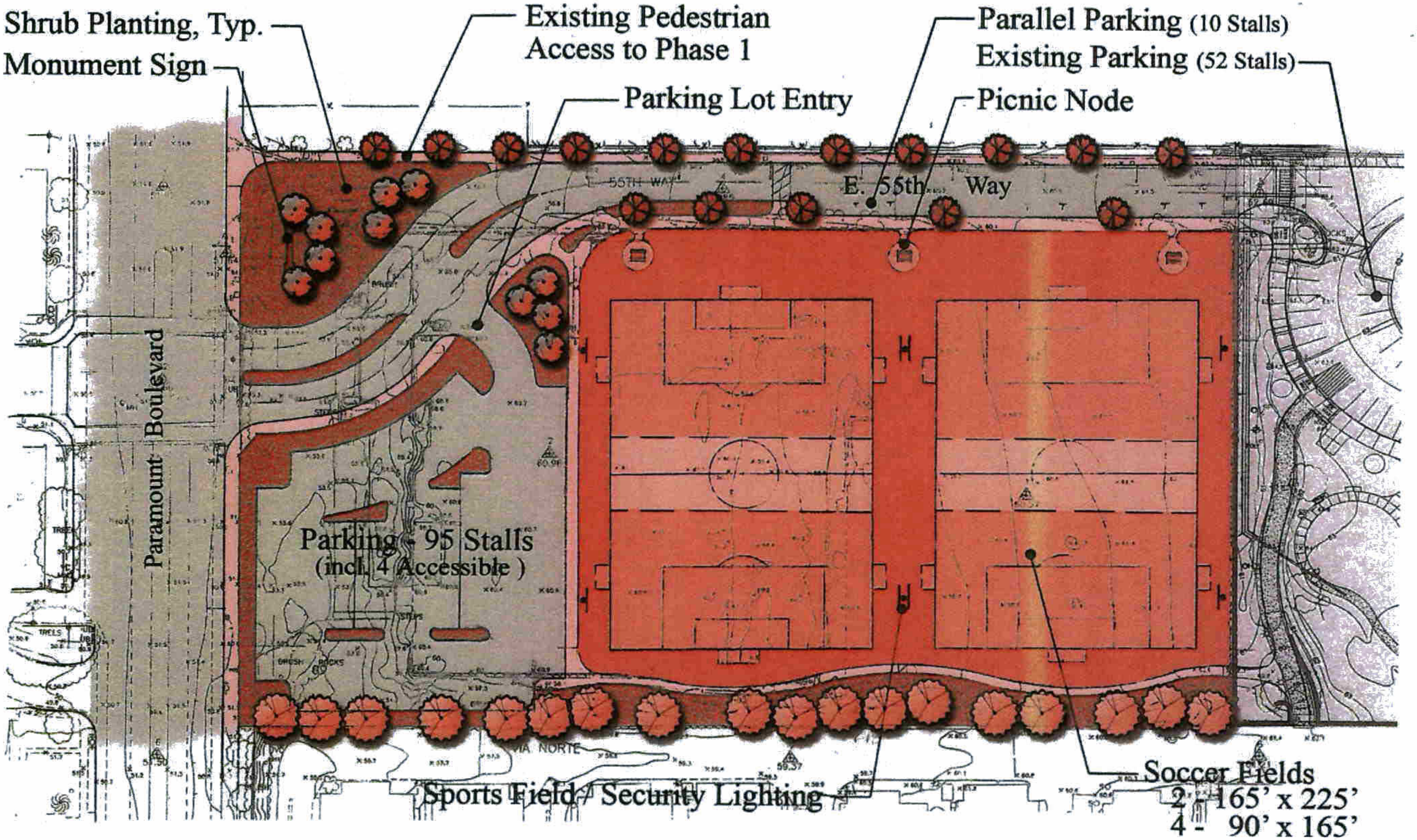


Picnic Node, Typ.
Mounded Landscape Soil for Planting
Soccer Fields - 2 -165' x 225'
4 - 90' x 165'
Sports Field/Security Lighting
Mounded Landscape Soil for Planting



Mounded Landscape Soil for Planting
Monument Sign
Existing Pedestrian Access to Picnic
Sports Field/ Security Lighting
Parking Lot Entry
Shrub Planting, Typ.
Parking – 95 Stalls (4 Accessible)
Paramount Boulevard

JULY 2010 CONCEPTUAL DESIGN POPS DAVENPORT PARK PHASE 2



07-19-2010

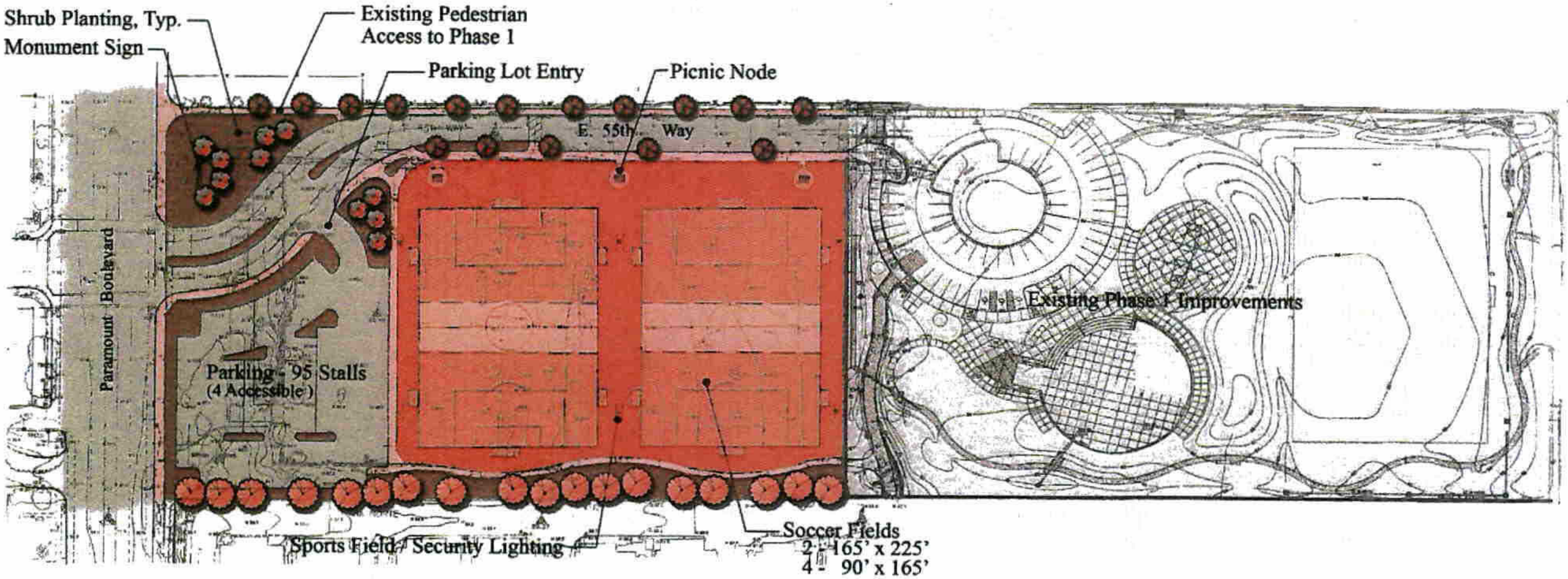
RJM DESIGN GROUP, INC.
PLANNING AND LANDSCAPE ARCHITECTURE

0 15' 30' 60'

PRELIMINARY LANDSCAPE PLAN

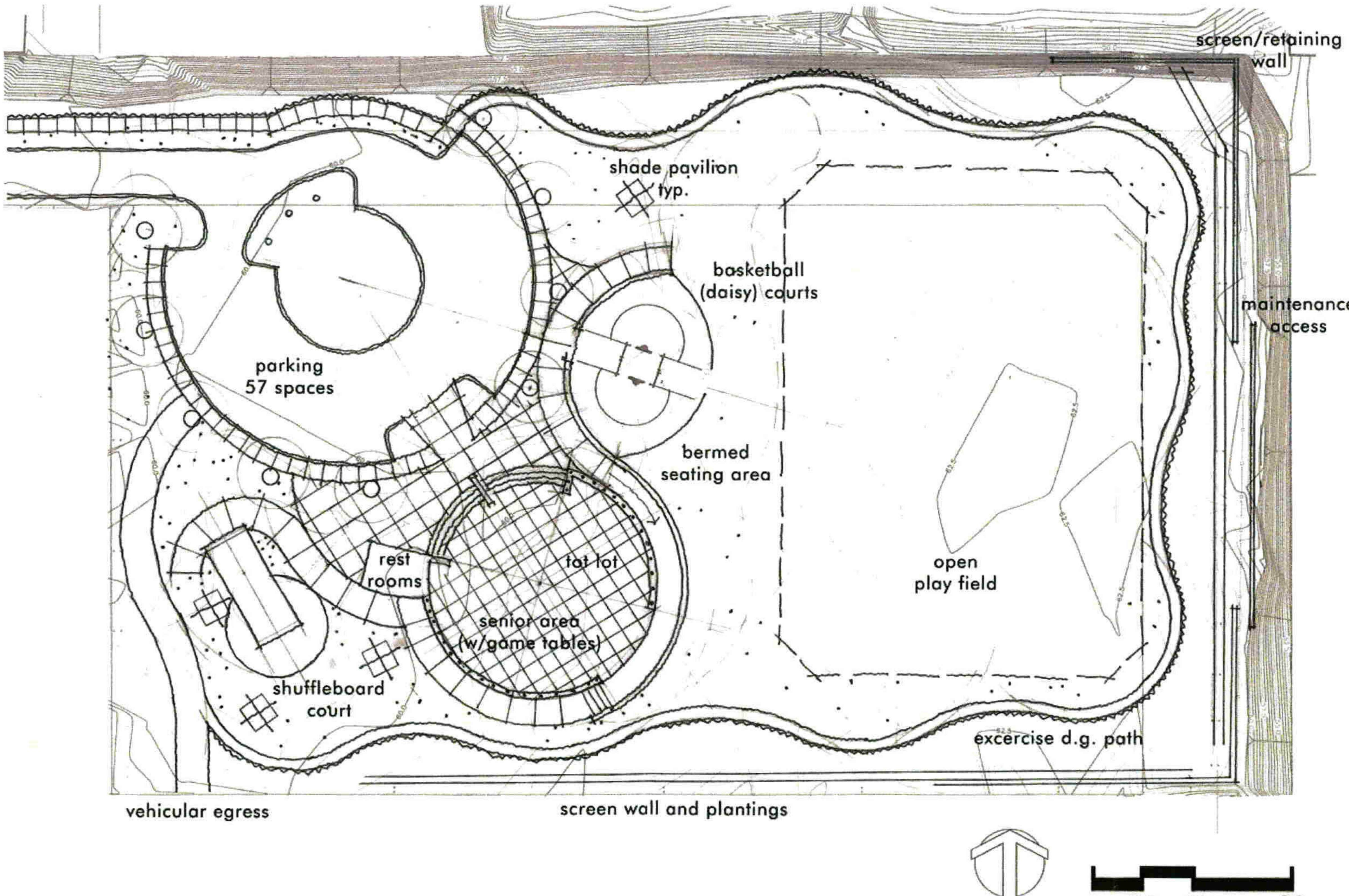
POPS DAVENPORT PARK - PHASE 2 IMPROVEMENTS

CITY OF LONG BEACH, CALIFORNIA



Shrub Planting, Typ.
Monument Sign
Existing Pedestrian
Access to Phase 1
Parking Lot Entry
Picnic Node
E. 55th Way
Paramount Boulevard
Parking - 95 Stalls
(4 Accessible)
Existing Phase 1 Improvements
Sports Field / Security Lighting
Soccer Fields
2 - 165' x 225'
4 - 90' x 165'

NOVEMBER 2003 REVISED PHASE I DESIGN



55th Way - Revised Siteplan

11.07.03

EDSA

C

APPENDIX II-C
LANDFILL BOUNDARY PROBE AND INVESTIGATIONS INFORMATION

CONCEPTUAL DESIGN OF NEW/REPLACEMENT LANDFILL GAS PROBES

INSTALLATION OF LANDFILL GAS MONITORING PROBES SUMMARY REPORT
OCTOBER 21, 2004

APPENDIX K FROM PHASE I PCLUP:
LANDFILL BOUNDARY PROBE INSTALLATION INFORMATION

FIGURE 5A FROM PHASE I PCLUP:
METHANE ISOCONCENTRATIONS IN SOIL GAS JANUARY 2002

LEA INSPECTION REPORT WITH PROBE MONITORING RESULTS JUNE 18, 2014

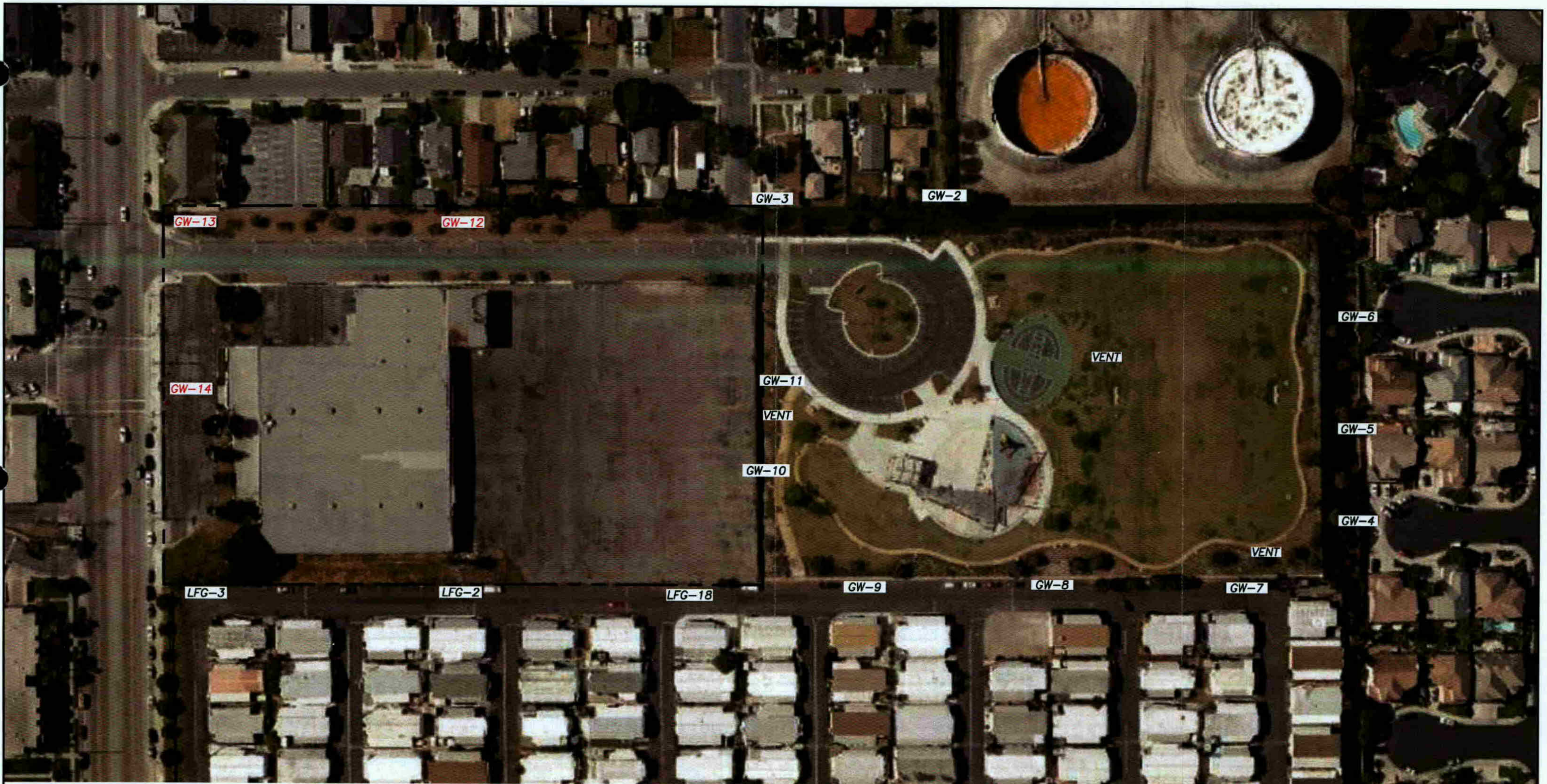
CALRECYCLE PROBE SAMPLING REPORT MARCH 23, 2011

TRENCHING LOCATION MAP AND LOGS 2005

CALRECYCLE SITE INVESTIGATION REPORT
FRIENDLY VILLAGE MOBILE HOME PARK, PORTION OF THE FORMER PARAMOUNT DUMP,
LONG BEACH, CALIFORNIA, SWIS 19-AK-0084

* This Report can be downloaded from:
http://www.calrecycle.ca.gov/SWFacilities/Directory/19-AK-0084/Document/ Friendly Villiage Mobile Home Pard Site investigation, Paramount Dump (pdf, 25513 KB)

CONCEPTUAL DESIGN OF NEW/REPLACEMENT LANDFILL GAS PROBES



LEGEND:

PROPERTY BOUNDARY
GW-12 PROPOSED LFG MONITORING PROBE
LFG-2/GW-4 EXISTING LFG MONITORING PROBE
VENT EXISTING LFG VENT/WELL

PREPARED BY:

SWT Civil & Environmental Engineering
800-C SOUTH ROCHESTER AVENUE
ONTARIO, CALIFORNIA 91761

50 25 0 50 100 150
SCALE: 1"=100'

DAVENPORT PARK PHASE II

EXISTING AND PROPOSED SUBSURFACE BOUNDARY MONITORING PROBE LOCATIONS

Z:\PROJECTS\LONG BEACH, CITY\DAVENPORT\ACAD\SHEET SET\EXISTING AND PROPOSED SUBSURFACE BOUNDARY MONITORING PROBE LOCATIONS

INSTALLATION OF LANDFILL GAS MONITORING PROBES SUMMARY REPORT
OCTOBER 21, 2004

300 Oceangate, Suite 700, Long Beach, California 90802-4443

INSTALLATION OF LANDFILL GAS MONITORING PROBES
SUMMARY REPORT

Former 55th Way Landfill/Paramount Dump
2910 East 55th Way, Long Beach, California
SWIS No.: 19-AK-0084

Telephone
562.951.2000
Facsimile
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Prepared for:

CITY OF LONG BEACH
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Long Beach, California 90802

Prepared by:

EARTH TECH INC.
300 Oceangate, Suite 700
Long Beach, California 90802

Eva Rasdal
Geologist

Travis Taylor, REA II 20249, REM 11111
Project Director

Date: October 21, 2004
Project No.: 79355.01

E A R T H T E C H

A TYCO INTERNATIONAL LTD. COMPANY

1.0 INTRODUCTION

This summary report has been presented by Earth Tech to document the installation of five subsurface landfill gas monitoring probes at the Former 55th Way Landfill located in Long Beach, California (site). A total of six subsurface boundary monitoring probes have previously been installed onsite to monitor the potential migration of methane and other landfill gases in the subsurface to adjacent properties located north and east of the site. In response to the submittal of the Final Post Closure Land Use Proposal (PCLUP) prepared by Earth Tech on September 26, 2003, the lead enforcement agency (LEA) commented on the need to monitor potential migration of landfill gases to the south and west of the site during and after park construction. Additional subsurface landfill gas monitoring probes were installed as per the requirements of the County of Los Angles, Department of Health Services (County) and the County of Los Angeles, Department of Public Works (DPW), in correspondences rlating to approval of the PCLUP. Copies of these correspondences are attached as **Appendix A.**

On August 19, 2004, Earth Tech installed five additional subsurface landfill gas monitoring probes (GW-7 through GW-11). Well construction permits were obtained from the City of Long Beach, Department of Health Services (permit number 1024), prior to installation of the five monitoring probes. Prior to initiation of drilling activities, Dig Alert, the underground services alert of Southern California, was notified and issued ticket number A2250777. Well installation permits are attached as **Appendix B.**

1.1 SCOPE OF WORK

The investigation scope of work (SOW) at the site included:

- Installing five subsurface landfill gas monitoring probes screened at two depths in accordance with Rule 1150.1;
- Conducting a purge volume study to determine the optimum purge volume for sample collection;
- Collecting landfill gas samples from each of the five newly installed monitoring probes (each screened at two discrete depths for a total of 10 samples);
- Analyzing landfill gas samples for volatile organic compounds (VOCs), total volatile petroleum hydrocarbons (TVPH), and fixed gases;
- Preparing and submitting an Installation of Landfill Gas Monitoring Probes Summary Report to the County for review and comment.

2.0 SITE DESCRIPTION AND HISTORY

2.1 SITE LOCATION AND DESCRIPTION

The site comprises approximately 5.5 acres in the northeast corner of the Paramount Dump and is located in a mixed commercial, residential, and industrial area of Long Beach (**Figures 1 and 2**). The site is bordered on the east and northwest by single-family dwellings, on the south by the Friendly Village Mobile Home Park (residential), on the north by the Paramount Petroleum Lakewood Tank Farm, and on the west by an industrial/commercial property, Cal Coast Packing & Crating Co. Inc. The southern and western property boundaries of the site border the remainder of the former Paramount Dump.

The 17.4-acre Paramount Dump, which is listed by the California Integrated Waste Management Board (CIWMB) as Solid Waste Information System (SWIS) Number 19-AK-0084, is located at the northeast corner of Paramount Boulevard and Candlewood Street in Long Beach, California (**Figures 1 and 2**).

2.2 SITE HISTORY

The site was part of the 17.4-acre landfill that was owned and operated by the City of Long Beach from 1945 to 1948 as Long Beach Dump #26. Based on review of available historic aerial photographs, the area appeared to be undisturbed until May 1945. The extent of landfill operations is evident in the 1947 aerial photograph. In 1952, a building existed in the northwest corner of the landfill and vegetation covered the site. In January 1958, a baseball field existed on the western edge of the landfill and adjacent to the site. Disturbed earth and vegetation were present over the remainder of the landfill at that time. A manufacturing and warehouse building had been constructed on the site by 1961.

Through the 1970s, building permit applications filed with the City of Long Beach document a number of owners/tenants of the property, including manufacturing facilities, a diesel repair facility, and a company identified as Artesia Milling. One owner/tenant, Dolphin Trucking, filed an application in 1974 to install two underground storage tanks (USTs) (9,940 gallons and 5,000 gallons), pumps and dispensers at the site. According to the Long Beach Fire Department Underground Storage Tank log, Kraus Trucking Company removed two USTs in 1986 without permits. However, documentation concerning the exact location of the USTs and UST removal activities is limited. In 1987, Paul Lai, George Y. Chow, Young Lung Chien, and Long Beach Warehouse Limited Partnership purchased the property from Josef and Helen Kraus and then formed a limited partnership called Fu Mai Limited Corporation, Long Beach Warehouse Limited Partnership.

In late 1993, the remaining building on the site was declared substandard and a public nuisance. The owners were ordered to demolish or rehabilitate the existing structure by January 15, 1994, which was later extended to July 31, 1994.

Since 1993, the County and the CIWMB have conducted several inspections to measure the generation of landfill gas. Recent site assessments conducted by the County in 2001 and 2002 indicated very low or undetectable levels of methane gas at the site.

In 1999, the Redevelopment Agency's North Long Beach Project Area Committee (North PAC) identified the site as a priority site for remediation and redevelopment. On July 31, 2001, the Redevelopment Agency unanimously approved the acquisition of the site for redevelopment and conversion to a local park.

The site is currently an open, vacant lot with no structures and minimal surface vegetation. In October 2002, a 24,000-square-foot building and loading dock formerly in the northwest corner of the site was demolished and the resulting debris was removed from the site. Previous subsidence of the landfill had caused severe structural damage to the building, rendering the building substandard and a public nuisance. In addition, miscellaneous storage containers, a loading ramp, debris piles and abandoned vehicles were also removed. The site is relatively flat with the topography gently sloping to the west.

2.2.1 Waste Disposal History

During disposal operations, the landfill accepted municipal waste from which food wastes were separated to be sold as agricultural feed supplements; only "inedible" waste was received by the landfill. Reportedly, no liquid wastes were disposed of at the Paramount Dump. Assuming an average landfill refuse thickness of 22.5 feet, an estimated 660,000 cubic yards of refuse remains in place at the Paramount Dump, of which approximately 160,000 cubic yards is within the boundaries of the site. Currently, a 4- to 8-foot thick heterogeneous soil cover consisting of assorted silts, sands, rocks, and gravels exists over the estimated 15- to 30-foot thick refuse layer. Historic aerial photographs show the approximate area of the landfill that actually contains municipal wastes. Landfill operations reportedly ceased by 1948 and the site was sold in 1953. Limited information exists concerning actual landfill operation and management practices including method of refuse placement, interim cover techniques (if any), waste treatment, landfill construction (e.g., liner, drainage), operation permits, and inspections and repairs completed at the Paramount Dump.

Estimated refuse thickness, volumes, and depths were based on review of past reports and site documentation. Recent investigations at the site have discovered that the refuse layer underneath the current cover may only be 10 to 15 feet thick. However, evidence to confirm this thickness is limited.

Therefore, the more conservative refuse layer estimate (22.5 feet thick) was used to calculate refuse volumes and mass.

2.3 PREVIOUS SITE INVESTIGATIONS

SCS Engineers (SCS) of Long Beach, California, conducted multiple investigations of the landfill from 1985 through 1987, including an Environmental Impact Report (EIR), in connection with proposed development on a section of the site. Borings from the investigations indicated that refuse materials consist of moderately to highly decomposed organic material (wood, paper, etc.), glass, metal, and traces of silty and sandy soils. SCS reported a high degree of degradation of landfill materials and stated that although the landfill gas (LFG) generation was past the maximum stage, LFG generation could continue for 10 to 20 more years (SCS, 1987). In 1993 and 1994, the CIWMB conducted various investigations at the site. The CIWMB recommended that a full-scale LFG monitoring program be initiated.

The United States Environmental Protection Agency (USEPA) contracted Ecology and Environmental, Inc. (EE) to perform a Brownfield investigation at the site. EE collected surface soil and soil gas samples between December 4 and December 8, 2000. Field activities and results are summarized in the *55th Way Landfill, Long Beach, California, Targeted Brownfields Assessment Final Report* (EE, 2001). The report concluded that all analytes detected on the site were consistent with known uses of the site:

- Former landfill – methane and other VOCs typical to LFG, possibly introduced through landfill materials, and naturally occurring levels of metals in cover materials,
- Use of the warehouse building by Artesia Milling, Dolphin Trucking, and a diesel repair facility – surficial petroleum contamination, and associated semi-volatile, and volatile constituents.

In January and February 2002, Earth Tech conducted a pre-design investigation to support post-closure land use and redevelopment activities at a portion of the 55th Way Landfill (Earth Tech, 2002). Air sampling was completed from January 14 through February 5, 2002. Air sampling included instantaneous surface air measurements, integrated surface air sampling, and 24-hour ambient air sampling at the site perimeter. A total of 35 soil borings were completed between January 22 and January 28, 2002, during which both soil and LFG samples were collected and analyzed. Twenty soil borings were completed as soil vapor probes set at 8 feet below ground surface (bgs) and ten soil borings were completed as LFG probes set between 20 and 35 feet bgs. Four borings were completed as two dual-cluster soil gas monitoring wells, one cluster outside the northern boundary of the landfill and one cluster inside the eastern boundary of the landfill. Investigation activities, results, and findings are included the *Pre-Design Investigation Summary Report* dated March 2002.

In May and June 2003, Earth Tech installed four additional dual cluster subsurface boundary landfill gas monitoring probes (GW-3 through GW-6). GW-3 is screened from 5 to 10 feet bgs, and from 20 to 25 feet bgs. GW-4, GW-5, and GW-6 are screened from 5 to 10 feet bgs, and from 15 to 20 feet bgs. During drilling at locations GW-4, GW-5, and GW-6, groundwater was encountered at approximately 20 feet bgs. To avoid screening the landfill gas probes beneath groundwater, the deep monitoring points were screened from 15 to 20 feet bgs, rather than from 20 to 25 feet bgs as outlined in South Coast Air Quality Management District Rule 1150.1.

Earth Tech collected landfill gas samples from each of the newly installed probes on June 12, 2003. The highest concentrations of VOCs were detected in the sample collected from landfill gas monitoring probe GW-2 located at the northern boundary of the site. BTEX concentrations were detected at each of the five landfill gas boundary monitoring probes except GW-3. VOC concentrations detected in landfill gas samples collected at the landfill boundary do not appear to be a distinct and separate on-site source (or sources) for those detected contaminants that can be identified and isolated. Monitoring probe installation and sampling are included the *Final Post-Closure Land Use Proposal* dated September 2003.

In general, the highest concentrations of TPH, VOCs, and SVOCs in soil were detected at the northern property line (32 feet bgs) outside of the landfill boundary and adjacent to the tank farm north of the site. The tank farm is currently undergoing remediation of petroleum hydrocarbons and related constituents in the groundwater.

Earth Tech conducted a Groundwater Solid Waste Assessment Test (SWAT) on behalf of the City of Long Beach at the site. The objectives of the investigation were to determine whether landfill refuse had impacted the groundwater beneath, and in the vicinity of, the site and to provide recommendations for post-closure monitoring (if necessary). Groundwater sampling results indicate that landfill-related contaminants are not present in wells located downgradient of the site (MW-1, MW-2 and MW-3). Results from an onsite (upgradient) well MW-4 and onsite piezometer (PZ-4) indicate the presence of hydrocarbon-related constituents and volatile organic compounds (VOCs) that may be linked to the Paramount Petroleum Lakewood Tank Farm (tank farm) located north (upgradient) of the site. Based on a review of analytical results and information presented in reports from the tank farm, it appears that the types of constituents detected in the samples collected from MW-4 and PZ-4 are similar to the constituents detected in samples collected from the upgradient tank farm property, which include BTEX and other gasoline related constituents. Currently, the tank farm property is undergoing remedial action including free product recovery.

3.0 FIELD ACTIVITIES

This section describes the field activities conducted during subsurface boundary monitoring probe installation and sampling.

3.1 HEALTH AND SAFETY

A site-specific Health and Safety Plan (HASP) was prepared that identified potential hazards associated with the performance of the subsurface investigation. The HASP is consistent with current Federal Occupational Safety and Health Administration (OSHA) requirements for hazardous waste operations [29 Code of Federal Regulations (CFR) 1910.120 (e) and (f) and CCR Title 8, Section 5192]. The HASP was updated in August 2004 to include field activities related to installation of the subsurface landfill gas monitoring probes. All field personnel were required to read and sign the HASP prior to performing work at the site. A copy of the HASP was kept on site throughout the landfill gas monitoring probe installation and sampling program.

3.2 SUBSURFACE BOUNDARY MONITORING PROBE INSTALLATION

Each newly installed monitoring probe consisted of two dual-cluster well casings set inside two separate boreholes. Monitoring probes were constructed of ¾-inch diameter Schedule 80 PVC with 5 linear feet of 0.010-inch machine-slotted screened casing. Each of the monitoring probes is screened from 5 to 10 feet bgs and from 20 to 25 feet bgs. A filter pack (#2/12 Monterey sand) was installed from the base of the boring to the top of the screened interval, and each boring was sealed with hydrated bentonite chips to ground surface. Cascade Drilling of Norwalk, California, provided drilling services for monitoring probe installation on August 19, 2004. Soil samples were not collected as part of this investigation. Monitoring probe construction logs for each monitoring probe are included in **Appendix C**.

Dulin and Boynton, a licensed land survey company, surveyed monitoring probe locations after the drilling was completed. The surveying was performed on August 25, 2004, using a combination of conventional land survey transit instrumentation and Global Positioning System (GPS) equipment, which located each monitoring probe location within the California State Plane Coordinate system. Additionally, vertical coordinates of each boring location were surveyed to mean sea level (MSL). All new probes were surveyed and located relative to the existing wells and other surveyed features at the site.

3.3 SAMPLE COLLECTION AND ANALYSIS

The following describes the sample collection and analysis methodology used for this investigation.

3.3.1 PURGE VOLUME STUDY

A purge volume study was conducted prior to initiation of landfill gas sampling to evaluate the optimum purge volume to use at each depth. Seven different purge volumes (0.5, 1.0. 1.5, 2.0, 3.0, 5.0, and 7.0 well volumes) were extracted at each depth and field readings were recorded after each purge volume. The purge volume with the highest field meter readings was selected as the optimal volume of landfill gas to purge prior to sample collection. During the purge volume test, high field meter readings were observed for methane after each purge volume. Since the recorded methane readings were elevated to 100% lower explosive limit (LEL) after each purge volume, an optimum purge volume cannot be determined and a default of three well volumes was used across the site. Purge test data, including field meter readings, are summarized in **Table 1**.

3.3.2 SAMPLE COLLECTION

Summa canisters (6 liters) were connected to the probe and a regulator was placed on the canister to ensure that the flow rate was no more than 200 milliliters (ml) per minute into the Summa canister. To identify and manage the Summa canisters collected in the field, a sample label was affixed to each canister. Each sample label included the following information: project number, site name, sample identification number, sampler's initials, date, and time of collection. Pressure readings were recorded from each Summa canister before and after sample collection. A summary of field measurement data is attached as **Table 2**.

3.3.3 ANALYTICAL METHODS

Landfill gas samples collected from each monitoring probe were analyzed for the following constituents:

- VOCs using EPA Method TO-15,
- TVPH using EPA Method TO-3, and
- Fixed gases using ASTM D1947.

Air Technology Laboratories, a California state certified laboratory, performed the analyses on all landfill gas samples. Proper Chain of Custody (COC) procedures were followed to document sample collection and shipment to the laboratory for analysis.

3.4 SAMPLE RESULTS

Landfill gas samples were collected at five locations at two depths: 10 and 25 feet bgs. Each of the landfill gas samples was analyzed for VOCs, TVPH, and fixed gases. VOC concentrations ranged from levels below the laboratory reporting limit to 95,000 parts per billion by volume (ppbV) of 2-Butanone at GW-8 (25 feet bgs). Concentrations of acetone and 2-butanone were detected at every location and at every depth. Toluene, ethylbenzene and xylenes were each detected in samples collected from probes GW-9, GW-10 and GW-11. Trichloroethene (TCE) and 1,2,4-trimethylbenzene were detected at each subsurface landfill gas sample location but not at every depth. The highest concentration of TCE was detected at GW-9 (10 feet bgs), and the highest concentrations of tetrachloroethene (PCE) and 1,4 dichlorobenzene were detected at GW-10 (10 feet bgs). However, other samples had elevated laboratory detection limits for these and other compounds and an accurate distribution of VOCs in the subsurface cannot be determined due to the high concentrations of acetone and 2-butanone present. TVPH concentrations ranged from 66 ppmV at GW-10 (25 feet bgs), to 270 ppmV at GW-9 (10 feet bgs). Detected VOC and hydrocarbon concentrations are summarized in **Tables 3** and **4**. Detected VOC concentrations are presented in **Figure 3**.

As expected from an inactive landfill, methane concentrations were detected at each of the landfill gas probe locations, each with detected concentrations greater than 5 percent. The highest concentration of methane, 50 percent, was detected at GW-7 (10 feet bgs). The highest carbon dioxide concentrations, included results of 31 and 34 percent, which were detected at GW-7. Laboratory reported methane concentrations are represented in **Figure 4**. **Table 4** summarizes the fixed gas results for analyzed landfill gas samples.

4.0 RESULTS AND CONCLUSIONS

4.1 LANDFILL GAS ANALYTICAL RESULTS

The highest concentrations of VOCs were detected in the samples collected from GW-8 (25 feet bgs), and GW-9 (10 feet bgs). Gasoline related constituents were detected at each of the five landfill gas monitoring probes, but not at every depth. VOCs detected in landfill gas samples collected from the landfill probes do not appear to be a distinct and separate on-site source (or sources) for those detected contaminants that can be identified and isolated. Sample results are summarized on **Tables 3** and **4**.

4.2 CONCLUSIONS

Based on the field observations and laboratory results, Earth Tech concludes the following:

- Five subsurface landfill gas monitoring probes were installed and screened at two depths in accordance with Rule 1150.1;
- A purge volume study was conducted to determine the optimum purge volume for sample collection;
- Landfill gas samples were collected from each of the five newly installed monitoring probes (each screened at two discreet depths for a total of 10 samples) and analyzed for VOCs, TVPH, and fixed gases.
- This data will serve as a baseline and will be used to evaluate future potential landfill gas migration between properties to the south and west of the site.

6.0 REFERENCES

California Integrated Waste Management Board, Timothy W. Christ, *Site Investigation of 55th Way Landfill 22 Apr 93, Fiole No. 19-AK-0084*, August 1993.

California Integrated Waste Management Board, Peter M. Janicki, *Investigation Report 55th Way Landfill*, August 1994.

Earth Tech, *Final Post-Closure Land Use Proposal*, 55th Way Park (former Paramount Dump), 2910 East 55th Way, Long Beach, California, September 26, 2003.

Earth Tech, *Groundwater Solid Waste Assessment Test Summary Report, Well Installation and First Quarter Monitoring*, Former 55th Way Landfill/Paramount Dump, 2910 East 55th Way, Long Beach, California, July 15, 2003.

Earth Tech, *Groundwater Solid Waste Assessment Test Summary Report, Fourth Quarter Monitoring*, Former 55th Way Landfill/Paramount Dump, 2910 East 55th Way, Long Beach, California, January 23, 2004.

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SCS Engineers, *Environmental Impact Report Data Base*: Proposed Mini-Warehouses. Prepared for Spongberg, Kirkland and Associates, Lakewood, California, December 1987.

APPENDIX K FROM PHASE I PCLUP:
LANDFILL BOUNDARY PROBE INSTALLATION INFORMATION

APPENDIX K

LANDFILL BOUNDARY PROBE INSTALLATION INFORMATION

Appendix K

Included in Appendix K:

- Well installation permits issued by the City of Long Beach;
- Well construction logs;
- Sample collection field data sheets;
- Laboratory reports.

CITY OF LONG BEACH

DEPARTMENT OF HEALTH & HUMAN SERVICES

2525 Grand Avenue Long Beach, CA 90815-1765 (562) 570-4134 FAX (562) 570-4038

WELL PERMIT

Permit # 0896	Date: May 21, 2003

All work must be completed in accordance with Water Well Bulletin 74-81 and 74-90

Site Address: 2910 E. 55th Way

Owner: City of Long Beach (Mike) (562) 570-6710

Owner Address: 333 W. Ocean Blvd. (3rd floor), Long Beach, CA 90802

Consulting Firm: Earth Tech, Inc. (562) 951-2275

Consulting Firm Address: 100 W. Broadway #240, Long Beach, CA 90802

Drilling Company: Gregg Drilling (562) 427-6899

Drilling Company Address: 2726 Walnut Avenue, Signal Hill, CA

Method of Construction/Destruction: see attached

Number of Wells/Borings:

Steven M. Nakauchi /for

Don Cillay, Manager, Bureau of Environmental Health

CITY OF LONG BEACH

DEPARTMENT OF HEALTH & HUMAN SERVICES

2525 Grand Avenue Long Beach, CA 90815-1765 (562) 570-4134 FAX (562) 570-4038

0896

APPLICATION FOR WELL PERMIT

Date: 5-19-03

Type of Permit: (check) ☒ New Well Construction ☐ Destruction	Type of Well: (check) ☒ Monitoring (SOIL GAS) ☐ Irrigation ☐ Cathodic ☐ Soil Boring ☐ Private Domestic ☐ Vapor Extraction ☐ Public Domestic ☐ Other
Well Owner Name: City of Long Beach Address: 333 W. Ocean Blvd. 3rd Floor City: Long Beach CA 90802 Phone: Mike Conway 562-570-6710 Consulting Firm: EARTH TECH Inc. Address: 100 W. Broadway #240 City: Long Beach CA 90802 Phone: TRAVIS TAYLOR 562-951-2275	Site Address 2910 E. 55th Way Site Map ☒ Site plan attached Installing 4 Soil Vapor monitoring points - We will not go to groundwater depth during drilling or vapor well installation
Drilling Company: Gregg Drilling Address: 2726 Walnut Ave City: Signal Hill CA Phone: 1(562) 427-6899	Construction/Destruction Method Type of casing, method of sealing, etc. (Use additional sheet or attachments) 3/4" Diameter PVC Sealed w/ hydrated bentonite —SEE ATTACHED DIAGRAMS.
Proposed Start Date: 5-27-03	To be done in accordance with Water Well Bulletin 74-81 & 74-90
I hereby agree to comply in every respect with all regulations of the Long Beach Department of Health and Human Services and with all ordinances and laws of the City of Long Beach and of the State of California pertaining to well construction, reconstruction and destruction. Upon completion of well and within ten days thereafter, I will furnish the Long Beach Department of Health and Human Services with a complete log of the well, giving date drilled, depth of well, all perforations in casing, and any other data deemed necessary by other City agencies.	Disposition of Application: (For Office Use Only) ☒ Approved with Conditions ☐ Denied Date: 5-20-03 If denied or approved with conditions, report reason or conditions here:

Applicants Signature: [signature]

Print Name: TRAVIS TAYLOR

By: [signature] / for
Jon Cillav, Manager, Bureau of Environmental Health

E A R T H T E C H

Borehole Log

Project Name: 55th Way Landfill	Project Number: 52264.11.01	Borehole Number: B-1	
Borehole Location: 40' N or GW-1	Northing:	Easting:	Sheet 1 of 2
Drilling Agency: Gregg Drilling	Driller: Juan Carlos		
Drilling Equipment: Geo-Probe	Date Started: 5/27/2003	Total Depth (feet): 32.0	
Drilling Method: Direct Push	Number of Samples: 8	Date Finished: 5/27/2003	Depth to Bedrock (feet):
Drilling Fluid: N/A	Borehole Diameter (in): 2.5	Depth to Water (feet): Drilling:	Static: NA
Completion Information: Backfilled w/ Bentonite	Elevation (feet MSL): 61.00		
	Logged By: Eva Rasdal	Checked By:	

Depth (feet)	Samples: Number	Type	Blow Count	Percent Recovery	Time	Field Analyses: FID (ppm) Sample/Background	PID (ppm) Sample/Background	Additional Tests	Log: Graphic	USCS or Rock Type	Lithologic Description	Remarks
0	B-1 -0			80						SW	GRAVELLY SAND; w/ degraded asphalt. Medium Brown.	
										SM	SILTY SAND; 70% fine sand, 30% silt. Moist micaceous, brown. 5' - wood and glass debris	
5	B-1 -5			85								
	B-1 -7			60						SM	SILTY SAND; 70% sand, 25% silt, 5% clay. Moist, micaceous, dark brown.	
10										SM	SILTY SAND; 85% sand, 15% silt. Moist micaceous, brown. Decomposed paper.	Sample barrel becoming clogged with refuse debr resulting in low sample recovery.
	B-1 -9			30						SM	SILTY SAND; 65% sand, 30% silt, 5% clay. Moist, micaceous, dark gray. Decomposed paper. 14' - Paper and Wood	No Recovery from 14 to 15 feet bgs
15	B-1 -11			35							SILTY SAND; 70% sand, 30% silt. Moist, micaceous, brown. Glass and wood debris.	No Recovery from 18 to 20 feet bgs
20	B-1 -13			25								
										SM	SILTY SAND; 65% sand, 30% silt, 5% clay. Moist, micaceous, dark gray. Wood debris.	No Recovery from 22 to 24 feet bgs
25	B-1 -15			50						SM	SILTY SAND; 65% sand, 30% silt, 5% clay. Moist, micaceous, gray.	
										SM	SILTY SAND; 70% fine sand, 30% silt. Moist micaceous, gray.	
	B-1 -17			100								
30												

EARTH TECH

Borehole Log
(Continuation Sheet)

Project Name: 55th Way Landfill	Project Number: 52264.11.01	Borehole Number: B-1
Borehole Location: 40' N or GW-1		Sheet 2 of 2

Depth (feet)	Samples: Number	Samples: Type	Samples: Blow Count	Samples: Percent Recovery	Samples: Time	Field Analysis: FID (ppm) Sample/Background	Field Analysis: PID (ppm) Sample/Background	Field Analysis: Additional Tests	Log: Graphic	Log: USCS or Rock Type	Lithologic Description	Remarks
										SM	SILTY SAND; 60% sand, 30% silt, 10% clay. Moist, micaceous, gray.	

EARTH TECH

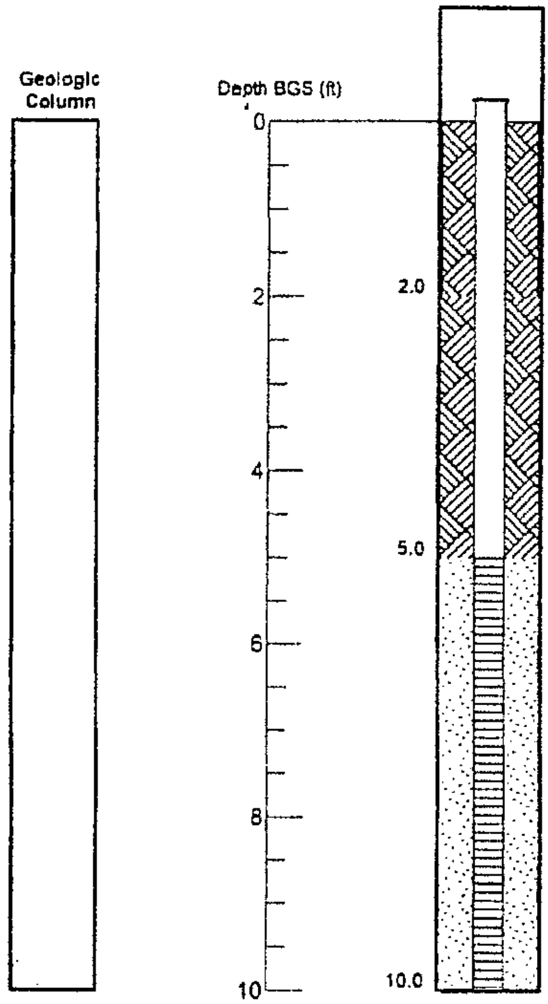
Monitoring Well Construction Log

Project Name: 55th Way Landfill		Project Number: 52264.11.01	Sheet 1 of 1
Well Location: North Western Corner of Site Northing: 1770541.3 Easting: 6513820.7		Well Number: GW-3A	Well Depth (ft): 10.0
Driller: Juan Carlos		Borehole Diameter (in): 2.5	Depth to Water (ft): Static: Drilling:
Drilling Agency: Gregg Drilling		Date Started: 5/27/2003	
Drilling Equipment: Geo-Probe		Date Finished: 5/27/2003	Elevation: 52.67 ft MSL
Drilling Method: Direct Push		Logged by: Eva Rasdal	Checked by:
Drilling Fluid: N/A		Number of Soil Samples: 0	Date Checked:

Elevation (TOC): 55.20 ft MSL

Stick-up Height: 2' ft

Ground Surface Elevation: 52.67 ft MSL



Comments:

PROTECTIVE CASING
Material/Type:
Diameter (in): 8"
Depth (ft BGS): 2'

GUARD POSTS
No: ____ Type:

SURFACE PAD
Composition and Size:

RISER PIPE
Type and Thickness:
Diameter (in):
Total Length (ft TOC to TOS):
Ventilated Cap:

GROUT
Composition and Proportions:

Tremied:
Interval (ft BGS):

CENTRALIZERS
Depths (ft):

SEAL
Type: Bentonite
Source: Bentonite Chips
Hydration Time: ____ Vol. of Fluid Added:
Tremied: ____ Interval (ft BGS): 0-5'

FILTER PACK
Type: #2/12 Sand
Amount Used:
Tremied:
Source:
Grain Size Dist.: ____ Interval (ft BGS): 5-10'

SCREEN
Type and Thickness: SCH 40 PVC
Diameter (in): 3/4" Slot Size (in): 0.010
Interval (ft BGS): 5-10'

WELL FOOT
Interval (ft BGS):

BACKFILL/PLUG
Interval (ft BGS): ____ Material:
Hydration Time:

EARTH TECH

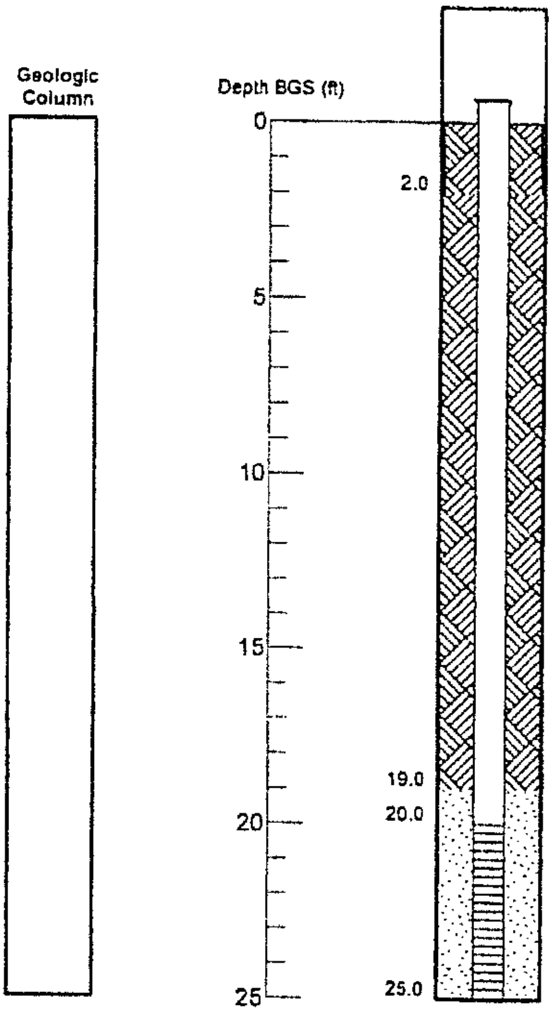
Monitoring Well Construction Log

Project Name: 55th Way Landfill	Project Number: 52264.11.01	Sheet 1 of 1
Well Location: North Western Corner of Site Northing: 1770541.3 Easting: 6513820.7	Well Number: GW-3B	Well Depth (ft): 25.0
Driller: Steve Gomez	Borehole Diameter (in): 2.5	Depth to Water (ft): Static: Drilling:
Drilling Agency: Gregg Drilling	Date Started: 5/27/2003	
Drilling Equipment: Geo-Probe	Date Finished: 5/27/2003	Elevation: 52.67 ft MSL
Drilling Method: Direct Push	Logged by: Eva Rasdal	Checked by:
Drilling Fluid: N/A	Number of Soil Samples: 0	Date Checked:

Elevation (TOC): 55.19 ft MSL

Stick-up Height: 2' ft

Ground Surface Elevation: 52.67 ft MSL



PROTECTIVE CASING
Material/Type:
Diameter (in): 8"
Depth (ft BGS): 2'

GUARD POSTS
No: ___ Type:

SURFACE PAD
Composition and Size:

RISER PIPE
Type and Thickness:
Diameter (in):
Total Length (ft TOC to TOS):
Ventilated Cap:

GROUT
Composition and Proportions:

Tremied:
Interval (ft BGS):

CENTRALIZERS
Depths (ft):

SEAL
Type: Bentonite
Source: Bentonite Chips
Hydration Time: ___ Vol. of Fluid Added:
Tremied: ___ Interval (ft BGS): 0-19'

FILTER PACK
Type: #2/12 Sand
Amount Used:
Tremied:
Source:
Grain Size Dist.: ___ Interval (ft BGS): 24-30'

SCREEN
Type and Thickness: SCH 40 PVC
Diameter (in): 3/4" Slot Size (in): 0.010
Interval (ft BGS): 20-25

WELL FOOT
Interval (ft BGS):

BACKFILL/PLUG
Interval (ft BGS): ___ Material:
Hydration Time:

Comments:

EARTH TECH

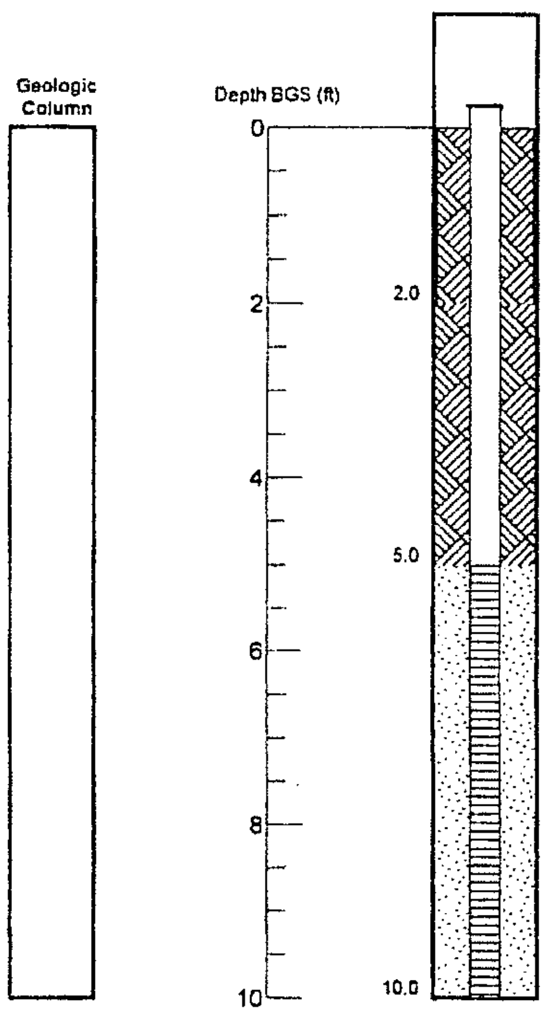
Monitoring Well Construction Log

Project Name: 55th Way Landfill	Project Number: 52264.11.01	Sheet 1 of 1	
Well Location: South Eastern Corner Northing: 1770209.3 Easting: 6514444.4	Well Number: GW-4A	Well Depth (ft): 10.0	
Driller: Steve Gomez	Borehole Diameter (In): 4	Depth to Water (ft): Static: Drilling:	
Drilling Agency: Pacific Drilling	Date Started: 5/27/2003		
Drilling Equipment: Tri-pod Mounted Rig	Date Finished: 5/28/2003	Elevation: 51.50 ft MSL	
Drilling Method: Hollow Stem Auger	Logged by: Eva Rasdal	Checked by:	
Drilling Fluid: N/A	Number of Soil Samples: 0	Date Checked:	

Elevation (TOC): 54.82 ft MSL

Stick-up Height: 2' ft

Ground Surface Elevation: 51.50 ft MSL



Comments:

PROTECTIVE CASING

Material/Type: ______

Diameter (in): 8"

Depth (ft BGS): 2'

GUARD POSTS

No: ___ Type: ______

SURFACE PAD

Composition and Size: ______

RISER PIPE

Type and Thickness: ______

Diameter (in): ______

Total Length (ft TOC to TOS): ______

Ventilated Cap: ______

GROUT

Composition and Proportions: ______

Tremied: ______

Interval (ft BGS): ______

CENTRALIZERS

Depths (ft): ______

SEAL

Type: Bentonite

Source: Bentonite Chips

Hydration Time: ______ Vol. of Fluid Added: ______

Tremied: ___ Interval (ft BGS): 0-5'

FILTER PACK

Type: #2/12 Sand

Amount Used: ______

Tremied: ______

Source: ______

Grain Size Dist.: ______ Interval (ft BGS): 5-10'

SCREEN

Type and Thickness: SCH 40 PVC

Diameter (in): 3/4" Slot Size (in): 0.010

Interval (ft BGS): 5-10'

WELL FOOT

Interval (ft BGS): ______

BACKFILL/PLUG

Interval (ft BGS): ______ Material: ______

Hydration Time: ______

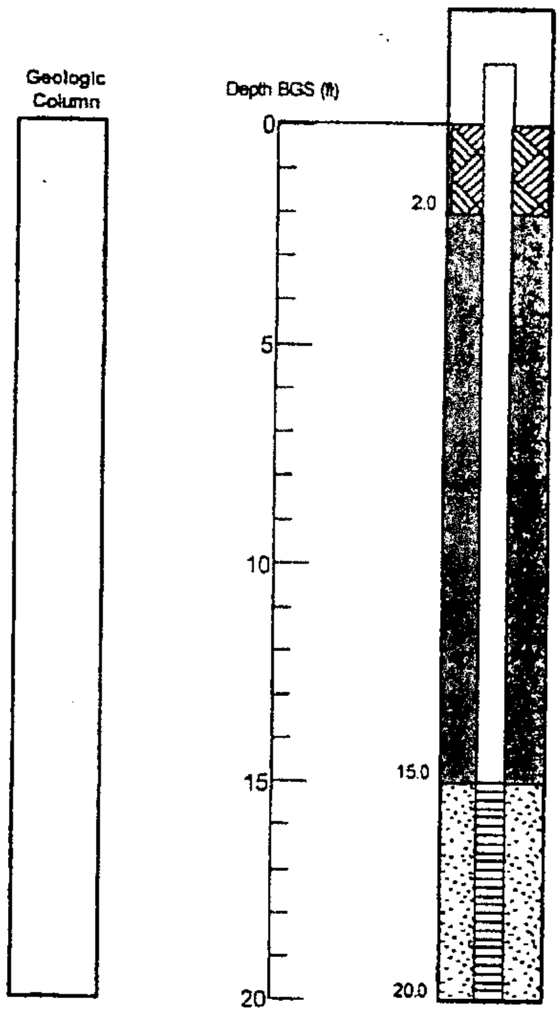
Monitoring Well Construction Log

Project Name: 55th Way Landfill	Project Number: 52264.11.01	Sheet 1 of 1
Well Location: South Eastern Corner Northing: 1770209.2 Easting: 6514445.3	Well Number: GW-4B	Well Depth (ft): 20.0
Driller: Steve Gomez	Borehole Diameter (in): 4	Depth to Water (ft): Static: Drilling:
Drilling Agency: Pacific Drilling	Date Started: 6/10/2003	
Drilling Equipment: Tri-pod Mounted Rig	Date Finished: 6/10/2003	Elevation: 51.40 ft MSL
Drilling Method: Hollow Stem Auger	Logged by: Eva Readal	Checked by:
Drilling Fluid: N/A	Number of Soil Samples: 0	Date Checked:

Elevation (TOC): 54.63 ft MSL

Stick-up Height: 2 ft

Ground Surface Elevation: 51.40 ft MSL



PROTECTIVE CASING

Material/Type: Above-Ground Steel Monument with Locking Cap

Diameter (in): 8"

Depth (ft BGS): 2

GUARD POSTS

No: Type:

SURFACE PAD

Composition and Size: Concrete

RISER PIPE

Type and Thickness:

Diameter (in):

Total Length (ft TOC to TOS):

Ventilated Cap:

GROUT

Composition and Proportions:

Tremied:

Interval (ft BGS):

CENTRALIZERS

Depths (ft):

SEAL

Type: Bentonite

Source: Bentonite Chips

Hydration Time: Vol. of Fluid Added:

Tremied: Interval (ft BGS): 0-15'

FILTER PACK

Type: #2/12 Sand

Amount Used:

Tremied:

Source:

Grain Size Dist.: Interval (ft BGS): 15-20'

SCREEN

Type and Thickness: SCH 40 PVC

Diameter (in): 3/4" Slot Size (in): 0.010

Interval (ft BGS): 15-20'

WELL FOOT

Interval (ft BGS):

BACKFILL/PLUG

Interval (ft BGS): Material:

Hydration Time:

Comments:

EARTH TECH

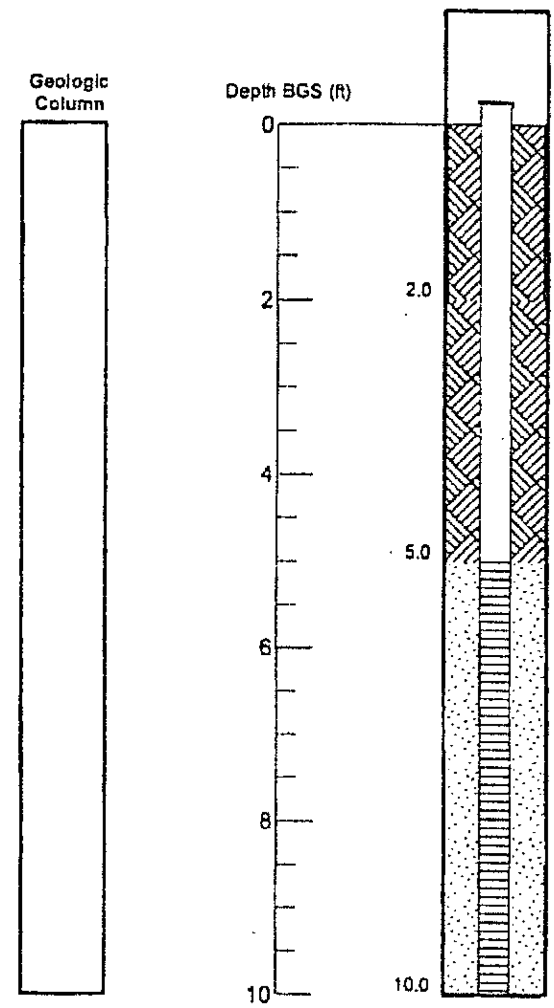
Monitoring Well Construction Log

Project Name: 55th Way Landfill	Project Number: 52264.11.01		Sheet 1 of 1
Well Location: Eastern Boundary Northing: 1770306.2 Easting: 6514443.2	Well Number: GW-5A		Well Depth (ft): 10.0
Driller: Steve Gomez	Borehole Diameter (in): 4		Depth to Water (ft): Static: Drilling:
Drilling Agency: Pacific Drilling	Date Started: 5/27/2003		
Drilling Equipment: Tri-pod Mounted Rig	Date Finished: 5/28/2003		Elevation: 51.50 ft MSL
Drilling Method: Hollow Stem Auger	Logged by: Eva Rasdal		Checked by:
Drilling Fluid: N/A	Number of Soil Samples: 0		Date Checked:

Elevation (TOC): 55.43 ft MSL

Stick-up Height: 2' ft

Ground Surface Elevation: 51.50 ft MSL



Comments:

PROTECTIVE CASING
Material/Type:
Diameter (in): 8"
Depth (ft BGS): 2'

GUARD POSTS
No: ___ Type:

SURFACE PAD
Composition and Size:

RISER PIPE
Type and Thickness:
Diameter (in):
Total Length (ft TOC to TOS):
Ventilated Cap:

GROUT
Composition and Proportions:
Tremied:
Interval (ft BGS):

CENTRALIZERS
Depths (ft):

SEAL
Type: Bentonite
Source: Bentonite Chips
Hydration Time: ______ Vol. of Fluid Added:
Tremied: ____ Interval (ft BGS): 0-5'

FILTER PACK
Type: #2/12 Sand
Amount Used:
Tremied:
Source:
Grain Size Dist.: ____ Interval (ft BGS): 5-10'

SCREEN
Type and Thickness: SCH 40 PVC
Diameter (in): 3/4" Slot Size (in): 0.010
Interval (ft BGS): 5-10'

WELL FOOT
Interval (ft BGS):

BACKFILL/PLUG
Interval (ft BGS): ______ Material:
Hydration Time:

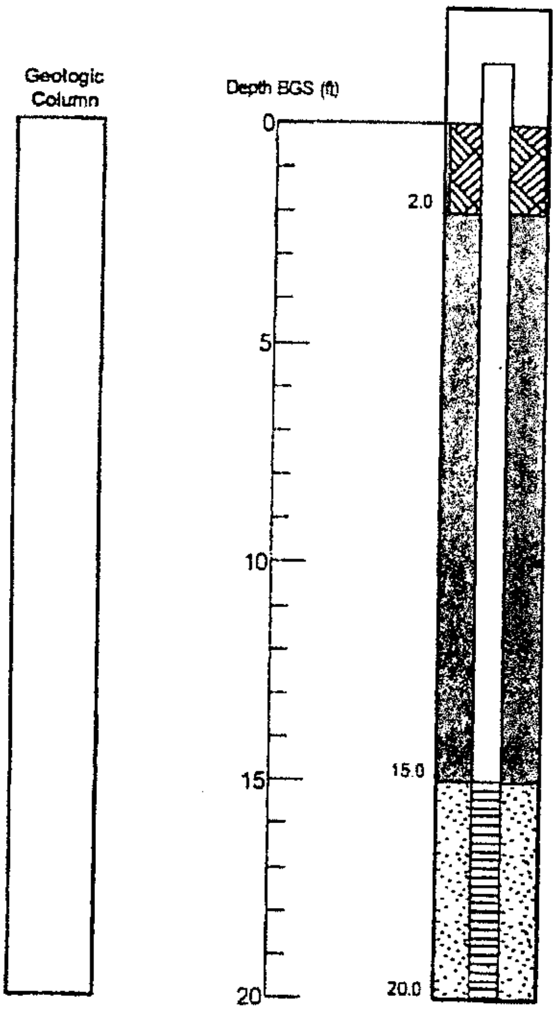
Monitoring Well Construction Log

Project Name: 55th Way Landfill	Project Number: 52264.11.01	Sheet 1 of 1
Well Location: Eastern Boundary Northing: 1770306 Easting: 6514444.3	Well Number: GW-5B	Well Depth (ft): 20.0
Driller: Steve Gomez	Borehole Diameter (in): 4	Depth to Water (ft): Static: Drilling:
Drilling Agency: Pacific Drilling	Date Started: 6/10/2003	
Drilling Equipment: Tri-pod Mounted Rig	Date Finished: 6/10/2003	Elevation: 51.00 ft MSL
Drilling Method: Hollow Stem Auger	Logged by: Eva Rasdal	Checked by:
Drilling Fluid: N/A	Number of Soil Samples: 0	Date Checked:

Elevation (TOC): 55.21 ft MSL

Stick-up Height: 2' ft

Ground Surface Elevation: 51.00 ft MSL



Comments:

PROTECTIVE CASING
- Material/Type: Above-Ground Steel Monument with Locking Cap
- Diameter (in): 8"
- Depth (ft BGS): 2'

GUARD POSTS
- No: Type:

SURFACE PAD
- Composition and Size: Concrete

RISER PIPE
- Type and Thickness:
- Diameter (in):
- Total Length (ft TOC to TOS):
- Ventilated Cap:

GROUT
- Composition and Proportions:
- Tremied:
- Interval (ft BGS):

CENTRALIZERS
- Depths (ft):

SEAL
- Type: Bentonite
- Source: Bentonite Chips
- Hydration Time: Vol. of Fluid Added:
- Tremied: Interval (ft BGS): 0-15'

FILTER PACK
- Type: #2/12 Sand
- Amount Used:
- Tremied:
- Source:
- Grain Size Dist.: Interval (ft BGS): 15-20'

SCREEN
- Type and Thickness: SCH 40 PVC
- Diameter (in): 3/4" Slot Size (in): 0.010
- Interval (ft BGS): 15-20'

WELL FOOT
- Interval (ft BGS):

BACKFILL/PLUG
- Interval (ft BGS): Material:
- Hydration Time:

EARTH TECH

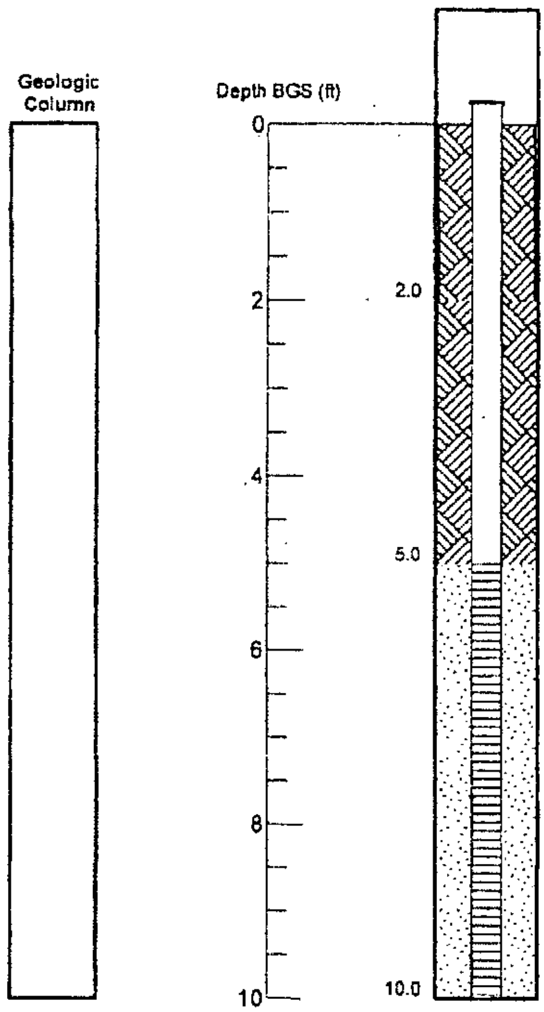
Monitoring Well Construction Log

Project Name: 55th Way Landfill	Project Number: 52264.11.01	Sheet 1 of 1
Well Location: North Eastern Corner Northing: 1770424.1 Easting: 6514444.3	Well Number: GW-6A	Well Depth (ft): 10.0
Driller: Steve Gomez	Borehole Diameter (in): 4	Depth to Water (ft): Static: Drilling:
Drilling Agency: Pacific Drilling	Date Started: 5/27/2003	
Drilling Equipment: Tri-pod Mounted Rig	Date Finished: 5/28/2003	Elevation: 52.70 ft MSL
Drilling Method: Hollow Stem Auger	Logged by: Eva Rasdal	Checked by:
Drilling Fluid: N/A	Number of Soil Samples: 0	Date Checked:

Elevation (TOC): 56.20 ft MSL

Stick-up Height: 2' ft

Ground Surface Elevation: 52.70 ft MSL



Comments:

PROTECTIVE CASING
Material/Type:
Diameter (in): 8"
Depth (ft BGS): 2'

GUARD POSTS
No: ____ Type:

SURFACE PAD
Composition and Size:

RISER PIPE
Type and Thickness:
Diameter (in):
Total Length (ft TOC to TOS):
Ventilated Cap:

GROUT
Composition and Proportions:
Tremied:
Interval (ft BGS):

CENTRALIZERS
Depths (ft):

SEAL
Type: Bentonite
Source: Bentonite Chips
Hydration Time: ____ Vol. of Fluid Added:
Tremied: ____ Interval (ft BGS): 0-5'

FILTER PACK
Type: #2/12 Sand
Amount Used:
Tremied:
Source:
Grain Size Dist.: ____ Interval (ft BGS): 5-10'

SCREEN
Type and Thickness: SCH 40 PVC
Diameter (in): 3/4" Slot Size (in): 0.010
Interval (ft BGS): 5-10'

WELL FOOT
Interval (ft BGS):

BACKFILL/PLUG
Interval (ft BGS): ____ Material:
Hydration Time:

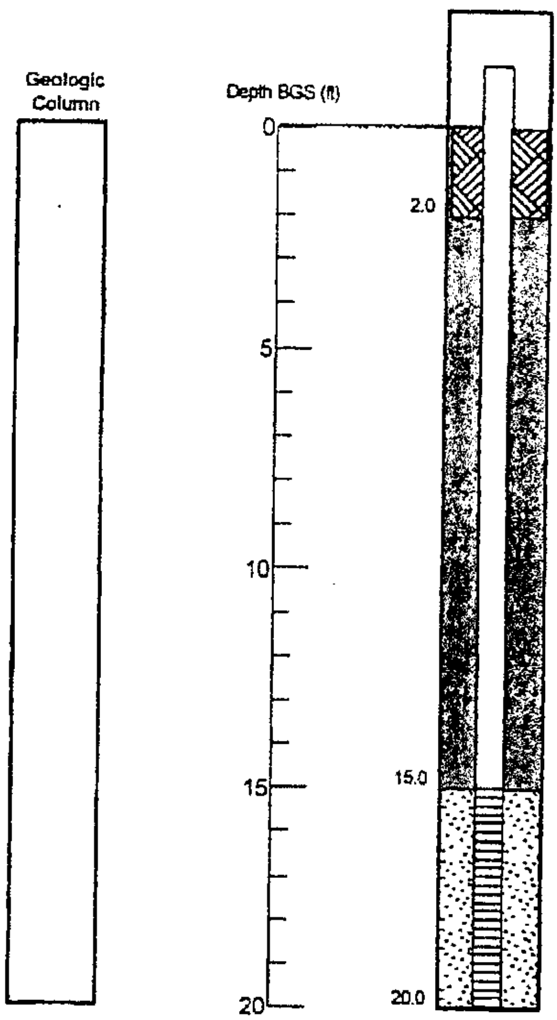
Monitoring Well Construction Log

Project Name: 55th Way Landfill	Project Number: 52264.11.01	Sheet 1 of 1
Well Location: North Eastern Corner Northing: 1770424 . Easting: 6514445.3	Well Number: GW-6B	Well Depth (ft): 20.0
Driller: Steve Gomez	Borehole Diameter (in): 4	Depth to Water (ft): Static: Drilling:
Drilling Agency: Pacific Drilling	Date Started: 6/10/2003	
Drilling Equipment: Tri-pod Mounted Rig	Date Finished: 6/10/2003	Elevation: 52.50 ft MSL
Drilling Method: Hollow Stem Auger	Logged by: Eva Rasdal	Checked by:
Drilling Fluid: N/A	Number of Soil Samples: 0	Date Checked:

Elevation (TOC): 56.36 ft MSL

Stick-up Height: 2' ft

Ground Surface Elevation: 52.50 ft MSL



Comments:

PROTECTIVE CASING

Material/Type: Above-Ground Steel Monument with Locking Cap

Diameter (in): 8"

Depth (ft BGS): 2

GUARD POSTS

No: ___ Type: ___

SURFACE PAD

Composition and Size: Concrete

RISER PIPE

Type and Thickness: ___

Diameter (in): ___

Total Length (ft TOC to TOS): ___

Ventilated Cap: ___

GROUT

Composition and Proportions: ___

Tremied: ___

Interval (ft BGS): ___

CENTRALIZERS

Depths (ft): ___

SEAL

Type: Bentonite

Source: Bentonite Chips

Hydration Time: ___ Vol. of Fluid Added: ___

Tremied: Interval (ft BGS): 0-15'

FILTER PACK

Type: #2/12 Sand

Amount Used: ___

Tremied: ___

Source: ___

Grain Size Dist.: ___ Interval (ft BGS): 15-20'

SCREEN

Type and Thickness: SCH 40 PVC

Diameter (in): 3/4" Slot Size (in): 0.010

Interval (ft BGS): 15-20'

WELL FOOT

Interval (ft BGS): ___

BACKFILL/PLUG

Interval (ft BGS): ___ Material: ___

Hydration Time: ___

APPENDIX K - TABLE 1
Purge Test Data
City of Long Beach -55th Way Landfill
2910 East 55th Way, Long Beach, California

July 25, 2003

Boundary Probe No.	Purge Depth (feet bgs)	Purge Date	Duration of Purge (seconds)	Rate (ml/min)	Well Volumes	Volume Purged (ml)	PID VOC (ppm)	MULTIGAS METER METHANE (% LEL)	CO (ppm)	H2S (ppm)	Oxygen (%)
GW-4	10	6/12/2003	26	2000	1	869	5.7	60	0	0	1.7
			78	2000	3	2,606	2.5	65	0	0	1.4
			182	2000	7	6,081	1.5	76	0	0	2.5
			After Sample Collection				5.1	80	0	0	2.7

Notes:
ppm = parts per million
ml/min = milliliters per minute
% Methane = Lower explosive limit (LEL) calibrated to methane.
bgs=below ground surface

Sec Table 2

LEL measured as peak values
Prior to sample collection constant 50% LEL.

APENDIX K - TABLE 2
Sample Collection Data
City of Long Beach -55th Way Landfill
2910 East 55th Way, Long Beach, California

July 25, 2003

SAMPLE ID	DATE	SUMMA ID #	INITIAL PRESSURE (in Hg)	FINAL PRESSURE (in Hg)	VOLUME PURGED (ml)	Peak Reading Prior to Purge		Constant for 30 Continuous Seconds Prior to Sample Collection					Peak Reading After Sample Collection	
						PID	MULTI-GAS	PID	MULTI-GAS METER				PID	MULTI-GAS
						VOC (ppm)	METHANE (% LEL)	VOC (ppm)	METHANE (% LEL)	CO (ppm)	H2S (ppm)	OXYGEN (%)	VOC (ppm)	METHANE (% LEL)
GW3-10	6/12/2003	5945	-30	-6	6,000	2.2	1	0.2	1	0	0	12.6	0.2	1
GW3-20	6/12/2003	2415	-30	-2	12,000	5.5	0	0.9	22	3	0	6.9	2	22
GW4-10	6/12/2003	7122	-30	-2	6,000	1.5	76	NR	60	0	0	2.5	5.1	80
GW4-20	6/12/2003	1367	-30	-2	12,000	20.5	39	7.7	44	5	0	10.5	9.2	45
GW5-10	6/12/2003	1423	-30	0	6,000	14.7	1	2.0	1	0	0	11.1	11.1	1
GW5-20	6/12/2003	5973	-30	-2.5	12,000	25.0	1	30.0	1	0	0	13.4	39.7	1
GW6-10	6/12/2003	3476	-30	-2.5	6,000	9.0	8	2.0	53	3	0	7.4	2.4	63
GW6-20	6/12/2003	7128	-30	-3.5	12,000	8.4	4	3.0	53	3	0	4.3	13.1	50

Notes: estimated as (set to methane)
Methane = % LEL calibrated to methane.
in Hg = Pressure in inches of mercury.
ml = milliliters
NR=Not Recorded

ppm = parts per million
Samples were collected by opening the Summa cannister slowly to pull for 10 continuous minutes.

06/25/2003

Earth Tech
ATTN: Eva Rasdal
100 W. Broadway, Suite 5000
Long Beach, CA 90802

Project Reference: 55^{th} Way Landfill
Lab Number: A3061302-01/08

Enclosed are results for sample(s) received 6/13/03 by Air Technology Laboratories. Analyses were performed according to specifications on the chain of custody provided with the sample(s).

Report Narrative:

Sample analyses were performed within method performance criteria. All results are reported without qualifications.

Results were faxed to Eva Rasdal on 6/24/03.

ATL appreciates the opportunity to provide testing services to your company. If you have any questions regarding these results, please call me at (626) 964-4032.

Sincerely,

Mark Johnson
Operations Manager
mark@atlglobal.com

Enclosures

Note: The cover letter is an integral part of this analytical report.

Client: EarthTech
Attn: Eva Rasdal

Client's Project: 55th Way Landfill
Date Received: 06/13/03
Matrix: Air
Units: ppbv

EPA Method TO14

Lab No:		A3061302-01		A3061302-02		A3061302-03		A3061302-04		A3061302-05	
Client Sample I.D.:		GW-4s-061203		GW-4d-061203		GW-5s-061203		GW-5d-061203		GW-6d-061203	
Date Sampled:		06/12/03		06/12/03		06/12/03		06/12/03		06/12/03	
Date Analyzed:		06/16/03		06/16/03		06/16/03		06/16/03		06/16/03	
QC Batch No:		030616MS2A1		030616MS2A1		030616MS2A1		030616MS2A1		030616MS2A1	
Analyst Initials:		SC		SC		SC		SC		SC	
Dilution Factor:		1.7		1.7		1.7		1.7		1.8	
ANALYTE	PQL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL
Dichlorodifluoromethane (12)	1.0	ND	1.7	ND	1.7	ND	1.7	ND	1.7	ND	1.8
Chloromethane	2.0	ND	3.4	ND	3.4	ND	3.4	ND	3.4	ND	3.5
1,2-Cl-1,1,2,2-F ethane (114)	1.0	ND	1.7	ND	1.7	ND	1.7	ND	1.7	ND	1.8
Vinyl Chloride	1.0	2.8	1.7	ND	1.7	ND	1.7	ND	1.7	ND	1.8
Bromomethane	1.0	ND	1.7	ND	1.7	ND	1.7	ND	1.7	ND	1.8
Chloroethane	1.0	ND	1.7	ND	1.7	ND	1.7	ND	1.7	ND	1.8
Trichlorofluoromethane (11)	1.0	ND	1.7	ND	1.7	ND	1.7	ND	1.7	ND	1.8
1,1-Dichloroethene	1.0	ND	1.7	ND	1.7	ND	1.7	ND	1.7	ND	1.8
1,1,2-Cl 1,2,2-F ethane (113)	1.0	ND	1.7	ND	1.7	ND	1.7	ND	1.7	ND	1.8
Methylene Chloride	1.0	ND	1.7	ND	1.7	ND	1.7	ND	1.7	ND	1.8
1,1-Dichloroethane	1.0	ND	1.7	ND	1.7	ND	1.7	ND	1.7	ND	1.8
c-1,2-Dichloroethene	1.0	ND	1.7	ND	1.7	ND	1.7	ND	1.7	ND	1.8
Chloroform	1.0	ND	1.7	ND	1.7	ND	1.7	ND	1.7	ND	1.8
1,1,1-Trichloroethane	1.0	ND	1.7	ND	1.7	ND	1.7	ND	1.7	ND	1.8
Carbon Tetrachloride	1.0	ND	1.7	ND	1.7	ND	1.7	ND	1.7	ND	1.8
Benzene	1.0	12	1.7	7.6	1.7	ND	1.7	2.1	1.7	3.4	1.8
1,2-Dichloroethane	1.0	ND	1.7	ND	1.7	ND	1.7	ND	1.7	ND	1.8
Trichloroethene	1.0	ND	1.7	ND	1.7	ND	1.7	ND	1.7	ND	1.8
1,2-Dichloropropane	1.0	ND	1.7	ND	1.7	ND	1.7	ND	1.7	ND	1.8
c-1,3-Dichloropropene	1.0	ND	1.7	ND	1.7	ND	1.7	ND	1.7	ND	1.8
Toluene	1.0	23	1.7	47	1.7	ND	1.7	11	1.7	11	1.8
t-1,3-Dichloropropene	1.0	ND	1.7	ND	1.7	ND	1.7	ND	1.7	ND	1.8
1,1,2-Trichloroethane	1.0	ND	1.7	ND	1.7	ND	1.7	ND	1.7	ND	1.8
Tetrachloroethene	1.0	ND	1.7	ND	1.7	ND	1.7	ND	1.7	ND	1.8
1,2-Dibromoethane	1.0	ND	1.7	ND	1.7	ND	1.7	ND	1.7	ND	1.8
Chlorobenzene	1.0	ND	1.7	ND	1.7	ND	1.7	ND	1.7	ND	1.8
Ethylbenzene	1.0	7.3	1.7	11	1.7	1.8	1.7	7.6	1.7	2.7	1.8
p,&m-Xylene	1.0	28	1.7	46	1.7	3.5	1.7	30	1.7	11	1.8
o-Xylene	1.0	7.5	1.7	12	1.7	ND	1.7	13	1.7	3.4	1.8
Styrene	1.0	ND	1.7	ND	1.7	18	1.7	1.7	1.7	ND	1.8
1,1,2,2-Tetrachloroethane	2.0	ND	3.4	ND	3.4	ND	3.4	ND	3.4	ND	3.5
Benzyl Chloride	1.0	ND	1.7	ND	1.7	ND	1.7	ND	1.7	ND	1.8
1,3,5-Trimethylbenzene	2.0	10	3.4	17	3.4	ND	3.4	13	3.4	3.8	3.5
1,2,4-Trimethylbenzene	2.0	20	3.4	31	3.4	4.6	3.4	36	3.4	9.9	3.5
1,3-Dichlorobenzene	1.0	ND	1.7	ND	1.7	ND	1.7	ND	1.7	ND	1.8
1,4-Dichlorobenzene	1.0	ND	1.7	ND	1.7	ND	1.7	ND	1.7	ND	1.8
1,2-Dichlorobenzene	1.0	ND	1.7	ND	1.7	ND	1.7	ND	1.7	ND	1.8
1,2,4-Trichlorobenzene	2.0	ND	3.4	ND	3.4	ND	3.4	ND	3.4	ND	3.5
Hexachlorobutadiene	1.0	ND	1.7	ND	1.7	ND	1.7	ND	1.7	ND	1.8

PQL = Practical Quantitation Limit
ND= Not Detected (below RL)
RL = PQL X Dilution Factor

Reviewed/Approved By: [signature]
Mark Johnson
Air Toxics Operations Manager

Date 6-24-03

The cover letter is an integral part of this analytical report

Air Technology Laboratories 18501 E. Gale Avenue Suite 130 City of Industry, CA 91748 Tel: 626 964-4032 Fax: 626 964-5832

Client: EarthTech
Attn: Eva Rasdal

Client's Project: 55th Way Landfill
Date Received: 06/13/03
Matrix: Air
Units: ppbv

539

EPA Method TO14

Lab No:		A3061302-06		A3061302-07		A3061302-08	
Client Sample I.D.:		GW-6s-061203		GW-3d-061203		GW-3s-061203	
Date Sampled:		06/12/03		06/12/03		06/12/03	
Date Analyzed:		06/16/03		06/16/03		06/16/03	
QC Batch No:		030616MS2A1		030616MS2A1		030616MS2A1	
Analyst Initials:		SC		SC		SC	
Dilution Factor:		1.7		1.7		2.1	
ANALYTE	PQL	Result	RL	Result	RL	Result	RL
Dichlorodifluoromethane (12)	1.0	ND	1.7	ND	1.7	ND	2.1
Chloromethane	2.0	ND	3.4	ND	3.4	ND	4.1
1,2-Cl-1,1,2,2-F ethane (114)	1.0	ND	1.7	ND	1.7	ND	2.1
Vinyl Chloride	1.0	ND	1.7	ND	1.7	ND	2.1
Bromomethane	1.0	ND	1.7	ND	1.7	ND	2.1
Chloroethane	1.0	ND	1.7	ND	1.7	ND	2.1
Trichlorofluoromethane (11)	1.0	ND	1.7	ND	1.7	ND	2.1
1,1-Dichloroethene	1.0	ND	1.7	ND	1.7	ND	2.1
1,1,2-Cl 1,2,2-F ethane (113)	1.0	ND	1.7	ND	1.7	ND	2.1
Methylene Chloride	1.0	ND	1.7	ND	1.7	ND	2.1
1,1-Dichloroethane	1.0	ND	1.7	ND	1.7	ND	2.1
c-1,2-Dichloroethene	1.0	ND	1.7	5.5	1.7	ND	2.1
Chloroform	1.0	ND	1.7	ND	1.7	ND	2.1
1,1,1-Trichloroethane	1.0	ND	1.7	ND	1.7	ND	2.1
Carbon Tetrachloride	1.0	ND	1.7	ND	1.7	ND	2.1
Benzene	1.0	5.3	1.7	ND	1.7	ND	2.1
1,2-Dichloroethane	1.0	ND	1.7	ND	1.7	ND	2.1
Trichloroethene	1.0	ND	1.7	2.3	1.7	ND	2.1
1,2-Dichloropropane	1.0	ND	1.7	ND	1.7	ND	2.1
c-1,3-Dichloropropene	1.0	ND	1.7	ND	1.7	ND	2.1
Toluene	1.0	1.7	1.7	ND	1.7	ND	2.1
t-1,3-Dichloropropene	1.0	ND	1.7	ND	1.7	ND	2.1
1,1,2-Trichloroethane	1.0	ND	1.7	ND	1.7	ND	2.1
Tetrachloroethene	1.0	ND	1.7	8.4	1.7	3.5	2.1
1,2-Dibromoethane	1.0	ND	1.7	ND	1.7	ND	2.1
Chlorobenzene	1.0	ND	1.7	ND	1.7	ND	2.1
Ethylbenzene	1.0	ND	1.7	ND	1.7	ND	2.1
p,&m-Xylene	1.0	3.8	1.7	ND	1.7	ND	2.1
o-Xylene	1.0	ND	1.7	ND	1.7	ND	2.1
Styrene	1.0	ND	1.7	ND	1.7	ND	2.1
1,1,2,2-Tetrachloroethane	2.0	ND	3.4	ND	3.4	ND	4.1
Benzyl Chloride	1.0	ND	1.7	ND	1.7	ND	2.1
1,3,5-Trimethylbenzene	2.0	ND	3.4	ND	3.4	ND	4.1
1,2,4-Trimethylbenzene	2.0	5.7	3.4	ND	3.4	ND	4.1
1,3-Dichlorobenzene	1.0	ND	1.7	ND	1.7	ND	2.1
1,4-Dichlorobenzene	1.0	ND	1.7	ND	1.7	ND	2.1
1,2-Dichlorobenzene	1.0	ND	1.7	ND	1.7	ND	2.1
1,2,4-Trichlorobenzene	2.0	ND	3.4	ND	3.4	ND	4.1
Hexachlorobutadiene	1.0	ND	1.7	ND	1.7	ND	2.1

PQL = Practical Quantitation Limit
ND= Not Detected (below RL)
RL = PQL X Dilution Factor

Reviewed/Approved By: Mark Johnson
Mark Johnson
Air Toxics Operations Manager

Date 6-24-03

The cover letter is an integral part of this analytical report

LCS/LCSD Recovery and RPD Summary Report

QC Batch #: 030616MS2A1

Matrix: Air

EPA Method TO-14/TO-15												
Lab No:	Method Blank		LCS		LCSD							
Date Analyzed:	06/16/03		06/16/03		06/16/03							
Data File ID:	16JUN006.D		16JUN004.D		16JUN005.D							
Analyst Initials:	SC		SC		SC							
Dilution Factor:	1.0		1.0		1.0			Limits				
ANALYTE	Result ppbv	Spike Amount	Result ppbv	% Rec	Result ppbv	% Rec	RPD	Low %Rec	High %Rec	Max. RPD	Pass/ Fail	
1,1-Dichloroethene	0.0	10.0	8.5	85	9.0	90	5.4	70	130	25	Pass	
Methylene Chloride	0.0	10.0	8.9	89	9.2	92	2.6	70	130	25	Pass	
Trichloroethene	0.0	10.0	8.7	87	8.7	87	0.3	70	130	25	Pass	
Toluene	0.0	10.0	8.6	86	8.7	87	0.8	70	130	25	Pass	
1,1,2,2-Tetrachloroethane	0.0	10.0	9.5	95	10.7	107	12.5	70	130	25	Pass	

RPD = Relative Percent Difference

Reviewed/Approved By: Mark Johnson

Mark Johnson
Air Toxics Operations Manager

Date: 6-24-03

The cover letter is an integral part of this analytical report

Client: Earth Tech
Attn: Eva Rasdal

Client's Project: 55th Way Landfill
Date Received: 06/13/2003
Matrix: Air
Units: % v/v

ASTM D1946 Fixed Gases

Lab No.:		A3061302-01		A3061302-02		A3061302-03		A3061302-04		A3061302-05	
Client Sample I.D.:		GW-4s-061203		GW-4d-061203		GW-5s-061203		GW-5d-061203		GW-6d-061203	
Date Sampled:		06/12/2003		06/12/2003		06/12/2003		06/12/2003		06/12/2003	
Date Analyzed:		06/17/2003		06/17/2003		06/17/2003		06/17/2003		06/17/2003	
Analyst Initials:		DT		DT		DT		DT		DT	
Data File:		16jun047		16jun049		16jun052		16jun053		16jun055	
QC Batch:		030616GC11A2		030616GC11A2		030616GC11A2		030616GC11A2		030616GC11A2	
Dilution Factor:		1.7		1.7		1.7		1.7		1.8	
ANALYTE	PQL	RL	Results	RL	Results	RL	Results	RL	Results	RL	Results
Oxygen/Argon	0.50	0.84	4.4	0.86	12	0.84	12	0.86	14	0.89	6.0
Nitrogen	1.0	1.7	73	1.7	74	1.7	76	1.7	79	1.8	77
Methane	0.0010	0.0017	5.0	0.0017	2.0	0.0017	ND	0.0017	0.0047	0.0018	2.0
Carbon Dioxide	0.010	0.017	17	0.017	8.7	0.017	7.9	0.017	3.7	0.018	11

PQL = Pratical Quantitation Limit
ND = Not Detected (Below RL).
RL = PQL X Dilution Factor

Reviewed/Approved By: Mark J. Johnson
Mark J. Johnson
Air Toxics Operations Manager

Date: 6-24-03

The cover letter is an integral part of this analytical report.

Client: Earth Tech
Attn: Eva Rasdal

Client's Project: 55th Way Landfill
Date Received: 06/13/2003
Matrix: Air
Units: % v/v

ASTM D1946 Fixed Gases

Lab No.:		A3061302-06		A3061302-07		A3061302-08						
Client Sample I.D.:		GW-6s-061203		GW-3d-061203		GW-3s-061203						
Date Sampled:		06/12/2003		06/12/2003		06/12/2003						
Date Analyzed:		06/17/2003		06/17/2003		06/17/2003						
Analyst Initials:		DT		DT		DT						
Data File:		16jun057		16jun059		16jun061						
QC Batch:		030616GC11A2		030616GC11A2		030616GC11A2						
Dilution Factor:		1.7		1.7		2.1						
ANALYTE	PQL	RL	Results	RL	Results	RL	Results					
Oxygen/Argon	0.50	0.86	7.6	0.86	7.9	1.0	14					
Nitrogen	1.0	1.7	76	1.7	76	2.1	72					
Methane	0.0010	0.0017	2.4	0.0017	0.93	0.0021	0.0040					
Carbon Dioxide	0.010	0.017	11	0.017	11	0.021	8.6					

PQL = Pratical Quantitation Limit
ND = Not Detected (Below RL).
RL = PQL X Dilution Factor

Reviewed/Approved By: [signature]
Mark J. Johnson
Air Toxics Operations Manager

Date: 6-24-03

The cover letter is an integral part of this analytical report.

QC Batch No.: 030616GC8A2
Matrix: Air
Units: % v/v

QC for ASTM D1946 Fixed Gases

Lab No.:			Method Blank		LCS		LCSD		
Date Analyzed:			06/16/03		06/16/03		06/16/03		
Analyst Initials:			DT		DT		DT		
Datafile:			16jun034		16jun032		16jun033		
Dilution Factor:			1.0		1.0		1.0		
ANALYTE	PQL	RL	Results	% Rec.	Criteria	% Rec.	Criteria	%RPD	Criteria
Oxygen/Argon	0.50	0.50	ND	105	70-130%	106	70-130%	0.7	<30
Nitrogen	1.0	1.0	ND	98	70-130%	98	70-130%	0.1	<30
Methane	0.0010	0.0010	ND	85	70-130%	81	70-130%	4.6	<30
Carbon Dioxide	0.010	0.010	ND	83	70-130%	82	70-130%	2.1	<30

PQL = Pratical Quantitation Limit
ND = Not Detected (Below PQL).
RL = PQL X Dilution Factor

Reviewed/Approved By: ____________________ Date: 6-24-03
Mark J. Johnson
Air Toxics Operations Manager

The cover letter is an integral part of this analytical report.

Air Technology 18501 E. Gale Avenue Suite 130 City of Industry, CA 91748 Tel: 626 964-4032 Fax: 626 964-5832

CHAIN OF CUSTODY RECORD

Pg ____ of ____

Air Technology Laboratories
18501 E. Gale Avenue, Suite 130
City of Industry, CA 91748
626-964-4032 • Fax: 626-964-5832

Project Name: 55th Way Landfill
Project #:
P.O. #: 52264.07

FOR LABORATORY USE ONLY

Method of Transport: Walk-In ☒ Courier ☐ UPS ☐ FedEx ☐ ATL ☐

Sample Condition Upon Receipt:
1. CHILLED Y☐ N☐
2. HEADSPACE (VOA) Y☐ N☐
3. CONTAINER INTACT Y☐ N☐
4. SEALED Y☐ N☐
5. # OF SPLS MATCH COC Y☐ N☐
6. PRESERVED Y☐ N☐

Company: EARTH TECH
Contact: EVA RABDAU
Address: 100 W. BROADWAY #240
City: Long Beach State: CA Zip Code: 90802
TEL: (562) 951-2356
FAX: (562) 951-2086

Relinquished by: (Signature and Printed Name)	Date	Time	Received by: (Signature and Printed Name)	Date	Time
[signature]	6/12/03	1650	[signature]	6/12/03	4:52
Cal overnight	6/13/03	0810	[signature]	6/13/03	0810

I hereby authorize ATL to perform the work indicated below:
[signature] 6/12/03
Project Mgr./Submitter (Print Name) Date
Signature

Send Report To: Attn: Co: S.A. Address: City: State: Zip:

Bill To: Attn: Co: S.A. Address: City: State: Zip:

Special Instructions/Comments:

Unless otherwise requested, all samples will be disposed 14 days after reporting or at Lab's discretion.

Sample Archive/Disposal:
☒ Laboratory Standard
☐ Other
☐ Return To:
* $10.00 FEE PER HAZARDOUS SAMPLE DISPOSAL.

QA/QC: RTNE ☐ RWQCB ☐ SPECIAL ☐

Lab No.	Sample I.D.	Date	Time	T03 Gas / BTEX / MTBE	T03 Hexane	T03 Carbon Chain	TO14A Volatiles + [illegible]	TO15 Volatiles Std/Low Level	15/16 Sulfur Comp Std/Low Level	15/16 H_2S Std/Low Level	3C/D1946 Fixed Gas	25C/3C TNMOC	25.1 TGNMHC	D1945 Natural Gas	RSK 175 Dissolved Gas			AIR • VAPOR	INDOOR AIR	LANDFILL GAS	WATER	SOLID • SOIL	OIL • SOLVENT • LIQUID	OTHER	TAT	Container(s) #	Container(s) Type	PRESERVATION	REMARKS
A3061302-01	GW-4S-061203	6/12/03	1215				X				X									X					E	1	C		
02	GW-4D-061203		1248				X				X									X						1	C		
03	GW-5S-061203		1342				X				X									X						1	C		
04	GW-5D-061203		1408				X				X									X						1	C		
05	GW-6D-061203		1440				X				X									X						1	C		
06	GW-6S-061203		1458				X				X									X						1	C		
07	GW-3D-061203		1539				X				X									X						1	C		
08	GW-3S-061203		1553				X				X									X						1	C		

Cal

* TAT starts 8 a.m. following day if samples received after 5 p.m.

TAT: A= Overnight ≤ 24 hr B= Emergency Next workday C= Critical 2 Workdays D= Urgent 3 Workdays E= Routine 7 Workdays

Container Types: B=Tedlar Bag C=Canister V=V... = Other

Preservatives: H=Hcl N...

APPENDIX K - TABLE 1
Purge Test Data
Paramount Dump - PCLUP
2910 E. 55th Way, Long Beach, California

Boundary Probe No.	Purge Depth (feet bgs)	Purge Date	Duration of Purge (seconds)	Rate (ml/min)	Well Volumes	Volume Purged (ml)	PID VOC (ppm)	MULTIGAS METER METHANE (% LEL)	CO (ppm)	H2S (ppm)	Oxygen (%)
GW-4	10	6/12/2003	26	2000	1	869	5.7	60	0	0	1.7
			78	2000	3	2,606	2.5	65	0	0	1.4
			182	2000	7	6,081	1.5	76	0	0	2.5
			After Sample Collection				5.1	80	0	0	2.7

Notes:
ppm = parts per million
ml/min = milliliters per minute
% LEL = Lower explosive limit (LEL) calibrated to methane.
bgs=below ground surface

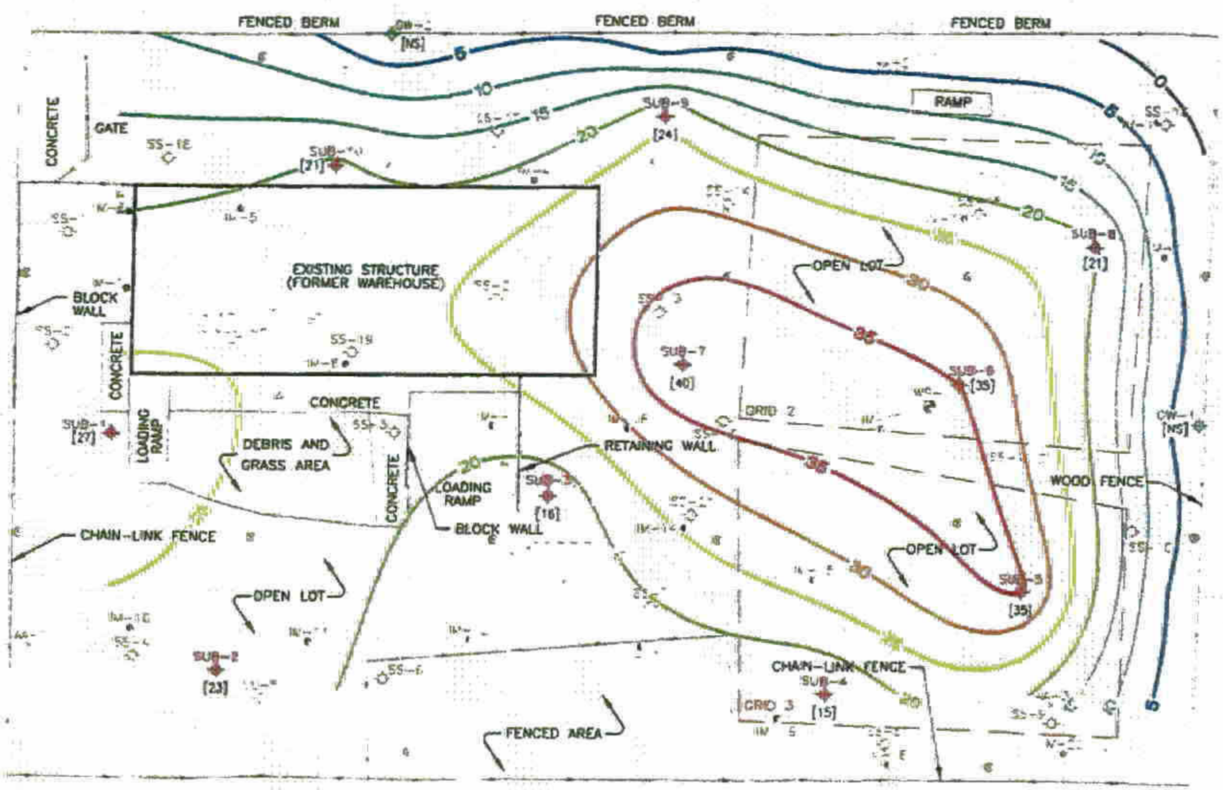
LEL measured as peak values
Prior to sample collection constant 50% LEL.

APENDIX K - TABLE 2
Sample Collection Data
Paramount Dump - PCLUP
2910 E. 55th Way, Long Beach, California

						Peak Reading Prior to Purge		Constant for 30 Continuous Seconds Prior to Sample Collection					Peak Reading After Sample Collection	
						PID	MULTI-GAS	PID	MULTI-GAS METER				PID	MULTI-GAS
SAMPLE ID	DATE	SUMMA ID #	INITIAL PRESSURE (in Hg)	FINAL PRESSURE (in Hg)	VOLUME PURGED (ml)	VOC (ppm)	METHANE (% LEL)	VOC (ppm)	METHANE (% LEL)	CO (ppm)	H2S (ppm)	OXYGEN (%)	VOC (ppm)	METHANE (% LEL)
GW3-10	6/12/2003	5945	-30	-6	6,000	2.2	1	0.2	1	0	0	12.6	0.2	1
GW3-20	6/12/2003	2415	-30	-2	12,000	5.5	0	0.9	22	3	0	6.9	2	22
GW4-10	6/12/2003	7122	-30	-2	6,000	1.5	76	NR	60	0	0	2.5	5.1	80
GW4-20	6/12/2003	1367	-30	-2	12,000	20.5	39	7.7	44	5	0	10.5	9.2	45
GW5-10	6/12/2003	1423	-30	0	6,000	14.7	1	2.0	1	0	0	11.1	11.1	1
GW5-20	6/12/2003	5973	-30	-2.5	12,000	25.0	1	30.0	1	0	0	13.4	39.7	1
GW6-10	6/12/2003	3476	-30	-2.5	6,000	9.0	8	2.0	53	3	0	7.4	2.4	63
GW6-20	6/12/2003	7128	-30	-3.5	12,000	8.4	4	3.0	53	3	0	4.3	13.1	50

Notes:
Methane = % LEL calibrated to methane.
in Hg = Pressure in inches of mercury.
ml = milliliters
NR=Not Recorded
ppm = parts per million
Samples were collected by opening the Summa cannister slowly to pull for 10 continuous minutes.

FIGURE 5A FROM PHASE I PCLUP:
METHANE ISOCONCENTRATIONS IN SOIL GAS JANUARY 2002



EXPLANATION

- FENCE LINE LOCATION
- BLOCK/RETAINING WALL
- OVERHEAD UTILITY LINE
- UTILITY/POWER POLE LOCATION
- PREVIOUS SYSTEMATIC SOIL GAS AND SOIL SAMPLING LOCATION
- PREVIOUS BIASED SOIL GAS AND SOIL SAMPLING LOCATION
- AMBIENT AIR SAMPLING LOCATION
- INSTANTANEOUS SAMPLING LOCATION (APPROXIMATE)
- SURFACE SOIL SAMPLING LOCATION
- WEATHER STATION LOCATION
- SUBSURFACE SOIL SAMPLING LOCATION
- GAS WELL SAMPLING LOCATION
- [40] METHANE CONCENTRATION IN SOIL GAS AT 10 FEET BGS (IN %)
- 10 METHANE ISOCONCENTRATION CONTOUR IN SOIL GAS AT 10 FEET BGS (IN %)
- [ND] NOT DETECTED AT METHOD DETECTION LIMIT (MDL) <5.0%
- [NS] NOT SAMPLED AT THIS DEPTH

NOTE: WELL HEAD AT GW-2 IS APPROXIMATELY 10' LOWER IN ELEVATION THAN OTHER SAMPLING POINTS AT THE SITE

NOTES:

1. SOURCE: SITE AND TOPOGRAPHY SURVEYED BY DULIN-BOYNTON LAND SURVEYORS, NOVEMBER 2001 AND FEBRUARY 2002.
2. FORMER FEATURES FROM ECOLOGY AND ENVIRO-MENTAL, INC., MAP DATED AUGUST 2000.

NORTH

0 60 120

APPROXIMATE SCALE IN FEET
(SCALE: 1" = 50'-0")

POST-CLOSURE LAND USE PROPOSAL
PARAMOUNT DUMP/55th WAY LANDFILL

METHANE ISOCONCENTRATIONS IN SOIL GAS AT 10 FEET BGS JANUARY 2002

CITY OF LONG BEACH
2910 EAST 55th WAY, LONG BEACH, CA

DATE 07-03	EARTH TECH	FIGURE
PROJECT NO. 52264		5A

FILE NAME: 52264METH10FT_R2 0703.DWG (1:1)

LEA INSPECTION REPORT WITH PROBE MONITORING RESULTS JUNE 18, 2014

CalRecycle

Closed Disposal Site Inspection Report (188)

Enforcement Agency:	County of Los Angeles		
SWIS Facility File Number (99-xx-9999)	Inspection Date	Program Code	
19-AK-0084	6/18/2014	LEA Periodic	
Time In		Time Out		Inspection Time	
Facility Name		Received By	
Paramount Dump		US MAIL	
Facility Location		Owner Name	
2910 East 55th Way/ 5450 Paramount Blv., Long Beach 90805		City of Long Beach	
Inspector		Also Present (Name)	
MARK COMO			

THE ABOVE FACILITY WAS INSPECTED FOR COMPLIANCE WITH APPLICABLE SECTIONS OF THE DIVISION 30 OF THE PUBLIC RESOURCES CODE (PRC) AND TITLE 14 AND TITLE 27 CAL FORNIA CODE OF REGULATIONS (CCR)

	No Violations or Areas of Concern	
V	A	Regulations
	X	20921 - Gas Monitoring and Control
		Comments: -LANDFILL GAS GENERATED AT THE DISPOSAL SITE SHALL BE CONTROLLED IN A MANNER TO PREVENT MIGRATION OF METHANE GAS AT A CONCENTRATION NOT TO EXCEED 5 PERCENT BY VOLUME IN AIR AT THE DISPOSAL SITE PERMITTED FACILITY BOUNDARY OR AN ALTERNATIVE BOUNDARY APPROVED IN ACCORDANCE WITH SECTION 20925. -PERIMETER PROBE GW4/SHALLOW OBSERVED AT 60% LEL DURING MONITORING.

Inspection Report Comments:

2014 2ND QUARTER CLOSED SITE INSPECTION

-OVERALL MAINTENANCE OF THE SITE WAS SATISFACTORY.
-CONTINUE TO MAINTAIN VEGETATION AROUND GAS MONITORING WELLS/PROBES.
-GAS MONITORING CONDUCTED WITH RKI EAGLE GAS MONITORING DETECTOR, WITH THE FOLLOWING READINGS FOR METHANE GAS:

*PROBES GW2 AND GW7-GW11 ARE INSIDE THE WASTE/TRASH FOOTPRINT.
ALL READINGS ARE IN % VOLUME:
-GW2 SHALLOW:0 DEEP:0
-GW7 SHALLOW:56.5%. DEEP:0
-GW8 UNABLE TO OPEN COVER
-GW9 SHALLOW:65.5% DEEP:0
-GW10 SHALLOW:49%. DEEP:35.5%
-GW11 SHALLOW:48% DEEP:44.5%

*PERIMETER PROBES GW4-GW6 ARE LOCATED ON EAST BOUNDARY.
ALL READINGS ARE IN % LEL:
-GW4 SHALLOW:60% LEL DEEP:0
-GW5 SHALLOW:0. DEEP:0
-GW6 SHALLOW:0. DEEP:0

NOTE: HELP US SERVE YOU BETTER BY COMPLETING A SHORT SURVEY.
VISIT OUR WEBSITE AT: www.publichealth.lacounty.gov/eh.

CALRECYCLE PROBE SAMPLING REPORT MARCH 23, 2011

CalRecycle

DEPARTMENT OF RESOURCES RECYCLING AND RECOVERY

801 K STREET, MS 19-01, SACRAMENTO, CALIFORNIA 95814 • (916) 322-4027 • WWW.CALRECYCLE.CA.GOV

March 23, 2011

California Natural Resources Agency
Department of Resources and Recycling
Closed, Illegal & Abandoned Sites Investigation Unit
1001 "I" Street
Sacramento, California 95812

Subject: Paramount Dump Additional Landfill Gas Monitoring, January 2011
Friendly Village Mobile Home Park and Davenport Park
Portions of the Former Paramount Dump
Long Beach, California SWIS No.
SWIS No. 19-AK-0084

Reference: CalRecycle, 2010, Site Investigation Report, Friendly Village Mobile Home Park, Portion of the Former Paramount Dump, Long Beach, California, SWIS No.19-AK-0084: dated November 9.

Dear Property Owners, LEA, Individuals of Concern:

The inactive and closed Paramount Dump is located northeast of the intersection of N. Paramount Boulevard and Candlewood Street in Long Beach, California. The former 55th Way Landfill operated to the adjacent south of the Paramount Petroleum tank farm (currently Davenport Park) and comprised approximately 5.5 acres and reportedly was part of a larger former 17.4-acre former municipal waste landfill owned and operated by the City of Long Beach as the Long Beach City Dump #26. The two sites are collectively referred to as the Paramount Dump.

The California Natural Resources Agency Department of Resources and Recycling (CalRecycle) was previously requested by the Los Angeles County Local Enforcement Agency (LEA) to assist with an investigation of landfill gas (LFG) at a portion of the former Paramount Dump, currently the location of the Friendly Village Mobile Home Park. CalRecycle conducted a LFG investigation that involved construction of 28 LFG wells, followed by one year of monthly field monitoring and quarterly monitoring and analytical testing. The results of the investigation were provided in the above-referenced Site Investigation Report (CalRecycle, 2010).

Subsequent to this, in January 2011, CalRecycle staff conducted additional LFG field monitoring, LFG sampling, and analytical testing of the LFG wells and probes at the Friendly Village Mobile Home Park and at Davenport Park, to the adjacent north. The monitoring included the 28 LFG wells at the mobile home park referred to as LFG-1 through LFG-28 and the eight LFG monitoring probes at the park referred to as 1A, 1B, 2A, 2B, 5A, 5B, CMP-1 and CMP-4. The results of this subsequent assessment are summarized in the tables included with this letter.

The results of the January 2011 monitoring indicate that elevated levels of LFG, Hydrogen Sulfide in the field monitoring and volatile organic compounds (VOCs) continue to be present in the wells at the mobile home park and were detected in the probes at Davenport Park. It continues to be our recommendation that a plan be developed and implemented to control the LFG.

Should you have questions regarding this assessment, please contact Tom White Los Angeles County DHS @ 626-430-5540 or Dawn Plantz at 916-341-6723 email dawn.plantz@calrecycle.ca.gov.

Sincerely,

Dawn A. Plantz

Attachments: Table 1 - Summary of Landfill Gas Field Monitoring, January 2011
Table 2- Summary of Landfill Gas Analytical Results, January 2011
Laboratory Data

Table 1 - Summary of Landfill Gas Analytical Results					
Sample Name	Sample Date	Fixed Gases and Methane by EPA 3C (%v/v)		Detected VOCs by TO-15 (mg/m^3)	
BACKGROUND	4/28/2009	Oxygen/Argon	25.0	ND	
		Nitrogen	76.9		
		Methane	ND		
		Carbon dioxide, free	ND		
LFG-1	1/24/2011	Oxygen/Argon	1.8	Benzene	42
		Nitrogen	39.0	Ethylbenzene	32
		Carbon dioxide, free	23.0	Hexane*	180
		Methane	34.0	Propylene*	36
				Toluene	54
				Xylenes, total	40
LFG-2	1/24/2011	Oxygen/Argon	1.9	Benzene	58
		Nitrogen	52.0	Cyclohexane*	51
		Carbon dioxide, free	20.0	Ethylbenzene	46
		Methane	25.0	Heptane*	150
				Hexane*	44
				Naphthalene	100
				Toluene	62
				Xylenes, total	76
LFG-3	1/24/2011	Oxygen/Argon	4.2	Benzene	4.4
		Nitrogen	72.0	Xylenes, total	12
		Carbon dioxide, free	13.0	Ethylbenzene	5.4
		Methane	8.8	Heptane*	40
				Hexane*	18
				Naphthalene	49
				Propylene*	5.4
				Toluene	13
LFG-4	1/24/2011	Oxygen/Argon	1.4	Cyclohexane*	12
		Nitrogen	69.0	Heptane*	51
		Carbon dioxide, free	17.0	Hexane*	21
		Methane	11.0	Naphthalene	19
LFG-5	1/24/2011	Oxygen/Argon	4.6	Toluene	12
		Nitrogen	78.0	Xylenes, total	67
		Carbon dioxide, free	14.0		
		Methane	ND		
LFG-6	1/24/2011	Oxygen/Argon	2.8	Naphthalene	64
		Nitrogen	80.0		
		Carbon dioxide, free	15.0		
		Methane	ND		
LFG-7	1/24/2011	Oxygen/Argon	1.5	Heptane*	80
		Nitrogen	54.0	Hexane*	38
		Carbon dioxide, free	22.0		
		Methane	23.0		
LFG-8	1/24/2011	Oxygen/Argon	1.6	Heptane*	80
		Nitrogen	39.0	Hexane*	40
		Carbon dioxide, free	23.0		
		Methane	35.0		
LFG-9	1/24/2011	Oxygen/Argon	2.0	Benzene	28
		Nitrogen	32.0	Ethylbenzene	26
		Carbon dioxide, free	27.0	Heptane*	86
		Methane	39.0	Hexane*	48
				Naphthalene	84
				Xylenes, total	28

Table 1 - Summary of Landfill Gas Analytical Results					
Sample Name	Sample Date	Fixed Gases and Methane by EPA 3C (%v/v)		Detected VOCs by TO-15 (mg/m^3)	
LFG-10	1/24/2011	Oxygen/Argon	1.8	Benzene	140
		Nitrogen	34.0	Heptane*	290
		Carbon dioxide, free	26.0	Hexane*	93
		Methane	37.0	Propylene*	120
				Toluene	28
LFG-11	1/24/2011	Oxygen/Argon	3.0	Benzene	94
		Nitrogen	52.0	Heptane*	150
		Carbon dioxide, free	21.0	Hexane*	99
		Methane	22.0	Propylene*	80
				Toluene	55
				Xylenes, total	150
				Ethylbenzene	68
LFG-12	1/24/2011	Oxygen/Argon	2.0	Benzene	50
		Nitrogen	66.0	Cyclohexane*	18
		Carbon dioxide, free	18.0	Ethylbenzene	16
		Methane	12.0	Heptane*	77
				Hexane*	61
				Naphthalene	200
				Propylene*	14
				Toluene	22
				Xylenes, total	40
LFG-13	1/24/2011	Oxygen/Argon	2.2	Benzene	61
		Nitrogen	64.0	Carbon disulfide	21
		Carbon dioxide, free	18.0	CycloHexane*	29
		Methane	13.0	cis-1,2-Dichloroethene	11
				Ethylbenzene	58
				Heptane*	100
				Hexane*	70
				Naphthalene	170
				Propylene*	63
				Toluene	27
				Xylenes, total	44
LFG-14	1/24/2011	Oxygen/Argon	2.6	Benzene	36
		Nitrogen	46.0	Cyclohexane*	30
		Carbon dioxide, free	22.0	Ethylbenzene	21
		Methane	28.0	Heptane*	92
				Hexane*	64
				Naphthalene	60
				Propylene*	40
				Toluene	29
				Xylenes, total	21
LFG-15	1/24/2011	Oxygen/Argon	2.7	Benzene	36
		Nitrogen	45.0	Cyclohexane*	290
		Carbon dioxide, free	21.0	Ethylbenzene	15
		Methane	28.0	Hexane*	160
				Naphthalene	98
				Toluene	52
				Xylenes, total	31
LFG-16	1/24/2011	Oxygen/Argon	1.9	Heptane*	18
		Nitrogen	56.0	Naphthalene	25
		Carbon dioxide, free	20.0		
		Methane	21.0		
LFG-17	1/24/2011	Oxygen/Argon	2.1	Benzene	15
		Nitrogen	71.0	Cyclohexane*	80
		Carbon dioxide, free	18.0	Heptane*	110
		Methane	6.3	Hexane*	180
				Toluene	12
				Xylenes, total	19

Table 1 - Summary of Landfill Gas Analytical Results

Sample Name	Sample Date	Fixed Gases and Methane by EPA 3C (%v/v)		Detected VOCs by TO-15 (mg/m^3)	
LFG-18	1/24/2011	Oxygen/Argon	3.3	Benzene	66
		Nitrogen	60.0	Cyclohexane*	20
		Carbon dioxide, free	20.0	cis-1,2-Dichloroethene	350
		Methane	16.0	Ethylbenzene	53
				Heptane*	64
				Naphthalene	23
				Propylene*	95
				Toluene	47
				Vinyl chloride	200
				Xylenes, total	51
LFG-19	1/24/2011	Oxygen/Argon	3.4	Benzene	170
		Nitrogen	49.0	Cyclohexane*	30
		Carbon dioxide, free	21.0	cis-1,2-Dichloroethene	95
		Methane	25.0	Ethylbenzene	120
				Heptane*	140
				Hexane*	86
				Naphthalene	67
				Propylene*	110
				Toluene	40
				Vinyl chloride	79
				Xylenes, total	130
LFG-20	1/24/2011	Oxygen/Argon	4.5	Benzene	50
		Nitrogen	40.0	Cyclohexane*	67
		Carbon dioxide, free	21.0	Ethylbenzene	21
		Methane	32.0	Hexane*	66
				Propylene*	44
				Toluene	15
				Xylenes, total	19
LFG-21	1/24/2011	Oxygen/Argon	1.8	Benzene	160
		Nitrogen	30.0	Cyclohexane*	120
		Carbon dioxide, free	27.0	Ethylbenzene	82
		Methane	40.0	Hexane*	120
				Naphthalene	16
				Propylene*	57
				Toluene	33
				Xylenes, total	83
LFG-22	1/24/2011	Oxygen/Argon	2.7	Benzene	100
		Nitrogen	37.0	Cyclohexane*	110
		Carbon dioxide, free	24.0	Dichlorodifluoromethane	49
		Methane	35.0	Ethylbenzene	61
				Heptane*	150
				Hexane*	110
				Naphthalene	16
				Propylene*	28
				Toluene	18
				Xylenes, total	74
LFG-23	1/24/2011	Oxygen/Argon	2.4	Acetone	67
		Nitrogen	40.0	Benzene	120
		Carbon dioxide, free	26.0	Cyclohexane*	41
		Methane	30.0	cis-1,2-Dichloroethene	78
				Ethylbenzene	110
				4-Ethyltoluene*	150
				Heptane*	80
				Hexane*	62
				Propylene*	84
				Toluene	59
				1,2,4-Trimethylbenzene	120
				Vinyl chloride	11
				Xylenes, total	340

Table 1 - Summary of Landfill Gas Analytical Results					
Sample Name	**Sample Date**	**Fixed Gases and Methane by EPA 3C (%v/v)**		**Detected VOCs by TO-15 (mg/m³)**	
LFG-24	1/24/2011	Oxygen/Argon	3.1	Benzene	80
		Nitrogen	54.0	Cyclohexane*	16
		Carbon dioxide, free	21.0	Ethylbenzene	40
		Methane	20.0	Heptane*	66
				Hexane*	51
				Propylene*	70
				Toluene	25
				1,2,4-Trimethylbenzene	230
				Xylenes, total	76
LFG-25	1/24/2011	Oxygen/Argon	2.0	Benzene	260
		Nitrogen	42.0	Cyclohexane*	120
		Carbon dioxide, free	26.0	Ethylbenzene	140
		Methane	29.0	Heptane*	150
				Hexane*	130
				Propylene*	85
				Toluene	21
				1,2,4-Trimethylbenzene	180
				Xylenes, total	58
LFG-26	1/24/2011	Oxygen/Argon	2.0	Benzene	62
		Nitrogen	30.0	Cyclohexane*	120
		Carbon dioxide, free	27.0	Ethylbenzene	170
		Methane	40.0	Heptane*	160
				Hexane*	130
				Propylene*	110
				Toluene	94
				1,2,4-Trimethylbenzene	82
				Xylenes, total	180
LFG-27	1/24/2011	Oxygen/Argon	1.9	Benzene	110
		Nitrogen	29.0	Cyclohexane*	53
		Carbon dioxide, free	28.0	Dichlorodifluoromethane	41
		Methane	39.0	Ethylbenzene	110
				Heptane*	83
				Hexane*	55
				Propylene*	42
				Toluene	39
				1,2,4-Trimethylbenzene	190
				Xylenes, total	96
LFG-28	1/24/2011 analyzed by OEC	Oxygen/Argon	1.9	Benzene	83
		Nitrogen	29.0	Cyclohexane*	26
		Carbon dioxide, free	28.0	cis-1,2-Dichloroethene	330
		Methane	39.0	Ethylbenzene	59
				Heptane*	70
				Hexane*	65
				Naphthalene	30
				Propylene*	100
				Toluene	52
				1,2,4-Trimethylbenzene	160
				Vinyl chloride	200
				Xylenes, total	59

Table 1 - Summary of Landfill Gas Analytical Results					
Sample Name	Sample Date	Fixed Gases and Methane by EPA 3C (%v/v)		Detected VOCs by TO-15 (mg/m^3)	
Probes are located in the Park					
Probe 1A	1/24/2011	Oxygen/Argon Nitrogen Carbon dioxide, free Methane	1.4 34 24 41	Benzene Chlorobenzene Toluene	120 180 32
Probe 1B	1/24/2011	Oxygen/Argon Nitrogen Carbon dioxide, free Methane	1.4 37 25 36	Methyl-t-butyl ether* Chlorobenzene Toluene	56 180 32
Probe 2A	1/24/2011	Oxygen/Argon Nitrogen Carbon dioxide, free Methane	6.3 51 11 29	Hexane*	150
Probe 2B	1/24/2011	Oxygen/Argon Nitrogen Carbon dioxide, free Methane	12 59 12 13	Hexane* Xylenes (total)	95 68
Probe 5A	1/24/2011	Oxygen/Argon Nitrogen Carbon dioxide, free Methane	1.5 26 31 42	Benzene Chlorobenzene Hexane* Propylene* Toluene Vinyl Chloride	150 110 230 190 26 34
Probe 5B	1/24/2011	Oxygen/Argon Nitrogen Carbon dioxide, free Methane	3.4 30 21 46	Benzene Chlorobenzene Dichlorodifluoromethane Hexane* Naphthalene Toluene Propylene*	46 150 130 170 250 34 150
CMP-4	1/24/2011	Oxygen/Argon Nitrogen Carbon dioxide, free Methane	6.5 78 14 ND	Ethylbenzene Toluene	21 6.8
CMP-1	1/24/2011	Oxygen/Argon Nitrogen Carbon dioxide, free Methane	21 75 0.94 0.53	Methylene chloride	4.4

Notes:

% v/v - percent volume by volume of air

mg/m3 - milligrams per cubic meter

EPA - Environmental Protection Agency

ND - not detected

VOCs - volatile organic compounds

* - analyte not measured on previous inspections

Table 2 - Summary of Landfill Gas Field Monitoring

		CH4	CO2	CO	H2S	O2	Balance
1/11/2011 Park	Probe 1A	40.1	28.9	0	6	0.3	30.7
	Probe 1B	34.5	30.9	0	0	0.5	33.8
	Probe 2A	35.8	15.9	29.99	8	0.8	46.7
	Probe 2B	0.9	0.8	0	0	19.4	78.7
	Probe 4B	0.1	0	0	0	20.1	0
	Probe 4A	0	0	0	0	2.01	79.7
	Probe 5A	41.5	36.5	0	0	0.7	21.4
	Probe 5B	51.5	26.6	0	15	0	22.5
	CMP-4	0	0	0	0	0	ND
	CMP-1	0	0	0	0	0	ND
1/12/2011 Friendly Villiage	LFG-1	35.1	26.4	0	5	0.6	37.9
	LFG-2	23.7	24.5	0	6	1.4	50.7
	LFG-3	8.5	15.2	0	5.5	2.2	74
	LFG-4	10.3	18.7	0	5	0.9	70.1
	LFG-5	0	15.5	0	0	2.5	81.8
	LFG-6	0	16.9	0	0	1.4	81.8
	LFG-7	21.3	24.2	0	3	0.5	54
	LFG-8	34.2	25.7	0	14	0.3	39.4
	LFG-9	38.9	31.5	0	4	0.4	29.2
	LFG-10	37.4	29.3	0	8	0.6	32.6
	LFG-11	24.3	25	0	6	0.6	49.8
	LFG-12	13.5	20.4	0	3.5	0.5	65.4
	LFG-13	13.3	20.1	0	13	0.7	65.9
	LFG-14	29.3	25.1	0	6	0.6	45
	LFG-15	29.8	25.6	0	5	0.8	43.9
	LFG-16	20.8	22.2	0	3.5	0.5	56.4
	LFG-17	6	20.2	0	3	0.5	72.9
	LFG-18	17.1	24.1	0	3.5	0.6	58
	LFG-19	29.8	24.7	0	4	0.5	44.8
	LFG-20	38.3	27.6	0	33	0.7	33.3
	LFG-21	39.1	29.6	0	4	0.7	30.1
	LFG-22	36.4	26.7	0	8	0.7	36.1
	LFG-23	31.5	30.4	0	7	0.7	37.3
	LFG-24	21.2	24.6	0	6	0.8	53.5
	LFG-25	30.2	29.6	0	9	0.6	40.1
	LFG-26	40.5	31.3	0	8.5	0.8	27.4
	LFG-27	39.7	32.3	0	8.5	0.7	27.1
	LFG-28	42.1	31.3	0	3.5	0.8	25.6

TRENCHING LOCATION MAP AND LOGS 2005

LEGEND:

- INTERPRETED EXTENT OF REFUSE
- INTERPRETED TOP OF REFUSE ELEVATION CONTOUR (FT MSL)
- T-2 TRENCH LOCATION AND DESIGNATION
- 61.97× GROUND SURFACE ELEVATION OF FURTHEST EXTENT OF TRENCH
- *54.64*● GROUND SURFACE ELEVATION OF FURTHEST EXTENT OF REFUSE OBSERVED IN THE TRENCH
- PROPERTY BOUNDARY
- EXISTING FENCES
- EXISTING GRADE

NOTES:

1. TRENCH WIDTHS WERE 2 FEET (WIDTH OF BACKHOE BUCKET).
2. TOP OF REFUSE ELEVATIONS BASED ON FIELD MEASUREMENTS (FT MSL).
3. FIELD SURVEY BY DULIN & BOYNTON. SURVEY DATE WAS 1/20/05. VERTICAL DATUM IS NGVD29. CITY OF LONG BEACH BM #1170 NORTHEAST CORNER OF PARAMOUNT BLVD AT 56TH ST, 25.4' E OF CURB. HORIZONTAL DATUM IS NAD83 NGS DY9296, ZONE 5 NAD83. VERTICAL CONTROL DISK STAMPED "V1415 1988".
4. FURTHEST EXTENT OF REFUSE AT TRENCH T-2 IS BEYOND NORTHERN EXTENT OF TRENCH.
5. LIMITS OF REFUSE IS APPROXIMATE WHERE DASHED, AND INFERRED WHERE DOTTED, AND SHOULD BE CONFIRMED IN THE FIELD DURING THE EARLY PHASE OF CONSTRUCTION

Geotechnical Engineering Evaluation Report

INTERPRETED EXTENT OF REFUSE

55th Way Neighborhood Park

Date: 01-05	City of Long Beach	Figure
Project No. 81853	EarthTech A Tyco International Ltd. Company	3C

LOCATION: Along northern perimeter (western side) of former landfill	LOG OF TRENCH T-1	Project No: 81853-02	Figure: A-1
Equipment: Backhoe 710 G		Project: Former 55th Way Landfill, Long Beach CA	
[illegible] of Excavation: 01-05-05		Approximate Surface Elevation: 58.66 feet MSL	
Logged By: Robert Lopez R.G. #7373		Pit Trend:	

DESCRIPTION

1a CLAYEY SILT: dark brown 10YR3/3, slightly plastic, damp, soft, trace course to medium, angular sand, some roots material, no odor, and concrete debris.

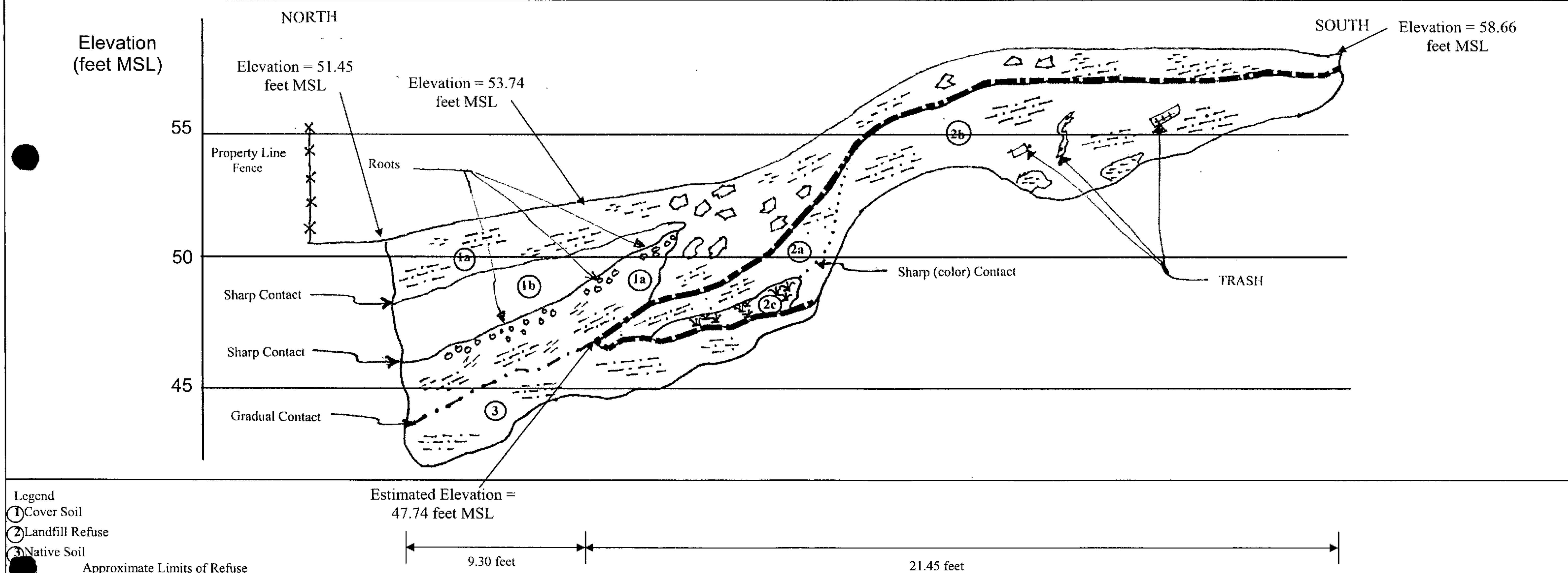
1b SILTY SAND: light yellow brown 10YR 6/4, well graded sand (mode = fine), crumbles into loose particles with medium thumb pressure, (pinche out and thins to the south), dry

2a SILT with SAND: dark grey 10YR 4/1; 85% non plastic silt; 15% poorly graded, fine sand; trace fine gravel and course sand; very soft, some TRASH (metal and brick), moist, strong odor.

2b SILT: very dark grey 10YR 3/1, very soft, moist, abundant TRASH (wood, tile, brick, asphalt, metal), strong odor.

2c VEGETATION: black 10 YR 2/1, wood, timber, other vegetation, decaying organic, "spongy", very strong odor.

3 SILT: brown 10YR 4/3, non-plastic, soft, damp to moist, faint laminations, no odor.



Note: Elevation scale is approximate.
Elevation values are based on survey data.

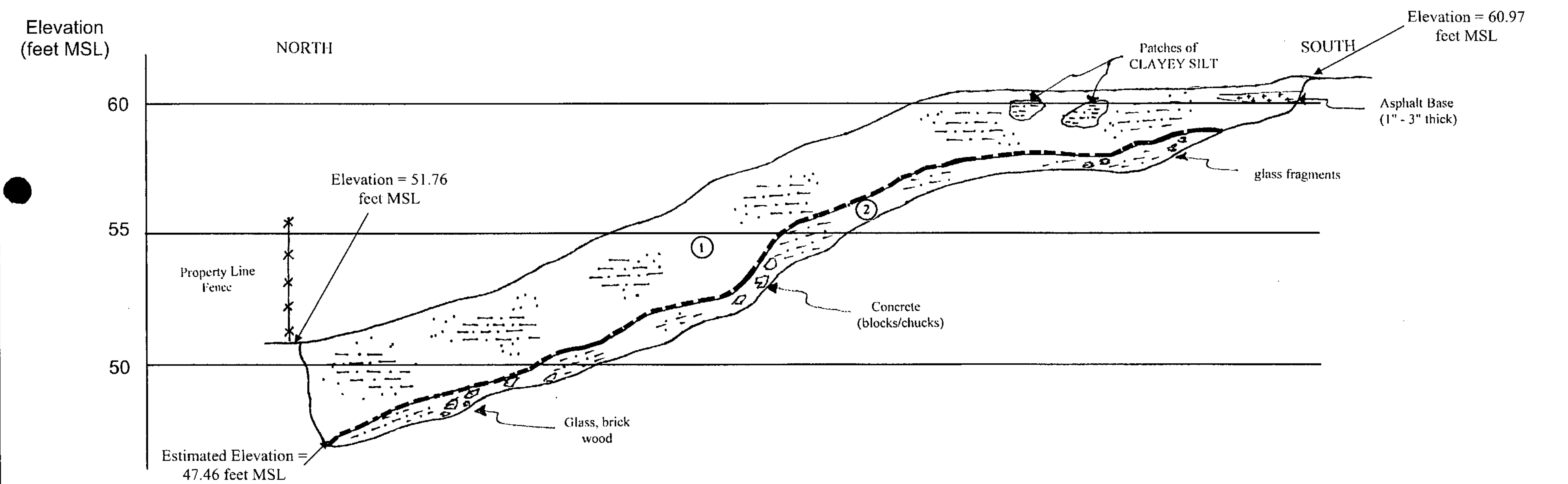
E

LOCATION: Along northern perimeter (western side) of former landfill	**LOG OF TRENCH T-2**	Project No: 81853-02	Figure: A-2
Equipment: Backhoe 710 G		Project: Former 55th Way Landfill, Long Beach CA	
of Excavation: 01-05-05		Approximate Surface Elevation: 60.97 feet MSL	
Logged By: Robert Lopez R.G. #7373		Pit Trend:	

DESCRIPTION

1 SILT with SAND: dark greyish brown 10YR 4/2, nonplastic silt; fine sand; trace mica and fine gravel (1/2-inch maximum diameter), soft, moist, no odor

2 SANDY SILT: varies in color reddish brown to brown to dark brownish grey 10%-40% fine sand, abundant TRASH (localized 50% to 80% - by volume): glass fragments/bottles, bricks, tile, wood, hair combs, sheet metal.



Legend
1 Cover Soil
2 Landfill Refuse
3 Native Soil
— · — Approximate Limits of Refuse

35.29 feet

E

LOCATION: Along northern perimeter (western side) of former landfill	**LOG OF TRENCH T-3**	Project No: 81853-02 — Figure: A-3
Equipment: Backhoe 710 G		Project: Former 55th Way Landfill, Long Beach CA
of Excavation: 01-05-05		Approximate Surface Elevation: 61.77 feet MSL
Logged By: Robert Lopez R.G. #7373		Pit Trend:

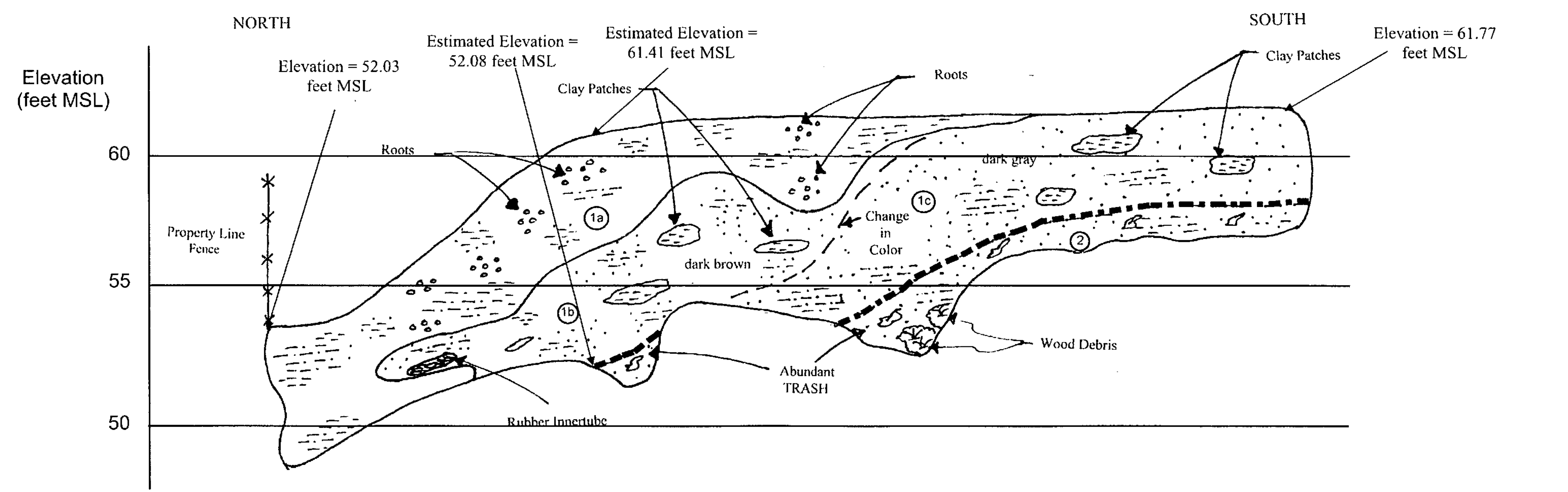
DESCRIPTION

1a CLAYEY SILT mixed with SANDY CLAY: dark brown 10YR 3/3; CLAYEY SILT, slightly plastic, trace well graded sand; mixed with SANDY CLAY, 70% slightly to moderately plastic clay; 30% well graded medium sand; abundant root material, moist to very moist, no odor

1b SILTY SAND (40%) mixed with CLAY (30%) and SANDY SILT (30%): dark brown 10 YR 3/3; SILTY SAND, variable silt content, 10-30% well graded sand, fine to course sand, loose, moist; mixed with CLAY, plastic soft, very moist; and SANDY SILT: nonplastic soft, very moist, no odor

1c SANDY SILT mixed with CLAY: dark brown 10YR 3/3 SANDY SILT, 85% silt; 15% fine sand, soft, very moist; mixed with CLAY, plastic, soft, very moist, trace fine sand.

2 TRASH mixed with SANDY SILT and CLAY: dark brown 10YR 3/3; TRASH, glass, wood, metal, newspaper, asphalt, concrete, plastic, tile, salt shaker, pens, metal wire and bricks; mixed with SANDY SILT, 85% silt; 15% fine sand, soft, very moist; CLAY, plastic, soft, very moist, trace fine sand.



Legend
1 Cover Soil
2 Landfill Refuse
Native Soil

14.46 feet — 21.17 feet

E

LOCATION: Along northern perimeter (western side) of former landfill	**LOG OF TRENCH T-4**	Project No: 81853-02 — Figure: A-4
Equipment: Backhoe 710 G		Project: Former 55th Way Landfill, Long Beach CA
of Excavation: 01-06-05		Approximate Surface Elevation: 61.76 feet MSL
Logged By: Robert Lopez R.G. #7373		Pit Trend:

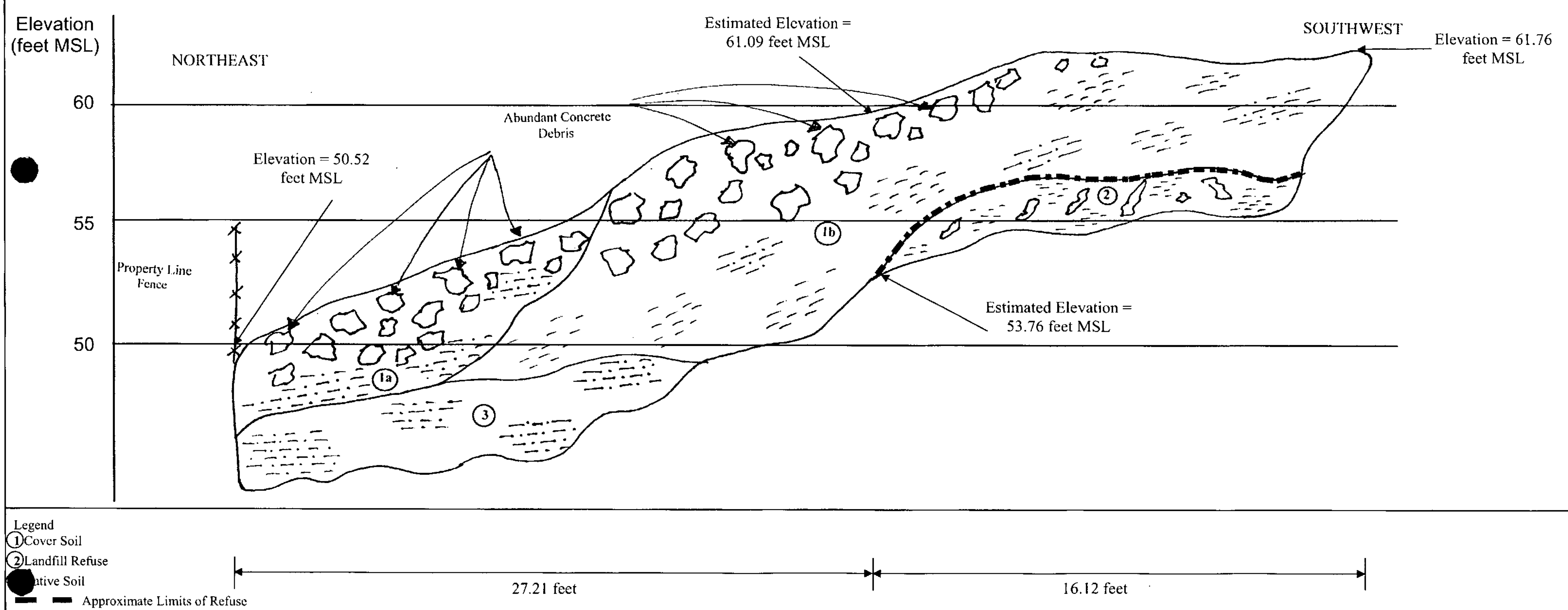
DESCRIPTION

1a SILT with SAND: very dark brown 10 YR 2/2 to brown 10 YR 3/x; non plastic, soft, unconsolidated, abundant concrete debris

1b CLAY mixed with CLAYEY SILT: mottled mostly very dark blown 10 YR 2/2; CLAY plastic, soft, some course sand, fine gravel and TRASH, poorly compacted, damp, no odor; mixed with CLAYEY SILT, non plastic, some fine gravel and TRASH.

2 CLAY with TRASH: mottled mostly very dark brown 10YR 2/2 with dark grey 10 YR 4/1; very soft abundant TRASH, some SANDY CLAY (dark grey).

3 SILT: 10YR 4/3 brown, 100% silt, very hard digging, firm, no dry strength, dry, no odor



Note: Elevation scale is approximate.
Elevation values are based on survey data.

E

LOCATION: Along northern perimeter (western side) of former landfill	**LOG OF TRENCH T-5**	Project No: 81853-02	Figure: A-5
Equipment: Backhoe 710 G		Project: Former 55th Way Landfill, Long Beach CA	
of Excavation: 01-06-05		Approximate Surface Elevation: 60.68 feet MSL	
Logged By: Robert Lopez R.G. #7373		Pit Trend:	

DESCRIPTION

Description:

1a CLAY: (60%) mixed with SILT (40%): mostly grayish brown 10 YR 5/2; CLAY, plastic, in pockets mixed with SILT, nonplastic; very moist (walls of trench collapsing), very soft, some roots, no odor.

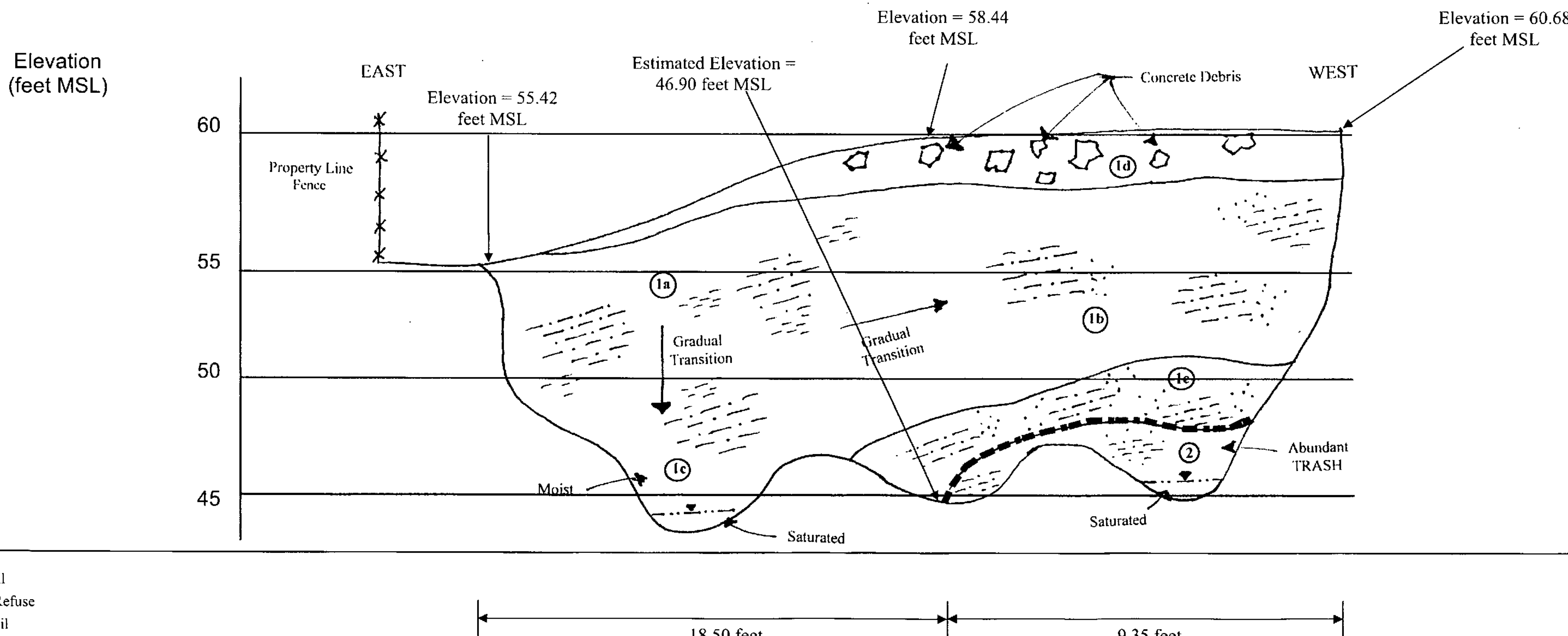
1b SILT with SAND mixed with CLAY: dark brown 10YR 3/3; SILT with SAND, nonplastic SILT; 15% well graded sand (mode = course) mixed with CLAY, very soft, very moist, contains localized trashed debris (glass & wood), no odor.

1c SILT: dark grayish brown 10YR 4/2, soft, some mica, saturated, no odor.

1d CONCRETE DEBRIS contained in SILT with SAND mixed with CLAY : dark brown 10YR 3/3; CONCRETE DEBRIS maximum diameter 24-inches, average diameter 5-inches; SILT with SAND, nonplastic SILT; 15% well graded sand (mode = course) mixed with CLAY, very soft, very moist, contains localized trashed debris (glass & wood), no odor.

1e SILT with SAND: dark grey 10YR 4/1; soft; 15% fine sand, poorly graded; trace trash debris (glass bottles), very moist.

2 TRASH mixed with SILT with SAND: TRASH, shoes, metal, metal cable and wire, bottles, glass, paper, wood, trace vegetation mixed with SILT with SAND: dark grey 10YR 4/1; soft; 15% fine sand, poorly graded, very moist.



Legend
1 Cover Soil
2 Landfill Refuse
3 Native Soil
— · — Approximate Limits of Refuse

E

Note: Elevation scale is approximate.
Elevation values are based on survey data.

LOCATION: Along northern perimeter (western side) of former landfill	**LOG OF TRENCH T-6**	Project No: 81853-02	Figure: A-6
Equipment: Backhoe 710 G		Project: Former 55th Way Landfill, Long Beach CA	
Date of Excavation: 01-06-05		Approximate Surface Elevation: 61.90 feet MSL	
Logged By: Robert Lopez R.G. #7373		Pit Trend:	

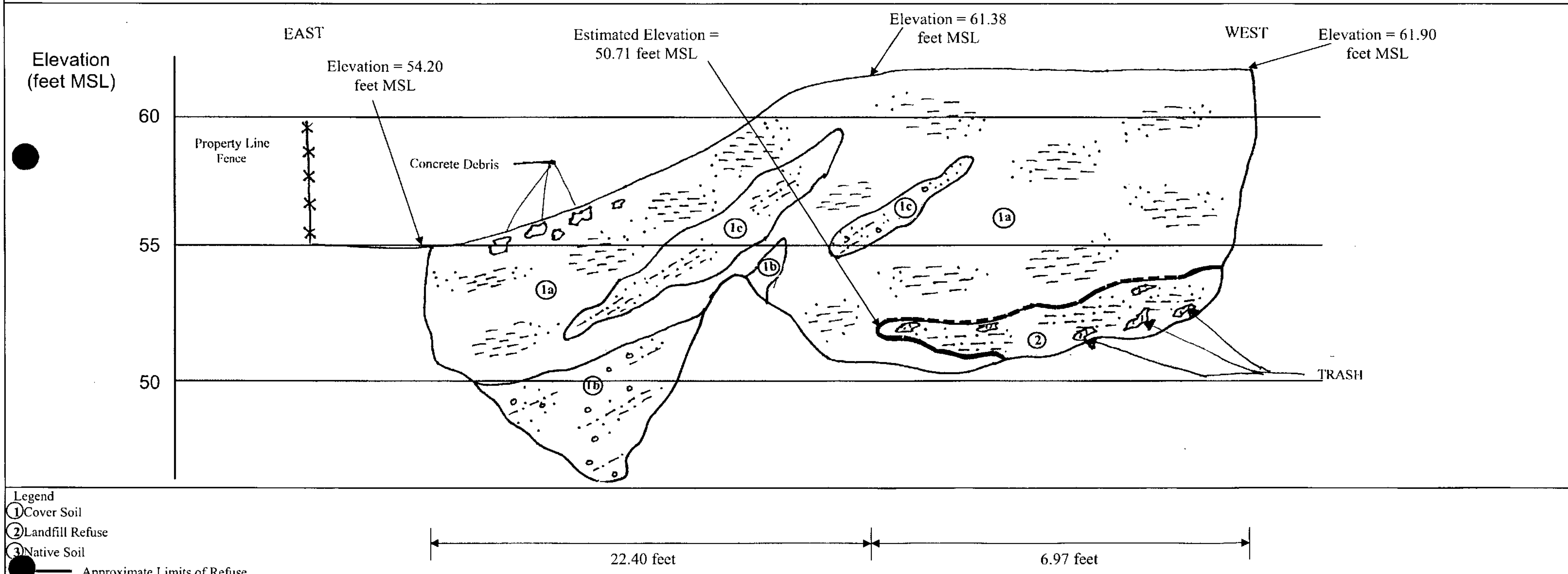
DESCRIPTION

1a SANDY CLAY: very dark brown 10YR 2/2; 60% clay, plastic, soft; 40% well graded sand, fine to course, angular sand with fine mode; some concrete debris near surface, damp to dry, no odor.

1b GRAVELLY SAND with SILT: yellowish brown 10YR 5/4; 55% well graded sand (mode = course), angular to subangular; 30% subrounded fine gravel, 3-inch maximum diameter, 1.5-inch average diameter, imbricated pebbles in orientation with slope; 15% silt; dry (very hard digging), no dry strength, no odor.

1c SANDY SILT: pale brown 10YR 6/3, 60% silt; 40% well graded sand, fine to course, angular sand (mode = fine); damp to dry, no odor.

2 SILT with SAND: dark grey 10YR 4/1, 80% silt, 20% poorly graded, fine sand; abundant TRASH, moist, strong odor.



Note: Elevation scale is approximate.
Elevation values are based on survey data.

E

CALRECYCLE SITE INVESTIGATION REPORT
FRIENDLY VILLAGE MOBILE HOME PARK, PORTION OF THE FORMER PARAMOUNT DUMP, LONG BEACH, CALIFORNIA, SWIS 19-AK-0084

* This Report can be downloaded from:
http://www.calrecycle.ca.gov/SWFacilities/Directory/19-AK-0084/Document/ Friendly Villiage Mobile Home Pard Site investigation, Paramount Dump (pdf, 25513 KB)

D

APPENDIX II-D
SCAQMD RELATED INFORMATION REGARDING SURFACE EMISSIONS

PHASE 1 HUMAN HEALTH RISK ASSESSMENT

ADDITIONAL DOCUMENTATION CONCERNING SCAQMD ISSUED NOTICES TO COMPLY

PHASE 1 HUMAN HEALTH RISK ASSESSMENT

100 West Broadway, Suite 240, Long Beach, California 90802-4443

FINAL HUMAN HEALTH RISK ASSESSMENT SUMMARY REPORT

55th Way Landfill/Paramount Dump
2910 East 55th Way, Long Beach, California
SWIS No.: 19-AK-0084B

Telephone
562 951.2000
Facsimile
562 951.2100

Prepared for:

CITY OF LONG BEACH
Property Services – 3rd Floor
333 West Ocean
Long Beach, California 90802

Prepared by:

EARTH TECH INC.
100 W. Broadway, Suite 240
Long Beach, California 90802-4443

Travis Taylor, REA 07571, REM 11111
Project Director

Silverio Prota
Project Engineer

Date: December 19, 2002

Project No.: 52264.09

EARTH TECH
A tyco INTERNATIONAL LTD. COMPANY

LB1 25098

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FINAL

1 INTRODUCTION

The 55[th] Way Park site ("site") is bounded on the north by the easterly extension of 55[th] Way, on the east by the boundary line of the City of Lakewood, on the south by an existing trailer park and on the west by southerly extension of the easterly line of Orizaba Avenue (**Figure 1-1**). The property is currently owned by the Redevelopment Agency of the City of Long Beach.

1.1 Project Objectives

The site comprises approximately 5.5 acres of the 17.4 acre former Paramount Dump. The site is currently an open vacant open with no structures and minimal surface vegetation. In October 2002, a 24,000 square foot building formerly in the northwest corner of the site was demolished and the resulting debris was removed from the site. Previous subsidence of the landfill had caused severe structural damage to the building, rendering the building substandard and a public nuisance. In addition, miscellaneous storage containers, debris piles and abandoned vehicles were also removed. The site is relatively flat with the topography gently sloping to the west (**Figure 1-2**).

The site is part of a landfill that was owned and operated by the City of Long Beach between 1945 and 1948 as the Long Beach Dump #26. The site was sold in 1953. Through the 1970's a number of owners/tenants occupied the property, including manufacturing facilities and a diesel repair facility. In 1974, two underground storage tanks were installed and in 1986, these tanks were removed.

Since 1993, the County of Los Angeles and the California Integrated Waste Management Board (CIWMB) have conducted several inspections to measure the generation of landfill gas. A recent site assessment conducted by the Redevelopment Agency of the City of Long Beach indicated varying levels of methane gas at the site.

In 1999, the Redevelopment Agency's North Long Beach Project Area Committee (North PAC) identified the site as a priority site for remediation and redevelopment. On July 31, 2001, the Redevelopment Agency unanimously approved the acquisition of the site for redevelopment and conversion to a local park.

1.1 Project Description

The site is proposed to be redeveloped and converted from former commercial and industrial uses to recreation and open space uses. The recreation and open space uses will include a lighted grass multi-purpose field, two lighted basketball half-courts, a skateboard area, a tot-lot, passive and active open space, minimal hardscape including gazebos, benches and tables, sun shelters, restrooms and surface parking with a drop-off area. The site will be screened and secured by fencing, which may consist of block wall, stone and wood, or metal. Hours of operation will be from 6:00 AM to 10:00 PM.

As the site is a portion of a former 17-acre municipal solid waste landfill, the project will include a Final Partial Post-Closure Land Use Plan. Various investigations have been performed at the site including a brownfields assessment, a pre-design investigation, an assessment of the integrity and adequacy of the existing landfill cover, and an alternative vegetative cover pilot-scale test. Currently, the City of Long Beach is in the process of implementing a Groundwater Solid Waste Assessment Test and is preparing a post-closure landfill cover design including recreation improvements, a post closure landfill cover maintenance plan and construction of recreation improvements.

The site has been cleared of existing structures, improvements, rubbish and debris. Temporary repairs to existing fencing has been made until new construction can begin. Upon approval of the Post-Closure Land Use Plan, approximately 40,000 cubic yards of clean soil will be imported to the site to stabilize and enhance the current landfill cover. The grading activities will be conducted pursuant to an approved grading plan. A controlled irrigation system which irrigates based on evapotranspiration rates will be designed and installed that will regulate the timing and duration of all watering cycles, including natural rainfall, to ensure that water does not infiltrate the landfill. A methane monitoring and venting system will also be installed to ensure no off-site migration of methane and to provide safe venting of low-level methane emissions. Passive open space areas will include some native vegetation and other non-invasive plantings to protect the landfill cover.

2 ENVIRONMENTAL SETTING

Paramount Dump is approximately 61 feet above mean sea level. Site-specific surface drainage is generally from east to west across the landfill platform, based on current survey data. However, ponding within the site boundaries does occur after rain events. The Los Angeles River channel is approximately 2.5 miles west and the San Gabriel River channel is approximately 3 miles east of the site. At this location, the Los Angeles and San Gabriel Rivers are completely contained within concrete canals.

2.1 Physiographic Location

Paramount Dump is located in the Central Structural Basin of the Los Angeles Basin. The main features in the vicinity of the site are the Downey Plain (on which the site is located), the Bouton Plain and Signal Hill to the south, the Los Angeles River to the west, and the San Gabriel River to the east (CDWR, 1961). The Downey Plain is a depositional feature formed by the coalesced alluvial fans of the Los Angeles, Rio Hondo and San Gabriel River systems. Signal Hill consists of sediments that have been folded and uplifted by faulting. The Bouton Plain slopes down gradually to the north from Signal Hill to the Downey Plain. The site is situated between the Los Angeles and San Gabriel Rivers, which are the main drainage channels in the area. Topography in the vicinity of the site slopes gently to the south.

3 HEALTH RISK ASSESSMENT SUMMARY

3.1 Purpose and Objectives

The objective of this human health risk assessment (HRA) is to evaluate the magnitude of the risks/hazards to human health caused by identified chemicals present in surface and the subsurface at the site. The assessment was focused on the projected future use of the site and is intended to assist in preparation of the post-closure landfill cover design specifications and maintenance/monitoring procedures at the site. The risk assessment incorporated available site-specific information and data in order to minimize the extent of uncertainties in the assessment. When site-specific parameters were not available, then standard, conservative default assumptions were applied. If the results indicate the site poses risks above conservative threshold levels (i.e., cancer risks above the range of 1 in 1,000,000 [1×10^{-6}] and non-cancer risks above a Hazard Index of 1.0), then the risk would be considered unacceptable and additional mitigation and/or remediation would be considered.

The HRA was primarily based on data presented in the *Targeted Brownfields Assessment Final Report* (Ecology and Environmental, 2001) and the *Pre-Design Investigation Summary Report* (Earth Tech, 2002). The list of chemicals of potential concern (COPCs) were reduced to 24 chemicals of concern (COCs) after evaluation of site concentrations and Tier 1 concentrations. Risks were evaluated quantitatively for the COCs identified in air, soil and subsurface soil vapor.

3.2 Organization

The following components are included in the HRA:

- Identification of COPCs and COCs
- Exposure Assessment
- Toxicity Assessment
- Risk Characterization

To assist with the HRA, Risk Integrated Software for Clean-ups (RISC), Version 4.0 software package (Spence and Walden, July 2001) was used to calculate the risk and hazard for each potential receptor. The RISC computer software package is a risk calculation program that incorporates algorithms and models from various agency approved risk assessment guidance documents including, but not limited to, the *Risk Assessment Guidance for Superfund* (EPA, 1989), and the *Standard Guide for Risk Based Corrective Action Applied at Petroleum Release Sites* (ASTM, 1995). Computer model features include:

- Risk-Based Corrective Action (RBCA) algorithms in a Tier 1 spreadsheet,
- Calculated additive risks due to multiple pathways, compounds, and receptors,
- Fate and transport models.

3.3 Identification of Chemicals of Potential Concern

COPCs were identified based on past land uses and current and past activities of neighboring properties. At the site, past land uses consisted of a municipal solid waste landfill, diesel repair facilities, manufacturing, and warehouse storage. Prior to the 1980s, a bulk storage tank farm was located north and east of the site, and currently an active tank farm remains north of the site.

A total of 149 chemicals (constituents) were initially considered and analyzed at the laboratory during the previously discussed investigations. A total of 56 constituents were detected in one or more samples and included in the Tier 1 Risk Assessment evaluation as COPCs. The Tier 1 Risk Assessment was performed in accordance with RBCA guidelines, E-1793 (ASTM, 1995). A total of 24 out of 56 constituents exceeded the Tier 1 Risk and Hazard Level goals and were considered for the Tier 2 Risk Assessment as COCs. A list of the 24 Tier 2 COCs is presented in **Table 3-1**. The properties of each chemical, including molecular weight, density, vapor pressure, solubility, Henry's Law Constant, and toxicity parameters are based on the RISC User's Manual, Version 4.0 and on the California Office of Environmental Health Hazard Assessment (OEHHA), Toxicity Criteria Database (**Table 3-2**).

3.4 Exposure Assessment

The exposure assessment consists of the identification of receptor populations, complete exposure pathways, and an estimation of the exposure dose for pathways that are, or may become, complete or significant. A complete exposure pathway consists of the following elements:

- A source of chemicals or point of chemical release both on-site and off-site;
- A transport mechanism and pathway from the chemical source to air, soil, groundwater, and/or surface water;
- A route of exposure, and;
- A potential receptor population at the site, or immediately adjacent to the site.

An exposure pathway is not considered complete if any one of these elements is missing. Any exposure pathway that is not either currently complete or not likely to be completed in the future is excluded from further evaluation in the HRA.

3.5 Conceptual Site Model

The sources of chemical release, mechanisms of release, transport mechanisms, exposure pathways, exposure routes, and potential receptor that were evaluated in the HRA are illustrated in the conceptual site model included as **Figure 3-1**. The first step in the development of the conceptual exposure model is to identify the primary and secondary sources of COCs and the various receiving media (soil, groundwater, air) associated with each source. The next step is to identify the transport mechanism, exposure pathways, and potential receptors associated with each receiving medium or source. Receiving media that contain chemicals to which receptors may be exposed are referred to as contact media. In order to identify receptors and potentially complete exposure pathways, it is necessary to understand current and future uses of the land and groundwater.

Since there will be no pumping or removal of groundwater at the subject site (except for monitoring by trained technicians), risk associated with chemicals in groundwater was not evaluated as part of this assessment since there is no complete exposure route for individuals at the proposed 55th Way park site. Potential risk associated with indoor air of neighboring residential properties was not calculated because significant horizontal transport of landfill soil gas is not expected to occur. The preferential pathway for soil and landfill gases is through the refuse and existing soil cover rather than horizontally through the dense, native subsurface soils. Risk from outdoor air was calculated for off-site residents.

In addition, dust prevention controls (best management practices [BMPs]) will be used during park construction and the site will be monitored for dust in accordance with the health and safety plan. Construction workers will utilize appropriate personal protection equipment (PPE) to mitigate the risk associated with this exposure pathway. The current surface of the site is hard (asphalt-like) with some vegetation which has prevented the generation of dust and mitigated off-site migration to the adjacent residential properties, thereby eliminating this transport mechanism (wind dispersion) and exposure pathway (dust).

Furthermore, stormwater does not appear to be a significant exposure pathway. Currently, no stormwater has been observed leaving the site and 40-hour OSHA trained construction workers will be wearing appropriate PPE during construction activities. After the former landfill is covered/capped, stormwater runoff will not contact impacted soil, which eliminates the surface water exposure pathway. After park construction, clean surface water will be transported to a stormwater interceptor (clarifier) before discharge to the municipal storm sewer system.

A total of six potential receptors were identified as part of the risk assessment; three are pre-park construction and three are post-park construction. As shown in the site conceptual model, unauthorized visitors are initially included as potential receptors. However, now that the storage containers and building that once housed transients have been removed and demolished, and security has increased measurably, unauthorized visitors have been eliminated as potential receptors and exposure risks were only calculated for five potential receptors (2 pre-construction and 3 post-construction).

3.6 Estimation of Exposure

The exposure dose is used to estimate risks due to the chemical intake for COCs. Exposure doses are estimated based on assumed exposure parameters and estimates of exposure point concentrations.

3.6.1 Exposure Parameters and Assumptions

Exposure parameters and assumptions used to estimate exposure concentrations for each scenario were chosen to be conservative. Exposure assumptions for construction workers, future park visitors, future park workers, and neighboring residential properties were obtained from the USEPA Exposure Factors Handbook (USEPA, 1998) and professional judgment. A summary of exposure assumptions (including exposure frequencies and duration) is included in Tables 3-3 and 3-4. Inhalation rates and dermal exposure assumptions are summarized in Tables 3-5 and 3-6. The assumed sources, exposure pathways, and potential receptors are shown in Figure 3-1. Details regarding exposure input parameters used in the RISC model are included in Appendix A.

3.6.2 Exposure Point Concentrations

During the Tier I assessment, the maximum concentrations were used for each COC and compared to individual constituent risk-based screening levels (RBSLs). The maximum concentrations and RBSLs for each constituent are shown in Table 3-7. RBSL were calculated using the algorithms provided in the RBCA guidance document (E-1739-95) (ASTM, 1995), and applying California Office of Environmental Health Hazard Assessment (OEHHA) toxicity parameters. For the Tier II HRA, the average concentration of each COC was used in the exposure calculations. If the COC was not detected during the investigation (below the detection limit), then a conservative value equal to the detection limit was used to estimate the exposure point concentration.

Exposure point concentrations in surface soil (0 to 6 feet below ground surface [bgs]) were obtained from available site data (Table 3-8). The soil concentrations listed in Table 3-8 are from the current, existing cover on top of which 3 to 5 additional feet of clean, compacted imported soil will be placed before park construction. The proposed 3 to 5 foot thick soil cap/cover provides a barrier that eliminates dust, surface soil, surface water, and sediment exposure pathways and reduces exposure point concentrations.

The Johnson and Ettinger (1991) model was used to estimate volatilization through the landfill cover. The source concentrations were based on soil gas data from the 10 foot bgs level (near the existing soil cover/refuse interface). For most COCs, the 10 foot bgs sample had the highest soil gas concentration. However, if higher soil gas concentrations were detected in the deeper samples (24 and 35 feet bgs), the soil gas concentrations were averaged over the depth to determine the source concentration used in the Tier 2 assessment (Table 3-9).

A "box" model (Appendix B) was used with the volatilization rate to calculate exposure point concentrations in outdoor air. The box model is used in the RBCA guidelines (ASTM, 1995). Average wind speed assumptions used in the box model calculations are shown in Table 3-10 which are base on the National Climatic Data Center (NCDC) on-line information source. The wind speed data was collected from the Long Beach weather station.

Indoor air concentrations of volatile organic compounds (VOCs) were not estimated since there are no enclosed structures proposed at the site. Exposure point concentrations in soil and air for each of the analyzed scenarios and other input parameters are presented in Appendix A.

3.6.3 Algorithms for Calculating Exposure Dose

The LADD (Life Average Daily Dose) and CADD (Chronic Average Daily Dose) were calculated for each scenario and for each exposure route, using the media concentration (soil or ambient air), the exposure frequency and duration, the receptor specific characteristics (body weight, total skin area, lifetime, soil ingestion and inhalation rates) and the specific contaminant route factors (chemical specific oral and dermal soil absorption factors, and inhalation absorption adjustment factors). Generally, the algorithmic calculations are based on the American Society for Testing and Materials (ASTM), RBCA guidelines (E-1739) (ASTM, 1995).

3.7 Toxicity Assessment

The toxicity assessment examines information concerning the potential human health effects of exposure to COCs. Its goal is to provide, for each listed COC, a basis for the characterization of risk using the exposure estimates and toxicity characteristics of each COC.

For carcinogens, it is assumed that no threshold concentration exists (i.e. any dose may result in carcinogenesis). The probability developing cancer is described by the slope of the dose response curve. The doses from the various known or suspected carcinogens are assumed to be additive over the receptor's lifetime.

For non-carcinogens, it is assumed that a dose exists below which no adverse health effects will occur (i.e., threshold dose). Compounds with short-term, acute effects are generally considered to have a threshold dose.

3.8 Toxicity Values

The cancer slope factor (SF) is the toxicity value used to quantitatively express the carcinogenic risk of cancer-causing constituents. The slope factor is expressed in units of $(mg/kg/day)^{-1}$. The SF is the upper 95-percentile confidence limit of the linear term of the dose response curve. The Incremental Excess Lifetime Cancer Risk (IELCR) is calculated from the product of the lifetime average daily dose and the SF. The USEPA uses an overall weight-of-evidence classification scheme to describe the degree of carcinogenicity in mammalian species. This information is used to draw conclusions about the potential to cause cancer in humans. The weight-of-evidence classification can be used in the interpretation of the significance of estimated risks. The slope factors used for each COC are provided in Table 3-2.

The reference dose (RfD) is the toxicity value used to quantitatively express the hazard of non-carcinogenic constituents. The RfD is expressed in units of mg/kg/day and represents a daily intake of chemical per kilogram of body weight below which no adverse health effects are assumed to occur. The ratio of exposure to the RfD is called the hazard quotient (HQ). RfDs for each COC are provided in Table 3-2.

The primary sources of slope factors and RfD values are the California Office of Environmental Health Hazard (OEHHA), the Integrated Risk Information System (IRIS) and the Agency for Toxic Substances and Disease Registry (ATSDR).

3.9 Risk Characterization

Human health risks are evaluated separately for carcinogenic and non-carcinogenic effects. For carcinogens, risk estimates represent an increased risk of cancer, which results from the total lifetime exposure to constituents from the site. The total exposure dose is normalized to a 70-year lifetime for the risk calculations. The summation of dose is in keeping with the concept that for genotoxic agents there exists no safe threshold dose and it implies that total, lifetime exposure is of greater importance than the actual dose during the exposure event(s). Current regulatory methodology assumes that excess lifetime cancer risks can be summed across routes of exposure and constituents to derive a "total site risk" (USEPA, 1989).

For non-carcinogens, a chronic average daily dose (CADD) is usually estimated to be an average dose occurring over a period of 2 to 7 years (USEPA, 1989). The comparison of the CADD to the RfD yields a ratio termed the HQ. Although an HQ of less than 1.0 suggests that non-carcinogenic health effects should not occur, an HQ of greater than 1.0 is not necessarily an indication that adverse effects will occur. The sum of the HQs is termed the hazard index (HI). Current regulatory methodology assumes that this can be summed across exposure routes for all media at the site.

According to the revised National Contingency Plan (NCP) (55 Fed. Reg. 8665-8865), USEPA RAGS (1989), and Rule 1150.1, Control of Gaseous Emission from Municipal Solid Waste Landfills (AQMD, 2000), carcinogenic risks are in a potentially acceptable range if they are between 1 in 10,000 and 1 in 1,000,000, however the more conservative risk level (1×10^{-6}) was used to evaluate human health risk for this site. The results of the human health risk assessment conducted for the site are summarized in **Table 3-11** and detailed information on input and output parameters of the computer model are included in **Appendix A.**

3.10 Summary and Conclusions

The apparent sources of the identified contamination at the site are the former inactive landfill, past and current activities are neighboring properties, and past tenant surface uses at the site. A total of 56 COPCs were initially identified. This list was reduced to 24 COCs that were used in the risk assessment. Exposure pathways and transport mechanisms of contaminants include volatilization from soil to outdoor air, dust emissions through wind dispersion, groundwater through infiltration/percolation, and surface water through stormwater run-off. Since groundwater will not be extracted from the subsurface, there is no complete on-site exposure route to the potential receptors and risk associated with groundwater will be evaluated after completion of a Groundwater Solid Waste Assessment Test (SWAT) (**Figure 3-1**).

Potential exposure routes include ingestion, dermal absorption, and inhalation. Prior to, and during, 55th Way Park construction, potential receptors include construction workers, unauthorized visitors, and off-site residential properties. Unauthorized visitors were removed from the risk assessment due to recent cleanup activities (removal of storage containers and the warehouse building) and security measures instituted at the site. After construction of the 55th Way Park, potential receptors will include park visitors, park workers, and off-site residential properties. Since the park will be covered by a 3 to 5 foot thick monolithic cover, ingestion and absorption were eliminated as potential exposure routes and inhalation remained the only feasible route of exposure for the three potential post-park construction receptors.

Exposure and toxicity data (input parameters) were input into the RISC computer model program to calculate site-specific daily doses and risk from ingestion, dermal absorption, and inhalation for each contaminant. Expected daily doses and risk for each COC were summed to determine the risk for each exposure route. The risk associated with each exposure route is also summed to calculate total carcinogenic and non-carcinogenic risks for each potential receptor (**Table 3-11**).

Based on the results of the HRA, Earth Tech concludes the following:

- The target cancer risk level is less than 1×10^{-6} and target hazard index level (non-carcinogenic) is less than 1.0,
- Both the calculated cancer risk level (carcinogenic) and hazard index level (non-carcinogenic) for each pre-park construction potential receptor (construction workers and off-site residential properties) are below the target levels.

- Both the calculated cancer risk level (carcinogenic) and hazard index level (non-carcinogenic) for each post-park construction potential receptor (park visitors, park workers, off-site residential properties) are below the target levels.

- According to the risk model predictions, corrective action measures to be implemented during construction of the 55[th] Way Park (landfill cover and cap) would reduce the cancer risk from 4.5×10^{-7} to 3.7×10^{-9} and non-carcinogenic hazard from 1.6×10^{-1} to 1.4×10^{-3} for off-site residential receptors.

- As summarized in Table 3-11, exposure risks decrease up to two-fold (100 times) from before park-construction (pre-construction) to after implementation of the proposed landfill post-closure land use plan and construction of the park (post-construction). The decrease in risk in primarily due to the placement of a landfill cap/cover, which prevents access to the contaminated soil and eliminates ingestion and dermal absorption exposure routes.

References

Agency for Toxic Substances and Disease Registry, *Tox Profile 2002 - Toxicological Profile Information 2002*, April 8th, 2002.

American Society for Testing and Materials (ASTM), *Standard Guide for Risk Based Corrective Action Applied at Petroleum Release Sites E-1739-95*, November 1995.

California Office of Environmental Health Hazard Assessment (OEHHA), *on-line Toxicity Criteria Database*, http://www.oehha.ca.gov/risk/ChemicalDB/index.asp

Earth Tech. *Pre-Design Investigation Summary Report, Paramount Dump, 2910 E. 55th Way*, March 29th, 2002.

Federal Register. 1990. *The National Contingency Plan. 55 Fed Reg. 8665 – 8865, Sec 300-430(d)(4)*, March 8th, 1990.

Johnson, P.C., and Ettinger, R.A., 1991. *Heuristic Model for Predicting the Intrusion Rate of Contaminant Vapors into Buildings. Environmental Science and Technology, 25, 1445-1452.*

Lynn R. Spence, Terry Walden, *Risk Integrated Software for clean-ups, RISC4 User's Manual*, July 2001.

National Climatic Data Center - NCDC, *Wind - average wind speed for Long Beach, CA*, http://lwf.ncdc.noaa.gov/oa/climate/online/ccd/avgwind.html, updated 24-apr-2002.

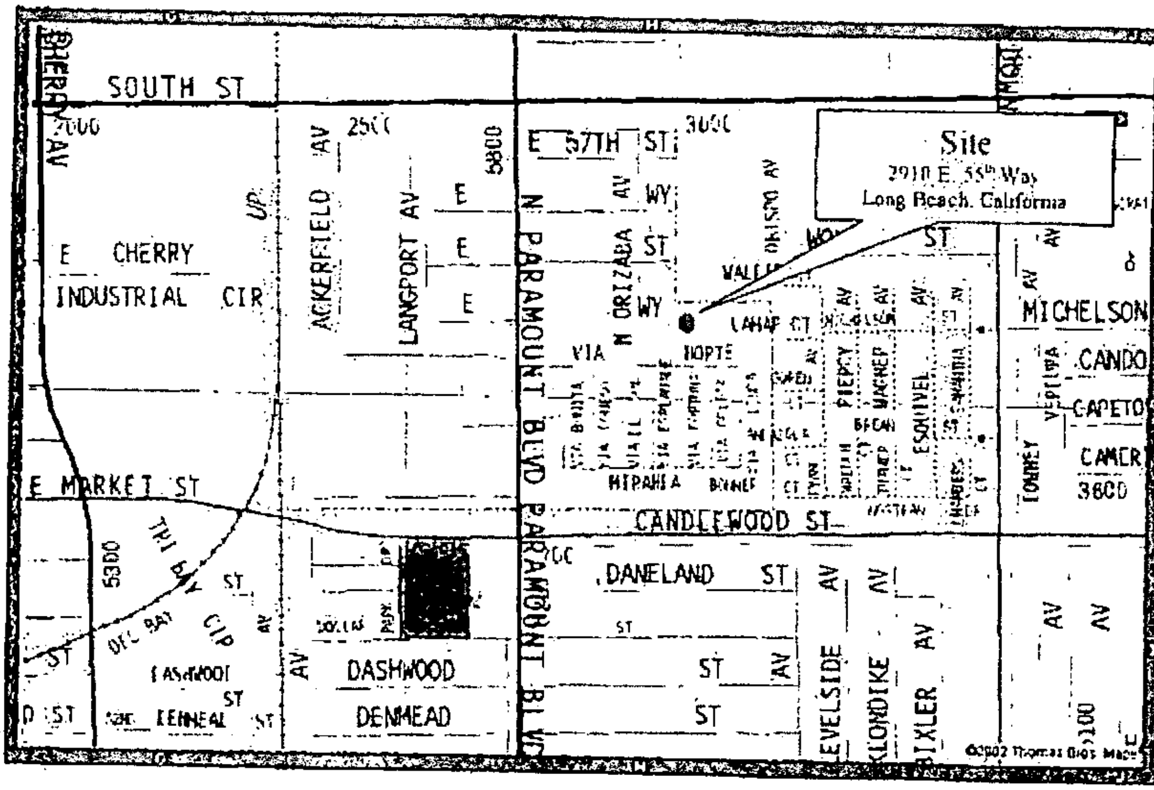
South Coast Air Quality Management District. *Rule 1150.1 Control of Gaseous Emissions from municipal Solid Waste Landfills*, April 5th, 1985; amended April 10th, 1998 and March 17th, 2000.

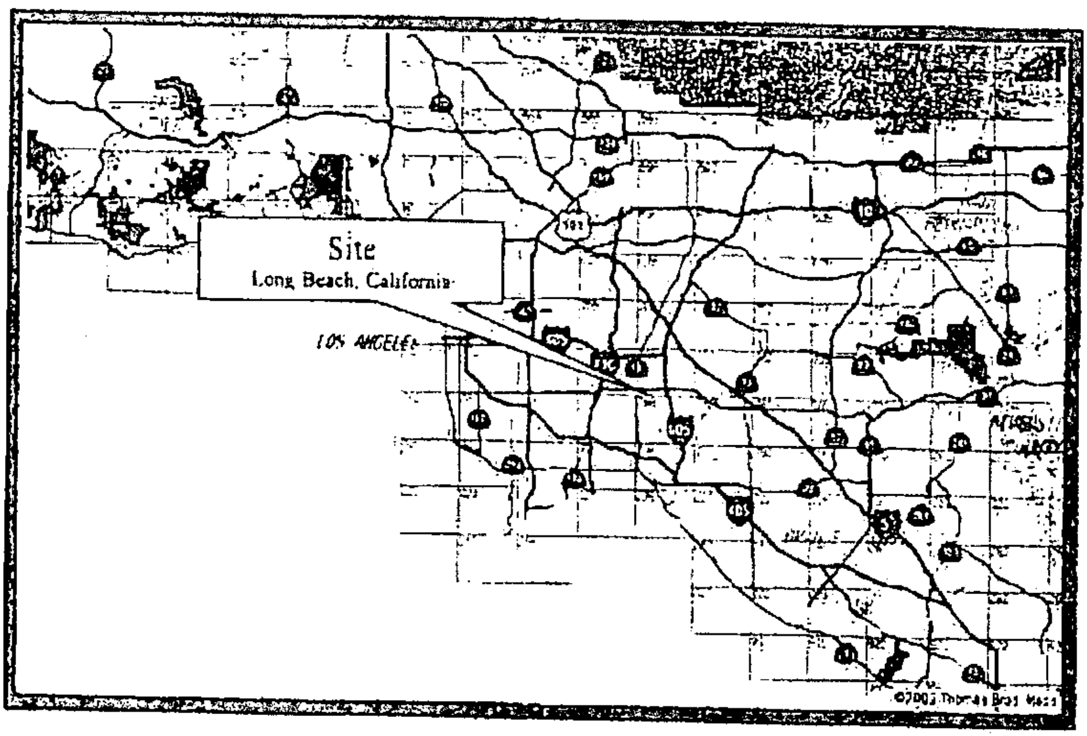
U.S. Environmental Protection Agency. 1988. *Superfund Exposure Assessment Manual*. EPA/640/1-88/001.

U.S. Environmental Protection Agency. 1989a. *Risk Assessment Guidance for Superfund (RAGS). Vol. I. Human Health Evaluation Manual (Part A), Office of Emergency and Remedial Response*, EPA/540/1-89/002.

U.S. Environmental Protection Agency. 1998. *Exposure Factors Handbook, Office of Health and Environmental Assessment, Vol. I PB98-124225, Vol. II PB98-124233, Vol. III PB98-124241*, Web page: http://www.epa.gov/ncea/exposfac.htm

Figures





CITY OF LONG BEACH
PARAMOUNT DUMP/55TH WAY PARK

SITE LOCATION MAP

2910 E. 55TH WAY
LONG BEACH, CALIFORNIA

DATE 12-02	EARTH TECH	FIGURE 1-1
PROJECT NO. 57264		

LB1 25113

ADDITIONAL DOCUMENTATION CONCERNING SCAQMD ISSUED NOTICES TO COMPLY

{In Archive} FW: Paramount Landfill in the City of Long Beach
Acosta, Greg
to:
Michael Conway, Meredith Elguira (meredith.elguira@longbeach.gov)
02/15/2012 08:47 AM
Cc:
"Leonard, Michael"
Hide Details
From: "Acosta, Greg" <gacosta@bas.com>

To: Michael Conway <Michael.Conway@longbeach.gov>, "Meredith Elguira (meredith.elguira@longbeach.gov)" <meredith.elguira@longbeach.gov>

Cc: "Leonard, Michael" <mleonard@bas.com>

2/15/2012

Bas Verbal Consult & Recommendation ??

Archive: This message is being viewed in an archive.

Mike/Meredith

We received this yesterday from SCAQMD. Charles has essentially taken a different view of the application of Rule 1150.1 to the passive vents. He has stopped short of requiring an active system, which is good, and he is implying that they may entertain re-opening the vents if fitted with Best Available Control Technologies.

We are taking a quick look at potential options for this and will give you our recommendation. But before any effort is made on a formal resubmittal of a request to re-open the vents, we recommend that Charles (and/or Atul, who reports to Charles) be consulted for verbal concurrence.

Greg Acosta, P.E. | **Vice President, Environmental Services Division**
Office. 909.860 7777 x258 | Fax: 909.396.1768 | Cell: 951.836 2709
greg.acosta@tetratech.com

From: Charles Tupac [mailto:ctupac@aqmd.gov]
Sent: Tuesday, February 14, 2012 8:36 AM
To: Acosta, Greg
Cc: Richard Tambara; Garrett Kakishita
Subject: Paramount Landfill in the City of Long Beach

Mr. Acosta,

The South Coast Air Quality Management District (AQMD), Refinery and Waste Management Permitting staff have received your transmittal letter dated January 24, 2012 regarding the passive vents at the Paramount Landfill, located in the City of Long Beach. Your letter requests that the Notice to Comply be rescinded, requests the passive vents to be re-opened, and also contains results, estimates and calculations for the gas flow rates, health risk and air emissions.

Based on a review of the information contained in the letter and Rule 1150.1, the AQMD has concluded the following

1) The one-ton per year reference in the letter is incorrect. The passive vent system has a maximum potential to emit of greater than 1 pound per day of non-methane non-ethane organic compounds. If the passive vent system was subject the equipment to AQMD's New Source Review regulation, it would be required to comply with Best Available Control Technology (BACT). The passive vent system, in its current configuration is without the benefit of emission control, and would not meet BACT.

2) AQMD has long-considered any passive vent to be the same as a landfill surface. Since the Paramount landfill is an inactive landfill without a gas collection system, and has surface gas emissions greater than 200 ppmv of Total Organics, as methane, the Notice to Comply correctly cites Rule 1150.1(h)(2)(A).

3) While not yet required to be installed, a properly designed and operated gas collection and control system would be the most effective method of mitigating surface emissions and preventing migration.

Please contact me if you have any questions or require more information.

Regards,

Charles Tupac, *P.E.*
AQAC Supervisor
Refinery and Waste Management Permitting
Engineering and Compliance Division
Phone 909-396-2684
Fax 909-396-3342
ctupac@aqmd.gov

December 13, 2011

JN: 2009.0064

Mr. Garrett Kakishita
South Coast Air Quality Management District
21865 Copley Drive,
P.O. BOX 4941
Diamond Bar, CA 91765

**RE: PARAMOUNT LANDFILL (FACILITY I.D. 164462)
RESPONSE TO NOTICE TO COMPLY – 11/30/11**

Dear Mr. Kakishita:

On November 30, 2011 the representatives of the City of Long Beach, Tetra Tech BAS (the City's consultant for this site) and the South Coast Air Quality Management District (SCAQMD) met at the Pop's Davenport Park which is the current post closure land use for the northeast portion of the Paramount Landfill in Long Beach, California (Facility ID 164462). At that time, SCAQMD personnel monitored the emissions from the outlets of three passive vent stacks located within the park. Monitored concentrations of TOC measured as methane at that time were observed to be in excess of 200 arts per million by volume (ppmv). In response, the SCAQMD issues a Notice to Comply (attached) which directed the City to *"Apply mitigation measures to reduce TOC measured as methane to under 200 ppmv at the exits of three vents on the landfill surface"*. A compliance due date was established as December 13, 2011

In response to this Notice, the City capped the outlets of the three vents on December 12, 2011. Photos of the capped vents are attached.

As discussed during our site meeting, the vents in question were installed under a Post Closure Land Use Plan (PCLUP) approved by the Los Angeles County Department of Public Health, Solid Waste Management Program. The vents were designed to control landfill gas accumulation within the capped waste prism and prevent off-site subsurface gas migration from the landfill perimeter which abuts an adjacent single family residential development. Capping of the vents, may result in the unintended consequence of increasing subsurface methane concentrations around the perimeter of the landfill. As such, the City will initiate regular monitoring of these probes to confirm the absence of methane.

Concurrently with this, the City intends to perform a Tier 2 Health Risk Assessment in accordance with SCAQMD Rule 1401 & 212 Risk Assessment Procedures in order to assess the true impact of the vent stack emissions and potentially provide justification for their re-opening, thereby mitigating concerns regarding subsurface gas migration. Analytical data for the Tier 2 Assessment will be taken from testing of vent stack emissions performed by the City and CalRecycle/SCAQMD. Results of the Tier 2 Assessment will be presented to SCAQMD upon completion.

We have contacted CalRecycle in order to obtain the analytical data from the CalRecycle/SCAQMD sampling event. Any assistant that the SCAQMD could provide in obtaining this data would be greatly appreciated.

The City is committed to maintaining the portion of the landfill under their control in compliance with SCAQMD rules. Should you have any questions or comments regarding this response and the proposed actions, please contact me directly at (909) 860-7777, extension 258.

Sincerely,

Greg Acosta, P.E.
Vice President, Environmental Services Division

c: Meredith Elguira – City of Long Beach
Michael Conway – City of Long Beach
Richard Tambara – SCAQMD
Michael L. Leonard, BAS

Attachments

A TETRA TECH COMPANY
BRYAN A. STIRRAT & ASSOCIATES
Civil & Environmental Engineers

February 3, 2012

JN: 2009.0064

Mr. Garrett Kakishita
South Coast Air Quality Management District
21865 Copley Drive,
P.O. BOX 4941
Diamond Bar, CA 91765

**RE: PARAMOUNT LANDFILL (FACILITY I.D. 164462)
RESPONSE TO NOTICE TO COMPLY – 1/19/12**

Dear Mr. Kakishita:

On January 19, 2012, SCAQMD personnel monitored the emissions from several locations at the currently vacant portion of the Paramount Landfill, west of Davenport Park, in Long Beach, California (Facility ID 164462). Monitored concentrations of TOC measured as methane at that six of these locations on that date were observed to be in excess of 200 parts per million by volume (ppmv). In response, the SCAQMD issued a Notice to Comply (attached) which directed the City to *"Apply mitigation measures to reduce TOC measured as methane to less than 200 ppmv at the following locations (as shown & designated):*

1. *"E1" (cracks in foundation – 900 ppmv)*
2. *"E2" ("   " 5% ~ 50,000 ppmv)*
3. *"S2" (south end of foundation – 2,000 ppmv)*
4. *"S2" ("   " – 4.1% ~ 40,000 ppmv)*
5. *"S1" (south fence line near bollards – 7% peak)*
6. *S3 (south fence line where grass meets asphalt – 1,000 ppmv)*

A compliance due date was established as February 3, 2012.

In response to this Notice, on February 2, 2012, the City of Long Beach performed the following mitigation activities:

Locations S1, S2, and S3: Covered with soil compacted by a loader and hand shovels.

Locations E1 and E2: Cover with compacted asphalt.

Curb Penetrations North of Fence Line: Plugged with concrete (this location was not listed on the Notice, but was noted with SCAQMD during the 01/19/12 site inspection).

1360 Valley Vista Drive • Diamond Bar, CA 91765 • (909) 860-7777 • FAX (909) 860-8017

Following implementation of the mitigation measure, Tetra Tech BAS monitored all locations using a TVA-100B FID to assess the effectiveness of the above-mentioned mitigation measures. None of the locations showed emissions above the 200ppmv action level. Photos of the mitigation activities are attached.

The City is committed to maintaining the portion of the landfill under their control in compliance with SCAQMD rules. Should you have any questions or comments regarding this response and the proposed actions, please contact me directly at (909) 860-7777, extension 258.

Sincerely,

Greg Acosta, P.E.
Vice President, Environmental Services Division

c: Meredith Elguira - City of Long Beach
Michael Conway - City of Long Beach
Richard Tambara - SCAQMD
Michael L. Leonard - BAS

Attachments

NOTICE TO COMPLY

South Coast Air Quality Management District
21865 Copley Drive, P.O. Box 4941, DIAMOND BAR, CA 91765-0941

NOTICE TO COMPLY

1/19/12
DATE OF INSPECTION

Facility Name:		Facility I.D.:	Sector:
Long Beach Redevelopment Agency		164462	LP
Location Address: 5550 N. Paramount Blvd	City: Long Beach		Zip: 90805
Mailing Address: 333 W. Ocean Blvd.	City: Long Beach		Zip: 90802

This Notice to Comply is being issued to:

- ☐ Request additional information needed to determine compliance with clean air requirements.
- ☒ Correct a minor violation found during an inspection.

Failure to respond or take corrective action, or providing false statements in response to this Notice to Comply can lead to issuance of a Notice of Violation pursuant to the California Health and Safety Code. The facility cited above is subject to re-inspection at any time to ensure compliance.

YOU ARE HEREBY DIRECTED TO COMPLY WITH:

#	Rule/Permit/Condition No.	Requirement	Compliance Due Date	Compliance Achieved Date
1	1150.1(h)(2)(A)	Apply mitigation measures to reduce TOC measured as methane to less than 200 ppmv at the following locations (as shown & designated):	2-3-12	
2		(1) "E1" (cracks in foundation - 900 ppmv) (2) "E2" (" " 5% ≈ 50,000 ppmv)		
3		(3) "S2" (South side of foundation - 2000 ppmv) (4) "S2" (" " 4.1% ≈ 41,000 ppmv) (5) "S1" (South fenceline near bollards - 7% ppmv)		
4		(6) "S3" (south fenceline where grass meets asphalt - 1,000 ppmv)		
5				
6				

Served To:		Served By:		
Greg Acosta		Garrett Kakishita		
Title: V.P. Env. Services Tetra Tech BAS		Date Served: 1-19-12	Phone: 909 396 3267	Fax: 909 396 3742
Email Address: greg.acosta@tetratech.com	Phone: 951-836-2709	Email Address: GKakishita @aqmd.gov		Forms & publications are available at: www.aqmd.gov

Instructions:

- For each minor violation cited above, compliance shall be achieved by the compliance deadline specified for that particular violation.
- Within 3 working days of achieving compliance for each respective violation, the owner/responsible officer of the cited facility must complete and return a signed copy of this Notice to Comply to the South Coast Air Quality Management District at the address listed above.
- Please copy and return this Notice to Comply as many times as necessary to provide the required information. On each copy, include the date on which compliance was achieved. Date, sign, and send all completed copies to the attention of the inspector named above.

I hereby certify that the facility cited in this Notice to Comply has achieved compliance with the requirements listed above.

NAME OF OWNER/RESPONSIBLE OFFICIAL ____ TITLE ____ SIGNATURE ____ DATE ____

NOTICE#: E 05311

FILE COPY (Blue) FACILITY COPY (Gold) INSPECTOR COPY (White)

A TETRA TECH COMPANY
BRYAN A. STIRRAT & ASSOCIATES
Civil & Environmental Engineers

December 13, 2011 JN: 2009.0064

Mr. Garrett Kakishita
South Coast Air Quality Management District
21865 Copley Drive,
P.O. BOX 4941
Diamond Bar, CA 91765

**RE: PARAMOUNT LANDFILL (FACILITY I.D. 164462)
RESPONSE TO NOTICE TO COMPLY - 11/30/11**

Dear Mr. Kakishita:

On November 30, 2011 representatives of the City of Long Beach, Tetra Tech BAS (the City's consultant for this site) and the South Coast Air Quality Management District (SCAQMD) met at the Pop's Davenport Park which is the current post closure land use for the northeast portion of the Paramount Landfill in Long Beach, California (Facility ID 164462). At that time, SCAQMD personnel monitored the emissions from the outlets of three passive vent stacks located within the park. Monitored concentrations of TOC measured as methane at that time were observed to be in excess of 200 parts per million by volume (ppmv). In response, the SCAQMD issued a Notice to Comply (attached) which directed the City to *"Apply mitigation measures to reduce TOC measured as methane to under 200 ppmv at the exits of three vents on the landfill surface"*. A compliance due date was established as December 13, 2011

In response to this Notice, the City capped the outlets of the three vents on December 12, 2011. Photos of the capped vents are attached.

As discussed during our site meeting, the vents in question were installed under a Post Closure Land Use Plan (PCLUP) approved by the Los Angeles County Department of Public Health, Solid Waste Management Program. The vents were designed to control landfill gas accumulation within the capped waste prism and prevent off-site subsurface gas migration from the landfill perimeter which abuts an adjacent single family residential development. Capping of the vents, may result in the unintended consequence of increasing subsurface methane concentrations around the perimeter of the landfill. As such, the City will initiate regular monitoring of the perimeter probes located along the eastern and northern boundaries of the landfill to confirm the absence of methane.

Concurrently, the City will to perform a Tier 2 Health Risk Assessment in accordance with SCAQMD Rule 1401 & 212 Risk Assessment Procedures in order to assess the true impact of the vent stack emissions and potentially provide justification for their re-opening,

1360 Valley Vista Drive • Diamond Bar, CA 91765 • (909) 860-7777 • FAX (909) 860-8017

thereby mitigating concerns regarding subsurface gas migration. Analytical data for the Tier 2 Assessment will be taken from testing of vent stack emissions performed by the City and CalRecycle/SCAQMD. Results of the Tier 2 Assessment will be presented to SCAQMD upon completion.

We have contacted CalRecycle in order to obtain the analytical data from the CalRecycle/SCAQMD sampling event. Any assistant that the SCAQMD could provide in obtaining this data would be greatly appreciated.

The City is committed to maintaining the portion of the landfill under their control in compliance with SCAQMD rules. Should you have any questions or comments regarding this response and the proposed actions, please contact me directly at (909) 860-7777, extension 258.

Sincerely,

Greg Acosta, P.E.
Vice President, Environmental Services Division

c: Meredith Elguira - City of Long Beach
Michael Conway - City of Long Beach
Richard Tambara - SCAQMD
Michael L. Leonard - BAS

Attachments

NOTICE TO COMPLY

South Coast Air Quality Management District
21865 Copley Drive, P.O. Box 4941, Diamond Bar, CA 91765-0941

AQMD

NOTICE TO COMPLY

Date of Inspection: 11 / 30 / 11

Facility Name: Long Beach Redevelopment Agency			Facility ID#: 164462
Location Address: 5450 - 5550 Paramount Blvd	City: Long Beach		Zip: 90805
Telephone #: (909) 860 7777			Sector: LP
Mailing Address: 333 W Ocean Blvd	City: Long Beach		Zip: 90812

YOU ARE DIRECTED TO COMPLY WITH:

Item #	•AQMD Permit # or Equip Description •AQMD Rule # •California H&S Code §	A MEANS OF ACHIEVING COMPLIANCE IS:	DUE DATE (Date compliance is due)
1	1150.1(H)(2)(A)	Apply mitigation measures to reduce TOC measured as methane to under	12-3-
2		200 ppmv at the exits of three vents located on the landfill surface.	
3			

REPLY REPORT BY CITED FACILITY

(attach additional pages as necessary)

DATE COMPLIANCE ACHIEVED	DESCRIPTION OF HOW COMPLIANCE WAS ACHIEVED

SIGNATURE OF OWNER/RESPONSIBLE OFFICIAL:

TITLE:

DATE:

SERVED TO: Michael Conway
TITLE: Director
TELEPHONE: (562) 570-5282

BY INSPECTOR: Garrett Kakishita
DATE ISSUED: 11-30-11

Instruction/Information:

- For each minor violation cited compliance shall be achieved by the due date specified above for that particular violation.
- Within 5 working days of achieving compliance for each respective violation, the owner/responsible officer of the cited facility must complete and return a signed copy of this Notice to the South Coast Air Quality Management District at the address listed above. Please copy this Notice as many times as necessary to provide the required information. On each copy, include a written statement describing when and how compliance was achieved. Send all completed copies to the attention of the inspector named above.
- Failure to respond or a false statement that compliance has been achieved is a violation subject to further legal action pursuant to the California Health and Safety Code.
- The facility cited in this Notice is subject to re-inspection at any time to ensure compliance.

NOTICE # D 26989

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

FILE COPY (Blue) *FACILITY COPY (Gold)* *INSPECTOR COPY (White)*

South Coast
Air Quality Management District
21865 Copley Drive, Diamond Bar, CA 91765-4178
(909) 396-2000 · www.aqmd.gov

Long Beach Redevelopment Agency
333 W Ocean Blvd., 3rd Floor,
Long Beach, CA 90802

October 22, 2010
A/N 511769
ID 164462

Attention: Mr. Jeff Winklepleck,
Planner, Long Beach Redevelopment Agency

Rule 1150 Excavation Permit

Reference is made to your Application No. 511769 for a Rule 1150 Excavation Permit for the excavation at the Davenport Landfill, located at 5500 N Paramount Blvd., Long Beach, California. Please be advised that this Excavation Permit is granted under Rule 1150 of the Rules and Regulations of the South Coast Air Quality Management District (AQMD) and is subject to the following conditions:

1. THIS EXCAVATION SHALL BE CONDUCTED IN COMPLIANCE WITH ALL PLANS AND SPECIFICATIONS SUBMITTED WITH THE APPLICATION UNDER WHICH THIS PERMIT IS ISSUED UNLESS OTHERWISE NOTED BELOW.

2. THIS EXCAVATION PERMIT SHALL BE VALID UNTIL OCTOBER 21, 2011. AN EXTENSION MAY BE GRANTED UPON WRITTEN REQUEST. SUCH A REQUEST SHALL INCLUDE THE REASONS THE EXTENSION IS REQUIRED, THE LENGTH OF THE EXTENSION AND THE STATUS OF THE EXCAVATION TO DATE.

3. THE AQMD SHALL BE NOTIFIED IN WRITING AT LEAST TWO (2) DAYS PRIOR TO THE START OF THE EXCAVATION AND WITHIN FIVE (5) DAYS AFTER IT IS COMPLETED.

4. THIS EXCAVATION PERMIT IS VALID ONLY FOR THE REMOVAL OF APPROXIMATELY 5,000 CUBIC YARDS OF EXCAVATED MATERIAL AND REFUSE.

5. EXCAVATION SHALL NOT BE CONDUCTED BETWEEN THE HOURS OF 5:00 P.M. AND 7:00 A.M. OR ON SATURDAYS, SUNDAYS AND LEGAL HOLIDAYS UNLESS OTHERWISE APPROVED IN WRITING BY THE AQMD.

6. EXCAVATION SHALL NOT BE CONDUCTED ON DAYS WHEN THE AQMD FORECASTS FIRST, SECOND OR THIRD STAGE EPISODES FOR AREA NUMBER 4 OR WHEN THE AQMD REQUIRES COMPANIES IN AREA NUMBER 4 TO IMPLEMENT THEIR FIRST, SECOND OR THIRD STAGE EPISODE PLANS. EPISODE FORECASTS FOR THE FOLLOWING DAY CAN BE OBTAINED BY CALLING (800) 288-7664.

7. EXCAVATION SHALL NOT BE CONDUCTED WHEN THE WIND SPEED IS GREAT THAN 15 M.P.H. (AVERAGED OVER 15 MINUTES) OR THE WIND SPEED INSTANTANEOUSLY EXCEEDS 25 M.P.H.

8. DURING EXCAVATION, ALL WORKING AREAS, EXCAVATED MATERIAL AND UNPAVED ROADWAYS SHALL BE WATERED DOWN UNTIL THE SURFACE IS MOIST AND THEN MAINTAINED IN A MOIST CONDITION TO MINIMIZE DUST AND EMISSIONS WITHOUT CREATING A SAFETY HAZARD CONDITION.

9. EXCAVATED REFUSE SHALL NOT BE STOCKPILED ON-SITE. ALL EXCAVATED REFUSE SHALL BE DEPOSITED DIRECTLY INTO THE TRUCKS OR TRAILERS WHICH WILL HAUL IT. THE TRUCK BEDS OR TRAILERS SHALL BE COMPLETELY COVERED WITH AN IMPERMEABLE COVER, WITH SUCH COVERS TIED DOWN. ALL SEAMS SHALL BE SEALED TO PREVENT ANY MATERIALS FROM ESCAPING DURING TRANSPORT.

10. WHEN LOADING IS COMPLETED AND DURING TRANSPORT, NO MATERIAL SHALL EXTEND ABOVE THE SIDES OR REAR OF THE TRUCK OR TRAILER WHICH WILL HAUL THE EXCAVATED MATERIAL.

11. THE EXTERIOR OF TRUCKS OR CARS (INCLUDING THE TIRES) SHALL BE CLEANED OFF PRIOR TO LEAVING THE EXCAVATION SITE.

12. VOC CONTAMINATED SOIL (AS DEFINED BY RULE 1166) SHALL NOT BE SPREAD ONSITE OR OFFSITE IF IT RESULTS IN UNCONTROLLED EVAPORATION OF VOC TO THE ATMOSPHERE.

13. THE EXCAVATION WORKFACE AND ALL EXCAVATED REFUSE SHALL BE COVERED WITH EITHER A PROTECTIVE LINER OR PLASTIC SHEETING, OR A MINIMAL OF 6 INCHES OF SOIL WHENEVER WORK IS NOT ACTIVELY IN PROGRESS.

14. THE EXCAVATION WORK FACE WHICH EXPOSES REFUSE OR OTHER EMISSION GENERATING MATERIALS TO THE ATMOSPHERE SHALL NOT EXCEED 500 SQUARE FEET.

15. ALL EXCAVATED HAZARDOUS MATERIAL SHALL BE TRANSPORTED IN SUCH A MANNER AS TO PREVENT ANY EMISSIONS OF HAZARDOUS MATERIALS.

16. ALL HAZARDOUS MATERIALS SHALL BE TRANSPORTED IN CONTAINERS CLEARLY MARKED AS TO THE TYPE OF MATERIAL CONTAINED AND WHAT PROCEDURES SHOULD BE FOLLOWED IN CASE OF ACCIDENTAL SPILLS.

17. EXCAVATED LIQUID HAZARDOUS MATERIALS WITH THE POTENTIAL TO CAUSE AIR EMISSIONS SHALL BE ENCAPSULATED OR ENCLOSED IN CONTAINERS WITH SEALED LIDS BEFORE LOADING INTO THE TRANSPORT VEHICLES.

18. ALL MATERIALS THAT ARE LISTED AS HAZARDOUS BY A FEDERAL OR STATE AGENCY SHALL BE CONSIDERED "HAZARDOUS MATERIALS" FOR THE PURPOSE OF THIS PERMIT.

19. DURING EXCAVATION, MONITORING FOR ORGANICS AS METHANE USING AN ORGANIC VAPOR ANALYZER (OVA) OR OTHER MONITOR APPROVED BY THE AQMD SHALL BE CONDUCTED CONTINUOUSLY AT THE WORKING FACE AND AT THE PROPERTY LINE. THE MAXIMUM SUSTAINED READINGS SHALL BE RECORDED EVERY 15 MINUTES.

20. IF THE OVA OR OTHER APPROVED ORGANIC MONITOR SHOWS A SUSTAINED (GREATER THAN 15 SECONDS) READING OF 2,000 PPM OR GREATER AT THE WORKING FACE, THE EXCAVATION SHALL CEASE AND THE APPROVED MITIGATION MEASURES IMPLEMENTED IMMEDIATELY. EXCAVATION SHALL NOT RESUME UNTIL THE READINGS RETURN TO THE BACKGROUND LEVEL.

21. IF THE OVA OR OTHER APPROVED ORGANIC MONITOR SHOWS A SUSTAINED (GREATER THAN 15 SECONDS) READING OF 200 PPM OR GREATER DOWNWIND FROM THE SITE AT THE PROPERTY LINE (OR OTHER APPROVED LOCATIONS), THE EXCAVATION SHALL CEASE AND THE APPROVED MITIGATION MEASURES IMPLEMENTED IMMEDIATELY. EXCAVATION SHALL NOT RESUME UNTIL THE READINGS RETURN TO THE BACKGROUND LEVEL.

22. DURING EXCAVATION, CONTINUOUS MONITORING AND RECORDING OF THE WIND SPEED AND DIRECTIONS SHALL BE CONDUCTED AT A SITE APPROVED BY THE AQMD.

23. ALL OVA OR OTHER APPROVED ORGANIC MONITORING EQUIPMENT MONITORS SHALL BE CALIBRATED DAILY USING A METHOD APPROVED BY THE AQMD.

24. CONTINUOUS PM10 MONITORING EQUIPMENT AT UPWIND AND DOWNWIND LOCATIONS SHALL BE DONE WITH CALIBRATED EQUIPMENT IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.

25. IF A DISTINCT ODOR (LEVEL III OR GREATER) RESULTING FROM THE EXCAVATION IS DETECTED AT OR BEYOND THE PROPERTY LINE, THE EXCAVATION SHALL CEASE AND THE APPROVED MITIGATION MEASURES IMPLEMENTED IMMEDIATELY. ODOR LEVELS WILL BE DETERMINED BY AQMD PERSONNEL OR ON-SITE SAFETY COORDINATOR IN THE ABSENCE OF AQMD PERSONNEL.

26. DURING EXCAVATION, IF A CONSIDERABLE NUMBER OF COMPLAINTS ARE RECEIVED, ALL WORK SHALL CEASE AND THE APPROVED MITIGATION MEASURES SHALL BE IMPLEMENTED IMMEDIATELY.

27. MITIGATION MEASURES, OTHER THAN THOSE INDICATED IN THESE CONDITIONS, WHICH ARE DEEMED APPROPRIATE BY AQMD PERSONNEL AS NECESSARY TO PROTECT THE COMFORT, REPOSE, HEALTH OR SAFETY OF THE PUBLIC, SHALL BE IMPLEMENTED UPON REQUEST.

28. ALL RECORDS OF EXCAVATION WORKING HOURS, MONITORING RESULTS, DAILY AMOUNTS OF MATERIALS EXCAVATED AND RELOCATED, AND OTHER RECORDS REQUIRED BY THIS PERMIT SHALL BE KEPT ON FILE FOR AT LEAST TWO YEARS AND MADE AVAILABLE TO THE AQMD UPON REQUEST.

29. DURING EXCAVATION, CONTINUOUS AIR MONITORING FOR SUSPENDED PARTICULATES SHALL BE CONDUCTED UPWIND AND DOWNWIND OF THE EXCAVATION SITES.

30. EXCAVATION AND FUGITIVE DUST MITIGATION SHALL BE CARRIED AS PER RULE 403.

31. IF ANY ANALYTICAL RESULTS SHOW THE UPWIND AND DOWNWIND DIFFERENTIAL CONCENTRATIONS OF CONTAMINANTS EXCEEDING THE FOLLOWING LIMITS, EXCAVATION ACTIVITIES SHALL CEASE UNTIL ADDITIONAL MITIGATION MEASURES ARE SUBMITTED TO AND APPROVED BY THE AQMD. THESE ADDITIONAL MITIGATION MEASURES SHALL BE IMPLEMENTED WHEN THE ACTIVITIES RESUME.

CONTAMINANT	CONDITION

PM10 50 ug/m^3

32. THIS PERMIT OR A COPY OF THIS PERMIT SHALL BE PRESENT AT THE EXCAVATION SITE.

Other governmental agencies may require approval before any excavation begins. It shall be the responsibility of the applicant to obtain that approval. The South Coast Air Quality Management District shall not be responsible or liable for any losses because of measures required or taken pursuant to the requirements of this approved Excavation Management Plan.

If you have any questions regarding this matter, please call Mr. Atul Kandhari at (909) 396-2477.

Very truly yours,

Charles Tupac

Charles Tupac
AQAC Supervisor

CDT:AK07:
cc: Rich Tambara

RULE 1150
EXCAVATION MANAGEMENT PLAN
Permit Application Package

Paramount Landfill

5550 N. Paramound Boulevard, Long Beach, California

June 1, 2010

Prepared For:

Long Beach Redevelopment Agency
333 W. Ocean Blvd, 3rd Floor
Long Beach, CA 90802

For Submittal To:

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
21865 E. Copley Drive
Diamond Bar, California 91765

Prepared By:

BRYAN A. STIRRAT & ASSOCIATES
1360 Valley Vista Drive
Diamond Bar, California 91765
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BAS JN: 2009.0064

Table of Contents

TABLE 1

Summary of Laboratory Air and Landfill Gas Results for Fixed Gases

Paramount Dump - PCLUP

2910 E. 55th Way, Long Beach, California

September 25, 2003

Sample Location	Description	Depth (feet bgs)	Date Sampled	DF	Oxygen/ Argon (%)	Nitrogen (%)	Methane (%)	Carbon Dioxide (%)	Notes
AA-1-1	Ambient Air Samples	-6.0	2/4/2002 Day	1.6	23	82	<0.0016	0.041	
AA-1-2		-6.0		1.6	22	81	<0.0016	0.036	
AA-1-3		-6.0		1.6	23	82	<0.0016	0.041	
AA-2-1		-6.0	2/4/2002 Night	1.7	22	79	<0.0016	0.059	
AA-2-2		-6.0		1.7	23	81	<0.0016	0.058	
AA-2-3		-6.0		1.7	23	81	<0.0017	0.072	
GRID-1	Integrated Air Samples	-0.25	1/15/2002	1.7	21	86	<0.0028	0.038	Regulatory limit is 0.005%
GRID-2		-0.25	1/15/2002	1.7	22	82	<0.0016	0.040	
GRID-3		-0.25	1/15/2002	6.5	22	82	<0.0018	0.041	
SUB 1	Subsurface Landfill Gas Samples	10	1/23/2002	1.7	<0.84	51	**27**	21	
		20		1.7	20	77	3.6	2.8	
		35		6.5	21	81	1.1	0.94	
SUB 2		10	1/23/2002	1.7	<0.84	52	**23**	22	
		20		1.7	22	82	1.0	0.94	
		35		1.6	21	80	1.3	1.2	
SUB 3		10	1/24/2002	1.7	1.6	60	**16**	19	
		20		1.6	22	80	0.23	0.26	
		35		1.7	22	79	0.28	0.30	
SUB 4		10	1/25/2002	1.7	13	56	**15**	14	
		20		1.7	19	72	**5.0**	5.0	
		35		1.9	17	69	**5.9**	5.5	
SUB 5		10	1/23/2002	1.7	0.87	22	**35**	31	
		20		1.7	<0.84	22	**34**	34	
		35		1.7	10	50	**19**	18	
SUB 6		10	1/24/2002	1.7	1.8	24	**35**	31	
		20		1.7	2.4	24	**33**	31	
		35		1.7	20	73	4.1	3.8	
SUB 7		10	1/25/2002	1.7	<0.84	19	**40**	35	
		20		1.7	21	76	2.5	2.3	
		35		1.9	19	72	**5.2**	4.5	
SUB 8		10	1/24/2002	1.7	7.0	43	**21**	22	
		20		2.0	23	82	0.65	0.64	
		35		1.7	20	77	3.9	4.2	
SUB 9		10	1/25/2002	1.7	7.5	42	**24**	22	
		20		1.7	20	75	2.5	2.4	
		35		1.9	13	58	**16**	14	
SUB 10		10	1/25/2002	1.7	<0.84	48	**21**	25	
		20		1.7	22	79	0.14	0.23	
		35		1.7	20	79	0.30	0.37	
GW-1	Landfill Gas Sample	25-30	1/28/2002	1.6	3.1	62	**12**	22	Landfill gas well within refuse boundary along eastern edge of landfill
		30-35		1.6	<0.81	47	**20**	29	
GW-2	Perimeter Soil Gas Probe Samples	15-20	1/28/2002	1.6	12	82	0.24	11	Northern boundary probe
		30-35		2.1	17	77	2.5	4.2	
GW-3		5-10	6/12/2003	2.1	14	72	0.004	8.6	Northwest boundary probe
		20-25		1.7	7.9	76	0.93	11	
GW-4		5-10	6/12/2003	1.7	4.4	73	5.0	17	Southeast boundary probe
		15-20		1.7	12	74	2.0	8.7	
GW-5		5-10	6/12/2003	1.7	12	76	<0.0017	7.9	Eastern boundary probe
		15-20		1.7	14	79	0.0047	3.7	
GW-6		5-10	6/12/2003	1.7	7.6	76	2.4	11	Northeastern boundary probe
		15-20		1.8	6.0	77	2.0	11	

Notes:

bgs = below ground surface

DF = Dilution Factor

Fixed Gas = ASTM-D1946 - carbon dioxide, carbon monoxide, methane, nitrogen, and oxygen

Methane concentrations greater than 5% in Bold

ppmV = parts per million by Volume

AA-1 samples were collected during the daytime hours, AA-2 samples were collected during the following evening hours.

Ambient Air: Windspeeds were within acceptable limits with peak wind speeds recorded at 14 mph and an average wind speed of approximately 4 mph.

Integrated Air: Windspeeds were generally within acceptable limits with peak wind speeds ranging 7.6 to 11.8 miles/hour and an average wind speed ranging from 2.4 to 4.1 miles per hour.

TABLE 2

Summary of Laboratory Landfill Gas Results for Detected VOCs - Boundary Probes

Paramount Dump - PCLUP

2910 E. 55th Way, Long Beach, California

September 25, 2003

Sample Location	Description	Depth (feet bgs)	Date Sampled	DF	Benzene	Toluene	Ethyl-benzene	m, p-Xylenes	o-Xylene	Chloroform	Styrene	cis-1,2-Dichloro ethene	Trichloro ethene	Tetrachloro ethene	Vinyl Chloride	1,3,5,-Tri methyl benzene	1,2,4,-Tri methyl benzene	Notes
GW-2	Perimeter Landfill Gas Monitoring Probe Samples	15-20	1/28/2002	1.6	42	232	80	166	43	4.6	<1.6	<1.6	<1.6	--	<1.6	17	44	Northern boundary probe
		30-35		2.1	39	93	443	77	35	6.2	<2.1	<2.1	<2.1	--	<2.1	18	53	
GW-3		5-10	6/12/2003	2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	<2.1	3.5	<2.1	<4.1	<4.1	Northwest boundary probe
		15-20		1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	5.5	2.3	8.4	<1.7	<3.4	<3.4	
GW-4		5-10	6/12/2003	1.7	12	23	7.3	28	7.5	<1.7	<1.7	<1.7	<1.7	<1.7	2.8	10	20	Southeast boundary probe
		15-20		1.7	7.6	47	11	46	12	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	17	31	
GW-5		5-10	6/12/2003	1.7	<1.7	<1.7	1.8	3.5	<1.7	<1.7	18	<1.7	<1.7	<1.7	<1.7	<3.4	4.6	Eastern boundary probe
		15-20		1.7	2.1	11	7.6	30	13	<1.7	1.7	<1.7	<1.7	<1.7	<1.7	13	36	
GW-6		5-10	6/12/2003	1.7	5.3	1.7	<1.7	3.8	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<1.7	<3.4	5.7	Northeastern boundary probe
		15-20		1.8	3.4	11	2.7	11	3.4	<1.8	<1.8	<1.8	<1.8	<1.8	<1.8	3.8	9.9	

Notes:

-- = Not Analyzed

bgs = below ground surface

DF = Dilution Factor

VOCs analyzed by EPA Method TO-14

All units in ppbV = parts per billion by Volume

E

APPENDIX II-E
POST-CLOSURE MONITORING AND MAINTENANCE PLAN FOR THE GCL COVER SYSTEM

POST-CLOSURE MONITORING AND MAINTENANCE PLAN FOR THE GCL COVER SYSTEM, 55TH WAY LANDFILL, AES, INC. OCTOBER 2005

Post-Closure Monitoring and Maintenance Plan
Alternate Final Cover Using Geosynthetic Clay Liner (GCL)
55th Way Landfill
2910 East 55th Way, Long Beach, California

Prepared for:

City of Long Beach
Department of Public Works
333 West Ocean Boulevard
Long Beach, California 90802

Prepared by:

Advanced Earth Sciences, Inc.
20 Fairbanks, Suite 178
Irvine, California 92618

in conjunction with

Simplus Management Corporation
10571 Calle Lee, Suite 171
Los Alamitos CA, 90720

Project No.: 04-113
October 2005

POST-CLOSURE MONITORING AND MAINTENACE PLAN FOR THE GCL COVER SYSTEM

1.0 INTRODUCTION

This Post-Closure Monitoring and Maintenance Plan (PCMMP) for the GCL cover system at the former 55th Way Landfill (Paramount Dump) located at 2910 East 55th Way, Long Beach, California, is an addendum to the PCMMP included in the Post Closure Land Use Proposal (PCLUP) prepared by Earth Tech, Inc., in 2003. This PCMMP was prepared by Advanced Earth Sciences, Inc. (AES) in conjunction with Simplus Management Corporation for the City of Long Beach, Department of Public Works.

The final cover for the landfill has been revised from the irrigated evapotranspirative cover originally proposed in the PCLUP, to a Geosynthetic Clay Liner (GCL) cover system. The Technical Memorandum for the design of the GCL cover system was prepared by AES and dated July 21, 2005.

This addendum to the PCMMP replaces Section 6.2.1 - Inspection and Maintenance of Landfill Cover (Evapotranspirative Cover) of the PCLUP.

2.0 GCL COVER SYSTEM

The GCL cover system underlies the vegetated portions of the relatively flat top deck of the landfill. The GCL cover system is documented in the Record Drawings and Specifications and consists of the following components:

- Vegetative Soil: Minimum 2-foot thick layer of vegetative cover soil placed to a relative compaction of 85 percent (as per ASTM D1557). In areas with trees, the cover thickness is 4 feet.

- Lateral Drainage Layer: Geocomposite drainage layer

- Barrier Layer: Geosynthetic clay liner (GCL)

- Foundation: Minimum 2-foot thick foundation layer

The GCL and geocomposite layer were designed and constructed with a minimum slope of 1.9 percent. The finished surface was graded with slopes ranging from 1.9 percent to 10 percent.

3.0 COVER INSPECTION

The cover system will be visually inspected on a quarterly basis. In addition to the regularly scheduled inspections, the cover will be inspected as soon as accessible following significant events listed below:

- Significant rainfall (more than 2 inches of rainfall in 24 hours)
- Major earthquakes
- Failure of surface water management or irrigation systems

The following are guidelines for conditions to be observed and recorded:

- Exposed GCL or geocomposite
- Cracks and fissures wider than 1 inch, deeper then 6 inches, and longer than 50 feet

- Areas of subsidence or surface depressions where ponding may occur
- Erosion gullies (deeper than 6 inches)
- Burrow holes
- Observed or interpreted damage to GCL or geocomposite
- Growth of deep rooting vegetation in grass areas
- Sparse or damaged vegetation

Inspection observations will be recorded on the Standard GCL Cover system Inspection form included in Appendix A.

4.0 COVER MAINTENANCE AND REPAIR

4.1 General

The Site Maintenance Manager will review the inspection observations to establish the need for and extent of maintenance and repair. Repairs will be done in accordance with Record Drawings and Specifications. The Operations Manager may consult with licensed/registered specialists to compile alternate repair plans or specifications. Repairs will be documented on the GCL Cover System Repair Record form (Appendix A).

The Record Drawings and Specifications document the constructed condition of the GCL cover. To the extent practical, maintenance and repair should be undertaken to maintain or restore the as-built conditions. Repair that involves construction should be undertaken in conformance with construction drawings and specifications.

Maintenance and repair procedures vary depending on existing conditions such as cracks, surface depressions, erosion gullies, and vegetation growth. Guidelines for maintenance and repair are provided below. Following repair of the GCL cover system, the repaired areas will be revegetated in accordance with the landscaping plan.

4.2 Guidelines for Maintenance and Repair

1. Cracking

   - Significant cracking, i.e., cracks wider then 1 inch, deeper than 6 inches, and longer than 50 feet, will be repaired.

   - To repair the cracks, moisture condition the cracked area and use tracked equipment or hand compactors to squeeze the vegetative cover materials and close the cracks. If the crack is not repaired using this method (i.e., if they reappear), excavate a minimum 2- to 3-foot wide zone straddling the crack to the full depth of crack and replace cover soils compacted as per GCL cover specifications. If the GCL is affected, replace or repair as appropriate.

2. Erosion

   - Sheet or Rill Erosion: Replace soil to bring to the average grade.

   - Gully Erosion: Remove loose material, and, if necessary, cut back to intact soil. Backfill with cover soil placed in accordance with the vegetative cover specifications.

3. Loss of Vegetation: Reestablish vegetation in accordance with the Specifications.

4. Undesirable Vegetation (vegetation that is not consistent with the landscaping plan or which has roots that may penetrate the soil layer and affect the GCL/geocomposite): Remove.

5. Minor Surface Depression (non-recurring surface depression generally involving less than about 2 feet of vertical downward movement at or near the central part of the depression, and/or depressions no more than about 15 feet in diameter): Place soil in the depression to bring the area to grade.

6. Monitoring Areas of Recurring Depression/Settlement: The following procedure will be implemented to monitor areas of recurring settlement when regrading the top deck in response to the formation of depressions:

   - Divide the affected area (or the entire GCL cover area) into practical sized grids. Grids may be uniform size across the top deck or may be defined to encompass an individual depression of any size.

   - Record the quantity of soil placed within individual grids for each year or other appropriate period.

   - When the cumulative quantity of soil placed in an individual grid exceeds that for average soil depth of 2 feet over the grid, evaluate the need to implement major surface depression repair as described below.

7. Major Surface Depression (recurring surface depression generally involving more than about 2 feet of vertical downward movement at or near the central part of the depression, and/or depressions with a diameter greater than about 15 feet, and/or a surface depression that, in the opinion of the Site Maintenance Manager, may affect the GCL or geocomposite, causing either parting of adjacent GCL panels at the seams or significant strain [in the long direction] of the GCL): Remove soil to within 2 feet of the proposed reconstructed grade, place a new GCL and geocomposite, and cover with 2 feet of vegetative cover soil. The extent of the soils removal and new GCL should be sufficient to cover the depression and to be in contact with and shingle over (minimum 2 feet of overlap) existing unaffected GCL. In the overlap zone, the existing geocomposite will be cut (with an approved cutting tool) and removed to allow GCL (new) to GCL (existing) contact. The new geocomposite will be overlapped geonet to geonet according to manufacturer's recommendations and a minimum of 4 inches. The overlapped geotextile will be pulled back and the geonet shall be joined by plastic fasteners. The geotextile will be sewn together.

8. Foundation Damage (significant, extended, recurrent, or chronic depression or holes that, in the opinion of the Operations Manager, may have resulted in unacceptable damage of the foundation layer): Remove the soil, the geocomposite and GCL, and affected foundation material. Replace in accordance with the Design Drawings and Specifications.

9. Burrowing Animals: Implement a burrowing animal control and removal program. A licensed pest control advisor may be consulted if excessive rodent populations exist.

10. Exposed or Damaged GCL/Geocomposite: Repair in accordance with the Design Drawings and Specifications.

- Areas of subsidence or surface depressions where ponding may occur
- Erosion gullies (deeper than 6 inches)
- Burrow holes
- Observed or interpreted damage to GCL or geocomposite
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Maintenance and repair procedures vary depending on existing conditions such as cracks, surface depressions, erosion gullies, and vegetation growth. Guidelines for maintenance and repair are provided below. Following repair of the GCL cover system, the repaired areas will be revegetated in accordance with the landscaping plan.

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1. Cracking

   - Significant cracking, i.e., cracks wider then 1 inch, deeper than 6 inches, and longer than 50 feet, will be repaired.

   - To repair the cracks, moisture condition the cracked area and use tracked equipment or hand compactors to squeeze the vegetative cover materials and close the cracks. If the crack is not repaired using this method (i.e., if they reappear), excavate a minimum 2- to 3-foot wide zone straddling the crack to the full depth of crack and replace cover soils compacted as per GCL cover specifications. If the GCL is affected, replace or repair as appropriate.

2. Erosion

   - Sheet or Rill Erosion: Replace soil to bring to the average grade.

   - Gully Erosion: Remove loose material, and, if necessary, cut back to intact soil. Backfill with cover soil placed in accordance with the vegetative cover specifications.

11. Any major repairs that involve removal and replacement of GCL/geocomposite will be performed in accordance with repair details or drawings, and specifications prepared by a registered civil engineer. Any new GCL that is placed will be in contact with and shingle over (minimum 2 feet overlap) existing undamaged GCL. Each layer of the cover system (2 feet of vegetative soil cover, geocomposite, and GCL) will be tied into existing layers of the corresponding material and constructed to Project Specifications.

GCL COVER SYSTEM REPAIR RECORD

Maintenance Technician: ____________ Date: ________ Time: ________

DEFICIENCY TYPE AND DETAILED DESCRIPTION:

☐ Cracks/Fissures ☐ Depression ☐ Erosion ☐ Burrow Holes ☐ Deep Rooting Vegetation ☐ Other:

LOCATION OF REPAIR ACTIVITY (Show on map):

REPAIR ACTION TAKEN (Refer to repair detail or design drawings, as appropriate):

ATTACHMENTS (As-built drawings, compaction reports, etc., as appropriate):

REMARKS:

Signatures

Site Maintenance Manager ____________ Date: ____________