

Prepared for:

City of Huntington Beach
Public Works Department - Engineering
2000 Main Street
Huntington Beach, California 92648

GEOTECHNICAL REPORT
PROPOSED IMPROVEMENTS
EDISON PARK
HUNTINGTON BEACH, CALIFORNIA

Prepared by:

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consultants

engineers | scientists | innovators

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TABLE OF CONTENTS

	<u>Page</u>
1. INTRODUCTION	1
1.1 General.....	1
1.2 Project Understanding.....	1
1.3 Site Background.....	2
1.4 Objective and Scope of Services	3
1.5 Organization of the Report	3
2. RELEVANT DOCUMENT REVIEW	5
2.1 Site Documents Reviewed.....	5
2.2 Geosyntec (2018) Feasibility Study for Settlement Related Damage Repair.....	5
2.3 Geosyntec (2020, 2021) Field Investigations	6
2.4 Geosyntec (2023) Oil Well Locating Geophysical Survey	7
2.5 RJM (2023) Edison Park Draft Conceptual Plan.....	7
3. SITE SURFACE AND SUBSURFACE CONDITIONS	8
3.1 Surface Conditions.....	8
3.2 Subsurface Conditions	8
3.3 Groundwater Conditions.....	8
4. GEOHAZARDS	9
4.1 Strong Ground Shaking and Design Ground Motions.....	9
4.2 Liquefaction	10
4.3 Lateral Spreading.....	11
4.4 Fault Surface Rupture	11
4.5 Other Geologic Hazards.....	11
5. GEOTECHNICAL ENGINEERING ASSESSMENTS AND RECOMMENDATIONS.....	12
5.1 General.....	12
5.2 Earthwork and Grading.....	12
5.2.1 Subgrade Preparation and Overexcavation	12
5.2.2 Fill and Backfill.....	13
5.2.3 Surface Drainage	13
5.3 Shallow Foundation Recommendations	14
5.4 Slabs-On-Grade	15
5.5 Lateral Earth Pressures for Retaining Walls.....	15
5.6 Construction Observation and Considerations	15
6. LIMITATIONS.....	17

TABLE OF CONTENTS (Continued)

7. REFERENCES 18

LIST OF TABLES

Table 1: Summary of Findings and Preliminary Recommendation from Geosyntec’s Review of Edison Park Draft Conceptual Plan Prepared by RJM dated 25 July 2023

Table 2: Nearby Active Faults

Table 3: Design Ground Motion Parameters

LIST OF FIGURES

Figure 1: Site Location Map

Figure 2: Draft Conceptual Plan Prepared by RJM

Figure 3: Waste Settlement Estimates

Figure 4: Existing Conditions and Field Investigation Locations

LIST OF APPENDICES

Appendix A: Geosyntec (2021) Waste Delineation Report

Appendix B: Laboratory Analytical Test Results

Appendix C: Geosyntec (2023) Geophysical Oil Well Locating Survey Report

Appendix D: ASCE7 Hazard Tool Output

1. INTRODUCTION

1.1 General

Geosyntec Consultants, Inc. (Geosyntec) is pleased to submit this Geotechnical Report to the City of Huntington Beach, Public Works Department (City). This report documents the review of the available geotechnical subsurface information from previous field investigations, geotechnical engineering assessment and provides preliminary geotechnical recommendations in support of the proposed park improvements at Edison Park (Project), located in Huntington Beach, California (Site). The site location is shown on Figure 1.

Geosyntec conducted the scope of services documented in this report in general accordance with the Professional Services Contract between the City and Geosyntec for As-Needed General Environmental Engineering Services, dated February 2021 and the scope of work described in our proposal dated April 7, 2023.

1.2 Project Understanding

Edison Park was constructed over the Cannery Street Former Refuse Disposal Station, also previously known as Cannery Street Landfill (CSL), in early 1970s. The types of waste disposed at the CSL generally included wood (stumps, logs, and large timber) and construction debris. Edison Park is approximately 39.7 acres, located at the northwest corner of the intersection of Magnolia Street and Hamilton Avenue in the City of Huntington Beach. The site's formal address is 21379 Magnolia Street, Huntington Beach, California 92647.

Several existing facilities/amenities at the Site are constructed on top of existing waste material deposited at the former CSL. Settlement, differential settlement, and potential sinkholes are typically expected to occur at facilities constructed on top of waste. The effect of settlement, differential settlement and/or a combination of both are observed at the existing tennis courts, sidewalks, open park areas and other hardscape/amenities at the Site.

Geosyntec understands that the City is currently evaluating conceptual designs for improvements at the Site. The proposed improvements include construction of new structures and amenities such as a sport court plaza with seating and shade, basketball, tennis, and pickleball courts, practice hitting walls, retaining walls, fence posts for batting cages, entry monument sign, new shade shelters, an all-wheels skate plaza, pump track, and light poles. Figure 2 includes the most recent draft conceptual plan prepared by RJM Design Group (RJM).

Given the historic Site use as a landfill and the presence of waste materials that are susceptible to settlement, the City retained Geosyntec to perform geotechnical evaluation to assess the feasibility and compatibility of the proposed improvements at the Site as well as provide preliminary geotechnical recommendations to support the design.

1.3 Site Background

The Site was used by Southern California Edison (SCE) as a sand and gravel pit from 1956 to 1957. In December of 1957, the County of Orange purchased the site from SCE. Between December 1957 and May 1969, the County of Orange owned and operated the Cannery Street waste disposal station, which has been referred to as the Cannery Street Landfill or Edison Pit. Based on information included in the Solid Waste Assessment Test (SWAT) prepared by The Earth Technology Corporation (TETC, 1990), approximately 90 percent of the pit is 36 ft deep, while the remaining 10 percent is approximately 46 ft deep. The sides of the excavation range from vertical to a 1 horizontal:1 vertical (1H:1V) slope. According to planning documents, filling the landfill was proposed in two stages.

The first stage consisted of filling the portion of the pit below the water table, which was found to be approximately 10 ft below ground surface (bgs), with logs, stumps, and large timber. After the first stage of filling was complete, the County planned a second stage of filling by placing approximately 1 ft of soil over the logs, stumps, and large timber and filling the remaining available space (approximately 500,000 yd³) with municipal solid waste (MSW). However, the Closed Landfill Environmental Assessment and Response (CLEAR) report (TRC, 2001) states that no MSW was disposed of on the site; rather, that only construction debris was landfilled.

Records also state the waste disposed of at the site was placed directly into standing water in the pit. Liners were not placed, nor were leachate or gas collection systems installed, at the site. The waste was confined to the rectangular westerly 20.5 acres of the site. The edge of native soils around the waste varies from 20 ft in width to less than 12 ft at some points along the west and north boundaries.

The CLEAR report (TRC, 2001) states: “Boundaries of the refuse prism remained constant during its construction based on a review of aerial photographs dated 1953, 1959, and 1967 and Project documents. Thus, the refuse appears to have been placed within reasonably well-defined limits within the Site.”

The County built up the western edge of the site with fill to prevent overflow from the pit from washing into the nearby homes to the west. As of July 1965, dumping was restricted to materials that would not float. Household waste was not allowed at the site. To control the water level in the pit, an open ditch was excavated between July 1967 and June 1968 to connect the pit to a storm drain along Hamilton Avenue.

Upon completion of fill, soil stockpiled to one side of the site was spread over the entire area. The soil cover was graded to improve drainage from the northwest to the southeast. The depth of soil cover is estimated to range from 2 to 3 ft over the site.

Upon closure of the landfill, the site was deeded to the City of Huntington Beach in 1970. To comply with the park restriction zoning, the City developed the area into a public park named Edison Community Park. In 1971, approximately 5 acres of the site were deeded to the City's School District of Orange County to be used as the William E. Kettler Elementary School Playground. Since then, the City and the School District have operated the site for recreation and school purposes and have had control of and responsibility for site conditions.

A groundwater Solid Waste Assessment Test (SWAT) was conducted in 1989, and the results indicated the need for quarterly groundwater monitoring at the site. Six groundwater monitoring wells were installed in June 1990 and monitored from 1990 to 1994. The results of groundwater monitoring indicated that groundwater quality was naturally poor both upgradient and downgradient of the site due to saltwater intrusion. No organic compounds were detected in the wells at the site during monitoring. The California Regional Water Quality Control Board (CRWQCB) approved the termination of the groundwater monitoring program in 1994.

1.4 Objective and Scope of Services

The objectives of this study were to develop understanding of the Site subsurface conditions through review of existing documents and previous field investigations, develop relevant geotechnical design parameters and provide preliminary geotechnical recommendations as it relates to the proposed improvements.

The specific geotechnical scope of services provided by Geosyntec included:

- Reviewing available project documents including previous field investigation reports;
- Reviewing site geologic and seismic hazards;
- Performing geotechnical engineering analyses;
- Developing preliminary geotechnical recommendations; and
- Preparing this geotechnical report to present results and findings of the document review, results of the geotechnical engineering analyses, and preliminary recommendations.

1.5 Organization of the Report

The body of this Report is divided into four sections, which contain the following:

- Section 1 – Introduction;
- Section 2 – Relevant Document Review – provides a list of documents reviewed and a summary of previous field investigations;
- Section 3 – Site Conditions – describes our understanding of the surface and subsurface conditions based on the review of previous field investigation and interpretation of the available data;

- Section 4 – Geohazards – discusses Site Geohazards, including assessment of Design Ground Motions; and
- Section 5 – Geotechnical Recommendations – presents the results of geotechnical evaluations and provides preliminary geotechnical recommendations for design and construction of the proposed Site improvements.

2. RELEVANT DOCUMENT REVIEW

2.1 Site Documents Reviewed

Geosyntec performed a limited review of available relevant project documents and existing information pertinent to the proposed improvements. Geosyntec's review included the following documents:

- *Construction Quality Assurance Report, Landfill Gas Collection and Control System Construction, Cannery Street Former Refuse Disposal Station, Huntington Beach, California*, prepared by Geosyntec Consultants, Inc. dated March 2010.
- *Feasibility Study for Edison Park Settlement Related Damage Repair, Edison Park, Huntington Beach, California*, prepared by Geosyntec Consultants, Inc. dated October 2018.
- *Focused Area Waste Limit/Depth Evaluation, Edison Park, Huntington Beach, California*, prepared by Geosyntec Consultants, Inc. dated June 2021.
- *Edison Park Draft Conceptual Plan, City of Huntington Beach, California*, prepared by RJM Design Group dated 25 July 2023.
- *Letter Report – Geophysical Oil Well Locating Survey, Edison Park, Huntington Beach, California*, prepared by Geosyntec Consultants, Inc. dated July 2023.

2.2 Geosyntec (2018) Feasibility Study for Settlement Related Damage Repair

Geosyntec performed a feasibility study in 2018 to evaluate several alternatives for repairing or reconstructing settlement related damage to the existing park facilities/amenities at the Site (Geosyntec, 2018). The primary objective of this evaluation was to develop general recommendations for the repair/reconstruction and preliminary cost estimated of the evaluated repair/reconstruction alternative of the settlement related damages. As part of this assessment, Geosyntec performed a waste settlement evaluation to estimate the rate of waste settlement considering secondary (long term) settlement as the predominant on-going mechanism of waste settlement at the Site. In waste, secondary settlement is comprised of long-term compression due to self-weight, external loads, and biological degradation of the organic portion of the waste materials.

The results of the settlement evaluation indicated that the site is settling at approximately 1 inch every two years. Geosyntec (2018) also evaluated the impacts of additional load (soil layer) placed on top of the waste on the estimated settlement rate and/or magnitude. The results of the settlement analyses are summarized in Figure 3.

2.3 Geosyntec (2020, 2021) Field Investigations

Geosyntec performed limited field investigations to evaluate the approximate lateral limit(s) and depth(s) of existing waste along a selected portion of the approximate eastern limits of waste estimated by TRC (2001) at Edison Park in November 2020 and March 2021. The results and findings of these field investigations are documented in the letter report prepared by Geosyntec (2021) and included here as Appendix A. These field investigations included five (5) exploratory test pits (TP-1 through TP-5) and twelve (12) hollow-stem auger (HSA) borings (HSA-1 through HSA-5, and HSA-2A through HSA-8A), the locations of which are shown in Figure 4. The objective of the test pits was to evaluate the approximate lateral limit(s) of the existing waste in the study. The objective of the HSA borings was to confirm the presence of waste and/or estimate the depth of the waste where present. The limits of the delineated waste based on Geosyntec (2021) are shown in Figure 4.

A summary of the findings from these investigations is provided below:

- Lateral limit of waste was delineated at two test pit locations (TP-1 and TP-2). The approximate depths to the encountered waste layer at TP-1 and TP-2 were 3.5 ft bgs and 3 ft bgs, respectively.
- Waste was identified at three test pit locations (TP-3, TP-4, and TP-5); however, the lateral limit of waste was not identified. It is likely that the lateral limits of waste at these locations extended eastward past the obstruction such as the concrete slab at TP-3 and TP-4, and concrete sidewalk at TP-5. The approximate depths to waste from existing surface at TP-3, TP-4, and TP-5 ranged between 2 to 3 ft bgs.
- The depths of waste at HSA borings near the TRC (2001) estimated lateral limits of waste (HSA-1 through HSA-3) were found to range between 10.5 ft and 20.5 ft bgs. The depth of waste at HSA-5 near the northern edge of existing tennis court was observed to be approximately 40.5 ft bgs. The depth of waste at HSA-4 near the southern edge of the tennis court could not be identified due to refusal, however waste was still observed up to 34 ft bgs. At the borings under existing concrete slab (HSA-2A through HSA-8A), soil materials encountered in the borehole contained slight traces of waste materials based on visual and odor field observations at depths between 5 ft and 15 ft bgs. However, no clearly defined waste layer was encountered. Slight waste traces observed in these boreholes (HSA-2A through HSA-8A) may not be part of a continuous waste layer.
- The top soil layer overlying the waste material at the Site was visually classified as silty sand (SM) in general accordance with ASTM D2488. The thickness of the soil layer generally ranged between 2 to 3.5 ft bgs.

- The waste material encountered at the site generally composed of dark gray asphalt concrete debris and decayed wood pieces within the landscape areas and dark gray, medium to high plasticity clay soils, with trace debris and slight organic odor within the concrete slab areas. The waste materials did not have any unusual odor. The above characteristics of the waste material was consistent throughout the investigation locations.
- Groundwater was encountered at ten of the twelve HSA borings during the investigations. The depth to groundwater in the landscape borings generally ranged between 8 to 12 ft bgs. The depth to groundwater in the concrete slab borings generally ranged between 12.5 to 16.5 ft bgs except at HSA-2A and HSA-6A where groundwater was not encountered.
- Composite samples of drill cuttings from HSA drilling were collected and sent to laboratory for analytical testing prior to disposal. The analytical laboratory testing included the following:
 - Total Petroleum Hydrocarbons (TPH) by EPA 8015M;
 - Volatile Organic Compounds (VOCs) by EPA 8260B;
 - Title 22 Metals by EPA 6010B/7471A; and
 - Lead, STLC by EPA 6010B

Results of the analytical testing are included here as Appendix B. The test results indicated that the waste was non-hazardous and thus the soil cuttings were disposed by American Integrated Services at Crosby & Overton, Inc., which is a licensed non-hazardous off-site waste disposal facility.

2.4 Geosyntec (2023) Oil Well Locating Geophysical Survey

Geosyntec retained the services of **GEOVision** Geophysical Services (**GEOVision**), a geophysical specialty subcontractor to perform a non-intrusive geophysical survey in July 2023 to locate two known existing historical oil wells located at the northeast corner of the Site (Geosyntec, 2023). The approximate interpreted locations of the Oil Wells based on the geophysical interpretation are shown in Figure 4. A copy of the Geophysical Oil Well Locating Survey Report is included as Appendix C.

2.5 RJM (2023) Edison Park Draft Conceptual Plan

Geosyntec performed a review of the Draft Conceptual Plan prepared by RJM dated 25 July 2023 (Figure 2) to assess the compatibility and feasibility of the proposed park improvements. Geosyntec's review findings and preliminary recommendations related to RJM's draft conceptual plan are presented in Table 1.

3. SITE SURFACE AND SUBSURFACE CONDITIONS

3.1 Surface Conditions

The Site is currently developed as a public park. Existing features/amenities at the park include tennis courts, racquetball court, basketball courts, softball field, Children's play area, picnic area with tables and shades, skate spot, Edison Community Center Building, Fire Station, asphalt concrete paved parking areas, and landscapes.

The Site is bordered by Stilwell drive to the north, Magnolia Street to the east, Hamilton Avenue to the south, and residential areas to the west. The Site elevation ranges from approximately 3 ft to 10 ft North American Vertical Datum of 1988 (NAVD88).

3.2 Subsurface Conditions

Based on the review of the previous Site documents and field investigation reports as discussed in Section 2, the subsurface conditions within the limits of waste consists of a top soil layer overlying the waste materials. Based on the field investigation performed by Geosyntec in 2020 and 2021 (Geosyntec, 2021), the thickness of the top soil layer is estimated to range between 2 to 3.5 ft bgs. The thickness of waste materials is estimated to range from 35 to 46 ft, with approximately 90 percent of the thickness being 35 ft (TETC, 1990). The thickness of waste encountered during focused field investigation as documented in Geosyntec (2021) ranged between 2.5 ft to 38 ft with smaller thicknesses near the limits of the waste.

Based on the review of available limited soil sampling and laboratory testing as documented in Geosyntec (2010), the shallow site soils generally consist of poorly graded sand with silt, silty and clayey sands. Review of the Quaternary Geologic Map of the Newport Beach 7.5-minute quadrangle (CGS, 2006) indicates that the Site is underlain by young alluvium (Qya) deposits.

3.3 Groundwater Conditions

Groundwater was encountered at depths ranging between approximately 8 to 16.5 ft bgs during Geosyntec (2021) field investigation. However, due to proximity to the ocean, water level is anticipated to exhibit muted fluctuation with the tides.

Based on the review of the Seismic Hazard Zone Report for the Anaheim and Newport Beach 7.5-Minute Quadrangles, Orange County, California [California Geological Survey (CGS), 2006], the historically highest groundwater level at the vicinity of the Site is approximately 3 ft bgs.

4. GEOHAZARDS

This section contains a description and evaluation of potential geologic and seismic hazards such as fault rupture, strong ground shaking, liquefaction, etc. based the understanding of site conditions described in Section 3 and a review of relevant publicly available information.

4.1 Strong Ground Shaking and Design Ground Motions

The Site is situated within a seismically active Southern California region and will likely experience moderate to severe ground shaking in response to a large magnitude earthquake occurring on a local or more distant active fault during the lifespan of the proposed facility. As a result, seismically induced ground shaking in response to an earthquake occurring on a nearby active fault, such as the Newport Inglewood fault zone located to the northeast of the Site, is considered to be the major geologic hazard affecting the project. Other active faults in the vicinity and their respective distances from the Site and the representative maximum Moment Magnitudes, as obtained from the 2013 Caltrans Fault database are summarized in Table 2 below.

Table 2 – Nearby Active Faults

Fault Name	Distance and Direction from Site	Maximum Moment Magnitude
Newport Inglewood fault zone (S. Los Angeles Basin section)	About 1.2 miles to northeast	7.2
Thums-Huntington Beach (northern)	About 1.3 miles to west	6.6
San Joaquin Hills	About 3.8 miles to northeast	7.0
Compton	About 5.5 miles to northwest	6.9
Anaheim	About 8.8 miles to northwest	6.4

The seismic design parameters for the project were established in accordance with ASCE 7-16, Chapter 11, for Site Class D (Default). Mapped ground motion parameters S_S and S_1 were obtained using the ASCE 7 Hazard Tool (<https://asce7hazardtool.online/>). The output from the web tool is included in Appendix D. The seismic design parameters are summarized in Table 3.

Note that ASCE 7-16, Section 11.4.8, requires that sites classified as Site Class D with an S_1 greater than or equal to 0.2 perform a site-specific ground motion hazard analysis. Although the Site meets the criteria for this requirement, a site-specific ground motion hazard analysis was not performed, which is permitted per Exception #2 in ASCE 7-16 Section 11.4.8. This exception states that a ground motion hazard analysis is not required provided that the value of the seismic response coefficient C_s is determined by Eq. (12.8-2) for values of $T \leq 1.5T_s$ and taken as equal to 1.5 times the value computed in accordance with either Eq. (12.8-3) for $T_L \geq T > 1.5T_s$ or Eq. (12.8-4) for T

> T_L. This approach to computation of the seismic response coefficient C_s, should be implemented by the structural engineer.

Table 3 – Design Ground Motion Parameters

Parameter	Value
Approximate Site Latitude	33.652693 degrees
Approximate Site Longitude	-117.9721 degrees
Site Class	D - Default
Mapped Short Period Spectral Response Acceleration, S _s	1.391 g
Mapped 1-second Spectral Response Acceleration, S ₁	0.502 g
Short Period Site coefficient (at 0.2-s period), F _a	1.2
Long Period Site coefficient (at 1.0-s period), F _v	1.8 ^(a)
Site-modified Short Period Spectral Response Acceleration, S _{MS}	1.67 g
Site-modified 1-second Spectral Response Acceleration, S _{M1}	0.904 g ^(a)
Design Short Period Spectral Response Acceleration, S _{DS}	1.113 g
Design 1-second Spectral Response Acceleration, S _{D1}	0.602 g ^(a)
Long Period Transition	8 s
Mapped MCE _G Peak Ground Acceleration, PGA	0.606 g
Site Coefficient, F _{PGA}	1.2
Site Class Adjusted MCE _G Peak Ground Acceleration, PGAM	0.728 g
Design Moment Magnitude	6.8
Notes:	
a. See the commentary in ASCE/SEI 7-16, Section 11.4.8 “Exception note” 2.	

4.2 Liquefaction

Seismically induced soil liquefaction can be described as a significant loss of strength and stiffness due to cyclic pore water pressure generation from seismic shaking or other large cyclic loading. The material types considered most susceptible to liquefaction are saturated, loose- to medium-dense granular soils and low-plasticity, fine-grained soils. Manifestations of soil liquefaction can include the loss of bearing capacity below foundations, surface settlements and tilting in level ground, and instabilities in areas of sloping ground. Soil liquefaction can also result in increased lateral and uplift pressures on buried structures. Lightweight or unrestrained buried structures may float upward to the ground surface during a liquefaction event.

Based on the review of the Seismic Hazard Zones Official Map for Newport Beach Quadrangle (CGS, 1997), the Site is located within the areas identified as potential liquefaction zone. However, given the site use and proposed improvement types, no liquefaction mitigation improvements are recommended.

4.3 Lateral Spreading

When liquefaction occurs, sloping ground or level ground near a steep slope or vertical face can potentially move as a mass downslope or towards the steep slope/vertical face, applying lateral forces to structures and their foundations, and potentially imposing large deformations.

Given the absence of a steep slope or vertical face, lateral spreading is not believed to pose a significant hazard to the proposed improvements.

4.4 Fault Surface Rupture

Fault surface rupture refers to the offset that occurs in the ground during an earthquake as a result of the relative movement of the ground on both sides of a fault. When that offset reaches the ground surface, either because the fault extends to the surface or because the offset propagates from the fault at depth through overlying soil to the surface, it is referred to as surface fault rupture. A review of published geologic data and the locations of fault-rupture hazard zones in Southern California did not indicate the presence of any active or potentially active faults crossing on or projecting towards the proposed improvements. The nearest identified fault zone is located approximately 1.2 miles to the northeast from the Site. Based on the above discussion, fault rupture is not believed to pose a hazard to the proposed improvements.

4.5 Other Geologic Hazards

Other geologic hazards, including land sliding, tsunami, and volcanic activity, are not considered to be significant hazards, given the geologic and topographic setting of the Site, and are not likely to pose an impact to the proposed improvements.

5. GEOTECHNICAL ENGINEERING ASSESSMENTS AND RECOMMENDATIONS

5.1 General

The preliminary recommendation provided herein assume that the proposed structures will generally be placed outside the identified limits of the waste, as shown on the draft conceptual plans prepared by RJM (Figure 2). Based on our understanding of site conditions, it is our opinion that the proposed improvements as shown in the draft conceptual plan are feasible from the geotechnical perspective provided that the recommendations outlined in this report are implemented in the design and construction.

5.2 Earthwork and Grading

Earthwork should be performed in accordance with the geotechnical recommendations of this report, the project specifications, applicable sections of the California Building Code (2022), applicable Orange County grading regulations, the current version of the Standard Specifications for Public Works Construction “Greenbook,” as well as California Occupational Safety and Health Administration (Cal OSHA) safety requirements.

Earthwork at the Site is expected to include minor grading to achieve the planned vertical grades, subgrade preparation, limited excavations for foundations, and potential retaining wall backfill. Since the proposed park structures are generally expected to be outside the delineated limits of the waste, it is expected that the earthwork and grading activities will generally not include waste excavation. However, limited partial waste excavation may be needed, if encountered during construction, particularly near the identified limits of the waste. Geosyntec recommends that earthwork be performed under the observation and testing of an experienced geotechnical landfill engineer to help further identify the limits of potential waste materials and limit the volume of potential waste excavation.

In addition, proposed grading work should avoid as much as possible disturbance to the existing oil wells at the Site. Grading work that might require adjustment to oil well height/depth can be considered “Re-entry into the well” which may trigger the need for potentially costly re-abandonment of the affected wells to current California Geologic Energy Management Division (CalGEM) Standards. Geosyntec recommends that limited excavation be performed at the geophysical survey inferred locations of the oil wells to physically confirm the well locations during detailed design phase of the project.

5.2.1 Subgrade Preparation and Overexcavation

The grading areas should be cleared of debris, and organic or deleterious materials. Such materials should be removed and properly disposed off-site. Abandoned underground utilities (if

encountered) should either be excavated and the trench properly backfilled or the pipe filled with two-sack sand-cement slurry.

Existing subgrade material should be overexcavated to a minimum depth of 12 inches below the bottom of proposed concrete slab or below the bottom of footings and replaced with engineered fill. The horizontal limits of removal excavation should extend at least 2 ft beyond the outer edge of concrete slabs.

The bottoms of excavations/footings should be scarified to a depth of 8 inches, moisture conditioned between 1 and 3 percent above optimum moisture content, and compacted to at least 90 percent of the maximum dry density as determined by ASTM D1557.

Excavation beyond the above requirements may be needed if waste or other unsuitable materials are encountered and replaced with engineered fill, as directed by the geotechnical engineer.

5.2.2 Fill and Backfill

Fill soils should possess:

1. At least 40% material less than ¼-inch in size;
2. A maximum size in the largest dimension of 3 inches;
3. Less than 50% of fines content passing sieve No. 200;
4. A plasticity index of less than 15 and a liquid limit of less than 40;
5. An expansion index (ASTM D4829) of less than 20 for materials placed within 5 feet of retaining walls, and an expansion index of less than 50 for other fill areas; and
6. No perishable, organic, deleterious, or otherwise unsuitable material.

The project geotechnical engineer should review and evaluate the proposed fill materials before their use.

Fill and backfill material should be placed in loose lifts no thicker than 8 inches, moisture conditioned, and processed as necessary to achieve uniform moisture content at 0 to 3 percent above the optimum moisture content. Each lift should be compacted to not less than 90 percent relative compaction. Relative compaction is defined as the ratio of the in-place dry density to the theoretical laboratory maximum dry density, using ASTM D1557 as the compaction standard. The in-place dry density and moisture content should be determined in accordance with ASTM D6938 or ASTM D1556 at a frequency as determined by the qualified geotechnical representative responsible for quality assurance during construction.

5.2.3 Surface Drainage

Surface drainage should be planned to prevent ponding and promote the drainage of surface water away from the concrete slabs/flatworks and towards suitable collection and discharge facilities.

Paved areas should be sloped to drain water away from structures and flatwork at a minimum gradient of 1 percent, and unpaved areas should be finish graded with a minimum slope of 2 percent away from the concrete slabs.

Additionally, for proposed landscaped areas and park facilities developed above the known waste limit, the amount of irrigation should be limited/minimized as much possible since moisture infiltration can accelerate the rate and increase the overall magnitude of settlement in waste. This may be achieved through the use of smart irrigation systems that limit the amount of water or use of vegetation types that can sustain with little water to minimize the infiltration of water into the waste material. Furthermore, proper positive drainage should be implemented and maintained to reduce potential ponding.

5.3 Shallow Foundation Recommendations

Shallow foundations, such as spread and continuous footings are suitable to support the proposed structures at the Site as shown in the draft conceptual plans prepared by RJM dated 25 July 2023 (Figure 2).

Allowable bearing pressure of 2,000 psf can be used for the foundations with a minimum width of 2 ft and minimum embedment of 2 ft. The allowable bearing capacity can be increased by one-third for short term wind or earthquake loading conditions.

Resistance to lateral loads may be provided by passive resistance along the outside face of the foundation and frictional resistance along the bottom of concrete. For allowable passive resistance, an equivalent fluid weight of 150 pounds per cubic foot (pcf) can be used for design of foundations. Passive resistance of the top 1 ft of soil should be neglected unless the grade next to the foundation is paved. If friction is used to resist lateral loads, a coefficient of 0.25 between soil and foundation concrete can be used.

Total and differential settlements of foundations are expected to be in tolerable ranges if recommendations provided in this report are implemented. Total settlement is not expected to exceed one inch, while differential settlements between footings are expected not to exceed approximately one-half inch.

A unit modulus of subgrade reaction for compacted subgrade can be assumed as 150 pci. The recommended value is valid for a unit area of one square foot. For larger loading areas, the modulus of subgrade reaction can be estimated by the following equation:

$$k_B = k_1 [(B + 1) / (2 B)]^2$$

where B is the width of effective soil reaction area in ft, and k_1 is the unit modulus of subgrade reaction.

5.4 Slabs-On-Grade

Conventional concrete slabs-on-grade may be used for the hardscape at the Site. Subgrade soils supporting the slab should be prepared as recommended in Section 5.2.1. At the time of concrete pour, the subgrade soils should be firm and relatively unyielding. Significant local loads are not expected in these slabs, as they are not expected to serve as structural slabs.

The concrete slabs-on-grade thickness and steel reinforcement should be properly designed by the project structural engineer for the anticipated floor loads and other structural considerations. Crack control or expansion/contraction joints should be provided at spacing appropriate for the slab thickness.

Concrete slabs should be underlain by a minimum of 4 inches of compacted clean, coarse sand or aggregate. Special care should be taken by the contractor so that a uniform thickness of sand is maintained to achieve uniformity in the concrete thickness for the slab. Geosyntec recommends that the subgrade soils be wetted prior to placement of the sand or aggregate beneath the slab.

5.5 Lateral Earth Pressures for Retaining Walls

In general, retaining walls should be designed to resist earth pressures, surcharge loads, and anticipated hydrostatic pressure.

The lateral earth pressure used in design of the cantilever retaining wall should include a triangular distribution with an equivalent fluid weight of 40 pcf.

Surcharge pressures (dead or live) should be added to the above lateral earth pressures where surcharge loads may be located above or adjacent to the wall. Surcharge pressures should be applied as a uniform rectangular pressure distribution by using a lateral earth pressure coefficient of 0.33 for cantilever walls. Surcharges that are set back behind the wall a horizontal distance greater than the wall height need not be included in the design pressure. A uniform vertical surcharge pressure of 300 psf may be used to simulate traffic loads.

The lateral earth pressures recommended above are based upon the assumption that the grade behind the walls is level and the wall backfill is well-drained to prevent the buildup of hydrostatic pressure behind the wall. Lateral earth pressures on walls for specific wall heights, unique surcharge conditions, or other conditions not described herein can be developed once details and construction procedures are available.

5.6 Construction Observation and Considerations

We recommended that a representative from Geosyntec as the Geotechnical Engineer of Record with experience in landfill engineering review the subsurface conditions as they are exposed during construction, observe, and assess the site preparation and earthwork construction, observe the

materials exposed in excavations, and assess whether subsurface conditions encountered throughout the site deviate significantly from those used as a basis for development of the recommendations contained herein. The Geotechnical Engineer of Record shall alert all parties of any unsuitable conditions related to the aspects discussed in this report.

Based on the field observations, additional recommendations may be provided regarding the suitability of soil and other materials for compaction, import soil, etc.

It is recommended that the Geotechnical Engineer of Record maintain a full-time on-site presence for construction quality assurance (CQA) during earthwork operations such as footing excavations and fill placement.

6. LIMITATIONS

This report was prepared exclusively for use by City of Huntington Beach, in support of the proposed improvements at Edison Park. The report is not intended to be suitable for reuse on extensions or modifications of the project or for use on any project other than the currently proposed development, as it may not contain sufficient or appropriate information for such uses. If this report or portions of this report are provided to contractors or included in specifications, it should be understood that they are provided for information only.

Subsurface deposits may vary in type, strength, and many other important properties between points of exploration due to non-uniformity of the geologic formations or to man-made cut and fill operations. While we cannot evaluate the consistency of the properties of materials in areas not explored, the conclusions drawn in this report are based on the assumption that the data obtained in the field are reasonably representative of field conditions and are conducive to interpolation and extrapolation.

Our investigation and evaluations were performed using generally accepted engineering approaches and principles available at this time and the degree of care and skill ordinarily exercised under similar circumstances by reputable Geotechnical Engineers practicing in this area. No other representation, either expressed or implied, is included or intended in our report.

7. REFERENCES

- American Society for Testing and Materials, 2020. Annual Book of ASTM Standards. Section 4 Construction, Volume 04.08 Soil and Rock.
- CGS (1997). *Seismic Hazard Zones Official Map for Newport Beach Quadrangle*.
- CGS (2006). *Seismic Hazard Zone Report for the Anaheim and Newport Beach 7.5-Minute Quadrangles*, Orange County, California.
- Geosyntec (2010). *Construction Quality Assurance Report, Landfill Gas Collection and Control System Construction, Cannery Street Former Refuse Disposal Station, Huntington Beach, California*, prepared by Geosyntec Consultants, Inc. dated March 2010.
- Geosyntec (2018). *Draft Feasibility Study for Edison Park Settlement Related Damage Repair*, Geosyntec Consultants, Inc., October 3, 2018.
- Geosyntec (2021). *Focused Area Waste Limit/Depth Evaluation, Edison Park, Huntington Beach, California*, prepared by Geosyntec Consultants, Inc. dated June 2021.
- Geosyntec (2023). *Letter Report – Geophysical Oil Well Locating Survey, Edison Park, Huntington Beach, California*, prepared by Geosyntec Consultants, Inc. dated July 2023.
- “Greenbook,” Standard Specifications for Public Works Construction, 2021 Edition.
- The Earth Technology Corporation (TETC) (1990). *Report, Solid Waste Assessment Test, Cannery Street Disposal Station, Huntington Beach, California*.
- TRC (2001). *Environmental Site Assessment Report, Former Cannery Street Refuse Disposal Station*, prepared for the County of Orange Integrated Waste Management Department. January.

TABLE

Table 1. Summary of Findings and Preliminary Recommendation from Geosyntec’s Review of Edison Park Draft Conceptual Plan Prepared by RJM dated 25 July 2023

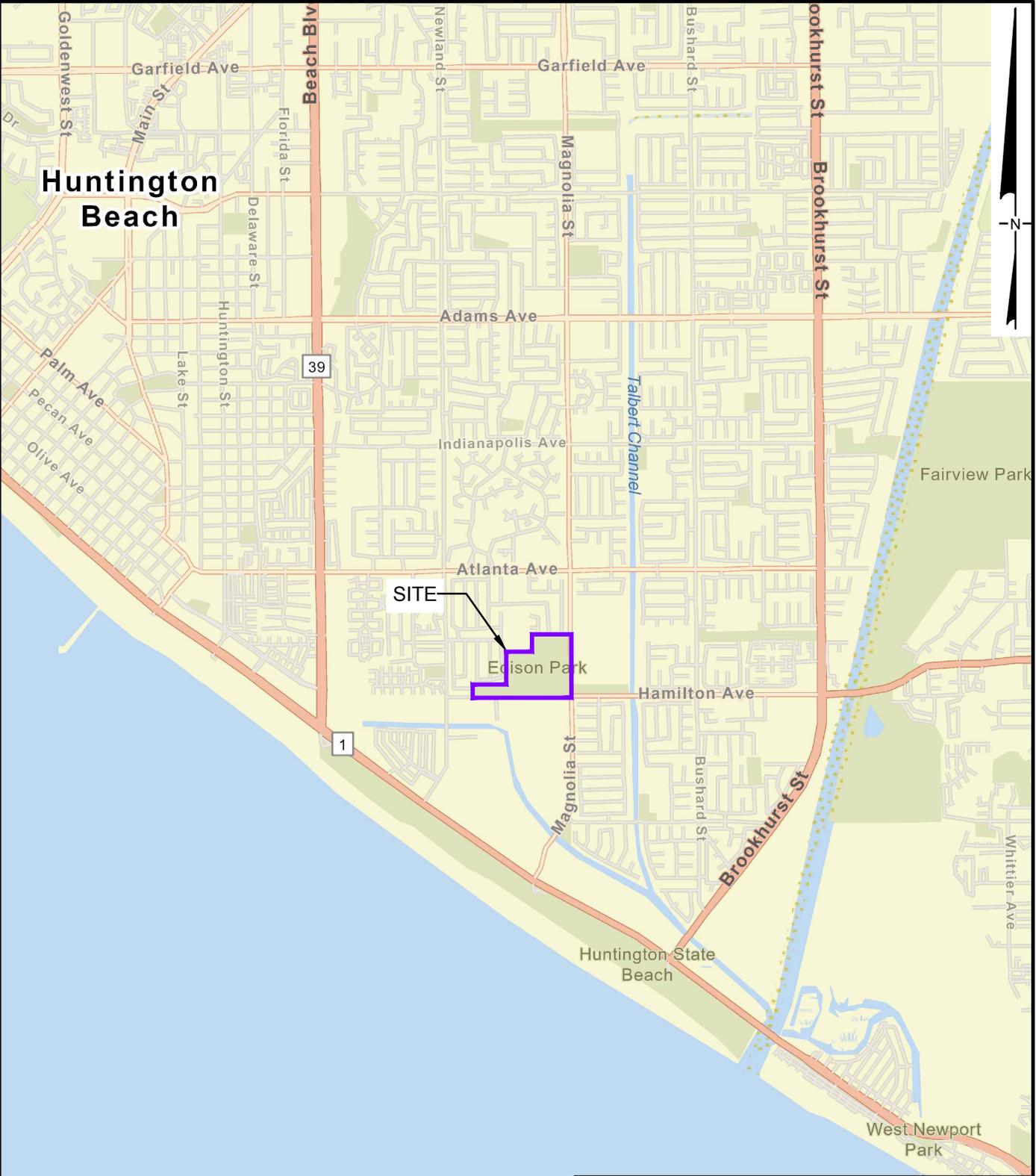
Item No.	Proposed Improvement/ Existing Features	Within waste limit? (Yes/No)	Description	Notes/Comments	Preliminary Recommendations
1	Reconfigured parking lot with new entry at Edison H.S. intersection. (Total Parking Spaces +/- 250)	No (However, in close proximity to inferred locations of Oil Wells #1 and #2)	Conceptual plans show notch around the oil well #1 for the proposed parking areas.	Placing a parking lot over the oil wells is generally not expected to impede access to the oil wells. However, care must be taken to not disturb the oil wells by grading activities.	Please note: proposed grading work should avoid as much as possible disturbance to the existing “plugged” oil wells. Grading work that might require adjustment to well height/depth can be considered “Re-entry into the well” which may trigger the need for costly re-abandonment of the affected wells to current CalGEM Standards. In addition to cost implications, this can also result in significant delay. Recommends the following: <ol style="list-style-type: none"> 1) Perform limited excavation at the locations marked by geophysical survey for confirmation and survey of actual well locations during detail design phase of the project. 2) Adjust, as/if needed, the extent of the proposed parking reconfiguration to be compatible with the actual oil well location(s).
2	New parking lot entry at Poston Lane.	No		Similar comments as Item No. 1	Similar recommendations as Item No. 1
3	New sport court plaza with seating and shade.	No	n/a	n/a	n/a
4	New full court basketball court (4).	No	n/a	n/a	n/a
5	New half-court basketball court (4).	No	n/a	n/a	n/a
6	New tennis courts (2).	No	Concrete slabs with potential penetrations for tennis nets and ball containment chain link fencing	While the tennis court is outside the shown limits of waste, the western edge of the tennis courts is in close proximity to the edge of the waste which may result in localized surface cracking/distress.	Limited partial waste excavation maybe required. Potential impact is anticipated to be not significant, and limit/volume of waste excavation can be adjusted in the field during construction, if encountered.
7	New practice hitting wall (4).	No	n/a	n/a	n/a
8	New picnic tables.	No	n/a	n/a	n/a
9	Dual use courts (2 tennis with 8 pickleball).	No	n/a	n/a	n/a
10	Existing tennis courts (#3 and #4) converted to pickleball courts (8).	Yes	Concrete slabs with potential penetrations for pickleball nets and ball containment chain link fencing. Southern half of the existing tennis courts to be removed and may salvage the northern half.	Entirely within the waste limits and on top of thick portion of waste which may result in significant total and differential settlements. Northern half of the tennis courts may be salvageable but suggest taking a closer look to assess its current condition.	Suggest one of the following: <ol style="list-style-type: none"> 1) Partial waste removal and off-site disposal of waste and placement of engineered fill prior to construction of the proposed pickleball court. [This option is possible but could add cost to the project] 2) Place the proposed courts on deep foundation system capable to transferring the load to competent soil layer below the existing waste. [This option is possible but

Item No.	Proposed Improvement/ Existing Features	Within waste limit? (Yes/No)	Description	Notes/Comments	Preliminary Recommendations
					potentially costly and with added complexity] Alternatively, if the above two options are not feasible, the proposed pickleball courts can be constructed with the understanding that the performance of the concrete slab will be affected by differential settlement and extensive repair/maintenance and/or replacement of the proposed courts will be required.
11	Reconfigured walkways.	No	n/a	n/a	n/a
12	Existing trees.	Yes	n/a	n/a	n/a
13	New trees.	No	n/a	n/a	n/a
14	New shade shelter	No	n/a	n/a	n/a
15	Existing softball fields.	Yes		Periodic corrective regrading work might be required.	This type of park amenities can tolerate settlement and considered compatible for sites with waste layer.
16	Existing SCE Towers and overhead utility lines.	No	n/a	n/a	n/a
17	Expanded exterior restrooms at Community Center.	No	n/a	n/a	n/a
18	Existing walkways.	Yes	Concrete surface		If the existing walkways are being replaced, recommend using surfaces that are more tolerant to differential settlement such as flexible pavers. Concrete surfaces are prone to cracking from potential settlement and can result in uneven walking surfaces.
19	New U10 (50yds x 70yds) soccer field overlay in SCE Corridor (pending SCE review and approval).	No	n/a	n/a	n/a
20	New U14 (60yds x 70yds) soccer field overlay in SCE Corridor (pending SCE review and approval).	No	n/a	n/a	n/a
21	Enlarged plaza all-wheels	Partially Yes	Concrete features proposed to be constructed on existing concrete slab with no intrusion/penetration below the existing slab within the limits of waste, some potential for penetration outside the waste limits	Proposed all-wheels plaza straddles between the waste and native soils; however, this feature is generally considered to be compatible with the site characteristics.	Suggest one of the following: 1) Perform selected repair of the existing concrete slab if needed, especially in the older sections of concrete that has shown signs of distress/cracks. 2) Remove the existing concrete slab and replace with new slab with potential for limited waste removal.
22	New Play Area with rubber surfacing, equipment, and shade.	No	n/a	n/a	n/a
23	New pump track.	No	n/a	n/a	n/a
24	Landfill monitoring station	No	Existing landfill gas management/blower system	Need to be protected in place	Suggest vegetation screen for enhanced aesthetics of the area
25	Oil Well #1	No	n/a	n/a	n/a
26	Oil Well #2	No	n/a	n/a	n/a

n/a: not applicable

FIGURES

N:\CADD\EDISON PARK\EDISON PARK-SC1369\FIGURES\SC1369F002 - Last Saved By: KViswanathan on 9/13/23



BASEMAP SOURCE: CITY OF HUNTINGTON BEACH,
 COUNTY OF LOS ANGELES, CALIFORNIA STATE PARKS,
 ESRI, HERE, GARMIN, SAFEGRAPH, GEOTECHNOLOGIES,
 INC., METI/NASA, USGS, BUREAU OF LAND
 MANAGEMENT, EPA, NPS, USDA.

SITE LOCATION MAP EDISON PARK - PROPOSED IMPROVEMENTS HUNTINGTON BEACH, CALIFORNIA	
PROJECT NO: SC1369	NOVEMBER 2023
FIGURE 1	

\\orangecounty-01\DATA\PRJ\CAWP\SC1369 - Edison Park Geotech Support\08 Geotechnical Report\Figures\Figure 2 - Conceptual Plan by RJM.pptx

EDISON PARK CONCEPTUAL PLAN LEGEND

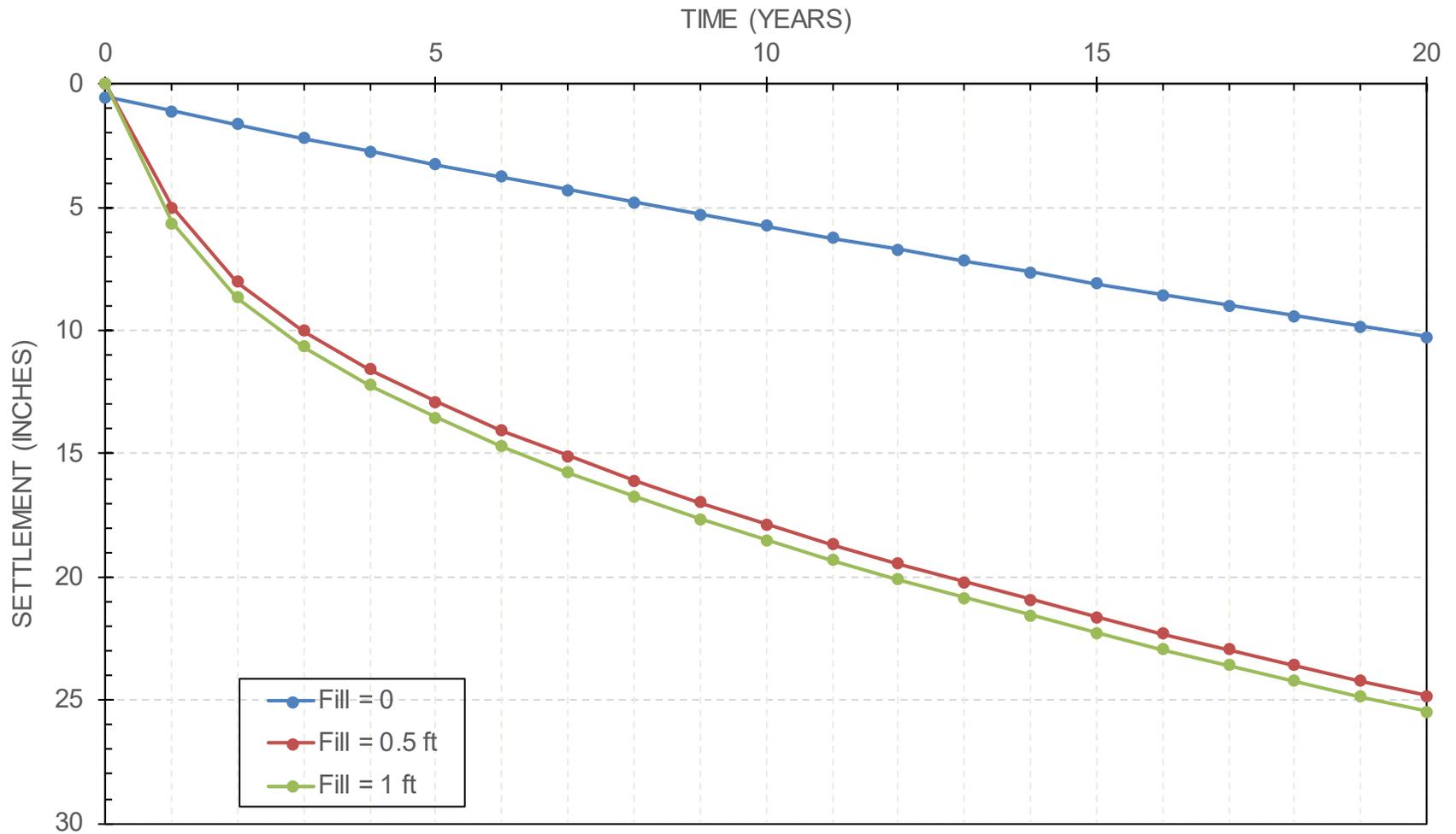
1. Reconfigured parking lot with new entry at Edison H.S. intersection. (Total Parking Spaces ± 250)
2. New parking lot entry at Poston Lane.
3. New sport court plaza with seating and shade.
4. New full court basketball court (4).
5. New half court basketball court (4).
6. New tennis courts (2).
7. New practice hitting wall at tennis court
8. New picnic tables.
9. Dual use courts (2 tennis with 8 pickleball).
10. Existing tennis courts (#3 and #4) converted to pickleball courts (8).
11. Reconfigured walkways.
12. Existing trees.
13. New trees.
14. New shade shelter.
15. Existing softball fields.
16. Existing SCE Towers and overhead utility lines.
17. Expanded exterior restrooms at Community Center.
18. Existing walkways.
19. New U10 (50 yds x 70 yds) soccer field overlay in SCE Corridor (pending SCE review & approval).
20. New U14 ((60 yds x 70 yds) soccer field overlay in SCE corridor (pending SCE review & approval).
21. Enlarged plaza all-wheels.
22. New Play Area with rubber surfacing, equipment and shade.
23. New Pump Track
24. Landfill monitoring station.
25. Oil Well #1
26. Oil Well #2



DRAFT CONCEPTUAL PLAN BY RJM
 EDISON PARK - PROPOSED IMPROVEMENTS
 HUNTINGTON BEACH, CALIFORNIA

	FIGURE
	2
PROJECT NO: SC1369	NOVEMBER 2023

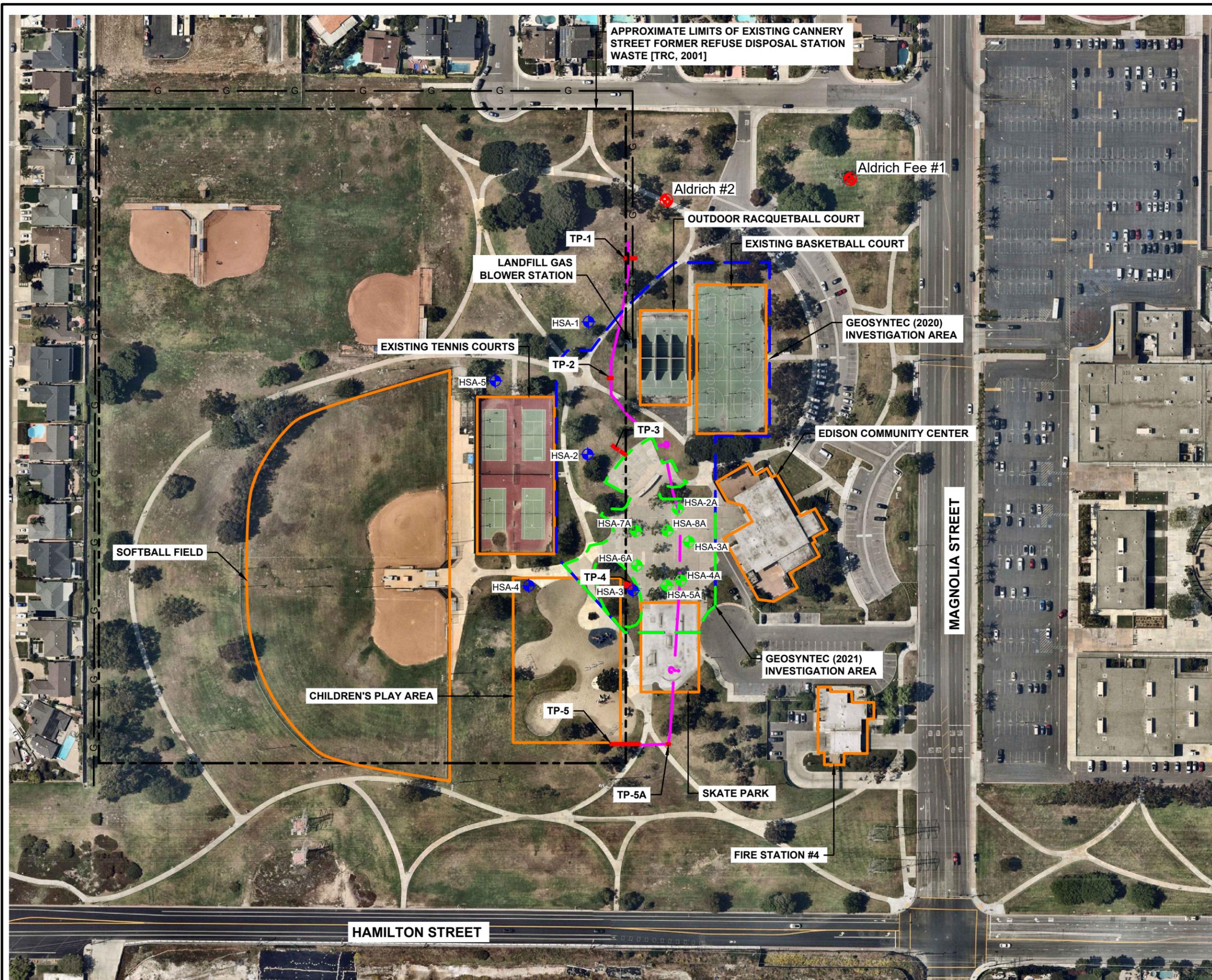
07/25/2023



Note:
Waste settlement estimates from Geosyntec (2018) Feasibility Study for Edison Park Settlement Related Damage Repair

WASTE SETTLEMENT ESTIMATES EDISON PARK – PROPOSED IMPROVEMENTS HUNTINGTON BEACH, CALIFORNIA	
PROJECT NO: SC1369	NOVEMBER 2023
FIGURE 3	

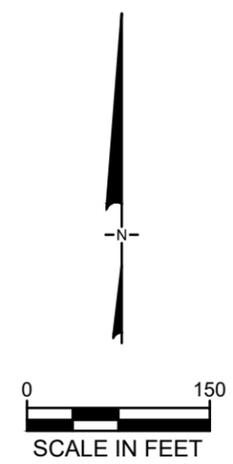
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LEGEND

-  BORINGS PERFORMED TO DETERMINE DEPTH OF WASTE (GEOSYNTEC, 2020)
-  EXPLORATORY TEST PITS PERFORMED (GEOSYNTEC, 2020)
-  BORINGS PERFORMED TO DETERMINE DEPTH OF WASTE (GEOSYNTEC, 2021)
-  INTERPRETED LOCATION OF OIL WELL FROM GEOPHYSICAL OIL WELL LOCATING SURVEY (GEOSYNTEC, 2023)
-  GEOSYNTEC (2020) INVESTIGATION AREA
-  GEOSYNTEC (2021) INVESTIGATION AREA
-  EXISTING BURIED LFG HEADER PIPE
-  LATERAL LIMITS OF WASTE MATERIAL DELINEATED DURING GEOSYNTEC 2020 AND 2021 EXPLORATIONS

AERIAL BACKGROUND IMAGERY: © 2023 NEARMAP.



EXISTING CONDITIONS AND FIELD INVESTIGATION LOCATIONS EDISON PARK PROPOSED IMPROVEMNTS HUNTINGTON BEACH, CALIFORNIA	
	FIGURE 4
PROJECT NO: SC1369	NOVEMBER 2023

APPENDIX A

GEOSYNTEC (2021) WASTE DELINEATION REPORT

June 7, 2021

Farhad Bolourchi, MSCE
Project Coordinator - Development Division
Community Service Department - City of Huntington Beach
2000 Main Street
Huntington Beach, California 92648

**Subject: Focused Area Waste Limit/Depth Evaluation
Edison Park, Huntington Beach, California**

INTRODUCTION

At the request of City of Huntington Beach, Community Services Department (City), Geosyntec Consultants Inc. (Geosyntec) has prepared this letter report documenting the results of limited subsurface investigations to evaluate the approximate lateral limit(s) and depth(s) of existing waste along a selected portion of the eastern edge of the former Canary Street Refuse Disposal Station (Landfill) at Edison Park (hereafter Site). The requested area for waste delineation at the Site is shown on **Figure 1** as it was provided to Geosyntec by the City in January 2019. The objective of the scope of work performed by Geosyntec was to collect field data to support the City in its evaluation of potential locations/types of proposed facilities/amenities at the Site.

BACKGROUND

Edison Park was constructed over the Cannery Street Former Refuse Disposal Station, also previously known as Cannery Street Landfill (CSL) in early 1970s. The CSL is approximately 27.5 acres, located in the City of Huntington Beach at the northwest corner of the intersection of Magnolia Street and Hamilton Avenue. The site's formal address is 21379 Magnolia Street, Huntington Beach, California 92647.

Some of the existing facilities/amenities at the Site are constructed on top of waste material deposited at the former CSL. Settlement, differential settlement, and potential sinkholes are typically expected to occur at facilities constructed on top of waste. The effect of settlement, differential settlement and/or a combination of both are observed at the existing tennis courts, sidewalks, open park areas and other hardscape/amenities at the Site. However, the surface expression of settlement/differential settlement is more pronounced in the vicinity of the Tennis courts potentially limiting the functionality and aesthetics of the Tennis courts.

In 2018, the City retained Geosyntec to prepare a feasibility study to evaluate several alternatives for repairing or reconstructing settlement related damage to the existing park and recreational areas at the Site [Geosyntec, 2018].

Geosyntec performed two site investigations for this project – the first investigation was performed between in November 2020 in the landscaped areas within the requested focus area and the second investigation was conducted on March 2021 in the areas of the park within the focus area currently under concrete slab.

PRE-FIELD INVESTIGATION ACTIVITIES

Geosyntec prepared a Site-specific Task Hazard Analysis (THA) that identified Site conditions, potential hazards, hazard control, monitoring procedures, personal protective equipment, and emergency procedures. Prior to field investigations, Geosyntec notified Underground Service Alert (USA) of southern California to mark and clear utilities in, and near to, the investigation focus area to reduce the potential for accidentally encountering buried utility lines. In addition, Geosyntec utilized the services of GEOVision, Inc. to perform a limited geophysical survey of the investigation focus area (and other potential boring/test pit locations) to evaluate potential buried underground utilities/features prior to performing field investigations. Geosyntec also obtained permits to advance soil borings from the Orange County Health Care Agency, Environmental Health Division, required under Orange County Well Ordinance (County Ordinance No. 2607) [Permit No. 20-08-22 and Permit No. 21-03-07]. The DigAlert ticket confirmations, field sketches provided by GEOVision and the soil boring permits are included here in **Appendix A**.

Geosyntec had, under a previous authorization from the City, prepared and submitted to the South Coast Air Quality Management District (SCAQMD) the required permit application package in general compliance with Rule 1150 which included an Excavation Management Plan. The permit application, was submitted on April 30, 2019 and deemed complete on May 03, 2019 [Application Number: 612262]. The SCAQMD issued the permit on September 11, 2020. An SCAQMD permit was not required for the second investigation. The permit issued by the SCAQMD for the first investigation and a copy of the Excavation Management Plan is included here in **Appendix B**.

FIELD INVESTIGATION

Test Pits

Five (5) exploratory test pits were logged between November 24 and November 25, 2020 by a Geosyntec engineer under the direction of a Professional Engineer licensed in the State of California to evaluate the approximate lateral limit(s) of the existing waste in the approximate areas shown on **Figure 2A**. The logs were prepared based on visual field observations of the exploratory test pits' exposed side-wall and retrieved soil cuttings. The logs include a general description of the encountered soils in accordance with the Unified Soil Classification System (USCS) and Standard Practice for Description and Identification of Soils (ASTM D2488) as well as a field sketch of the exploratory test pit wall showing interfaces of encountered materials. Geosyntec subcontracted with American Integrated Services, Inc. (AIS) to excavate and backfill the exploratory test pits using a standard backhoe.

The proposed exploratory test pits commenced at the approximate waste limit estimated by TRC [2001] as shown on **Figure 1**. The exploratory test pits were advanced to an approximate depth of 5 feet vertically and horizontally until existing waste limits are visually observed. Once waste was encountered in the exploratory test pit, efforts were made to reduce the excavation of additional material. Waste materials were not, to the extent practical, removed from the excavation. The exploratory test pits were generally advanced until waste material was encountered or until an obstruction such as surface concrete or other infrastructure was reached. Plastic tarps were placed with plywood sheeting to temporarily stage the test pit spoils during the excavation. Additionally, approximately 10 ft by 20 ft fence panels with windscreen attached were used to serve as a work exclusion area and visual barrier on three sides. Existing grass and topsoil were segregated from the exploratory test pits and replaced after backfilling the test pits directly with the materials excavated from the test pits. Backfill material was compacted in place to help provide unyielding condition using a roller attached to the end of the backhoe, however, density or moisture testing was not performed and/or required. Test pit logs are provided here in **Appendix C**.

Test pits were first advanced vertically until the waste material was encountered, and then advanced horizontally in an eastward direction to determine the lateral limit of the waste. The thickness of the soil overlying the waste were generally observed to range between 2 ft to 3.5 ft below the ground surface (bgs). Waste material was encountered at the five exploratory test pits (TP-1 through TP-5). Lateral limit of waste was delineated at test pits TP-1 and TP-2; however, the lateral limit of waste could not be identified at test pits

TP-3, TP-4, and TP-5. The approximate lateral limits of the waste as observed by the exploratory test pits are indicated in **Figures 2A and 2B**. A summary of test pit dimensions, thickness of the soil layer/depth to the top of waste is presented in **Table 1**.

Table 1: Summary of Test Pits

Test Pit ID	Width (ft)	Length (ft)	Soil layer thickness/ Depth to Top of Waste (ft bgs)	Total Depth (ft bgs)
TP-1	3.5	19.5	3.0	4.5
TP-2	3.5	8.0	2.0	2.5
TP-3	3.5	21.5	3.0	3.5
TP-4	3.5 - 7.5	15.0	3.0	4.0
TP-5	3.5	45.0	2.0	2.5 - 4
TP-5A	3.5	6.0	2.0	3.5

Hollow-Stem Auger Borings

ABC Livion Drilling, Inc, working as a drilling subcontractor to Geosyntec advanced five (5) hollow-stem auger (HSA) borings on October 28, 2020 in the landscape areas and seven (7) HSA borings on March 12, 2021 in the concrete covered areas. The purpose of the HSA borings was to estimate the thickness of the existing waste layer at the approximate locations shown on **Figures 2A and 2B**. The HSA borings advanced near the estimated lateral limits of waste (i.e., HSA-1 through HSA-3) started approximately 5 to 10 feet to the west of waste limit as observed by the exploratory test pits. The purpose of these HSA borings (i.e., HSA-1 through HSA-3) was to evaluate the depth of waste at or near the lateral limits of waste as observed by field measurements from the exploratory test pits. The objective of the HSA borings advanced near the Tennis Court (i.e., HSA-4 and HSA-5) was to estimate the depth of existing waste in the vicinity of the Tennis Court area. The objective of HSA-2A through HSA-8A was to confirm if waste is present under the existing concrete slab and determine its depth, if present. Borehole logs for the HSA borings are provided in **Appendix D**.

Each boring was logged by Geosyntec field engineer and includes a description of the encountered soils performed in general accordance with the USCS and Standard Practice for Description and Identification of Soils (ASTM D2488). Soil samples were collected from the HSA borings for logging and visual identification purposes, but no samples were retained for laboratory testing. Split-spoon samples were performed generally on the soil

material encountered at the bottom of the boreholes to estimate the depth of waste. Each boring was advanced to a minimum of 1 foot below the bottom of the waste material, or until refusal, to visually assess that bottom of waste was reached. The HSA borings were backfilled with hydrated bentonite chips and the upper six inches with topsoil. The cuttings were containerized in 55-gallon drums, stored on-Site pending waste profiling, and disposed off-Site by AIS under waste manifest. Groundwater levels encountered in the HSA borings were recorded using a water level indicator. The depths to encountered groundwater at each of the HSA are listed in **Table 2**.

The thickness of the soil overlying the waste material, as observed from the HSA borings were found to range between 2 ft to 3.5 ft bgs. Borings HSA-4 and HSA-5 were advanced to depths of 34 ft and 41.5 ft bgs, respectively. Borings HSA-1, HSA-2, and HSA-3 were advanced to depths of 11.5 ft, 16.5 ft, and 21.5 ft bgs, respectively. HSA-2A through HSA-8A were advanced to depths that ranged from about 16.5 to 18 feet. The depths of groundwater encountered in the landscape HSA borings (HSA-1 through HSA-5 performed) were observed to range between 8 and 12 ft bgs. The depths of groundwater encountered in borings (HSA-3A through HSA-5A, HSA-7A and HSA-8A) were observed to range between 12.5 and 16.5 ft bgs. Groundwater was not encountered at borings HSA-2A and HSA-6A. The depth of waste was identified in the HSA borings where waste was encountered except HSA-4, which hit refusal at a depth of 34 ft bgs before reaching the bottom of the waste. A summary of the HSA borings including the depth/thickness of the soil layer and waste, and the depth to groundwater is presented in **Table 2**.

Table 2: Summary of HSA Borings

Boring ID	Soil layer thickness/ Depth to Top of Waste (ft bgs)	Depth to bottom of Waste (ft)	Waste Thickness (ft)	Total Depth (ft bgs)	Depth to Groundwater (ft bgs)
HSA-1	3.5	10.5	7.0	11.5	10.5
HSA-2	2.5	15.5	13.0	16.5	12.5
HSA-3	2.5	20.5	18.0	21.5	11.0
HSA-4	2.0	–	>32.0	34.0	8.0
HSA-5	2.5	40.5	38.0	41.5	12.0
HSA-2A*	3.0*	10*	7.0*	16.5	Not observed
HSA-3A*	2.5*	10*	7.5*	16.5	15

Boring ID	Soil layer thickness/ Depth to Top of Waste (ft bgs)	Depth to bottom of Waste (ft)	Waste Thickness (ft)	Total Depth (ft bgs)	Depth to Groundwater (ft bgs)
HSA-4A*	2.5*	5*	2.5*	16.5	14.0
HSA-5A*	2.5*	15*	12.5*	17	16.5
HSA-6A*	2.5*	15*	12.5*	16.5	Not observed
HSA-7A*	3*	10*	7*	18	13.5
HSA-8A*	2.5*	11*	8.5*	16.5	12.5

*Soil materials encountered in this borehole contained slight traces of waste materials based on visual and odor field observations. No clearly defined waste layer was encountered in this borehole. Slight waste traces observed in this borehole may not be part of a continuous waste layer.

The approximate locations of the exploratory test pits and HSA borings were recorded using a hand-held global positioning system (GPS) unit.

Daily field reports with photo logs for the field investigation activities are included in **Appendix E**.

Air Monitoring

Geosyntec provided air monitoring services during the first field investigation phase of the project. The air monitoring was performed by Geosyntec in general accordance with the requirements of the SCAQMD Rule 1150. The general prevailing wind direction at the site was typically onshore from the west-southwest to east-northeast. The upwind and downwind monitoring locations are shown on **Figure 1**.

In accordance with the requirements of the SCAQMD Rule 1150, the following air quality parameters were monitored:

- Particulate matter (dust) as PM₁₀ – PM₁₀ monitoring will be performed using a DustTRAK DRX Handheld Aerosol monitor. Dust monitoring was conducted approximately every 60 minutes throughout the workday at the upwind and downwind monitoring locations. Action levels for dust at the monitoring locations was set in accordance with the SCAQMD Rule 1150 requirements at 0.05 mg/m³ above background. The recorded PM₁₀ levels were below the action level of 0.05 mg/m³ above background.
- Total Organic Compounds (TOCs) as methane – Continuous monitoring of TOC was conducted using an QRAE III monitoring equipment at the working face of

the excavation and at the downwind property monitoring location. The maximum sustained readings (greater than 15 seconds) were recorded at approximately every 15 minutes. Action levels for TOC readings at the excavation face and downwind property monitoring location was set at 500 ppmv and 200 ppmv, respectively, in accordance with the SCAQMD Rule 1150 requirements. The recorded TOC level were below the action levels at the monitoring locations.

- Odor – Unusual odor or increase in odor was not detected by Geosyntec personnel during the test pit excavation or HSA drilling.
- Local Weather – Local weather parameters were monitored at approximately every 15 minutes throughout the workday. Ambient Temperature (°F), and Wind Direction were monitored digitally from the KCAHUNT143 weather station located in close proximity to the Site. Wind Speed (miles/hour) was measured using a handheld Kestrel 4000 monitoring device.

Daily air monitoring logs are provided in **Appendix E**.

FINDINGS

Waste Delineated

Lateral limits of waste was delineated at two test pit locations (TP-1 and TP-2). Figure 2 shows an approximate limit of waste as identified from the test pits. The approximate depths to the encountered waste layer at TP-1 and TP-2 were 3.5 ft bgs and 3 ft bgs, respectively.

Waste Not-Delineated

Waste was identified at three test pit locations (TP-3, TP-4, and TP-5); however, the lateral limit of waste was not identified. It is likely that the lateral limits of waste at these locations may extend eastward past the obstruction such as the concrete slab at TP-3 and TP-4, and concrete sidewalk at TP-5. The approximate depths to waste from existing surface at TP-3, TP-4, and TP-5 ranged between 2 to 3 ft bgs.

Waste Depth

The depths of waste at HSA borings near the estimated lateral limits of waste (HSA-1 through HSA-3) were found to range between 10.5 ft and 20.5 ft bgs. The depth of waste at HSA-5 near the northern edge of tennis court was observed to be approximately 40.5 ft bgs. The depth of waste at HSA-4 near the southern edge of the tennis court could not be identified due to refusal, however waste was still observed up to 34 ft bgs. The

depths of waste at the borings under concrete slab (HSA-2A through HSA-8A) were found to range between 5 ft and 15 ft bgs.

Waste and Soil Layer Characteristics

The soil layer at the Site was visually classified as silty sand (SM) in general accordance with ASTM D2488. The thickness of the soil layer generally ranged between 2 to 3.5 ft bgs. The waste material encountered at the site generally composed of dark gray asphalt concrete debris and decayed wood pieces within the landscape areas and dark gray, medium to high plasticity clay soils, with trace debris and slight organic odor within the concrete slab areas. The waste materials did not have any unusual odor. The above characteristics of the waste material was consistent throughout the investigation locations.

Groundwater

Groundwater was encountered at all five HSA boring locations in the landscape areas and all but two HSA borings in the concrete slab areas. The depth to groundwater in the landscape borings generally ranged between 8 to 12 ft bgs. The depth to groundwater in the concrete slab borings generally ranged between 12.5 to 16.5 ft bgs except at HSA-2A and HSA-6A where groundwater was not encountered.

SUMMARY AND RECOMMENDATIONS

In general, existing waste limit was delineated along the Eastern limit of the CSL as identified by Test Pits (TP-1 and TP-2). However, the existing waste limit along the Southern Section of the Eastern limit of CSL was not delineated due the existing structures and/or concrete lined areas. Test Pits (TP-3, TP-4 and TP-5) were advanced until the test pit encountered a structure and/or lined areas. Based on borings HSA-2A through HSA-8A, traces of waste material impeded within soil layer is present under the concrete slab within the focus area as shown in **Figure 2B**. However, the exact waste amount that maybe impeded in the soil layer located in areas under the concrete slab of the site is not known. Geosyntec recommends that field observations and monitoring services are performed by an experienced landfill engineer during the construction and/or excavation phase of the project to help further identify the limit of potential waste materials. Geosyntec also recommends that excavation and/construction activities in the areas described in this letter report are performed by a licensed Contractor with extensive experience in working in landfill environments. Proposed design features, amenities and structures should take into consideration the potential presence of waste materials in the areas described in this letter report. Furthermore, Geosyntec recommends that the design team for proposed structures and park amenities work closely with an experience landfill

engineer that can provide design input recommendation including but not limited to potential settlement, methane, drainage, irrigation and other design considerations.

LIMITATIONS

The conclusions and professional opinions presented in this letter report were prepared for the City of Huntington Beach in accordance with generally accepted geotechnical and landfill engineering principles and practices.

The subsurface conditions presented in this letter report are based on information obtained from a limited number of exploratory test pits and HSA borings advanced to evaluate lateral limits and depths of the existing waste.

The data, conclusions, and recommendation contained herein should be considered only for this specific project and locations discussed in this letter report. Geosyntec is not responsible for any conclusions or recommendations that may be made by others, unless we have been given an opportunity to review such conclusions and/or recommendations and concur with them in writing. If any changes are made in the project as outlined in this letter report, the conclusions and/or recommendations contained in this letter report shall not be valid unless the changes are reviewed and the conclusions and/or recommendations of this letter report are modified or approved in writing by Geosyntec.

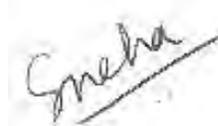
CLOSURE

We appreciate the opportunity of assisting you on this important project. If you have any questions about this letter report, or require additional information, please do not hesitate to call the undersigned at (714) 969-0800.

Sincerely,



Karthik Viswanathan, E.I.T.
Engineer



Sneha Upadhyaya, Ph.D.
Senior Staff Engineer



Yonas B. Zemuy, P.E.
Principal Engineer

Attachments:

- Figure 1 – Site Plan
- Figure 2a – Field Investigation Locations (North)
- Figure 2b – Field Investigation Locations (South)
- Appendix A – Soil Boring Permit, DigAlert Ticket Confirmations and Geophysical Utility Clearance Field Notes
- Appendix B – SCAQMD Permit for Rule 1150
- Appendix C – Test Pit Logs
- Appendix D – Boring Logs with Key
- Appendix E – Daily Field Reports
- Appendix F – Air Monitoring Logs

REFERENCES

- Geosyntec [2018], “Feasibility Study for Edison Park Settlement Related Damage Repair,” Geosyntec Consultants, Inc., October 3, 2018.
- TRC [2001], “Environmental Site Assessment Report, Former Cannery Street Refuse Disposal Station,” prepared for the County of Orange Integrated Waste Management Department. January.

Figures

N:\CADD\EDISON PARK\EDISON PARK-HL 1685\FIGURES\1685F016 - Last Saved by: KY/swanathan on 3/15/21



LEGEND

-  BORINGS PERFORMED TO DETERMINE DEPTH OF WASTE (GEOSYNTEC, 2020)
-  EXPLORATORY TEST PITS PERFORMED (GEOSYNTEC, 2020)
-  BORINGS PERFORMED TO DETERMINE DEPTH OF WASTE (GEOSYNTEC, 2021)
-  PREVIOUS INVESTIGATION AREA
-  CURRENT REQUESTED INVESTIGATION AREA
-  EXISTING BURIED LFG HEADER PIPE



SITE MAP - ADDITIONAL BORING LOCATIONS
 EDISON PARK - ADDITIONAL WASTE
 DELINEATION
 HUNTINGTON BEACH, CALIFORNIA

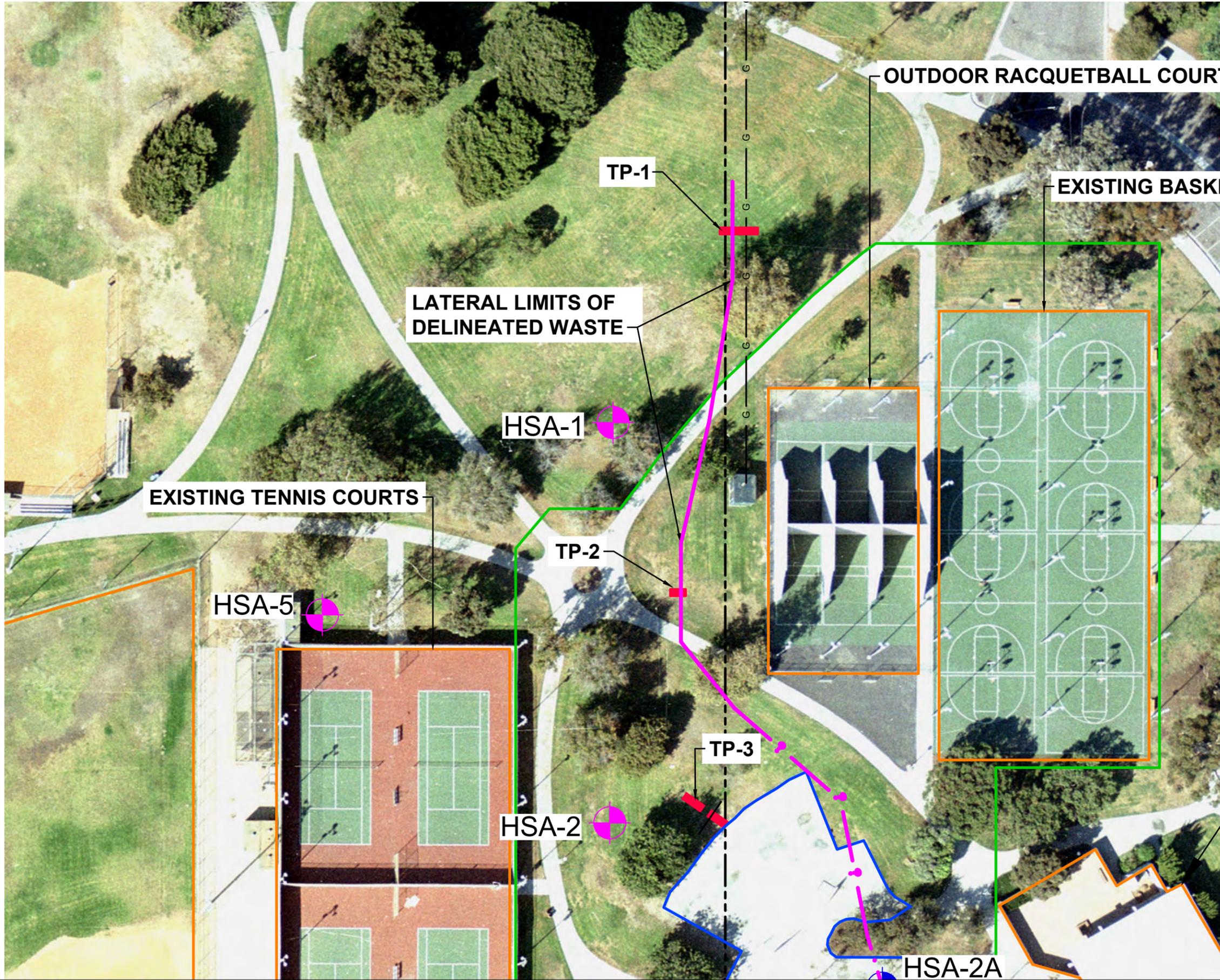


PROJECT NO: HL1685B

JUNE 2021

FIGURE
1

N:\CADD\EDISON PARK\EDISON PARK-HL1685\FIGURES\1685F014 - Last Saved by: KY/Iswanathan on 5/6/21



LEGEND

-  APPROXIMATE LIMITS OF EXISTING CANNERY STREET FORMER REFUSE DISPOSAL STATION WASTE [TRC, 2001]
-  BORINGS PERFORMED TO DETERMINE DEPTH OF WASTE (GEOSYNTEC, 2020)
-  EXPLORATORY TEST PITS PERFORMED (GEOSYNTEC, 2020)
-  REQUESTED INVESTIGATION AREA (2020)
-  REQUESTED INVESTIGATION AREA (2021)
-  EXISTING BURIED LFG HEADER PIPE
-  APPROXIMATE LATERAL LIMITS OF DELINEATED WASTE
-  AREAS WITH TRACES OF WASTE MATERIAL (QUERIED WHERE UNCERTAIN)

FIELD INVESTIGATION LOCATIONS (NORTH)
EDISON PARK - WASTE DELINEATION
HUNTINGTON BEACH, CALIFORNIA

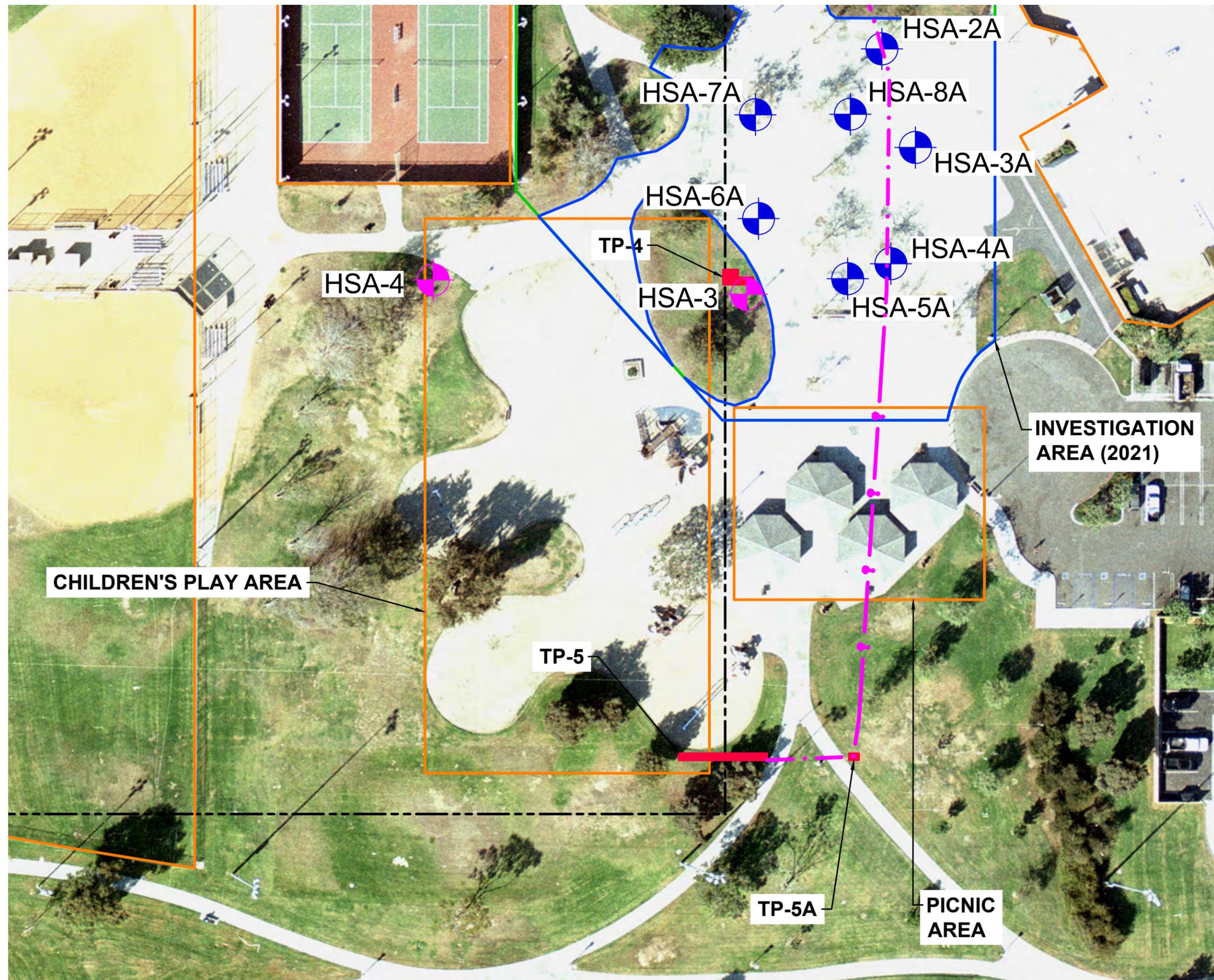


PROJECT NO: HL1685B

JUNE 2021

FIGURE
2A

N:\CADD\EDISON PARK\EDISON PARK-HL 1685\FIGURES\1685F014 - Last Saved by: KY/Iswanathan on 5/6/21



- LEGEND**
- APPROXIMATE LIMITS OF EXISTING CANNERY STREET FORMER REFUSE DISPOSAL STATION WASTE [TRC, 2001]
 - BORINGS PERFORMED TO DETERMINE DEPTH OF WASTE (GEOSYNTEC, 2020)
 - EXPLORATORY TEST PITS PERFORMED (GEOSYNTEC, 2020)
 - BORINGS PERFORMED TO DETERMINE DEPTH OF WASTE (GEOSYNTEC, 2021)
 - REQUESTED INVESTIGATION AREA (2020)
 - REQUESTED INVESTIGATION AREA (2021)
 - G — EXISTING BURIED LFG HEADER PIPE
 - - - AREAS WITH TRACES OF WASTE MATERIAL (QUERIED WHERE UNCERTAIN)



FIELD INVESTIGATION LOCATIONS (SOUTH)
EDISON PARK - WASTE DELINEATION
HUNTINGTON BEACH, CALIFORNIA

Geosyntec consultants		FIGURE 2B
PROJECT NO: HL1685B	JUNE 2021	

Appendix A

Soil Boring Permit, DigAlert Ticket Confirmations and Geophysical Utility Clearance Field Notes

Karthik Viswanathan

From: noreply@digalert.org
Sent: Friday, September 18, 2020 6:25 PM
To: Karthik Viswanathan
Subject: DigAlert Confirmation for Ticket A202620900-00A

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe. If you have any suspicion, please confirm with the sender verbally that this email is authentic.

EMLCFM 03993A USAS 09/18/20 18:25:10 A202620900-00A NEW NORM POLY LREQ

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This is not a certified copy of the ticket.

Ticket: A202620900 Rev: 00A Created: 09/18/20 18:24 User: BRJ Chan: 100

Work Start: 09/24/20 07:00 Legal Start: 09/24/20 07:00 Expires: 10/16/20 23:59
Response required: Y Priority: 2

Excavator Information

Company: AMERICAN INTERGRATED SERVICES
Co Addr: 1502 E OPP ST
City : WILMINGTON State: CA Zip: 90744
Created By: KARTHIK VISWANATHAN-GEOSYNTEC Language: ENGLISH
Office Phone: 714-969-0800 SMS/Cell: 510-993-8823
Office Email: KVISWANATHAN@GEOSYNTEC.COM

Site Contact: SNEHA UPADHYAYA

Site Phone: 714-461-9911 Site SMS/Cell: 714-461-9911
Site Email: KVISWANATHAN@GEOSYNTEC.COM

Excavation Area

State: CA County: ORANGE Place: HUNTINGTON BEACH
Zip: 92646

Location: Address/Street: STILWELL DR

: X/ST1: POSTON LN

:

: APPROX 65FT W/OF POSTON LN AT APPROX 250FT, 400FT, 520FT, 760FT,
: 1015FT S/OF STILWELL DR **ALL LOCATIONS WITHIN PARK** **PROPERTY OF
: EDISON COMMUNITY PARK** **MARK 25FT RADIUS ALL LOCATIONS**

Delineated Method: WHITEPAINT

Work Type: (5) TEST PITS (8FT DEPTH)

Work For : GEOSYNTEC CONSULTANTS

Permit: Job/Work order:

1 Year: N Boring: N Street/Sidewalk: N Vacuum: N Explosives: N

Lat/Long

Center Generated (NAD83): 33.653755/-117.973122 33.653752/-117.972114
: 33.650862/-117.973129 33.650859/-117.972121
Excavator Provided: 33.653346/-117.972630 33.652895/-117.972609
: 33.652569/-117.972623 33.651933/-117.972633 33.651273/-117.972623

Map link:

https://newtin.digalert.org/newtinweb/map_tkt.nap?TRG=E4TbQYTXQXOSNVW-C

Members:

CSD91	ORANGE CO SANITATION	CONTROL CENTER	714-593-7025
HUN01	C/OF HUNTINGTON BCH-WTR	DAVID RICO	714-861-0134
MCISOCAL	MCI (VERIZON BUSINESS) FIBE	FIBER SECURITY DEPT	800-624-9675
SCG2XN	SC GAS - GARDEN GROVE	LEAD DISPATCHER - CHUCK	800-603-7060
UCHTRW_C5	UTIL/SPECTRUM GG - CATV	SPECTRUM DAMAGE ONLY	844-780-6054
UOCW01	UTILIQUEST 4 OR CNTY WTR DIST	SCOTT DAVIDSON / JUSTIN	714-766-9375xCELL
USCEOR	UTILIQUEST FOR SCE- ORANGE RE	SC EDISON PERSONNEL	800-611-1911
UTFTRCA01	UTILIQUEST/FRONTIER - TEL/	UTILIQUEST DISPATCH	800-366-7801

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Karthik Viswanathan

From: noreply@digalert.org
Sent: Friday, September 18, 2020 6:35 PM
To: Karthik Viswanathan
Subject: DigAlert Confirmation for Ticket A202620902-00A

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Ticket: A202620902 Rev: 00A Created: 09/18/20 18:34 User: BRJ Chan: 100

Work Start: 09/24/20 07:00 Legal Start: 09/24/20 07:00 Expires: 10/16/20 23:59
Response required: Y Priority: 2

Excavator Information

Company: ABC LIOVIN DRILLING
Co Addr: 1180 E BURNETT ST
City : SIGNAL HILL State: CA Zip: 90755
Created By: KARTHIK VISWANATHAN-GEOSYNTEC Language: ENGLISH
Office Phone: 714-969-0800 SMS/Cell: 510-993-8823
Office Email: KVISWANATHAN@GEOSYNTEC.COM

Site Contact: SNEHA UPADHYAYA

Site Phone: 714-461-9911 Site SMS/Cell: 714-461-9911
Site Email: KVISWANATHAN@GEOSYNTEC.COM

Excavation Area

State: CA County: ORANGE Place: HUNTINGTON BEACH
Zip: 92646

Location: Address/Street: STILWELL DR

: X/ST1: POSTON LN

:

: APPROX 50FT W/OF POSTON LN AT APPROX 320FT, 570FT, 745FT S/OF STILWELL

: DR; APPROX 240FT W/OF POSTON LN AT APPROX 720FT & 450FT S/OF STILWELL

: DR **ALL LOCATIONS WITHIN PARK** **PROPERTY OF EDISON COMMUNITY

: PARK** **MARK 25FT RADIUS ALL LOCATIONS**

Delineated Method: WHITEPAINT

Work Type: (5) SOIL BORINGS

Work For : GEOSYNTEC CONSULTANTS

Permit:

Job/Work order:

1 Year: N Boring: N Street/Sidewalk: N Vacuum: N Explosives: N

Lat/Long

Center Generated (NAD83): 33.653556/-117.973708 33.653537/-117.972127
: 33.651572/-117.973731 33.651553/-117.972151

Excavator Provided: 33.653131/-117.972625 33.652477/-117.972639
: 33.651969/-117.972632 33.652032/-117.973225 33.652770/-117.973224

Map link:

https://newtin.digalert.org/newtinweb/map_tkt.nap?TRG=64Co9pCk9sztws3-k

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UCHTRW_C5	UTIL/SPECTRUM GG - CATV	SPECTRUM DAMAGE ONLY	844-780-6054
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Karthik Viswanathan

From: noreply@digalert.org
Sent: Monday, March 8, 2021 3:11 PM
To: Sneha Upadhyaya
Subject: DigAlert Confirmation for Ticket A210670984-00A

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Ticket: A210670984 Rev: 00A Created: 03/08/21 15:10 User: NAN Chan: 100

Work Start: 03/12/21 07:00 Legal Start: 03/12/21 07:00 Expires: 04/05/21 23:59
Response required: Y Priority: 2

Excavator Information

Company: ABC LIOVIN DRILLING
Co Addr: 1180 E BURNETT ST
City : SIGNAL HILL State: CA Zip: 90755
Created By: KARTHIK VISWANATHAN (GEOSYNTEC Language: ENGLISH
Office Phone: 714-969-0800 SMS/Cell: 510-993-8823
Office Email: KVISWANATHAN@GEOSYNTEC.COM

Site Contact: SNEHA UPADHYAYA
Site Phone: 714-461-9911 Site SMS/Cell: 714-461-9911
Site Email: supadhyaya@geosyntec.com

Excavation Area

State: CA County: ORANGE Place: HUNTINGTON BEACH
Zip: 92646

Location: Address/Street: MAGNOLIA ST
: X/ST1: HAMILTON AVE
:
: APPROX 685FT N/OF HAMILTON AVE AT APPROX 430FT W/OF S/BOUND MAGNOLIA
: ST; APPROX 630FT N/OF HAMILTON AVE AT APPROX 370FT W/OF S/BOUND
: MAGNOLIA ST; APPROX 585FT N/OF HAMILTON AVE AT APPROX 345FT W/OF
: S/BOUND MAGNOLIA ST; APPROX 525FT N/OF HAMILTON AVE AT APPROX 335FT
: W/OF S/BOUND MAGNOLIA ST; APPROX 530FT N/OF HAMILTON AVE AT APPROX
: 375FT W/OF S/BOUND MAGNOLIA ST; APPROX 545FT N/OF HAMILTON AVE AT
: APPROX 420FT W/OF S/BOUND MAGNOLIA ST; APPROX 608FT N/OF HAMILTON AVE
: AT APPROX 375FT W/OF S/BOUND MAGNOLIA ST; **MARK 25FT RADIUS AROUND
: EACH LOCATION** **DELINEATED EACH LOCATION #1-8 IN WHITE PAINT**

Delineated Method: WHITEPAINT

Work Type: 8 SOIL BORINGS

Work For : GEOSYNTEC

Permit:

Job/Work order:

1 Year: N Boring: N Street/Sidewalk: N Vacuum: N Explosives: N

Lat/Long

Center Generated (NAD83): 33.652888/-117.972945 33.652751/-117.971663
: 33.651623/-117.973080 33.651486/-117.971798

Excavator Provided: 33.652427/-117.972528 33.652276/-117.972352
: 33.652137/-117.972245 33.651984/-117.972236 33.651974/-117.972353
: 33.652017/-117.972514 33.652159/-117.972535 33.652187/-117.972344

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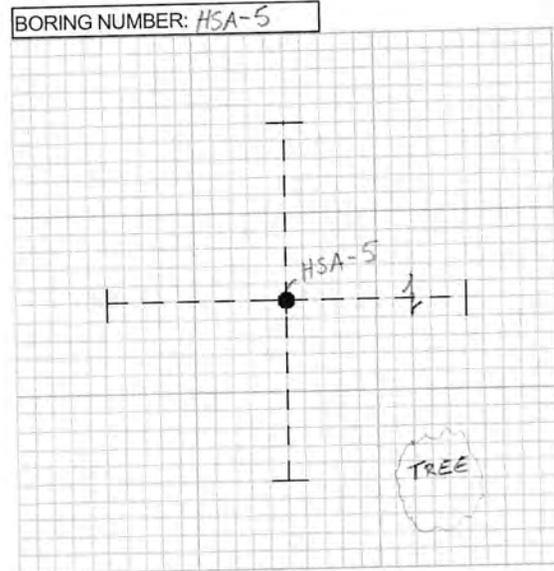
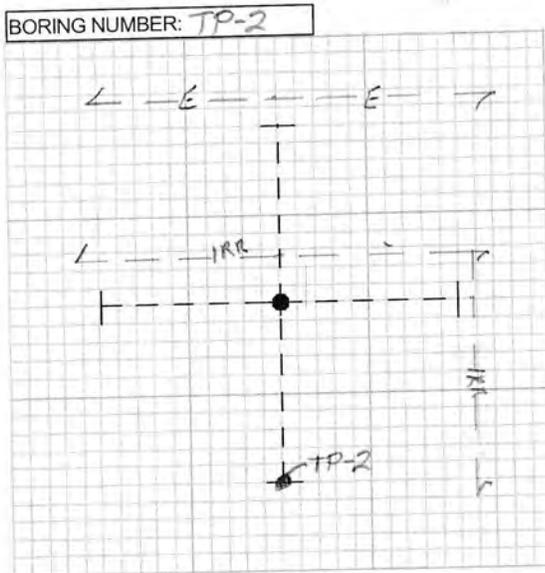
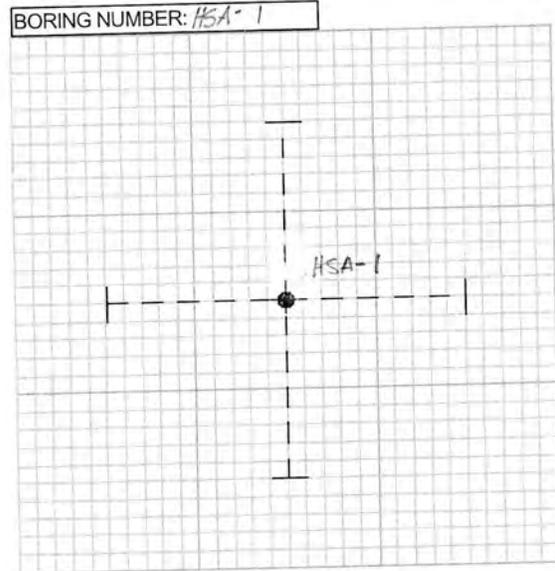
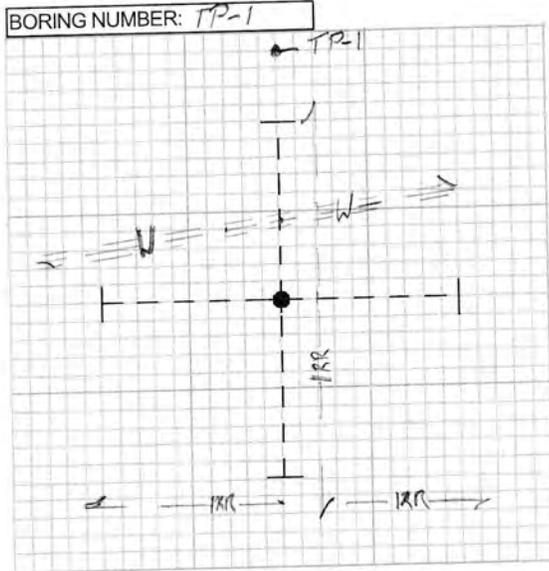
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SCG2XN	SOCALGAS DISTRIBUTION GARDEN	LEAD DISPATCHER - CHUCK	800-603-7060
UOCW01	UTILIQUEST 4 OR CNTY WTR DIST	SCOTT DAVIDSON / JUSTIN	714-766-9375xCELL
USCEOR	UTILIQUEST FOR SCE- ORANGE RE	SC EDISON PERSONNEL	800-611-1911
UTFTRCA01	UTILIQUEST/FRONTIER - TEL/	UTILIQUEST DISPATCH	800-366-7801

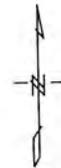
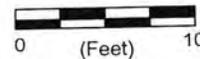
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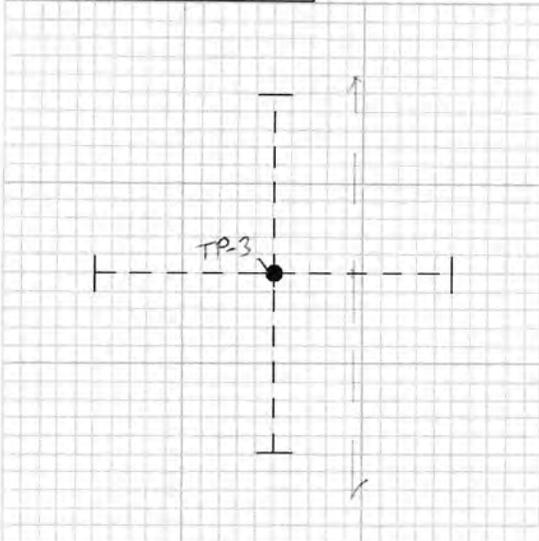
LEGEND

- Proposed Boring Location
- GPR Traverse with File Number
- Utility: E= Electrical, T= Telephone, NG = Natural Gas, SS = Sanitary Sewer
SD = Storm Drain, W = Water, C = Unknown Line

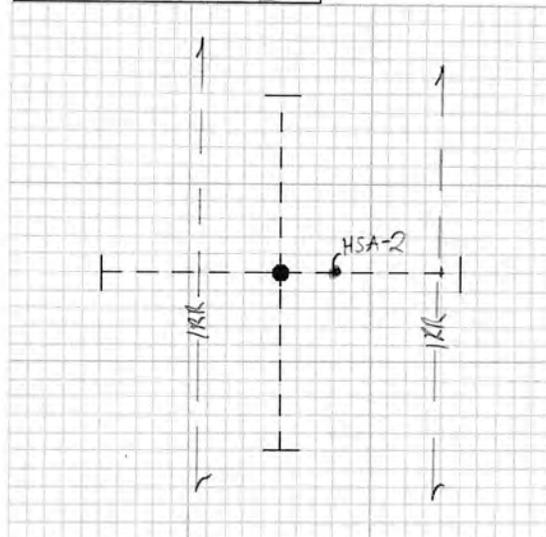


NOTE: All Geophysical methods have limitations dependant on: instrumentation used, soil conditions, and local cultural noise and other interference. The geophysical conditions interpretation presented above comprises a declaration of the geophysicist's professional judgement using methods and a degree of care and skill ordinarily exercised, under similar circumstances, by reputable members of their profession practicing in the same or similar locality. It does not constitute a warranty or guarantee, expressed or implied, nor does it relieve any other party of its responsibility to abide by contract documents, applicable codes, standards, regulations or ordinances. If you require further information about the limitations of the instruments and/or methods used on this project please contact GEOVision Geophysical Services.

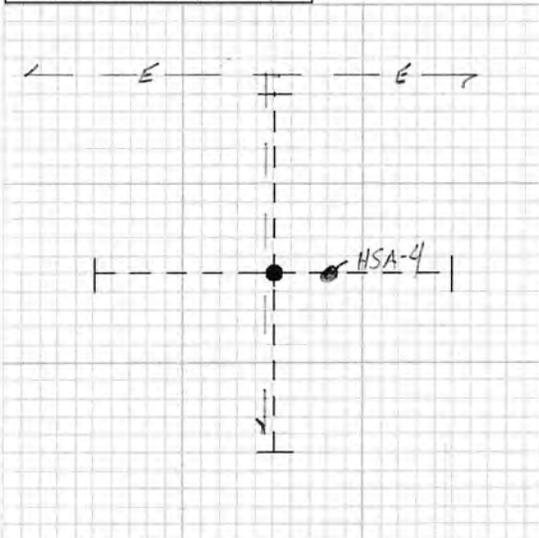
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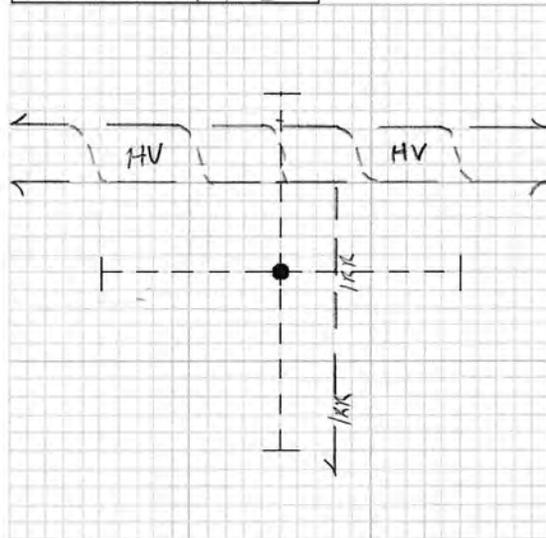
BORING NUMBER: HSA-2



BORING NUMBER: HSA-4

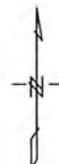
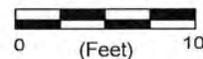


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LEGEND

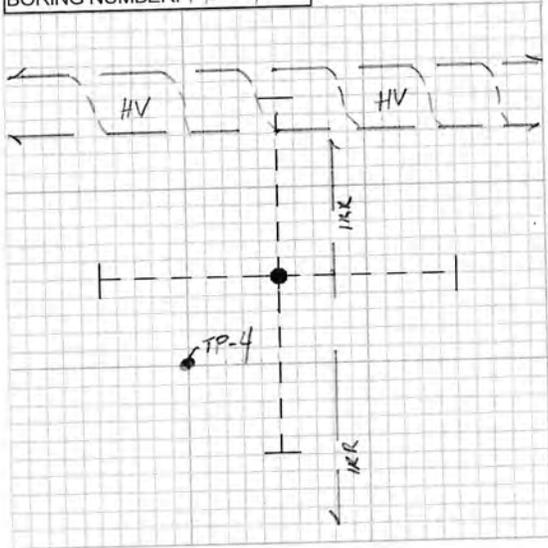
- Proposed Boring Location
- 1328 — | GPR Traverse with File Number
- ← NG → Utility: E= Electrical, T= Telephone, NG = Natural Gas, SS = Sanitary Sewer
SD = Storm Drain, W= Water, C = Unknown Line



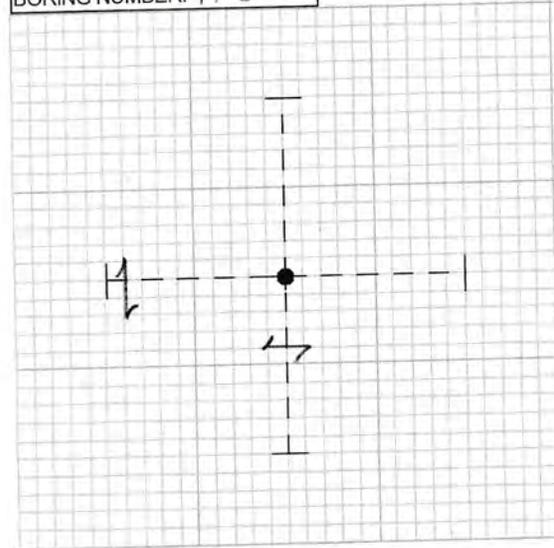
NOTE: All Geophysical methods have limitations dependant on: instrumentation used, soil conditions, and local cultural noise and other interference. The geophysical conditions interpretation presented above comprises a declaration of the geophysicist's professional judgement using methods and a degree of care and skill ordinarily exercised, under similar circumstances, by reputable members of their profession practicing in the same or similar locality. It does not constitute a warranty or guarantee, expressed or implied, nor does it relieve any other party of its responsibility to abide by contract documents, applicable codes, standards, regulations or ordinances. If you require further information about the limitations of the instruments and/or methods used on this project please contact GEOVision Geophysical Services.

Job Number: 20310 Date: 9-23-20
 Client: GEO SYNTEC Page No. _____
 Site Address: 21377 MAGADLIA ST
HUNTINGTON BEACH, CA

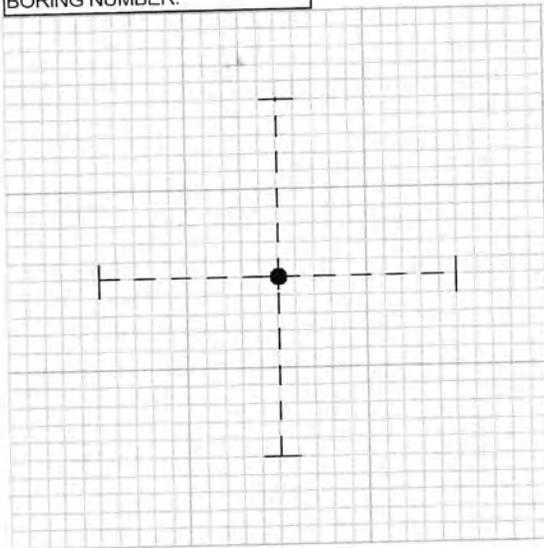
BORING NUMBER: TD-4



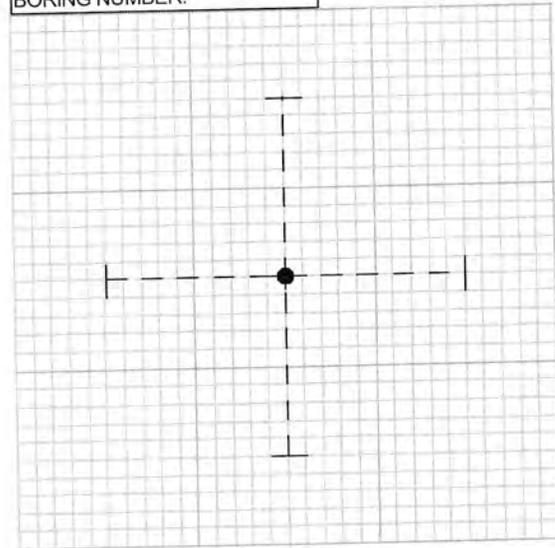
BORING NUMBER: TP-5



BORING NUMBER: _____

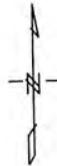


BORING NUMBER: _____



LEGEND

- Proposed Boring Location
- 1328 — | GPR Traverse with File Number
- ← NG → Utility: E= Electrical, T= Telephone, NG = Natural Gas, SS = Sanitary Sewer
SD = Storm Drain, W = Water, C = Unknown Line



NOTE: All Geophysical methods have limitations dependant on: instrumentation used, soil conditions, and local cultural noise and other interference. The geophysical conditions interpretation presented above comprises a declaration of the geophysicist's professional judgement using methods and a degree of care and skill ordinarily exercised, under similar circumstances, by reputable members of their profession practicing in the same or similar locality. It does not constitute a warranty or guarantee, expressed or implied, nor does it relieve any other party of its responsibility to abide by contract documents, applicable codes, standards, regulations or ordinances. If you require further information about the limitations of the instruments and/or methods used on this project please contact GEOVision Geophysical Services.

Date: 3-11-21

Job No. 21070

DAILY FIELD SUMMARY

Sheet: 1 of 3

Client: Geosyntec

Location: 21377 magnolia ST

Huntington Beach, CA

Description	Hours
Arrived @ 7:00	
Safety tailgate meeting	
Cleared eight Boring Locations B1, B2, B3, B4	
B5, B6, B7, and B8 for all detectable	
Utilities.	
Using the RD 8000, Fisher TW-6, GO HD2	
sir 3000 GPR and walk in tandem.	
Hand Auger 5'	
	Total:

GV Personnel: JF

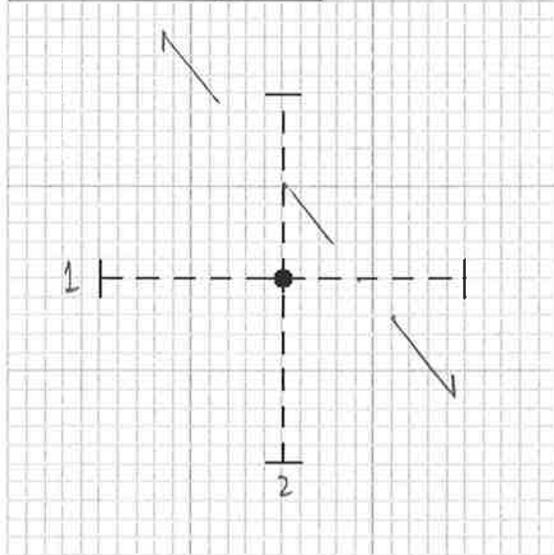
GV Field Supervisor: [Signature]

Date: 3-11-21

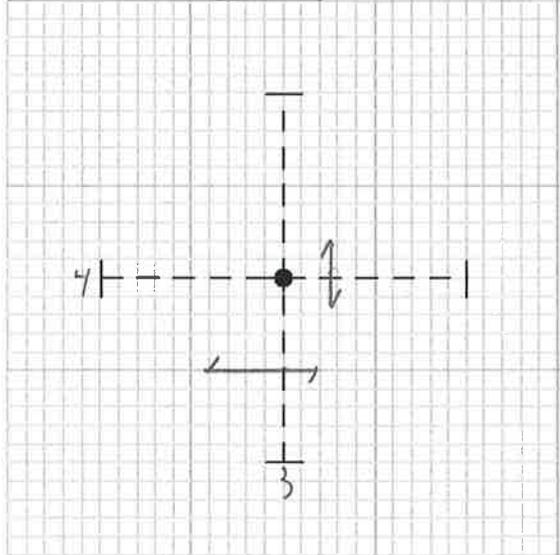
Client Approval: [Signature]

Date: 3-11-21

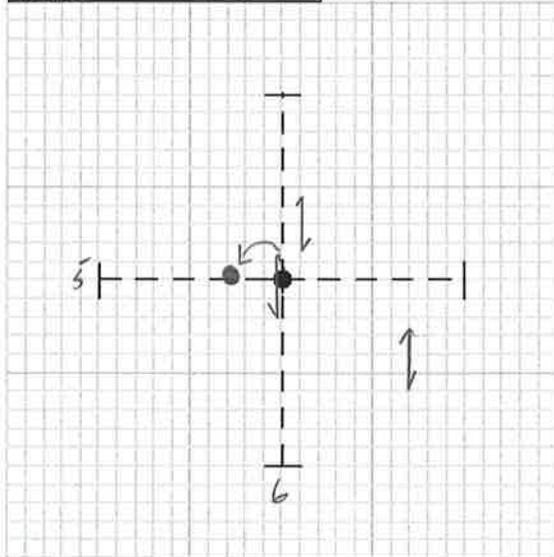
BORING NUMBER: B1



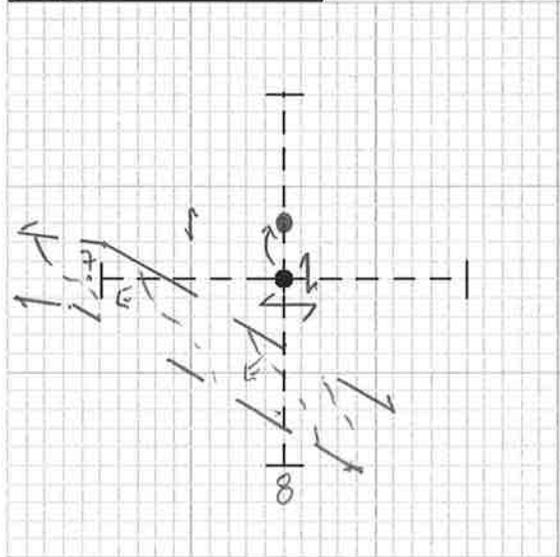
BORING NUMBER: B2



BORING NUMBER: B3



BORING NUMBER: B4



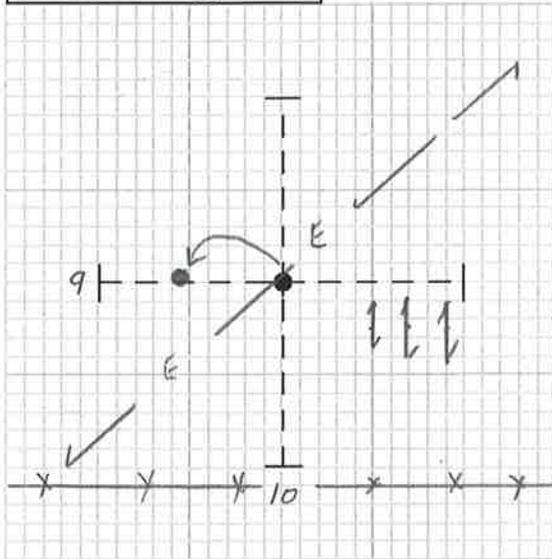
LEGEND

-  Proposed Boring Location
-  GPR Traverse with File Number
-  Utility: E= Electrical, T= Telephone, NG = Natural Gas, SS = Sanitary Sewer
SD = Storm Drain, W = Water, C = Unknown Line

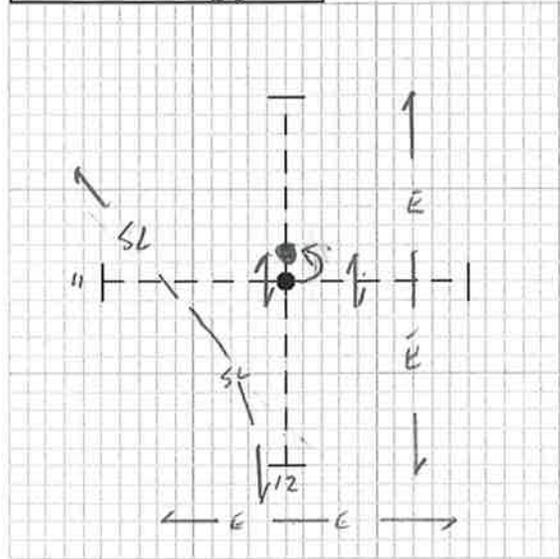


NOTE: All Geophysical methods have limitations dependant on: instrumentation used, soil conditions, and local cultural noise and other interference. The geophysical conditions interpretation presented above comprises a declaration of the geophysicist's professional judgement using methods and a degree of care and skill ordinarily exercised, under similar circumstances, by reputable members of their profession practicing in the same or similar locality. It does not constitute a warranty or guarantee, expressed or implied, nor does it relieve any other party of its responsibility to abide by contract documents, applicable codes, standards, regulations or ordinances. If you require further information about the limitations of the instruments and/or methods used on this project please contact GEOVision Geophysical Services.

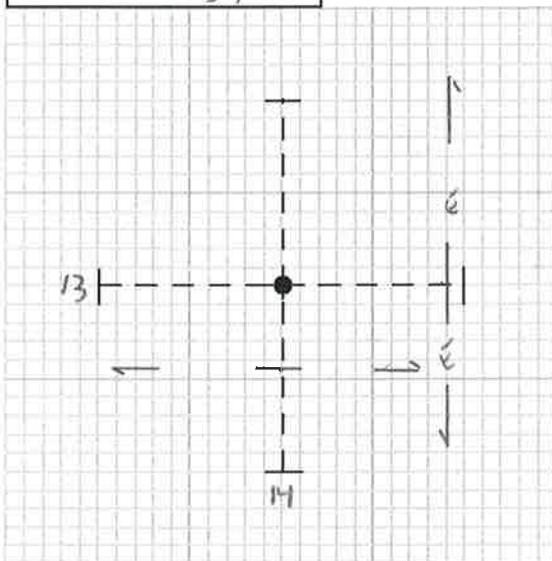
BORING NUMBER: B5



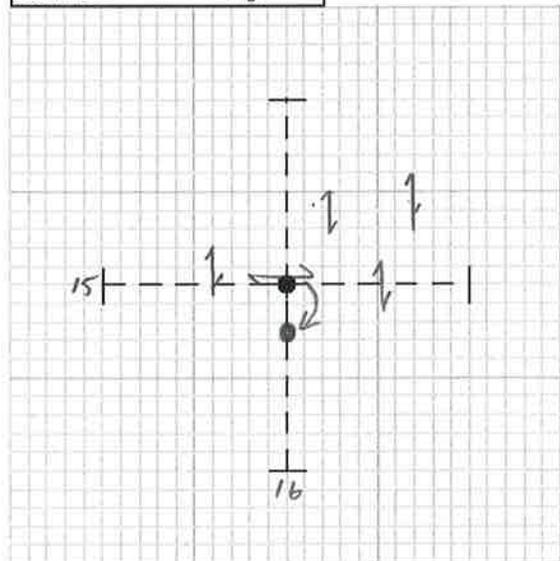
BORING NUMBER: B6



BORING NUMBER: B7

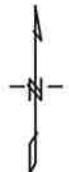


BORING NUMBER: B8



LEGEND

-  Proposed Boring Location
-  GPR Traverse with File Number
-  Utility: E= Electrical, T= Telephone, NG = Natural Gas, SS = Sanitary Sewer
SD = Storm Drain, W = Water, C = Unknown Line



NOTE: All Geophysical methods have limitations dependant on: instrumentation used, soil conditions, and local cultural noise and other interference. The geophysical conditions interpretation presented above comprises a declaration of the geophysicist's professional judgement using methods and a degree of care and skill ordinarily exercised, under similar circumstances, by reputable members of their profession practicing in the same or similar locality. It does not constitute a warranty or guarantee, expressed or implied, nor does it relieve any other party of its responsibility to abide by contract documents, applicable codes, standards, regulations or ordinances. If you require further information about the limitations of the instruments and/or methods used on this project please contact GEOVision Geophysical Services.

Appendix B

SCAQMD Permit for Rule 1150



South Coast Air Quality Management District
21865 Copley Drive, Diamond Bar, CA 91765-4178
COMPLIANCE PLAN

Page 1 of 5
Plan No.
612262

Certain compliance plan pursuant to Rule 306 (h) are subject to annual renewal fees unless the equipment is moved or changes operator.

Plan Issue Date: 9/11/2020

ID: 189921

Company: CITY OF HUNTINGTON BEACH
2100 MAIN ST, STE 150
HUNTINGTON BEACH, CA 92648

Site Location: 21377 MAGNOLIA ST, HUNTINGTON BEACH, CA 92646

Plan Description:

Excavation is required to perform subsurface investigation to evaluate the approximate lateral limits of existing waste along portion of the eastern edge of the Cannery Street Refuse Disposal Station at Edison Park.

Conditions :

1. This excavation shall be conducted in compliance with all plans and specifications submitted with the application under which this Rule 1150 Excavation Management Plan is issued unless otherwise noted below.
2. The excavation plan shall expire on October 31, 2021.
3. The South Coast AQMD shall be notified at least two (2) days prior to the excavation commencement and within five (5) days after its completion. The notification shall be made by emailing Rule1150Notification@aqmd.gov. The subject line of the email shall contain "Rule 1150 Notification." The body of the email shall contain the following information:
 - A. Company Name and Company ID.
 - B. Plan Number.
 - C. Site Address.
 - D. Notification Type (2 days prior or 5 days after).
 - E. Estimated Excavation Start Date and Completion Date.
 - F. Caller Name and Contact Information.
4. This excavation management plan is valid for the re-disposal of less than 50 cubic yards of refuse and contaminated material.
5. Excavation shall not be conducted whenever any excavation at the Ascon Landfill is underway.
6. Excavation shall not be conducted between the hours of 6:00 p.m. and 6:00 a.m. or on weekends and legal holidays unless otherwise approved in writing by the South Coast AQMD.

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7. Excavation shall not be conducted on days when South Coast AQMD forecasts first, second, or third stage episodes for area number 18 or when the South Coast AQMD requires companies in area number 18 to implement their first, second or third stage episode plans. Episode forecasts for the following day can be obtained by calling (800) 288-7664.
8. Upwind and downwind PM monitoring shall be conducted every 60 minutes throughout the workday when soil handling or excavation is in progress at locations identified in "[Attachment A: Site Plan and Excavation Areas Edison Park - Waste Delineation Huntington Beach, California]" (sent via email on 8/19/2020 from Geosyntec). If dust levels exceed 0.05 mg/m³ above background all excavation work shall cease until mitigation measures are implemented and the levels are below 0.05 mg/m³.
9. During excavation, continuous monitoring and recording of the wind speed and directions shall be conducted using a South Coast AQMD approved handheld monitoring device.
10. Excavation shall not be conducted when the wind speed is greater than 15 mph (averaged over 15 minutes) or the wind speed instantaneously exceeds 25 mph.
11. During excavation, all working excavation 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.
12. 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. Excavation shall not resume until the levels return to the background level.

Odor Scale	Description of Odor Intensity
0	No odor detected.
1	Very light odor detected.
2	Light odor detected, distinguishable.
3	Moderate odor, very distinguishable.
4	Strong odor, very distinguishable, irritable.
5	Very strong odor, very distinguishable, overpowering and intolerable.

Approved mitigation measures:

- A. Excavation shall be limited to one location at a time.
- B. Limiting excavation workface area.
- C. Minimizing soil disturbance/transfer.
- D. Limiting working hours.

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- E. Using long duration foams, plastic sheeting, or 6 inches of clean dirt cover.
 - F. Using water and/or odor neutralizing products containing no VOC.
 - G. Cleaning and covering of haul trucks.
 - H. Good housekeeping.
13. 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. VOC contaminated soil shall not be used for landfill cover.
 14. During excavation, monitoring for Total Organic Compounds as methane using an Organic Vapor Analyzer (OVA) or other monitor approved by the South Coast AQMD shall be conducted continuously at the working face of the excavation and at the downwind property line or other approved locations. The maximum sustained readings (greater than 15 seconds) shall be recorded every 15 minutes. The OVA or other approved monitor shall be calibrated each day in accordance with manufacturers' specifications.
 15. If the OVA or other approved organic monitor shows a sustained reading (greater than 15 seconds) of 500 ppmv or greater at the working face, the excavation shall cease and the area generating the emissions shall immediately be completely covered with a minimum of 6 inches of clean dirt, plastic sheeting, foam, or an approved cover. Excavation shall not resume until the readings return to the background level.
 16. If the OVA or other approved organic monitor shows a sustained reading (greater than 15 seconds) or 200 ppmv or greater downwind from the site at the property line (or other approved locations), the excavation shall cease and the area generating the emissions shall immediately be completely covered with a minimum of 6 inches of clean dirt, plastic sheeting, foam, or an approved cover. Excavation shall not resume until the readings return to the background level.
 17. The excavation workface, which exposes refuse or other emission generating material to the atmosphere, shall not exceed 300 square feet, without prior written approval from the South Coast AQMD.
 18. The topsoil material that is excavated for each test pit shall be placed directly back in the test pit following the completion of the excavation of each test pit.
 19. Stockpiles shall not exceed a height greater than 8 feet and shall be maintained so as to avoid steep sides.
 20. Daily inspections shall be conducted of all covered stockpiles to ensure the integrity of the plastic cover. An inspection log shall be maintained.
 21. All refuse/emission generating materials that are excavated/exposed to the atmosphere shall either be:
 - A. Immediately covered (with either a minimum of 6" of clean soil, approved foam, or heavy duty plastic sheeting) whenever the excavation is not actively in progress, and at the end of each working day. Foam by itself shall not be used as a night cover if it is raining or rain is predicted by the National Weather Service prior to the next scheduled day of excavation.
 - B. Immediately containerized in 55 gallon drums for offsite transport and disposal.
 22. The exterior of haul trucks or trailers including the tires shall be cleaned off prior to leaving the excavation site.

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23. All materials that are listed as hazardous by a federal or state agency shall be considered "hazardous materials" for the purpose of this plan.
24. All excavated hazardous material shall be transported in such a manner as to prevent any emissions of hazardous materials.
25. 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.
26. Excavated liquid hazardous materials with the potential to cause air emission shall be encapsulated or enclosed in containers with sealed lids before loading into the transport vehicles.
27. Excavation, handling, and stockpiling activities shall comply with the applicable requirements of Rule 403.
28. All records of excavation working hours monitoring results, daily amounts of materials excavated and relocated or hauled offsite, and other records required by this compliance plan shall be kept on file for at least two years and made available to the South Coast AQMD upon request.
29. Mitigation measures, other than those indicated in these conditions, which are deemed appropriate by South Coast AQMD personnel as necessary to protect the comfort, repose, health, and safety of the public, shall be implemented upon request.
30. This compliance plan or a copy of this compliance plan shall be present at the excavation site.

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NOTICE

This plan does not authorize the emission of air contaminants in excess of those allowed by Division 26 of the Health and Safety Code of the State of California or the applicable Rules and Regulations of the South Coast Air Quality Management District (SCAQMD). This plan cannot be considered as permission to violate existing laws, ordinances, regulations or statutes of other government agencies.

A copy of this plan shall be displayed in the vicinity of the equipment subject to this plan.

Executive Officer

A handwritten signature in black ink that reads "Amir Dejbaksh".

By AMIR DEJBAKSH

9/11/2020

ORIGINAL

Appendix C

Test Pit Logs

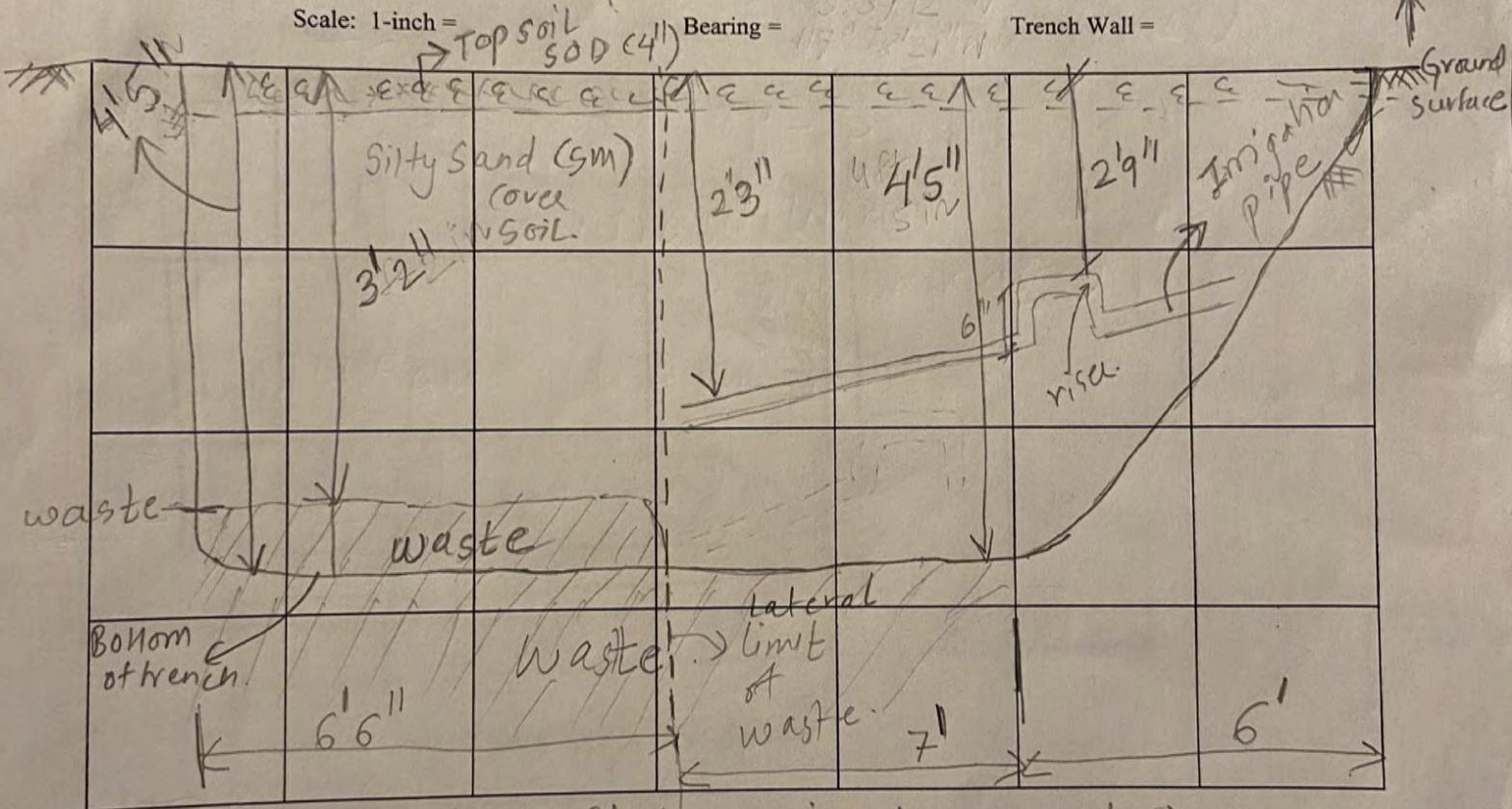
TEST PIT LOG

Formation	Bedding Attitude	Depth BGS (feet)	Description	Opt. Moist. Content (%)	Max. Dry Density (pcf)
		TD =			

Scale: 1-inch =

Bearing =

Trench Wall =



Waste: mostly AC debris (dark grey in color, no odor)

Test Pit Number: TP-1

Date: 9/24/2020

Geosyntec[®]
consultants

Location: Edison Park

Equipment: CASE 580
Super N

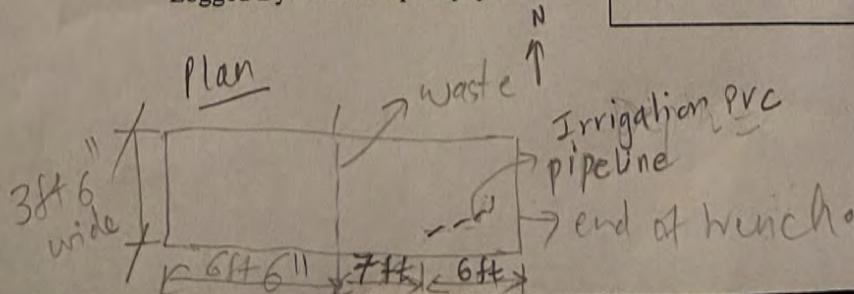
Project: Edison Park Waste Delineation

Northing, Easting:

33° 39' 12" N
117° 58' 21" W

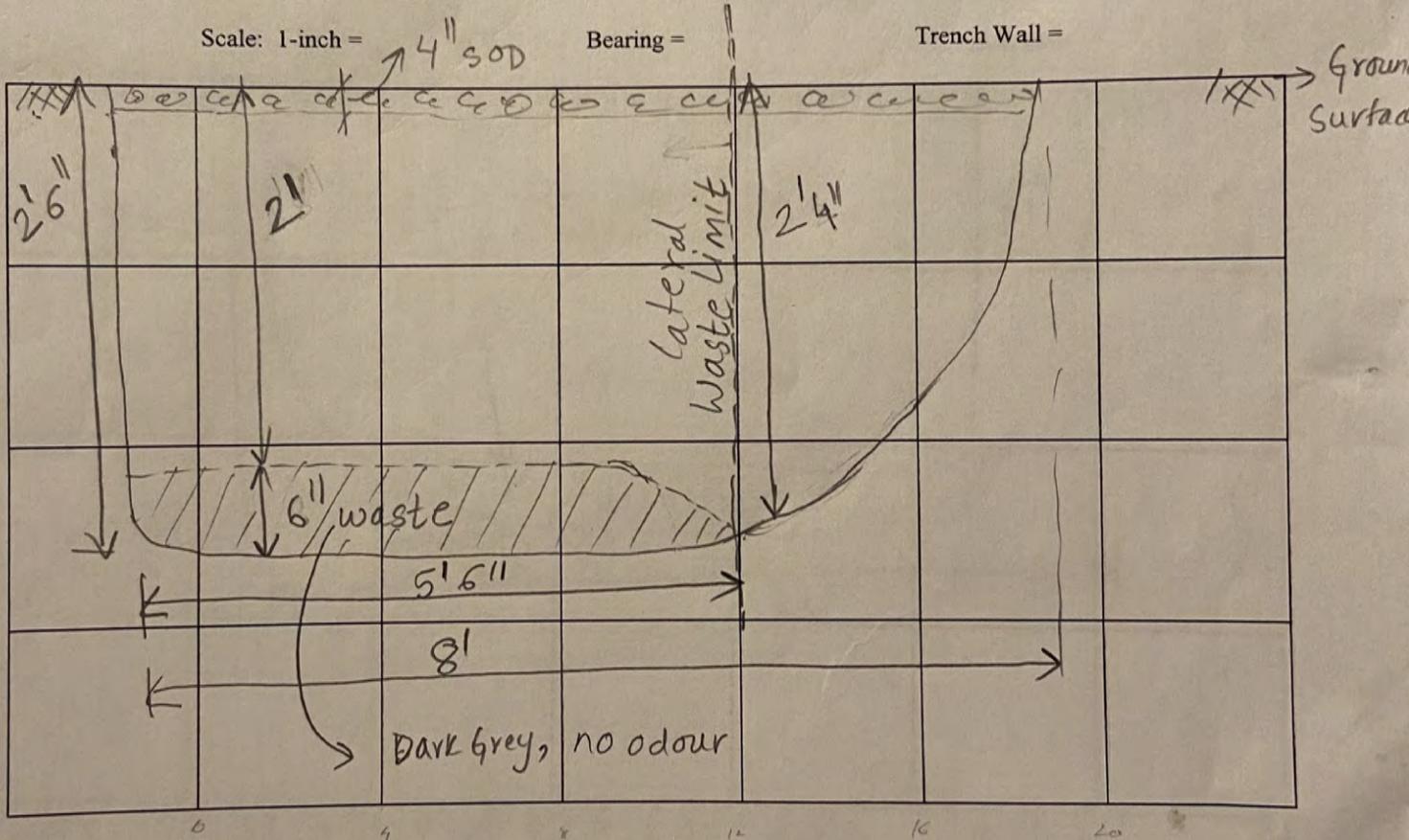
Logged By: Sneha Upadhyaya

Project No.: HL1685A



TEST PIT LOG

Formation	Bedding Attitude	Depth BGS (feet)	Description	N ↑	Opt. Moist. Content (%)	Max. Dry Density (pcf)
		TD =				



Test Pit Number: **TP-2**

Date: **9/24/2020**

Geosyntec[®]
consultants

Location: Edison Park

Equipment: **CASE 580, Super N**

Project: Edison Park Waste Delineation

Northing, Easting:

Logged By: Sneha Upadhyaya

Project No.: HL1685A

iPhone GPS: 33° 39' 10" N
117° 58' 22" W
(at the ^{horz} waste limit)

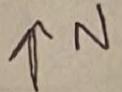
TEST PIT LOG

Formation	Bedding Attitude	Depth BGS (feet)	Description	Opt. Moist. Content (%)	Max. Dry Density (pcf)
		TD =			

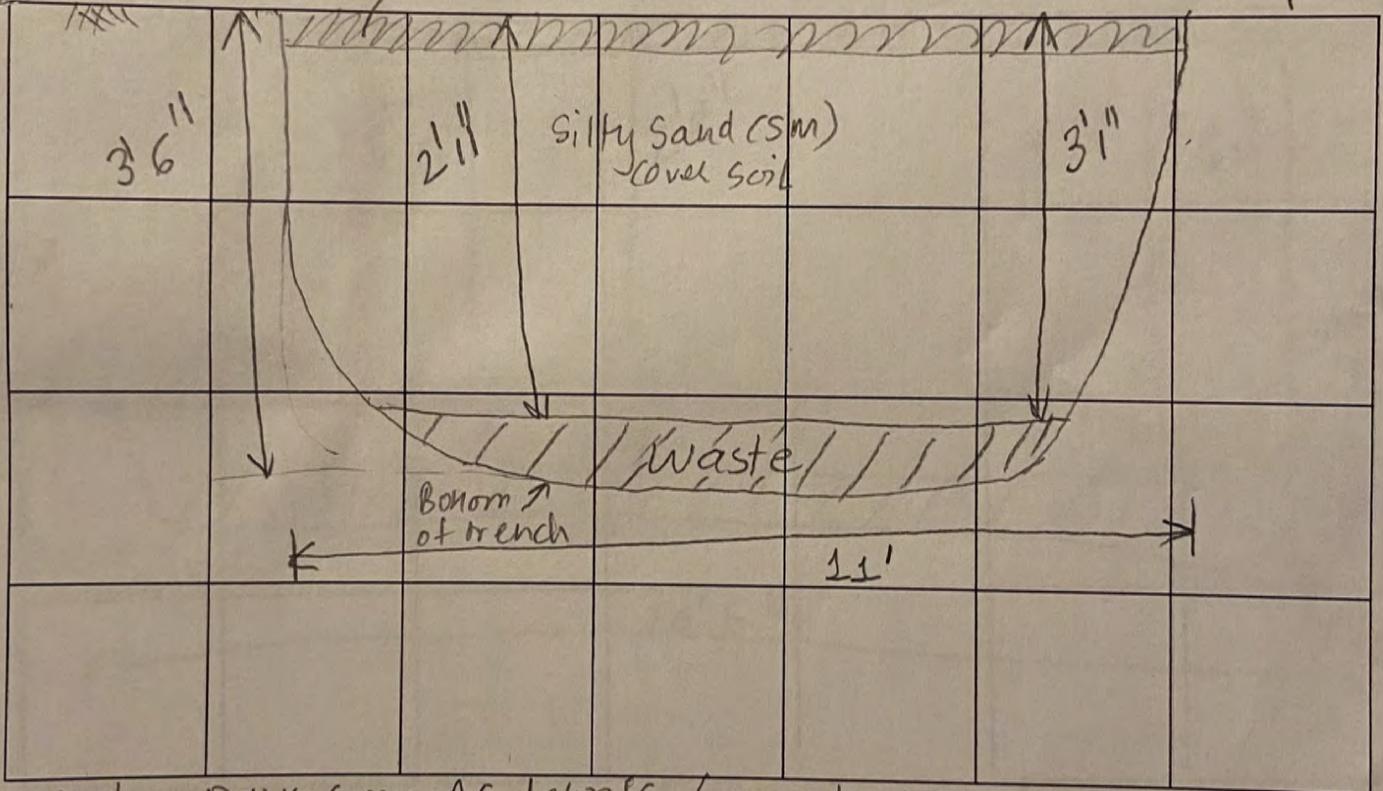
Scale: 1-inch = 4" SOD

Bearing =

Trench Wall =



Ground surface



waste: Dark Grey, AC debris (no odor)

Test Pit Number: TP-3

Date: 9/24/2020

Geosyntec
consultants

Location: Edison Park

Equipment:

Project: Edison Park Waste Delineation

Northing, Easting:

Logged By: Sneha Upadhyaya

Project No.: HL1685A

Note: Excavation stopped due to proximity to ~~at~~ ^{marked} electric utility line (2' away from the eastern edge of trench). To continue tomorrow 2 ft away from the marked utility line.

TEST PIT LOG

Formation	Bedding Attitude	Depth BGS (feet)	Description	Opt. Moist. Content (%)	Max. Dry Density (pcf)
		TD =			

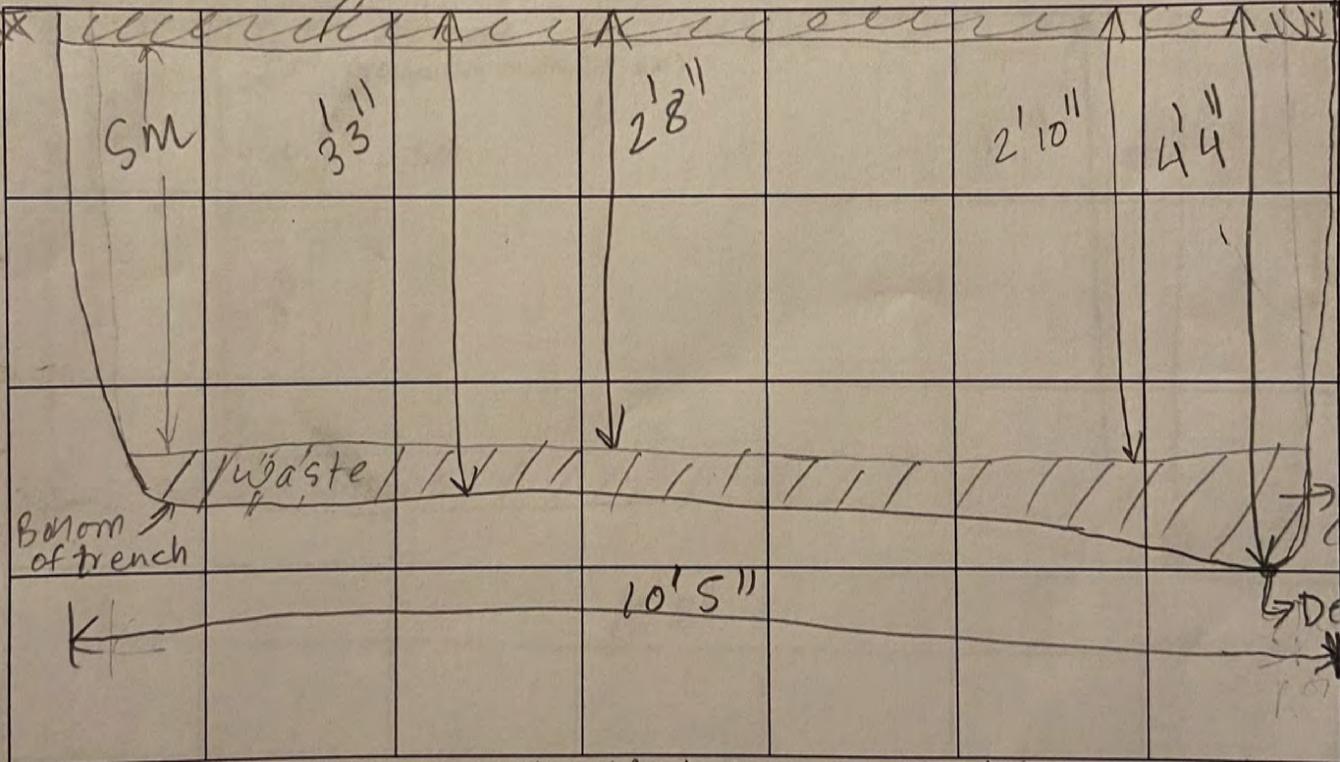
Scale: 1-inch = 4'50D

Bearing =

Trench Wall =



concrete slab



waste: Dark grey, mostly Asphalt-concrete debris, no odor.

Test Pit Number: TP-3 (cont..) Date: 9/25/2020

Geosyntec
consultants

Location: Edison Park

Equipment:

Project: Edison Park Waste Delineation

Northing, Easting:

Logged By: Sneha Upadhyaya

Project No.: HL1685A

Note: Couldn't determine the lateral extent of waste. (Reached the concrete slab on the east side)

TEST PIT LOG

Formation	Bedding Attitude	Depth BGS (feet)	Description	Opt. Moist. Content (%)	Max. Dry Density (pcf)
		TD =			

Scale: 1-inch =

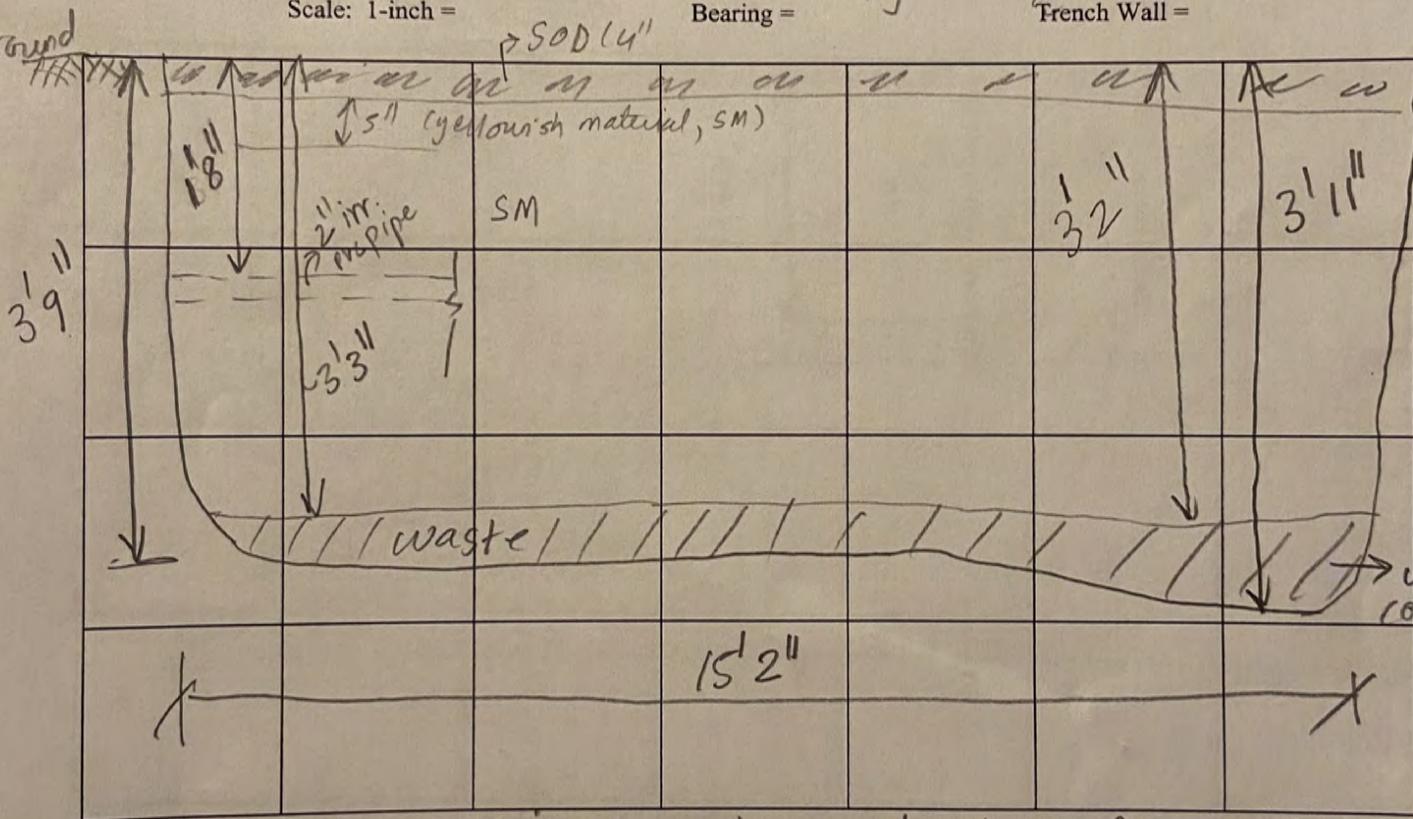
Bearing =

French Wall =

SOD (4")

utility

concrete slab



Notes: lateral limit of waste could not be found (reached close to concrete slab and utility lines)

Test Pit Number: TP-4

Date: 9/25/2020

Geosyntec
consultants

Location: Edison Park

Equipment: 580 CASE
Super N

Project: Edison Park Waste Delineation

Northing, Easting:
33° 39' 7" N
117° 58' 21" W

Logged By: Sneha Upadhyaya

Project No.: HL1685A

waste: Dark grey, AC debris (chunks of AC observed)

Top soil: silty sand (SM); some areas w/ loose clean sand (SP)

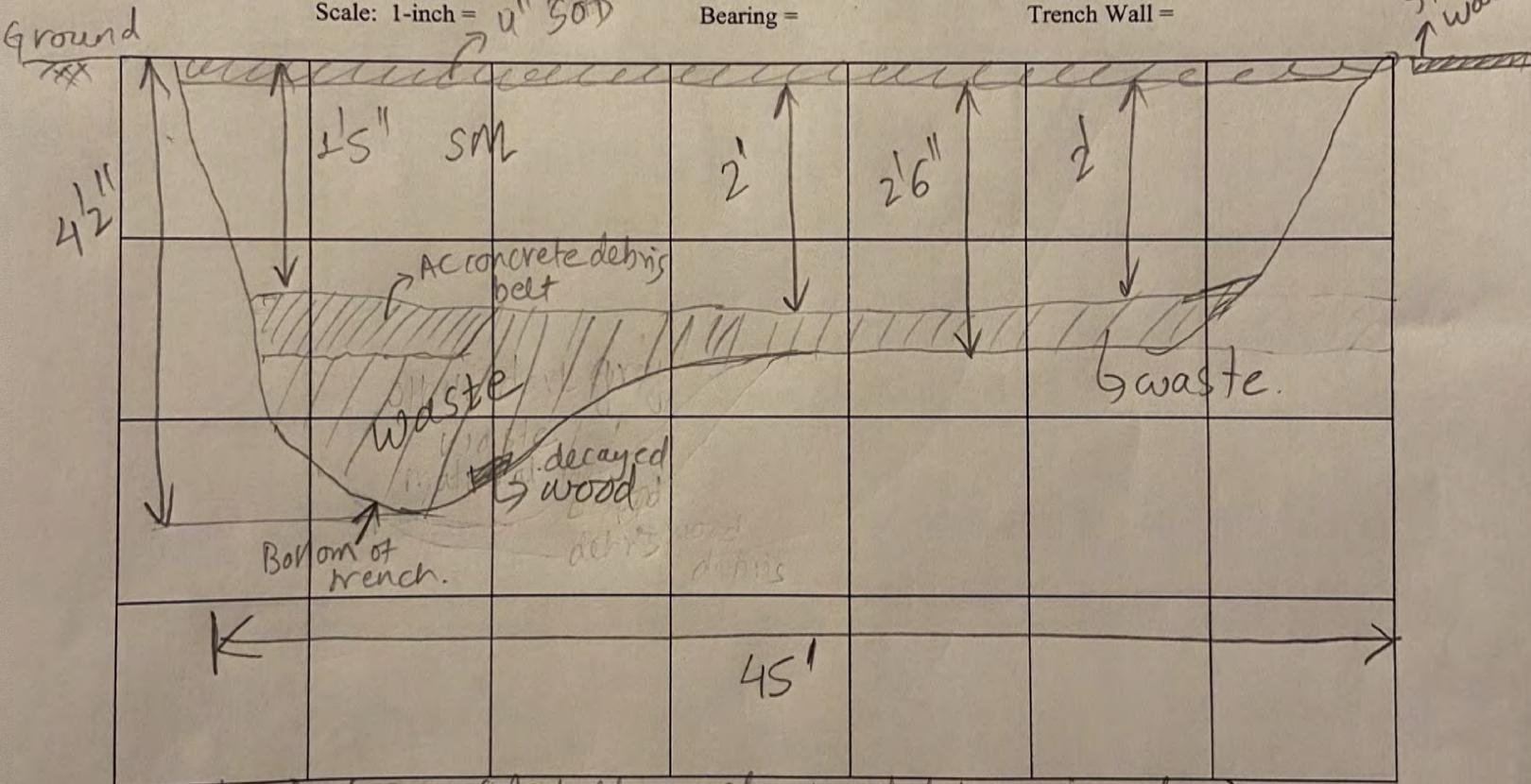
TEST PIT LOG

Formation	Bedding Attitude	Depth BGS (feet)	Description	Opt. Moist. Content (%)	Max. Dry Density (pcf)
		TD =			

Scale: 1-inch = 2' 30"

Bearing =

Trench Wall =



Waste: Dark grey CA asphalt concrete, wood debris (with odor)

Test Pit Number: TP-5

Date: 9/25/2020

Geosyntec
consultants

Location: Edison Park

Equipment: CASE 580
Super N

Project: Edison Park Waste Delineation

Northing, Easting:

Logged By: Sneha Upadhyaya

Project No.: HL1685A

33° 39' 5" N
117° 58' 21" W

TEST PIT LOG

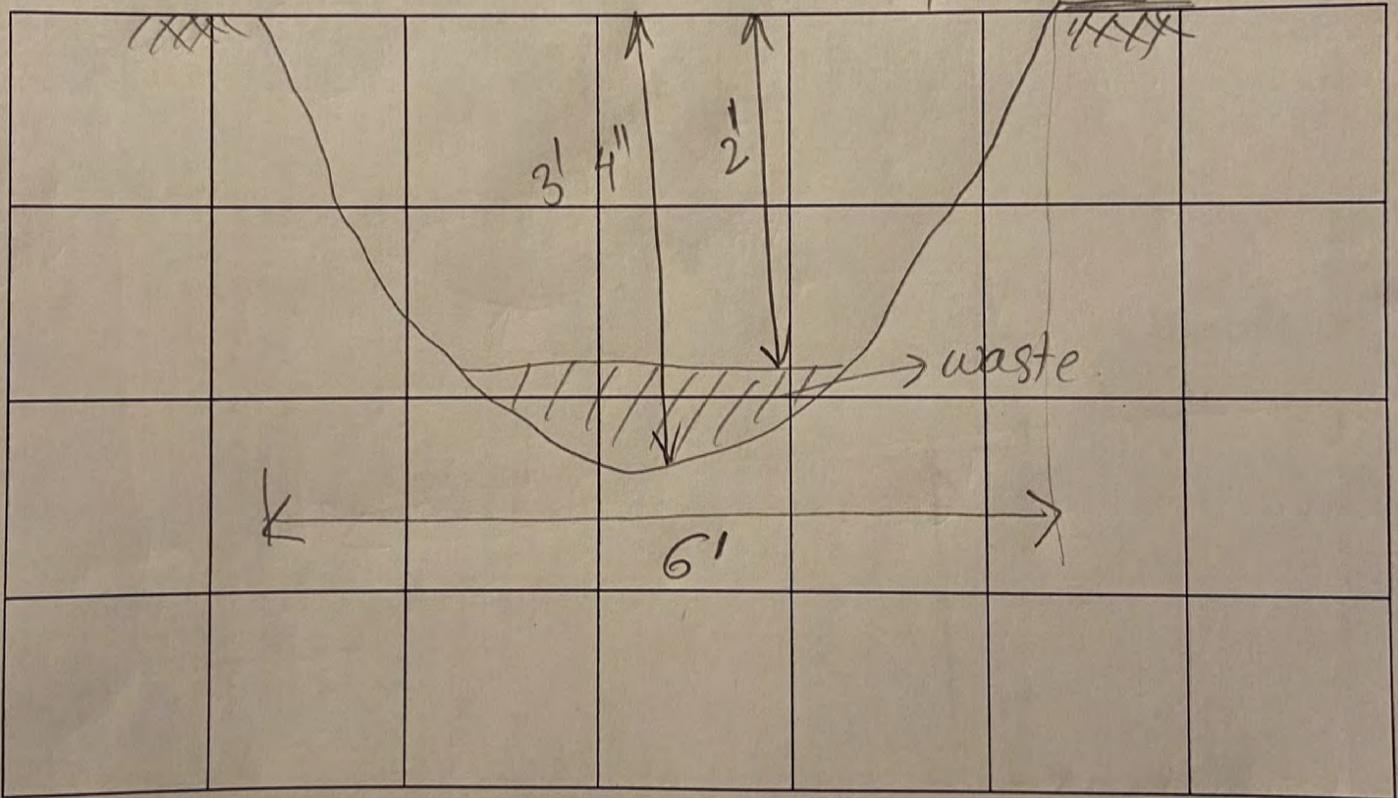
CTP-5, pothole

Formation	Bedding Attitude	Depth BGS (feet)	Description	Opt. Moist. Content (%)	Max. Dry Density (pcf)
			Pothole 35' from the edge of TP-5 towards the east (past the sidewalk lamp post)		
		TD =			

Scale: 1-inch =

Bearing =

Antenna Trench Wall =
box.



Test Pit Number: TP-5 pothole

Date: 9/25/2020

Geosyntec[®]
consultants

Location: Edison Park

Equipment:

Project: Edison Park Waste Delineation

Northing, Easting:

Logged By: Sneha Upadhyaya

Project No.: HL1685A

Appendix D

Borings Logs with Key

KEY SHEET - CLASSIFICATIONS AND SYMBOLS

GS FORM:
KEY/SYMBOLS 01/04

EMPIRICAL CORRELATIONS WITH STANDARD PENETRATION RESISTANCE N60 VALUES *

	N60 VALUE * (BLOWS/FT)	CONSISTENCY	UNCONFINED COMPRESSIVE STRENGTH (TONS/SQ FT)		N60 VALUE * (BLOWS/FT)	RELATIVE DENSITY
FINE GRAINED SOILS	0 - 2	VERY SOFT	<0.25	COARSE GRAINED SOILS	0 - 4	VERY LOOSE
	3 - 4	SOFT	0.25 - 0.50		5 - 10	LOOSE
	5 - 8	FIRM	0.50 - 1.00		11 - 30	MEDIUM DENSE
	9 - 15	STIFF	1.00 - 2.00		31 - 50	DENSE
	16 - 30	VERY STIFF	2.00 - 4.00		>50	VERY DENSE
	31 - 50	HARD	>4.00			
	>50	VERY HARD				

* ASTM D 1586; NUMBER OF BLOWS OF 140 POUND HAMMER FALLING 30 INCHES TO DRIVE A 2 IN. O.D., 1.4 IN. I.D. SAMPLER ONE FOOT, CORRECTED FOR HAMMER EFFICIENCY.

UNIFIED SOIL CLASSIFICATION AND SYMBOL CHART

MAJOR DIVISIONS		SYMBOLS	DESCRIPTIONS	
COARSE GRAINED SOILS	GRAVEL AND GRAVELLY SOILS	GW	WELL-GRADED GRAVELS, GRAVEL-SAND MIXTURES, LITTLE OR NO FINES	
		GP	POORLY GRADED GRAVELS, GRAVEL-SAND MIXTURES, LITTLE OR NO FINES	
		GM	SILTY GRAVELS, GRAVEL- SAND-SILT MIXTURES	
	MORE THAN 50% OF COARSE FRACTION RETAINED ON NO.4 SIEVE	GC	CLAYEY GRAVELS, GRAVEL- SAND-CLAY MIXTURES	
		SW	WELL GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES	
		SP	POORLY GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES	
MORE THAN 50% OF MATERIAL COARSER THAN NO. 200 SIEVE SIZE	SAND AND SANDY SOILS	SM	SILTY SANDS, SAND-SILT MIXTURES	
		SC	CLAYEY SANDS, SAND-CLAY MIXTURES	
		ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY	
FINE GRAINED SOILS	SILTS AND CLAYS	CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS	
		OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY	
		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SANDY OR SILTY SOILS, ELASTIC SILT	
	MORE THAN 50% OF MATERIAL FINER THAN NO. 200 SIEVE SIZE	SILTS AND CLAYS	CH	INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS
			OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
			PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENT
HIGHLY ORGANIC SOILS				

NOTE: DUAL SYMBOLS USED FOR BORDERLINE CLASSIFICATIONS

PARTICLE SIZE IDENTIFICATION

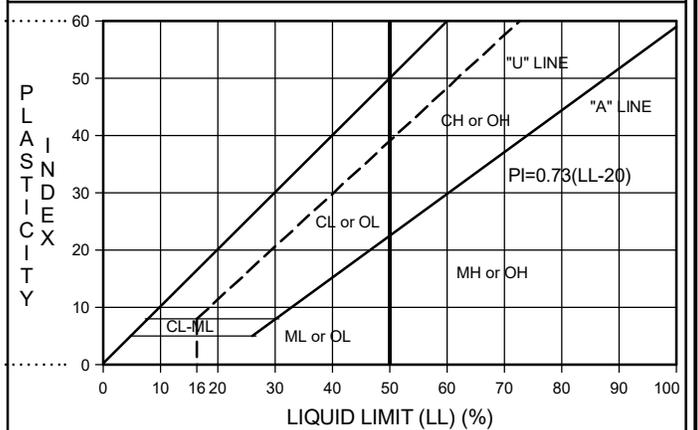
USCS (SOILS ONLY) *		SEDIMENTARY (ROCK ONLY)	
BOULDER	>300 mm	BOULDER	>256 mm
COBBLE	75 - 300 mm	COBBLE	64 - 256 mm
GRAVEL: COARSE	20 - 75 mm	PEBBLE	4 - 64 mm
GRAVEL: FINE	4.75 - 20 mm	GRANULE	2 - 4 mm
SAND: COARSE	2 - 4.75 mm	SAND: V. COARSE	1 - 2 mm
SAND: MEDIUM	0.42 - 2 mm	SAND: COARSE	0.5 - 1 mm
SAND: FINE	0.074 - 0.42 mm	SAND: MEDIUM	0.25 - 0.5 mm
SILT/CLAY	<0.074 mm	SAND: FINE	0.125 - 0.25 mm
		SAND: V. FINE	0.063 - 0.125 mm
		SILT	0.004 - 0.063 mm
		CLAY	<0.004 mm

* WELL GRADED - HAVING WIDE RANGE OF GRAIN SIZES AND APPRECIABLE AMOUNTS OF ALL INTERMEDIATE PARTICLE SIZES

* POORLY GRADED - PREDOMINANTLY ONE GRAIN SIZE, OR HAVING A RANGE OF SIZES WITH SOME INTERMEDIATE SIZES MISSING

PERCENTAGE OF PARTICLE TYPE IN DECREASING ORDER OF PARTICLE SIZE (GRAVEL, SAND, FINES), BASED ON VISUAL OBSERVATION

PLASTICITY CHART



OTHER MATERIAL SYMBOLS

	Conglomerate		Sandy Claystone		Marker Bed
	Sandstone		Granitic/Intrusive		
	Silty Sandstone		Volcanic/Extrusive		Artificial Fill
	Clayey Sandstone		Metamorphic		Refuse
	Sandy Siltstone		Limestone		Concrete/Asphalt
	Siltstone		Dolomite		
	Claystone		Glacial Till		
	Clayey Siltstone/ Silty Claystone		Landslide Debris		

WELL SYMBOLS

	CONCRETE
	GROUT
	BENTONITE SEAL
	TRANSITION SAND
	SAND PACK
	GRAVEL PACK
	NATIVE/SLUFF
	CENTRALIZER

SAMPLE TYPE AND OTHER SYMBOLS

	BULK SAMPLE		Water Level at Time Drilling, or as Shown
	STANDARD PENETRATION TEST		Static Water Level
	MODIFIED CALIFORNIA SAMPLE		Pump Inlet
	CORE SAMPLE		Loss of Drilling Fluid
	SHELBY TUBE		MSL: Mean Sea Level
	DRIVE SAMPLE		AGS: Above Ground Surface
			BGS: Below Ground Surface
			BTOC: Below Top of Casing
			HSA: Hollow Stem Auger



2100 Main St
Suite 150
Huntington Beach, CA 92648
Tel: (714) 969-0800
Fax: (714) 333-4275

BORING HSA-1
START DRILL DATE Sep 28, 20
FINISH DRILL DATE Sep 28, 20
LOCATION Huntington Beach, CA
PROJECT Edison Park Waste Delineation
NUMBER HL1685A

SHEET 1 OF 1
ELEVATION DATA:
GROUND SURF. 11
TOP OF CASING
DATUM ft +MSL

GS FORM:
GEOTECH1 01/04

BOREHOLE LOG

DEPTH (ft-bgs)	DESCRIPTION 1) Soil Name (USCS Sym.) 2) Color 3) Moisture 4) Grain Size 5) Percentage 6) Plasticity 7) Density/Consistency 8) Other (Mineral Content, Discoloration, Odor, etc.)	GRAPHIC LOG	ELEV. (ft)	SAMPLE						COMMENTS 1) Rig Behavior 2) Air Monitoring 3) Pocket Pen 4) Tor Vane
				SAMPLE NO.	TYPE	BLOWS PER 6"	N VALUE	RECOVERY (%)	PID READING (ppm)	
	Silty SAND (SM): brown; dry; fine sand; [0,80,20]; non-plastic.		10						16:20	Hand augered to 5 ft bgs.
5	LANDFILL MAERIAL: dark grey; moist; no odor; wood pieces, asphalt concrete debris.		5						16:30	
10	Silty SAND (SM): grey; wet; fine sand; [0,80,20]; low plastic.		0						16:45	First depth to groundwater.
	Terminate boring at 11.5-ft below ground surface (bgs).								16:55	
15			-5							
20			-10							
25			-15							
30										

02-GEOTECH1 HL1685A.GPJ GEOSNTEC.GDT 10/25/20

CONTRACTOR ABC Livin
EQUIPMENT CME 85
DRILL MTHD Hollow Stem Auger
DIAMETER 8-inch
LOGGER S. Upadhyaya

NORTHING 33.65306
EASTING -117.97278
COORDINATE SYSTEM:
REVIEWER Y. Zemuy, P. E.

NOTES: Borehole backfilled with hydrated bentonite chips. Logging of soils completed in general accordance with ASTM D2488 and ASTM D1586.

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS



2100 Main St
Suite 150
Huntington Beach, CA 92648
Tel: (714) 969-0800
Fax: (714) 333-4275

BORING HSA-2
START DRILL DATE Sep 28, 20
FINISH DRILL DATE Sep 28, 20
LOCATION Huntington Beach, CA
PROJECT Edison Park Waste Delineation
NUMBER HL1685A

SHEET 1 OF 1
ELEVATION DATA:
GROUND SURF. 7
TOP OF CASING
DATUM ft +MSL

GS FORM:
GEOTECH1 01/04

BOREHOLE LOG

DEPTH (ft-bgs)	DESCRIPTION 1) Soil Name (USCS Sym.) 2) Color 3) Moisture 4) Grain Size 5) Percentage 6) Plasticity 7) Density/Consistency 8) Other (Mineral Content, Discoloration, Odor, etc.)	GRAPHIC LOG	ELEV. (ft)	SAMPLE						COMMENTS 1) Rig Behavior 2) Air Monitoring 3) Pocket Pen 4) Tor Vane	
				SAMPLE NO.	TYPE	BLOWS PER 6"	N VALUE	RECOVERY (%)	PID READING (ppm)		TIME (00:00)
	Silty SAND (SM): brown; dry; fine sand; [5,75,20]; non-plastic; 1/4-in. to 1/2-in. gravel.		5							15:30	Hand augered to 5 ft bgs.
5	LANDFILL MAERIAL: dark grey; moist; no odor; wood pieces, asphalt concrete debris.									15:35	
	Silty SAND (SM): grey; wet; fine sand; [0,80,20]; non-plastic.		-5								First depth to groundwater.
15	Terminate boring at 16.5-ft below ground surface (bgs).		-10							15:45	
20			-15							15:50	
25			-20								
30			-25								

02-GEOTECH1 HL1685A.GPJ GEOSNTEC.GDT 10/25/20

CONTRACTOR ABC Liovin
EQUIPMENT CME 85
DRILL MTHD Hollow Stem Auger
DIAMETER 8-inch
LOGGER S. Upadhyaya

NORTHING 33.65250
EASTING -117.97250
COORDINATE SYSTEM:
REVIEWER Y. Zemuy, P. E.

NOTES: Borehole backfilled with hydrated bentonite chips. Logging of soils completed in general accordance with ASTM D2488 and ASTM D1586.

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS



2100 Main St
Suite 150
Huntington Beach, CA 92648
Tel: (714) 969-0800
Fax: (714) 333-4275

BORING HSA-3
START DRILL DATE Sep 28, 20
FINISH DRILL DATE Sep 28, 20
LOCATION Huntington Beach, CA
PROJECT Edison Park Waste Delineation
NUMBER HL1685A

SHEET 1 OF 1
ELEVATION DATA:
GROUND SURF. 7
TOP OF CASING
DATUM ft +MSL

GS FORM:
GEOTECH1 01/04

BOREHOLE LOG

DEPTH (ft-bgs)	DESCRIPTION	GRAPHIC LOG	ELEV. (ft)	SAMPLE						COMMENTS	
				SAMPLE NO.	TYPE	BLOWS PER 6"	N VALUE	RECOVERY (%)	PID READING (ppm)		TIME (00:00)
	1) Soil Name (USCS Sym.) 2) Color 3) Moisture 4) Grain Size 5) Percentage 6) Plasticity 7) Density/Consistency 8) Other (Mineral Content, Discoloration, Odor, etc.)										1) Rig Behavior 2) Air Monitoring 3) Pocket Pen 4) Tor Vane
	Silty SAND (SM): brown; dry; fine sand; [5,75,20]; non-plastic; 1/4-in. to 1/2-in. gravel.		5							13:55	Hand augered to 5 ft bgs.
5	LANDFILL MAERIAL: dark grey; moist; no odor; wood pieces, asphalt concrete debris.									14:05	
10											
15											
20	Poorly-graded SAND with Silt (SP-SM): grey; wet; predominantly fine sand; [0,90,10]; non-plastic. Terminate boring at 21.5-ft below ground surface (bgs).									14:20	First depth to groundwater.
25										14:30	
30										14:40	
										14:45	

02-GEOTECH1 HL1685A.GPJ GEOSNTEC.GDT 10/25/20

CONTRACTOR ABC Liovin
EQUIPMENT CME 85
DRILL MTHD Hollow Stem Auger
DIAMETER 8-inch
LOGGER S. Upadhyaya

NORTHING 33.65194
EASTING -117.97250
COORDINATE SYSTEM:
REVIEWER Y. Zemuy, P. E.

NOTES: Borehole backfilled with hydrated bentonite chips. Logging of soils completed in general accordance with ASTM D2488 and ASTM D1586.

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS



2100 Main St
Suite 150
Huntington Beach, CA 92648
Tel: (714) 969-0800
Fax: (714) 333-4275

BORING HSA-4
START DRILL DATE Sep 28, 20
FINISH DRILL DATE Sep 28, 20
LOCATION Huntington Beach, CA
PROJECT Edison Park Waste Delineation
NUMBER HL1685A

SHEET 1 OF 2

ELEVATION DATA:
GROUND SURF. 5
TOP OF CASING
DATUM ft +MSL

GS FORM:
GEOTECH1 01/04

BOREHOLE LOG

DEPTH (ft-bgs)	DESCRIPTION 1) Soil Name (USCS Sym.) 2) Color 3) Moisture 4) Grain Size 5) Percentage 6) Plasticity 7) Density/Consistency 8) Other (Mineral Content, Discoloration, Odor, etc.)	GRAPHIC LOG	ELEV. (ft)	SAMPLE						COMMENTS 1) Rig Behavior 2) Air Monitoring 3) Pocket Pen 4) Tor Vane	
				SAMPLE NO.	TYPE	BLOWS PER 6"	N VALUE	RECOVERY (%)	PID READING (ppm)		TIME (00:00)
	Silty SAND (SM): brown; dry; fine sand; [5,75,20]; non-plastic; 1/4-in. to 1/2-in. gravel.									10:50	Hand augered to 5 ft bgs.
	LANDFILL MAERIAL: dark grey; moist; no odor; wood pieces, asphalt concrete debris.									10:55	
5			0								
										11:10	First depth to groundwater.
10			-5								
15			-10							11:15	Hard drilling observed.
20			-15							11:20	
25			-20							11:30	Hard drilling observed.
30			-25								

02-GEOTECH1 HL1685A.GPJ GEOSNTEC.GDT 10/25/20

CONTRACTOR ABC Livin
EQUIPMENT CME 85
DRILL MTHD Hollow Stem Auger
DIAMETER 8-inch
LOGGER S. Upadhyaya
NORTHING 33.65194
EASTING -117.97306
COORDINATE SYSTEM:
REVIEWER Y. Zemuy, P. E.

NOTES: Borehole backfilled with hydrated bentonite chips. Logging of soils completed in general accordance with ASTM D2488 and ASTM D1586.

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS



2100 Main St
Suite 150
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Tel: (714) 969-0800
Fax: (714) 333-4275

BORING HSA-4
START DRILL DATE Sep 28, 20
FINISH DRILL DATE Sep 28, 20
LOCATION Huntington Beach, CA
PROJECT Edison Park Waste Delineation
NUMBER HL1685A

SHEET 2 OF 2
ELEVATION DATA:
GROUND SURF. 5
TOP OF CASING
DATUM ft +MSL

GS FORM:
GEOTECH1 01/04

BOREHOLE LOG

DEPTH (ft-bgs)	DESCRIPTION 1) Soil Name (USCS Sym.) 2) Color 3) Moisture 4) Grain Size 5) Percentage 6) Plasticity 7) Density/Consistency 8) Other (Mineral Content, Discoloration, Odor, etc.)	GRAPHIC LOG	ELEV. (ft)	SAMPLE						COMMENTS 1) Rig Behavior 2) Air Monitoring 3) Pocket Pen 4) Tor Vane
				SAMPLE NO.	TYPE	BLOWS PER 6"	N VALUE	RECOVERY (%)	PID READING (ppm)	
		[Hatched Pattern]								12:00 Very hard drilling, little to no spoils.
35	Terminate boring at 34-ft below ground surface (bgs) due to refusal.		-30							12:40 Refusal; auger plugged with wood. Wood chunks observed in the spoils as the auger was retracted.
40			-35							
45			-40							
50			-45							
55			-50							
60			-55							

02-GEOTECH1 HL1685A.GPJ GEOSNTEC.GDT 10/25/20

CONTRACTOR ABC Liovin
EQUIPMENT CME 85
DRILL MTHD Hollow Stem Auger
DIAMETER 8-inch
LOGGER S. Upadhyaya

NORTHING 33.65194
EASTING -117.97306
COORDINATE SYSTEM:
REVIEWER Y. Zemuy, P. E.

NOTES: Borehole backfilled with hydrated bentonite chips. Logging of soils completed in general accordance with ASTM D2488 and ASTM D1586.

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS



2100 Main St
Suite 150
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Tel: (714) 969-0800
Fax: (714) 333-4275

BORING HSA-5
START DRILL DATE Sep 28, 20
FINISH DRILL DATE Sep 28, 20
LOCATION Huntington Beach, CA
PROJECT Edison Park Waste Delineation
NUMBER HL1685A

SHEET 1 OF 2
ELEVATION DATA:
GROUND SURF. 9
TOP OF CASING
DATUM ft +MSL

GS FORM:
GEOTECH1 01/04

BOREHOLE LOG

DEPTH (ft-bgs)	DESCRIPTION 1) Soil Name (USCS Sym.) 2) Color 3) Moisture 4) Grain Size 5) Percentage 6) Plasticity 7) Density/Consistency 8) Other (Mineral Content, Discoloration, Odor, etc.)	GRAPHIC LOG	ELEV. (ft)	SAMPLE						COMMENTS 1) Rig Behavior 2) Air Monitoring 3) Pocket Pen 4) Tor Vane
				SAMPLE NO.	TYPE	BLOWS PER 6"	N VALUE	RECOVERY (%)	PID READING (ppm)	
	Silty SAND (SM): brown; dry; fine sand; [5,75,20]; non-plastic; 1/4-in. to 1/2-in. gravel.								07:45	Hand augered to 5 ft bgs.
	LANDFILL MAERIAL: dark grey; moist; no odor; wood pieces, asphalt concrete debris.		5						08:00	
5	organic odor.		0						08:20	
10			-5						08:25	First depth to groundwater.
15	becomes wet.		-10						08:30	
20			-15							
25			-20							
30			-25							

02-GEOTECH1 HL1685A.GPJ GEOSNTEC.GDT 10/25/20

CONTRACTOR ABC Liovin
EQUIPMENT CME 85
DRILL MTHD Hollow Stem Auger
DIAMETER 8-inch
LOGGER S. Upadhyaya
NORTHING 33.65278
EASTING -117.97333
COORDINATE SYSTEM:
REVIEWER Y. Zemuy, P. E.

NOTES: Borehole backfilled with hydrated bentonite chips. Logging of soils completed in general accordance with ASTM D2488 and ASTM D1586.
SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS



2100 Main St
Suite 150
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Tel: (714) 969-0800
Fax: (714) 333-4275

BORING HSA-5
START DRILL DATE Sep 28, 20
FINISH DRILL DATE Sep 28, 20
LOCATION Huntington Beach, CA
PROJECT Edison Park Waste Delineation
NUMBER HL1685A

SHEET 2 OF 2
ELEVATION DATA:
GROUND SURF. 9
TOP OF CASING
DATUM ft +MSL

GS FORM:
GEOTECH1 01/04

BOREHOLE LOG

DEPTH (ft-bgs)	DESCRIPTION 1) Soil Name (USCS Sym.) 2) Color 3) Moisture 4) Grain Size 5) Percentage 6) Plasticity 7) Density/Consistency 8) Other (Mineral Content, Discoloration, Odor, etc.)	GRAPHIC LOG	ELEV. (ft)	SAMPLE						COMMENTS 1) Rig Behavior 2) Air Monitoring 3) Pocket Pen 4) Tor Vane
				SAMPLE NO.	TYPE	BLOWS PER 6"	N VALUE	RECOVERY (%)	PID READING (ppm)	
35			-25							09:00 Hard drilling (rattling of auger) observed.
										09:30 No recovery. Hard drilling observed.
40			-30							09:32 No recovery.
										09:35
										09:45
45			-35							
50			-40							
55			-45							
60			-50							

Silty SAND (SM): grey; wet; fine sand; [0,80,20]; non-plastic.
Terminate boring at 41.5-ft below ground surface (bgs).

CONTRACTOR ABC Livin
EQUIPMENT CME 85
DRILL MTHD Hollow Stem Auger
DIAMETER 8-inch
LOGGER S. Upadhyaya
NORTHING 33.65278
EASTING -117.97333
COORDINATE SYSTEM:
REVIEWER Y. Zemuy, P. E.

NOTES: Borehole backfilled with hydrated bentonite chips. Logging of soils completed in general accordance with ASTM D2488 and ASTM D1586.

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

02-GEOTECH1 HL1685A.GPJ GEOSNTEC.GDT 10/25/20

KEY SHEET - CLASSIFICATIONS AND SYMBOLS

GS FORM:
KEY/SYMBOLS 01/04

EMPIRICAL CORRELATIONS WITH STANDARD PENETRATION RESISTANCE N60 VALUES *

	N60 VALUE * (BLOWS/FT)	CONSISTENCY	UNCONFINED COMPRESSIVE STRENGTH (TONS/SQ FT)		N60 VALUE * (BLOWS/FT)	RELATIVE DENSITY
FINE GRAINED SOILS	0 - 2	VERY SOFT	<0.25	COARSE GRAINED SOILS	0 - 4	VERY LOOSE
	3 - 4	SOFT	0.25 - 0.50		5 - 10	LOOSE
	5 - 8	FIRM	0.50 - 1.00		11 - 30	MEDIUM DENSE
	9 - 15	STIFF	1.00 - 2.00		31 - 50	DENSE
	16 - 30	VERY STIFF	2.00 - 4.00		>50	VERY DENSE
	31 - 50	HARD	>4.00			
	>50	VERY HARD				

* ASTM D 1586; NUMBER OF BLOWS OF 140 POUND HAMMER FALLING 30 INCHES TO DRIVE A 2 IN. O.D., 1.4 IN. I.D. SAMPLER ONE FOOT, CORRECTED FOR HAMMER EFFICIENCY.

UNIFIED SOIL CLASSIFICATION AND SYMBOL CHART

MAJOR DIVISIONS		SYMBOLS	DESCRIPTIONS
COARSE GRAINED SOILS	GRAVEL AND GRAVELLY SOILS	CLEAN GRAVELS LITTLE OR NO FINES	GW WELL-GRADED GRAVELS, GRAVEL-SAND MIXTURES, LITTLE OR NO FINES
			GP POORLY GRADED GRAVELS, GRAVEL-SAND MIXTURES, LITTLE OR NO FINES
		GRAVELS WITH FINES APPRECIABLE AMOUNT OF FINES	GM SILTY GRAVELS, GRAVEL- SAND-SILT MIXTURES
	SAND AND SANDY SOILS	CLEAN SANDS LITTLE OR NO FINES	SW WELL GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
			SP POORLY GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
		SANDS WITH FINES APPRECIABLE AMOUNT OF FINES	SM SILTY SANDS, SAND-SILT MIXTURES
		SC CLAYEY SANDS, SAND-CLAY MIXTURES	
FINE GRAINED SOILS	SILTS AND CLAYS	LIQUID LIMIT LESS THAN 50	ML INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY
			CL INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
			OL ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
	SILTS AND CLAYS	LIQUID LIMIT GREATER THAN 50	MH INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SANDY OR SILTY SOILS, ELASTIC SILT
			CH INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS
			OH ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
HIGHLY ORGANIC SOILS		PT PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENT	

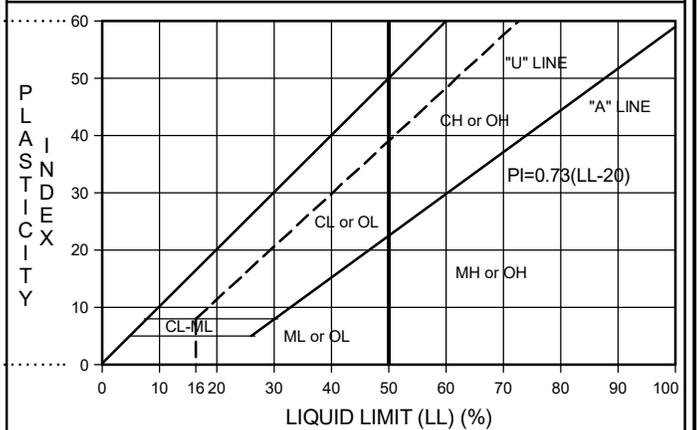
NOTE: DUAL SYMBOLS USED FOR BORDERLINE CLASSIFICATIONS

PARTICLE SIZE IDENTIFICATION

USCS (SOILS ONLY) *		SEDIMENTARY (ROCK ONLY)	
BOULDER	>300 mm	BOULDER	>256 mm
COBBLE	75 - 300 mm	COBBLE	64 - 256 mm
GRAVEL: COARSE	20 - 75 mm	PEBBLE	4 - 64 mm
GRAVEL: FINE	4.75 - 20 mm	GRANULE	2 - 4 mm
SAND: COARSE	2 - 4.75 mm	SAND: V. COARSE	1 - 2 mm
SAND: MEDIUM	0.42 - 2 mm	SAND: COARSE	0.5 - 1 mm
SAND: FINE	0.074 - 0.42 mm	SAND: MEDIUM	0.25 - 0.5 mm
		SAND: FINE	0.125 - 0.25 mm
SILT/CLAY	<0.074 mm	SAND: V. FINE	0.063 - 0.125 mm
		SILT	0.004 - 0.063 mm
		CLAY	<0.004 mm

* WELL GRADED - HAVING WIDE RANGE OF GRAIN SIZES AND APPRECIABLE AMOUNTS OF ALL INTERMEDIATE PARTICLE SIZES
* POORLY GRADED - PREDOMINANTLY ONE GRAIN SIZE, OR HAVING A RANGE OF SIZES WITH SOME INTERMEDIATE SIZES MISSING
PERCENTAGE OF PARTICLE TYPE IN DECREASING ORDER OF PARTICLE SIZE (GRAVEL, SAND, FINES), BASED ON VISUAL OBSERVATION

PLASTICITY CHART



OTHER MATERIAL SYMBOLS

Conglomerate	Sandy Claystone	Marker Bed
Sandstone	Granitic/Intrusive	
Silty Sandstone	Volcanic/Extrusive	Artificial Fill
Clayey Sandstone	Metamorphic	Refuse
Sandy Siltstone	Limestone	Concrete/Asphalt
Siltstone	Dolomite	
Claystone	Glacial Till	
Clayey Siltstone/ Silty Claystone	Landslide Debris	

WELL SYMBOLS

CONCRETE
GROUT
BENTONITE SEAL
TRANSITION SAND
SAND PACK
GRAVEL PACK
NATIVE/SLUFF
CENTRALIZER

SAMPLE TYPE AND OTHER SYMBOLS

BULK SAMPLE	Water Level at Time Drilling, or as Shown
STANDARD PENETRATION TEST	Static Water Level
MODIFIED CALIFORNIA SAMPLE	Pump Inlet
CORE SAMPLE	Loss of Drilling Fluid
SHELBY TUBE	MSL: Mean Sea Level
DRIVE SAMPLE	AGS: Above Ground Surface
	BGS: Below Ground Surface
	BTOC: Below Top of Casing
	HSA: Hollow Stem Auger



2100 Main St
Suite 150
Huntington Beach, CA 92648
Tel: (714) 969-0800
Fax: (714) 333-4275

BORING HSA-2A
START DRILL DATE Mar 12, 21
FINISH DRILL DATE Mar 12, 21
LOCATION Huntington Beach, CA
PROJECT Edison Park Waste Delineation
NUMBER HL1685B

SHEET 1 OF 1
ELEVATION DATA:
GROUND SURF. 9
TOP OF CASING
DATUM ft +MSL

GS FORM:
GEOTECH1 01/04

BOREHOLE LOG

DEPTH (ft-bgs)	DESCRIPTION	GRAPHIC LOG	ELEV. (ft)	SAMPLE						COMMENTS		
				SAMPLE NO.	TYPE	BLOWS PER 6"	N VALUE	RECOVERY (%)	PID READING (ppm)		TIME (00:00)	
	CONCRETE		8									
	Silty SAND (SM): brown; moist; fine sand; [5,80,15]; non-plastic; trace 1/4-in. to 1/2-in. gravel.		7									
5	Fat CLAY (CH): dark grey; moist; trace fine sand; [5,5,90]; medium to high plasticity; slight organic odor; trace brick debris pieces.		6									
			5									
			4									
			3									
			2									
			1									
			0									
			-1									
10	Fat CLAY with Sand (CH): dark grey; moist; fine sand; [0,20,80]; medium to high plasticity.		-2					100			13:40	
			-3									
			-4									
			-5									
			-6									
15	Sandy SILT (ML): dark grey; wet; fine sand; [0,40,60]; none to low plasticity.		-7					100			13:45	
			-8								13:50	
			-9									
			-10									
			-11									
			-12									
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			-14									
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			-99									
			-100									

CONTRACTOR ABC Livin
EQUIPMENT CME 85
DRILL MTHD Hollow Stem Auger
DIAMETER 8-inch
LOGGER S. Upadhyaya

NORTHING 33.652273
EASTING -117.972310
COORDINATE SYSTEM:
REVIEWER Y. Zemuy, P. E.

NOTES: Groundwater was not encountered. Borehole backfilled with hydrated bentonite chips. Logging of soils completed in general accordance with ASTM D2488 and ASTM D1586.

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

02-GEOTECH1 HL1685B.GPJ GEOSNTEC.GDT 4/9/21



2100 Main St
Suite 150
Huntington Beach, CA 92648
Tel: (714) 969-0800
Fax: (714) 333-4275

BORING HSA-3A
START DRILL DATE Mar 12, 21
FINISH DRILL DATE Mar 12, 21
LOCATION Huntington Beach, CA
PROJECT Edison Park Waste Delineation
NUMBER HL1685B

SHEET 1 OF 1
ELEVATION DATA:
GROUND SURF. 8
TOP OF CASING
DATUM ft +MSL

GS FORM:
GEOTECH1 01/04

BOREHOLE LOG

DEPTH (ft-bgs)	DESCRIPTION	GRAPHIC LOG	ELEV. (ft)	SAMPLE						COMMENTS	
				SAMPLE NO.	TYPE	BLOWS PER 6"	N VALUE	RECOVERY (%)	PID READING (ppm)		TIME (00:00)
	CONCRETE		7							11:20	
	Silty SAND (SM): brown; moist; fine sand; [5,80,15]; non-plastic; trace 1/4-in. to 1/2-in. gravel.		6							11:35	Hand augered to 5 ft bgs.
5	Fat CLAY (CH): dark grey; moist; trace fine sand; [0,5,95]; medium to high plasticity; slight organic odor; trace asphalt debris pieces.		5								
			4								
			3							11:45	
			2								
			1								
			0								
			-1								
			-2								
10	Fat CLAY with Sand (CH): dark grey; moist; fine sand; [0,25,75]; medium to high plasticity.		-2					100		12:00	
			-3								
			-4								
			-5								
			-6								
			-7								
15	Silty SAND (SM): grey; wet; fine sand; [0,60,40]; none to low plasticity.		-7					100		12:10	First depth to groundwater.
			-8								
			-9							12:20	
	Terminate boring at 16.5-ft below ground surface (bgs).		-9								
			-10								
			-11								
			-12								
			-13								
			-14								
			-15								
			-16								
			-17								
			-18								
			-19								
			-20								
			-21								
			-22								

CONTRACTOR ABC Liovin
EQUIPMENT CME 85
DRILL MTHD Hollow Stem Auger
DIAMETER 8-inch
LOGGER S. Upadhyaya

NORTHING 33.652136
EASTING -117.972250
COORDINATE SYSTEM:
REVIEWER Y. Zemuy, P. E.

NOTES: Borehole backfilled with hydrated bentonite chips. Logging of soils completed in general accordance with ASTM D2488 and ASTM D1586.

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

02-GEOTECH1 HL1685B.GPJ GEOSNTEC.GDT 4/9/21



2100 Main St
Suite 150
Huntington Beach, CA 92648
Tel: (714) 969-0800
Fax: (714) 333-4275

BORING HSA-4A
START DRILL DATE Mar 12, 21
FINISH DRILL DATE Mar 12, 21
LOCATION Huntington Beach, CA
PROJECT Edison Park Waste Delineation
NUMBER HL1685B

SHEET 1 OF 1
ELEVATION DATA:
GROUND SURF. 9
TOP OF CASING
DATUM ft +MSL

GS FORM:
GEOTECH1 01/04

BOREHOLE LOG

DEPTH (ft-bgs)	DESCRIPTION	GRAPHIC LOG	ELEV. (ft)	SAMPLE						COMMENTS	
				SAMPLE NO.	TYPE	BLOWS PER 6"	N VALUE	RECOVERY (%)	PID READING (ppm)		TIME (00:00)
	CONCRETE		8							14:30	Hand augered to 5 ft bgs.
	Silty SAND (SM): brown; moist; fine sand; [5,75,20]; non-plastic; trace 1/4-in. to 1/2-in. gravel.		7							14:40	
	Fat CLAY (CH): dark grey; moist; trace fine sand; [5,5,90]; medium to high plasticity; slight organic odor; wood debris; trace brick debris pieces. few brick debris pieces.		6								14:50
5	Fat CLAY (CH): dark grey; moist; few fine sand; [0;10;90]; medium to high plasticity; trace sea shells.		4								
	becomes wet; [0;5;95].		-1								15:15
	Sandy SILT (ML): grey; wet; fine sand; (0;40;60); low to medium plasticity.		-2				100				
			-5								15:25
15	Fat CLAY (CH): grey; wet; few fine sand; [0,10,90]; medium to high plasticity.		-6				100				
	Terminate boring at 16.5-ft below ground surface (bgs).		-8							15:30	First depth to groundwater.
20			-10								
25			-15								
30			-20								

02-GEOTECH1 HL1685B.GPJ GEOSNTEC.GDT 4/9/21

CONTRACTOR ABC Livin
EQUIPMENT CME 85
DRILL MTHD Hollow Stem Auger
DIAMETER 8-inch
LOGGER S. Upadhyaya

NORTHING 33.651973
EASTING -117.972290
COORDINATE SYSTEM:
REVIEWER Y. Zemuy, P. E.

NOTES: Borehole backfilled with hydrated bentonite chips. Logging of soils completed in general accordance with ASTM D2488 and ASTM D1586.

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS



2100 Main St
Suite 150
Huntington Beach, CA 92648
Tel: (714) 969-0800
Fax: (714) 333-4275

BORING HSA-5A
START DRILL DATE Mar 12, 21
FINISH DRILL DATE Mar 12, 21
LOCATION Huntington Beach, CA
PROJECT Edison Park Waste Delineation
NUMBER HL1685B

SHEET 1 OF 1
ELEVATION DATA:
GROUND SURF. 9
TOP OF CASING
DATUM ft +MSL

GS FORM:
GEOTECH1 01/04

BOREHOLE LOG

DEPTH (ft-bgs)	DESCRIPTION 1) Soil Name (USCS Sym.) 2) Color 3) Moisture 4) Grain Size 5) Percentage 6) Plasticity 7) Density/Consistency 8) Other (Mineral Content, Discoloration, Odor, etc.)	GRAPHIC LOG	ELEV. (ft)	SAMPLE						COMMENTS 1) Rig Behavior 2) Air Monitoring 3) Pocket Pen 4) Tor Vane	
				SAMPLE NO.	TYPE	BLOWS PER 6"	N VALUE	RECOVERY (%)	PID READING (ppm)		TIME (00:00)
	CONCRETE		8							16:00	Hand augered to 5 ft bgs.
	Silty SAND (SM): brown; moist; fine sand; [5,75,20]; none to low plasticity; trace 1/4-in. to 1/2-in. gravel.		7							16:15	
5	Fat CLAY (CH): dark grey; moist; trace fine sand; [0,5,95]; medium to high plasticity; slight organic odor.		6							16:25	First depth to groundwater.
			5								
			4								
			3								
			2								
			1								
			0								
10			-1					100		16:45	
			-2								
			-3								
			-4								
			-5								
15	Sandy SILT (ML): dark grey; wet; fine sand; (0;30;70); low to medium plasticity.		-6					100		16:50	
			-7								
			-8								
	Terminate boring at 17.0-ft below ground surface (bgs).		-8							17:00	
			-9								
			-10								
			-11								
			-12								
			-13								
			-14								
			-15								
			-16								
			-17								
			-18								
			-19								
			-20								
			-21								

02-GEOTECH1 HL1685B.GPJ GEOSNTEC.GDT 4/9/21

CONTRACTOR ABC Livin
EQUIPMENT CME 85
DRILL MTHD Hollow Stem Auger
DIAMETER 8-inch
LOGGER S. Upadhyaya

NORTHING 33.651951
EASTING -117.972360
COORDINATE SYSTEM:
REVIEWER Y. Zemuy, P. E.

NOTES: Borehole backfilled with hydrated bentonite chips. Logging of soils completed in general accordance with ASTM D2488 and ASTM D1586.

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS



2100 Main St
Suite 150
Huntington Beach, CA 92648
Tel: (714) 969-0800
Fax: (714) 333-4275

BORING HSA-6A
START DRILL DATE Mar 12, 21
FINISH DRILL DATE Mar 12, 21
LOCATION Huntington Beach, CA
PROJECT Edison Park Waste Delineation
NUMBER HL1685B

SHEET 1 OF 1
ELEVATION DATA:
GROUND SURF. 7
TOP OF CASING
DATUM ft +MSL

GS FORM:
GEOTECH1 01/04

BOREHOLE LOG

DEPTH (ft-bgs)	DESCRIPTION	GRAPHIC LOG	ELEV. (ft)	SAMPLE						COMMENTS	
				SAMPLE NO.	TYPE	BLOWS PER 6"	N VALUE	RECOVERY (%)	PID READING (ppm)		TIME (00:00)
	CONCRETE		6							17:10	
	Silty SAND (SM): brown; moist; fine sand; [5,80,15]; non-plastic; trace 1/4-in. to 1/2-in. gravel.		5							17:15	Hand augered to 5 ft bgs.
	Fat CLAY (CH): dark grey; moist; trace fine sand; [0,5,95]; medium to high plasticity; slight organic odor.		4								
5			3								
			2								
			1							17:30	
			0								
			-1								
			-2								
			-3								
10	[0;10;90]; no odor.		-4					100		17:35	
			-5								
			-6								
			-7								
			-8								
15	Sandy SILT (ML): dark grey; wet; fine sand; [0,30,70]; none to low plasticity.		-9					100		17:45	
			-10								
	Terminate boring at 16.5-ft below ground surface (bgs).		-11							17:50	
			-12								
			-13								
			-14								
			-15								
			-16								
			-17								
			-18								
25			-19								
			-20								
			-21								
			-22								
			-23								
30											

02-GEOTECH1 HL1685B.GPJ GEOSNTEC.GDT 4/9/21

CONTRACTOR ABC Liovin
EQUIPMENT CME 85
DRILL MTHD Hollow Stem Auger
DIAMETER 8-inch
LOGGER K. Viswanathan

NORTHING 33.652033
EASTING -117.972510
COORDINATE SYSTEM:
REVIEWER Y. Zemuy, P. E.

NOTES: Groundwater was not encountered. Borehole backfilled with hydrated bentonite chips. Logging of soils completed in general accordance with ASTM D2488 and ASTM D1586.

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS



2100 Main St
Suite 150
Huntington Beach, CA 92648
Tel: (714) 969-0800
Fax: (714) 333-4275

BORING HSA-7A
START DRILL DATE Mar 12, 21
FINISH DRILL DATE Mar 12, 21
LOCATION Huntington Beach, CA
PROJECT Edison Park Waste Delineation
NUMBER HL1685B

SHEET 1 OF 1
ELEVATION DATA:
GROUND SURF. 10
TOP OF CASING
DATUM ft +MSL

GS FORM:
GEOTECH1 01/04

BOREHOLE LOG

DEPTH (ft-bgs)	DESCRIPTION 1) Soil Name (USCS Sym.) 2) Color 3) Moisture 4) Grain Size 5) Percentage 6) Plasticity 7) Density/Consistency 8) Other (Mineral Content, Discoloration, Odor, etc.)	GRAPHIC LOG	ELEV. (ft)	SAMPLE						COMMENTS 1) Rig Behavior 2) Air Monitoring 3) Pocket Pen 4) Tor Vane	
				SAMPLE NO.	TYPE	BLOWS PER 6"	N VALUE	RECOVERY (%)	PID READING (ppm)		TIME (00:00)
	CONCRETE		9							07:50	Hand augered to 5 ft bgs.
	Silty SAND (SM): brown; moist; fine sand; [5,80,15]; none to low plasticity; trace 1/4-in. to 1/2-in. gravel.		8							08:00	
5	Fat CLAY (CH): dark grey; moist; trace fine sand; [0,5,95]; medium to high plasticity; slight organic odor.		7								First depth to groundwater.
			6							08:10	
10	Sandy SILT (ML): dark brown; wet; fine sand; [0,40,60]; low to medium plasticity.		0				100			08:25	
	Fat CLAY (CH): grey; wet; few fine sand; [0,10,90]; medium to high plasticity.		-1								
			-2								
			-3								
			-4								
			-5								
			-6								
			-7								
			-8								
	Terminate boring at 18.0-ft below ground surface (bgs).		-9							08:35	
			-10								
			-11								
			-12								
			-13								
			-14								
			-15								
			-16								
			-17								
			-18								
			-19								
			-20								

02-GEOTECH1 HL1685B.GPJ GEOSNTEC.GDT 4/9/21

CONTRACTOR ABC Livin
EQUIPMENT CME 85
DRILL MTHD Hollow Stem Auger
DIAMETER 8-inch
LOGGER S. Upadhyaya

NORTHING 33.652178
EASTING -117.972520
COORDINATE SYSTEM:
REVIEWER Y. Zemuy, P. E.

NOTES: Borehole backfilled with hydrated bentonite chips. Logging of soils completed in general accordance with ASTM D2488 and ASTM D1586.

SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS



2100 Main St
Suite 150
Huntington Beach, CA 92648
Tel: (714) 969-0800
Fax: (714) 333-4275

BORING HSA-8A
START DRILL DATE Mar 12, 21
FINISH DRILL DATE Mar 12, 21
LOCATION Huntington Beach, CA
PROJECT Edison Park Waste Delineation
NUMBER HL1685B

SHEET 1 OF 1
ELEVATION DATA:
GROUND SURF. 10
TOP OF CASING
DATUM ft +MSL

GS FORM:
GEOTECH1 01/04

BOREHOLE LOG

DEPTH (ft-bgs)	DESCRIPTION 1) Soil Name (USCS Sym.) 2) Color 3) Moisture 4) Grain Size 5) Percentage 6) Plasticity 7) Density/Consistency 8) Other (Mineral Content, Discoloration, Odor, etc.)	GRAPHIC LOG	ELEV. (ft)	SAMPLE						COMMENTS 1) Rig Behavior 2) Air Monitoring 3) Pocket Pen 4) Tor Vane
				SAMPLE NO.	TYPE	BLOWS PER 6"	N VALUE	RECOVERY (%)	PID READING (ppm)	
	CONCRETE		9							09:50
	Silty SAND (SM): brown; moist; fine sand; [0,85,15]; non-plastic.		8							10:10
5	Fat CLAY (CH): dark grey; moist; trace fine sand; [0,5,95]; medium to high plasticity; slight organic odor.		7							
			6							
			5							10:15
			4							
			3							
			2							
			1							
10	Sandy SILT (ML): dark gray; wet; fine sand; (0;40;60); low to medium plasticity.		0				100			10:20
			-1							
			-2							
			-3							
			-4							
15	Silty SAND (SM): grey; wet; fine to medium sand; [0;80;20]; none to low plasticity.		-5				100			10:30
			-6							
	Terminate boring at 16.5-ft below ground surface (bgs).		-7							10:35
			-8							
			-9							
			-10							
			-11							
			-12							
			-13							
			-14							
			-15							
25			-16							
			-17							
			-18							
			-19							
			-20							

02-GEOTECH1 HL1685B.GPJ GEOSNTEC.GDT 4/9/21

CONTRACTOR ABC Livin
EQUIPMENT CME 85
DRILL MTHD Hollow Stem Auger
DIAMETER 8-inch
LOGGER S. Upadhyaya
NORTHING 33.652181
EASTING -117.972360
COORDINATE SYSTEM:
REVIEWER Y. Zemuy, P. E.

NOTES: Borehole backfilled with hydrated bentonite chips. Logging of soils completed in general accordance with ASTM D2488 and ASTM D1586.
SEE KEY SHEET FOR SYMBOLS AND ABBREVIATIONS

Appendix E

Daily Field Reports



DAILY FIELD REPORT

Report Sequence No.:001

PROJECT: <u>Edison Park Waste Delineation</u>		
LOCATION: <u>Huntington Beach, California</u>	PROJECT NO.: <u>HL1685A</u>	TASK NO.: <u>01</u>
DESCRIPTION: <u>Geophysical Survey for Locating Utilities</u>	CONTRACTOR: <u>GEOVision, Inc.,</u>	
DAY OF WEEK: <u>Wednesday</u>	DATE: <u>September 23, 2020</u>	
WEATHER: <u>Sunny, High 72° Low 64°</u>		

Time	Field Work Activities
0700	Arrived on site and met with GEOVision field crew Martin Garcia and Christopher Collins.
0705	Held a brief tailgate safety meeting. GEOVision crew acknowledged the THA.
0710	Performed a site walk with GEOVision crew to observe the proposed investigation locations (HSA-1 through HSA-5; TP-1 through TP-5).
0730	GEOVision started utility clearance survey at location of TP-1 test pit. Some utilities (likely irrigation and main water line) were encountered within 5 ft of TP-1. GEOVision marked a new location 14 ft north of the existing TP-1 location.
0800	GEOVision performed utility clearance survey at location of HSA-1 boring. No conflicts were found at HSA-1 location.
0810	GEOVision performed utility clearance survey at location of TP-2. Electrical and irrigation utility lines were located within 3 ft of TP-2 location. GEOVision marked a new TP-2 location 10 ft south of the existing location.
0820	GEOVision performed utility clearance survey at location of HSA-5 boring. No conflicts were found at HSA-5 location.
0835	GEOVision performed utility clearance survey at locations of TP-3 and HSA-2. Some utilities (likely irrigation lines) were encountered within 5 ft of HSA-2 and TP-3 location. GEOVision marked a new HAS-2 location 3 ft east of the existing location.
0850	GEOVision performed utility clearance survey at location of HSA-4. Some utilities were encountered within 2 ft of the HSA-4 location. GEOVision marked a new location 3 ft east of the existing location.
0900	GEOVision performed utility clearance survey at locations of TP-4 and HSA-3. Electrical and irrigation utility lines were encountered within 5-10 ft of TP-4 and HSA-3 locations. No conflict at HSA-3. GEOVision marked a new location 15 ft southwest of the existing TP-4 location.
0920	GEOVision performed utility clearance survey at TP-5 location. No conflicts were found at TP-5.
0945	Geosyntec and GEOVision departed the site for the day.



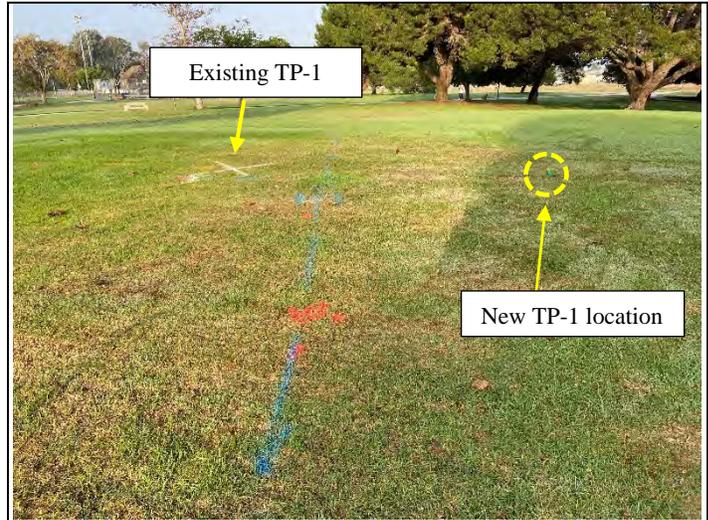
DAILY FIELD REPORT

Report Sequence No.:001

PROJECT: <u>Edison Park Waste Delineation</u>		
LOCATION: <u>Huntington Beach, California</u>	PROJECT NO.: <u>HL1685A</u>	TASK NO.: <u>01</u>
DESCRIPTION: <u>Geophysical Survey for Locating Utilities</u>	CONTRACTOR: <u>GEOVision, Inc.,</u>	
DAY OF WEEK: <u>Wednesday</u>	DATE: <u>September 23, 2020</u>	
WEATHER: <u>Sunny, High 72° Low 64°</u>		



GEOVision crew performing utility clearance survey at location TP-1 (looking west)



Utility markings at TP-1 and the new TP-1 location (looking west)



Location HSA-1 cleared of utilities (looking north)



GEOVision crew performing utility clearance survey at location TP-2 (looking north)

Printed Name: Sneha Upadhyaya

Signature



DAILY FIELD REPORT

Report Sequence No.:001

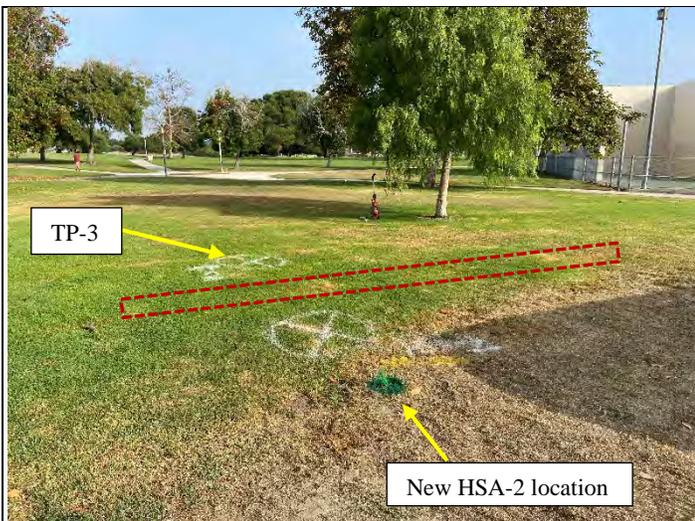
PROJECT: <u>Edison Park Waste Delineation</u>		
LOCATION: <u>Huntington Beach, California</u>	PROJECT NO.: <u>HL1685A</u>	TASK NO.: <u>01</u>
DESCRIPTION: <u>Geophysical Survey for Locating Utilities</u>	CONTRACTOR: <u>GEOVision, Inc.,</u>	
DAY OF WEEK: <u>Wednesday</u>	DATE: <u>September 23, 2020</u>	
WEATHER: <u>Sunny, High 72° Low 64°</u>		



Electrical utility markings at existing TP-2 and the new TP-2 location (looking north)



Location HSA-5 cleared of utilities (looking south)



Utility markings at existing TP-3 and HSA-2 locations and the new HSA-2 location (looking northwest)



Utility markings at existing HSA-4 location and the new HSA-4 location (looking northwest)

Printed Name: Sneha Upadhyaya

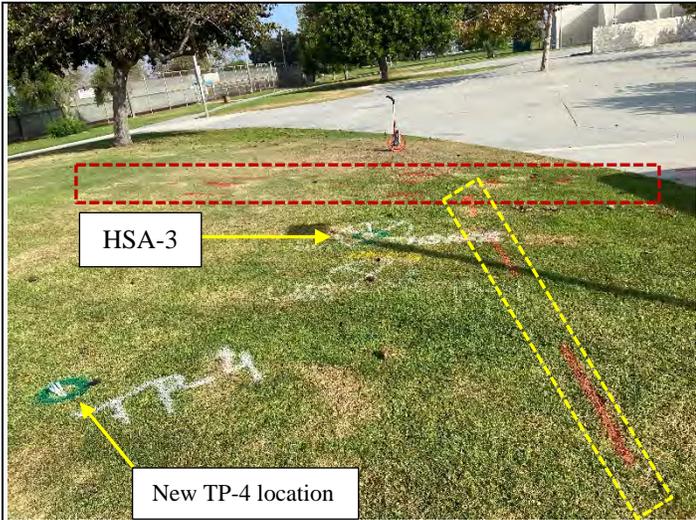
Signature



DAILY FIELD REPORT

Report Sequence No.:001

PROJECT: <u>Edison Park Waste Delineation</u>		
LOCATION: <u>Huntington Beach, California</u>	PROJECT NO.: <u>HL1685A</u>	TASK NO.: <u>01</u>
DESCRIPTION: <u>Geophysical Survey for Locating Utilities</u>	CONTRACTOR: <u>GEOVision, Inc.,</u>	
DAY OF WEEK: <u>Wednesday</u>	DATE: <u>September 23, 2020</u>	
WEATHER: <u>Sunny, High 72° Low 64°</u>		



Utility markings (electrical and irrigation lines) at TP-4 and HSA-3 locations and the new TP-4 location (looking north)



Location TP-5 cleared of utilities (looking northwest). The anomalies located are likely roots.



DAILY FIELD REPORT

Report Sequence No.:002

PROJECT: <u>Edison Park Waste Delineation</u>		
LOCATION: <u>Huntington Beach, California</u>	PROJECT NO.: <u>HL1685A</u>	TASK NO.: <u>02</u>
DESCRIPTION: <u>Trenching and Backfilling</u>	CONTRACTOR: <u>American Integrated Services, Inc.</u>	
DAY OF WEEK: <u>Thursday</u>	DATE: <u>September 24, 2020</u>	
WEATHER: <u>Sunny, High 76° Low 64°</u>		

Time	Field Work Activities
0645	Geosyntec air monitoring staff Eric Garcia arrived on site.
0650	Geosyntec field staff Sneha Upadhyaya arrived on site.
0700	Met with American Integrated Services (AIS) field crew (Geoff Harris, Antonio Sanchez, Jose Avila, and Brandon Duncan) and Geosyntec Air Monitoring field staff (Eric Garcia). Discussed the plan for the day with AIS field crew.
0710	AIS unloaded the drums at the parking lot.
0720	AIS mobilized the field equipment to proposed TP-1 exploratory test pit location. Plywood panels were placed on the ground to prevent potential rutting of the vegetation from the backhoe tires.
0730	Conducted a brief tailgate safety meeting.
0740	Fence panels with wind screens were placed around the excavation area. Plastic tarps were placed for temporarily staging the excavated soil.
0745	Started excavation activities at TP-1 location using a backhoe (CASE 580 Super N) with 36 inches wide bucket. About 4 inches of sod and topsoil was removed carefully.
0750	Continued excavating through the cover soil [visual classification in general accordance with ASTM D2488: Silty SAND (SM)]
0810	Encountered a 1 ft long metallic object at 2 ft below the ground surface (bgs).
0820	Encountered waste at approximately 3.5 ft bgs. Continued excavation to delineate the lateral limit of the waste.
0825	Geosyntec engineer Karthik Viswanathan arrived on-site.
0830	Encountered an underground irrigation pipe at approximately 3.0 ft bgs(1.5-inch PVC pipe). Minor damage caused during excavation was observed on the pipe.
0900	A section of the irrigation pipe was cut for repair. Excavation was continued towards the east to delineate the lateral limit of waste.
0930	Observed the lateral limit of the waste. Geosyntec took field measurements, prepared a log of the test-pit to include the field sketch of the exploratory test-pit wall.
0950	AIS repaired the damaged section of the irrigation pipe.
1010	AIS went to fill up the water trailer.
1050	Started backfilling the test pit (TP-1) with the excavated materials. The excavated material was backfilled into the test-pit and compacted to a firm condition.
1130	City of Huntington Beach personnel (Farhad Bolourchi) arrived on-site. Geosyntec provided an update to Mr. Bolourchi on TP-1 excavation activities.
1140	Geosyntec Senior Engineer (Yonas Zemuy) arrived on-site. Mr. Zemuy and Mr. Bolourchi performed a site walk.
1200	Backfilling activities were completed at TP-1.
1210	AIS field crew stopped for lunch break.

Printed Name: Sneha Upadhyaya

Signature



DAILY FIELD REPORT

Report Sequence No.:002

PROJECT: <u>Edison Park Waste Delineation</u>		
LOCATION: <u>Huntington Beach, California</u>	PROJECT NO.: <u>HL1685A</u>	TASK NO.: <u>02</u>
DESCRIPTION: <u>Trenching and Backfilling</u>	CONTRACTOR: <u>American Integrated Services, Inc.</u>	
DAY OF WEEK: <u>Thursday</u>	DATE: <u>September 24, 2020</u>	
WEATHER: <u>Sunny, High 76° Low 64°</u>		

1250	Mobilized to TP-2 location.
1300	Excavation activities started at TP-2 location. The sod and topsoil were carefully removed. Excavation continued through the cover soil [visual classification in general accordance with ASTM D2488: Silty SAND (SM)].
1315	Encountered waste at approximately 2 ft bgs at TP-2. Continued excavation towards the east to delineate the lateral limit of the waste.
1320	Observed the lateral limit of the waste at TP-2. Geosyntec took field measurements, prepared a log of the test-pit to include the field sketch of the exploratory test-pit wall.
1330	Started backfilling the test pit (TP-2) with the excavated materials. The excavated material was backfilled into the test-pit and compacted to a firm condition.
1350	Backfilling activities were completed at TP-2.
1355	Mobilized to TP-3 location.
1410	Excavation activities started at TP-3 location. The sod and topsoil were carefully removed. Excavation continued through the cover soil [visual classification in general accordance with ASTM D2488: Silty SAND (SM)].
1420	Encountered waste at approximately 3 ft bgs at TP-3. Continued excavation towards the east to delineate the lateral limit of the waste.
1430	Could not reach the lateral limit of the waste due to proximity to electric utility lines toward the east. Geosyntec field staff contacted Karthik Viswanathan (Geosyntec) and discussed about backfilling the excavated test-pit at TP-3 and starting a new test-pit the following day at 2 ft away from the marked electric lines (towards the east).
1440	Started backfilling the test pit (TP-3) with the excavated materials. The excavated material was returned into the test-pit and compacted to a firm condition.
1510	Backfilling activities were completed at TP-3. AIS to excavate a new test-pit at TP-3 tomorrow.
1515	AIS started moving the field equipment to the parking lot. Drums, plywood panels, and other equipment were secured within the fence panels at the parking lot.
1520	Geosyntec air monitoring staff Eric Garcia departed the site.
1545	Geosyntec field staff Sneha U. departed the site.

Printed Name: Sneha Upadhyaya

Signature



DAILY FIELD REPORT

Report Sequence No.:002

PROJECT: <u>Edison Park Waste Delineation</u>		
LOCATION: <u>Huntington Beach, California</u>	PROJECT NO.: <u>HL1685A</u>	TASK NO.: <u>02</u>
DESCRIPTION: <u>Trenching and Backfilling</u>	CONTRACTOR: <u>American Integrated Services, Inc.</u>	
DAY OF WEEK: <u>Thursday</u>	DATE: <u>September 24, 2020</u>	
WEATHER: <u>Sunny, High 76° Low 64°</u>		



Start of excavation at TP-1 location (looking south).



Waste encountered at TP-1. Also indicated is the exposed underground irrigation pipeline (looking southeast).



Lateral limit of waste at TP-1 (looking south)



Backfilling at TP-1(looking northeast)



DAILY FIELD REPORT

Report Sequence No.:002

PROJECT: <u>Edison Park Waste Delineation</u>		
LOCATION: <u>Huntington Beach, California</u>	PROJECT NO.: <u>HL1685A</u>	TASK NO.: <u>02</u>
DESCRIPTION: <u>Trenching and Backfilling</u>	CONTRACTOR: <u>American Integrated Services, Inc.</u>	
DAY OF WEEK: <u>Thursday</u>	DATE: <u>September 24, 2020</u>	
WEATHER: <u>Sunny, High 76° Low 64°</u>		



Start of excavation at TP-2 location (looking north).



Waste encountered at TP-2 and the lateral limit of waste (looking northeast).



Backfilling at TP-2; placing the vegetation back (looking northeast).



Start of excavation at TP-3 location (looking southeast).

Printed Name: Sneha Upadhyaya

Signature



DAILY FIELD REPORT

Report Sequence No.:002

PROJECT: <u>Edison Park Waste Delineation</u>		
LOCATION: <u>Huntington Beach, California</u>	PROJECT NO.: <u>HL1685A</u>	TASK NO.: <u>02</u>
DESCRIPTION: <u>Trenching and Backfilling</u>	CONTRACTOR: <u>American Integrated Services, Inc.</u>	
DAY OF WEEK: <u>Thursday</u>	DATE: <u>September 24, 2020</u>	
WEATHER: <u>Sunny, High 76° Low 64°</u>		



Waste encountered at TP-3 (looking east).



Backfilling at TP-3 (looking southeast).



DAILY FIELD REPORT

Report Sequence No.:003

PROJECT: <u>Edison Park Waste Delineation</u>		
LOCATION: <u>Huntington Beach, California</u>	PROJECT NO.: <u>HL1685A</u>	TASK NO.: <u>02</u>
DESCRIPTION: <u>Trenching and Backfilling</u>	CONTRACTOR: <u>American Integrated Services, Inc.</u>	
DAY OF WEEK: <u>Friday</u>	DATE: <u>September 25, 2020</u>	
WEATHER: <u>Sunny, High 78° Low 64°</u>		

Time	Field Work Activities
0650	Geosyntec field staff Sneha Upadhyaya and Eric Garcia arrived on site.
0700	Met with American Integrated Services (AIS) field crew and mobilized the equipment to TP-3 location to resume trenching activities at TP-3. Note that the trenching activities were discontinued at TP-3 on September 24 due to proximity to marked electric utility line.
0710	Plywood panels were placed on the ground to prevent potential rutting of the vegetation from the backhoe tires. Fence panels with wind screens were placed around the excavation area. Plastic tarps were placed for temporarily staging the excavated soil.
0715	Started excavation activities at TP-3 location 2 ft east of the marked electric utility line. Approximately 4 inches of sod and topsoil was removed carefully.
0720	Encountered the electric line at approximately 3.5 ft east of the marked utility line (1.5 ft from the western edge of the trench). Continued trenching from 1.5 ft away from the actual electric line (towards east).
0730	Encountered waste at about 3 ft bgs (dark grey Asphalt concrete debris, no odor). Continued excavation to delineate the lateral limit of the waste.
0810	Trench extended up to the edge of the concrete slab. Waste was observed to extent underneath the concrete slab. Unable to delineate the lateral extent of the waste. Geosyntec took field measurements, prepared a log of the test-pit to include the field sketch of the exploratory test-pit wall.
0815	Started backfilling the test pit (TP-3) with the excavated materials. The excavated material was backfilled into the test-pit and compacted to a firm condition.
0830	Backfilling activities completed at TP-3.
0840	Mobilized to proposed TP-4 location.
0850	Excavation activities started at TP-4 location. The sod and topsoil were carefully removed. Excavation continued through the cover soil [visual classification in general accordance with ASTM D2488: Silty SAND (SM)].
0855	Traces of Asphalt concrete observed at approximately 1.5 ft bgs. Some poorly graded fine sand (SP) was also observed at about 2 ft bgs (likely pipe bedding material).
0900	Encountered irrigation line (2-in. PVC pipe) at approximately 1 ft 8 in bgs. The irrigation pipe was damaged during excavation activities.
0915	Started another test pit 1 ft south of the existing test-pit at TP-4.
0930	Encountered waste at about 3 ft 3 inches bgs at TP-4 (dark grey Asphalt concrete debris, no odor). Continued excavation towards the east to delineate the lateral limit of the waste.
1025	Excavation was discontinued at approximately 3.5 ft away from the concrete slab due to close proximity to the marked utilities lines along the edge of the concrete slab. Unable to delineate the lateral extent of the waste. Geosyntec took field measurements, prepared a log of the test-pit to include the field sketch of the exploratory test-pit wall.
1030	AIS fixed the damaged irrigation pipe.

Printed Name: Sneha Upadhyaya

Signature





DAILY FIELD REPORT

Report Sequence No.:003

PROJECT: <u>Edison Park Waste Delineation</u>		
LOCATION: <u>Huntington Beach, California</u>	PROJECT NO.: <u>HL1685A</u>	TASK NO.: <u>02</u>
DESCRIPTION: <u>Trenching and Backfilling</u>	CONTRACTOR: <u>American Integrated Services, Inc.</u>	
DAY OF WEEK: <u>Friday</u>	DATE: <u>September 25, 2020</u>	
WEATHER: <u>Sunny, High 78° Low 64°</u>		

1055	Started backfilling at TP-4 with the excavated materials. The excavated material was backfilled into the test-pit and compacted to a firm condition.
1140	Backfilling activities were completed at TP-2. AIS stopped for lunch.
1215	AIS returned from lunch.
1220	City of Huntington Beach Park Development Division officials arrived at the site (Chris Slama et al.).
1230	Mobilized to proposed TP-5 location.
1250	Excavation activities started at TP-5 location. The sod and topsoil were carefully removed. Excavation continued through the cover soil [visual classification in general accordance with ASTM D2488: Silty SAND (SM)].
1300	Encountered waste (Asphalt concrete debris) at 1 ft 8 in bgs.
1310	Decayed wood pieces encountered at 4 ft 2 in bgs (mild organic odor).
1330	Excavation activities were continued towards the east. Waste was observed consistently at about 2 ft below the ground surface along the length of the trench.
1400	Excavation activities were continued until the edge of concrete sidewalk was reached (45 ft from the western edge of the trench). Excavation activities were discontinued. Unable to determine the lateral extent of the waste.
1410	Started backfilling the test pit (TP-5) with the excavated materials. The excavated material was backfilled into the test-pit and compacted to a firm condition.
1500	Backfilling activities were completed at the excavated trench at TP-5.
1530	A pothole was excavated at about 35 ft away from the eastern edge of the TP-5 trench (past the sidewalks). Waste was observed at 2 ft bgs.
1540	Backfilled the pothole.
1545	AIS started demobilization activities.
1600	AIS and Geosyntec departed the site.

Printed Name: Sneha Upadhyaya

Signature





DAILY FIELD REPORT

Report Sequence No.:003

PROJECT: <u>Edison Park Waste Delineation</u>		
LOCATION: <u>Huntington Beach, California</u>	PROJECT NO.: <u>HL1685A</u>	TASK NO.: <u>02</u>
DESCRIPTION: <u>Trenching and Backfilling</u>	CONTRACTOR: <u>American Integrated Services, Inc.</u>	
DAY OF WEEK: <u>Friday</u>	DATE: <u>September 25, 2020</u>	
WEATHER: <u>Sunny, High 78° Low 64°</u>		



Resumption of excavation at TP-3 location (looking south).



Electric utility pipe encountered at TP-3 (looking south).



Waste encountered at TP-3, waste continues underneath the concrete slab (looking east)



Backfilling at TP-3 (looking east)



DAILY FIELD REPORT

Report Sequence No.:003

PROJECT: <u>Edison Park Waste Delineation</u>		
LOCATION: <u>Huntington Beach, California</u>	PROJECT NO.: <u>HL1685A</u>	TASK NO.: <u>02</u>
DESCRIPTION: <u>Trenching and Backfilling</u>	CONTRACTOR: <u>American Integrated Services, Inc.</u>	
DAY OF WEEK: <u>Friday</u>	DATE: <u>September 25, 2020</u>	
WEATHER: <u>Sunny, High 78° Low 64°</u>		



Start of excavation at TP-4 location (looking northeast).



Damaged irrigation pipe at TP-4 (looking northeast).



DAILY FIELD REPORT

Report Sequence No.:003

PROJECT: <u>Edison Park Waste Delineation</u>		
LOCATION: <u>Huntington Beach, California</u>	PROJECT NO.: <u>HL1685A</u>	TASK NO.: <u>02</u>
DESCRIPTION: <u>Trenching and Backfilling</u>	CONTRACTOR: <u>American Integrated Services, Inc.</u>	
DAY OF WEEK: <u>Friday</u>	DATE: <u>September 25, 2020</u>	
WEATHER: <u>Sunny, High 78° Low 64°</u>		



Excavation of second trench adjacent to the first trench at TP-4 (looking southeast).



Waste encountered at TP-4 (looking east).

Printed Name: Sneha Upadhyaya

Signature



DAILY FIELD REPORT

Report Sequence No.:003

PROJECT: <u>Edison Park Waste Delineation</u>		
LOCATION: <u>Huntington Beach, California</u>	PROJECT NO.: <u>HL1685A</u>	TASK NO.: <u>02</u>
DESCRIPTION: <u>Trenching and Backfilling</u>	CONTRACTOR: <u>American Integrated Services, Inc.</u>	
DAY OF WEEK: <u>Friday</u>	DATE: <u>September 25, 2020</u>	
WEATHER: <u>Sunny, High 78° Low 64°</u>		



Waste observed to continue underneath the concrete slab at TP-4 (looking south).



AIS repairing the damaged irrigation pipe at TP-4 (looking northwest).



Start of excavation at TP-5 (looking southeast).



Waste encountered at TP-5 (looking south).



DAILY FIELD REPORT

Report Sequence No.:003

PROJECT: <u>Edison Park Waste Delineation</u>		
LOCATION: <u>Huntington Beach, California</u>	PROJECT NO.: <u>HL1685A</u>	TASK NO.: <u>02</u>
DESCRIPTION: <u>Trenching and Backfilling</u>	CONTRACTOR: <u>American Integrated Services, Inc.</u>	
DAY OF WEEK: <u>Friday</u>	DATE: <u>September 25, 2020</u>	
WEATHER: <u>Sunny, High 78° Low 64°</u>		



Waste materials at TP-5 (looking south).



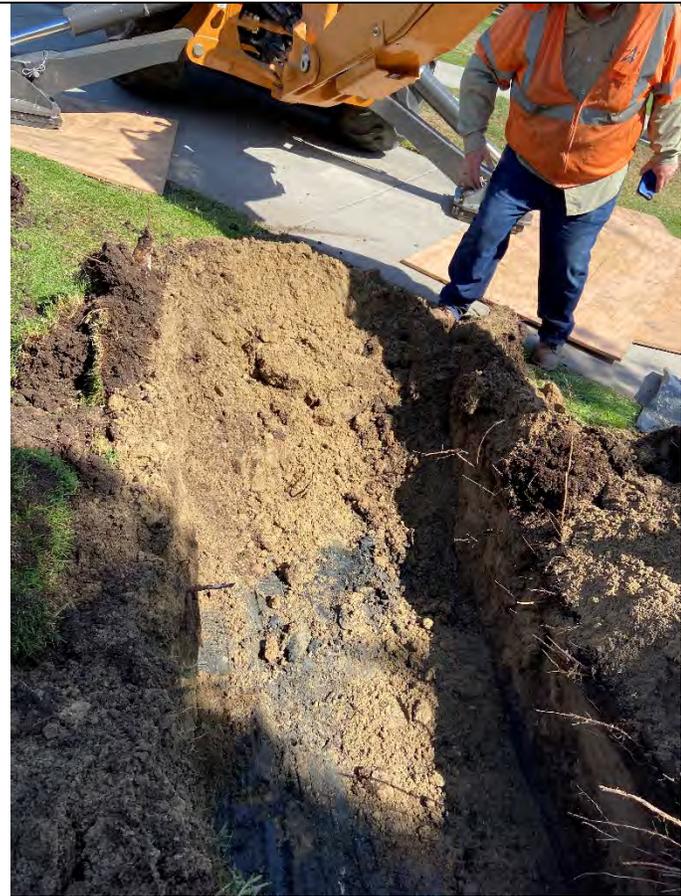
Trench wall face at TP-5 (looking south).



DAILY FIELD REPORT

Report Sequence No.:003

PROJECT: <u>Edison Park Waste Delineation</u>		
LOCATION: <u>Huntington Beach, California</u>	PROJECT NO.: <u>HL1685A</u>	TASK NO.: <u>02</u>
DESCRIPTION: <u>Trenching and Backfilling</u>	CONTRACTOR: <u>American Integrated Services, Inc.</u>	
DAY OF WEEK: <u>Friday</u>	DATE: <u>September 25, 2020</u>	
WEATHER: <u>Sunny, High 78° Low 64°</u>		



Waste material encountered at TP-5 (looking south).



Pothole 35 ft east of excavated trench at TP-5 and observation of waste (looking west).

Printed Name: Sneha Upadhyaya

Signature



DAILY FIELD REPORT

Report Sequence No.:003

PROJECT: <u>Edison Park Waste Delineation</u>		
LOCATION: <u>Huntington Beach, California</u>	PROJECT NO.: <u>HL1685A</u>	TASK NO.: <u>02</u>
DESCRIPTION: <u>Trenching and Backfilling</u>	CONTRACTOR: <u>American Integrated Services, Inc.</u>	
DAY OF WEEK: <u>Friday</u>	DATE: <u>September 25, 2020</u>	
WEATHER: <u>Sunny, High 78° Low 64°</u>		



Backfilling the pothole at TP-5 (looking northwest).



DAILY FIELD REPORT

Report Sequence No.:004

PROJECT: <u>Edison Park Waste Delineation</u>		
LOCATION: <u>Huntington Beach, California</u>	PROJECT NO.: <u>HL1685A</u>	TASK NO.: <u>02</u>
DESCRIPTION: <u>Hollow-Stem Auger (HSA) drilling</u>	CONTRACTOR: <u>ABC Liovin Drilling</u>	
DAY OF WEEK: <u>Monday</u>	DATE: <u>September 28, 2020</u>	
WEATHER: <u>Sunny, High 82° Low 64°</u>		

Time	Field Work Activities
0650	Geosyntec field staff Sneha Upadhyaya arrived on site.
0655	Geosyntec air monitoring staff Eric Garcia arrived on site.
0705	ABC Liovin Drilling (ABC) arrived on site. Met with ABC crew Julio Gutierrez and Jimmy Candelaria.
0710	Discussed the plan for the day and walked to the first hollow stem auger location (HSA-5) to check the equipment access route.
0715	Conducted a brief safety meeting with ABC. ABC acknowledged the THA.
0730	Mobilized to proposed HSA-5 location.
0750	ABC carefully removed the top soil and vegetation. Hand augered the top 5 ft of soil.
0800	Encountered waste at approximately 2.5 ft bgs (dark gray Asphalt concrete debris, no odor). Continued hand augering. The soil cuttings were placed in 55-gallon drums.
0820	Started HSA drilling with CME85 drill rig. Mild organic odor at 8 ft bgs.
0825	Hard drilling observed at approximately 12 ft bgs. Some brick debris observed in the spoil.
0830	Observed wet spoil at approximately 18 ft indicative of reaching the ground water table (GWT). Measured the depth to the GWT to approximately 12 ft bgs.
0845	ABC project manager Bill Borgo on site.
0900	First split spoon sample collected at 30 – 31.5 ft bgs. Sample indicative of the presence of waste (dark gray, wet, with pieces of decayed wood, mild organic odor).
0905	Observed hard drilling (rattling of auger) at approximately 32 ft bgs. Advanced through the hard material at approximately 34 ft bgs.
0920	City of Huntington Beach Park Development Division official Farhad Bolourchi arrived at the site.
0930	Unsuccessful attempt to collect a split spoon sample at 35 to 36.5 ft bgs (no recovery, sample too soft). Second attempt was made to collect sample at 38-39.5 ft bgs, still unsuccessful.
0935	Third attempt was made to collect the sample at 40 to 41.5 ft bgs. The sample indicated the end of waste and beginning of native soil at approximately 40.5 ft bgs. Native soil was visually classified as Silty SAND (SM) in general accordance with ASTM D2488.
0940	HSA drilling terminated at 41.5 ft bgs.
0945	Geosyntec Senior Engineer Yonas Zemuy arrived at the site.
0950	Started backfilling the borehole at HSA-5 with hydrated bentonite chips.
1015	Mr. Bolourchi departed the site.
1025	Mr. Zemuy departed the site.
1030	Completed backfilling the borehole at HSA-5. The upper 6 inches were covered with top soil and vegetation. Mr. Borgo departed the site.

Printed Name: Sneha Upadhyaya

Signature





DAILY FIELD REPORT

Report Sequence No.:004

PROJECT: <u>Edison Park Waste Delineation</u>		
LOCATION: <u>Huntington Beach, California</u>	PROJECT NO.: <u>HL1685A</u>	TASK NO.: <u>02</u>
DESCRIPTION: <u>Hollow-Stem Auger (HSA) drilling</u>	CONTRACTOR: <u>ABC Liovin Drilling</u>	
DAY OF WEEK: <u>Monday</u>	DATE: <u>September 28, 2020</u>	
WEATHER: <u>Sunny, High 82° Low 64°</u>		

1035	Mobilized to proposed HSA-4 location.
1050	ABC carefully removed the top soil and vegetation. Hand augered the top 5 ft of soil at HSA-4.
1055	Encountered waste at approximately 2 ft bgs (dark gray asphalt concrete debris, no odor). Continued hand augering. The soil cuttings were placed in 55-gallon drums.
1105	Started HSA drilling with CME85 drill rig.
1110	Encountered GWT; the depth to GWT was measured to be approximately 8 ft bgs.
1115	Hard drilling (rattling and rumbling of auger) observed starting at approximately 16 ft bgs.
1130	Hard drilling continues at approximately 25 ft bgs. Auger tilting observed. Little to no spoil observed starting at this depth.
1140	Damage to the wire connecting the sampling barrel assembly to the lead auger.
1150	ABC repaired the wire damage and continued drilling.
1200	Hard drilling continues at 30 ft bgs, little to no spoil observed at the ground surface.
1215	Continued attempt to drill past 30 ft bgs. Very slow advancement of the auger.
1235	At 34 ft bgs, auger tilting observed. Unable to drill past 34 ft.
1240	Terminated boring at 34 ft bgs.
1245	Retrieved the auger. The lead auger was plugged with wood. The wood had mild organic odor.
1300	Started backfilling the borehole at HSA-4 with hydrated bentonite chips.
1335	Completed backfilling the borehole at HSA-4. The upper 6 inches were covered with top soil and vegetation.
1345	Mobilized to HSA-3.
1355	ABC carefully removed the top soil and vegetation. Hand augered the top 5 ft of soil at HSA-3.
1405	Encountered waste at approximately 2.5 ft bgs (dark gray Asphalt concrete debris, no odor). Continued hand augering. The soil cuttings were placed in 55-gallon drums.
1415	Started HSA drilling with CME85 drill rig.
1420	Encountered GWT; the depth to GWT was measured to be approximately 11 ft bgs.
1430	First split spoon sample collected at 15 – 16.5 ft bgs. Observed material with a different texture than the overlying waste material (Visual classification: Sandy CLAY, dark gray, wet, medium to high plasticity, no odor), likely an interim soil cover layer.
1440	Second split spoon sample collected at 20 to 21.5 ft bgs. The sample indicated the end of waste and beginning of native soil at approximately 20.5 ft bgs. Native soil was visually classified as Poorly graded SAND with silt (SP-SM) in general accordance with ASTM D2488.
1445	Terminated boring HSA-3 at 21.5 ft bgs.
1450	Started backfilling the borehole at HSA-3 with hydrated bentonite chips.
1510	Completed backfilling the borehole at HSA-3. The upper 6 inches were covered with top soil and vegetation.

Printed Name: Sneha Upadhyaya

Signature



DAILY FIELD REPORT

Report Sequence No.:004

PROJECT: <u>Edison Park Waste Delineation</u>		
LOCATION: <u>Huntington Beach, California</u>	PROJECT NO.: <u>HL1685A</u>	TASK NO.: <u>02</u>
DESCRIPTION: <u>Hollow-Stem Auger (HSA) drilling</u>	CONTRACTOR: <u>ABC Liovin Drilling</u>	
DAY OF WEEK: <u>Monday</u>	DATE: <u>September 28, 2020</u>	
WEATHER: <u>Sunny, High 82° Low 64°</u>		

1515	Mobilized to proposed HSA-2 location.
1530	ABC carefully removed the top soil and vegetation. Hand augered the top 5 ft of soil at HSA-2.
1535	Encountered waste at approximately 2.7 ft bgs (dark gray Asphalt concrete debris, no odor). Continued hand augering. The soil cuttings were placed in 55-gallon drums.
1540	Started HSA drilling at HSA-2 with CME85 drill rig.
1545	Split spoon sample collected at 15 – 16.5 ft bgs. The sample indicated the end of waste and beginning of native soil at approximately 15.5 ft bgs. Native soil was visually classified as Silty SAND (SM) in general accordance with ASTM D2488.
1550	Terminated boring HSA-2 at 16.5 ft bgs. Started backfilling at HSA-2.
1600	Completed backfilling HSA-2.
1615	Mobilized to HSA-1.
1620	ABC carefully removed the top soil and vegetation. Hand augered the top 5 ft of soil at HSA-1.
1630	Encountered waste at approximately 3.5 ft bgs (dark gray Asphalt concrete debris, no odor). Continued hand augering. The soil cuttings were placed in 55-gallon drums.
1640	Started HSA drilling at HSA-1 with CME85 drill rig.
1645	Split spoon sample collected at 10 – 11.5 ft bgs. The sample indicated the end of waste and beginning of native soil at approximately 10.3 ft bgs. Native soil was visually classified as Silty SAND (SM) in general accordance with ASTM D2488.
1650	Depth to GWT measured to be at approximately 10.5 ft bgs.
1655	Terminated boring HSA-1 at 11.5 ft bgs.
1700	Started backfilling at HSA-1.
1710	Completed backfilling at HSA-1.
1715	Geosyntec air monitoring staff Eric G. departed the site.
1720	ABC crew Julio G. departed the site.
1730	ABC crew Jimmy C. helped store the drums at the backyard of Edison Park Community Center, pending analysis and disposal.
1740	ABC crew Jimmy departed the site.
1745	Geosyntec field staff Sneha Upadhyaya departed the site

DAILY FIELD REPORT

Report Sequence No.:004

PROJECT: <u>Edison Park Waste Delineation</u>		
LOCATION: <u>Huntington Beach, California</u>	PROJECT NO.: <u>HL1685A</u>	TASK NO.: <u>02</u>
DESCRIPTION: <u>Hollow-Stem Auger (HSA) drilling</u>	CONTRACTOR: <u>ABC Liovin Drilling</u>	
DAY OF WEEK: <u>Monday</u>	DATE: <u>September 28, 2020</u>	
WEATHER: <u>Sunny, High 82° Low 64°</u>		



Removal of top soil and vegetation at HSA-5 (looking northeast).



Waste encountered at HSA-5 (looking northwest).



Piece of wood

First split spoon sample collected at 30 – 31.5 ft bgs at HSA-5. Sample indicates of the presence of waste.



Split spoon sample collected at 40 – 41.5 ft bgs at HSA-5. The interface between the waste and native soil is indicated.



DAILY FIELD REPORT

Report Sequence No.:004

PROJECT: <u>Edison Park Waste Delineation</u>		
LOCATION: <u>Huntington Beach, California</u>	PROJECT NO.: <u>HL1685A</u>	TASK NO.: <u>02</u>
DESCRIPTION: <u>Hollow-Stem Auger (HSA) drilling</u>	CONTRACTOR: <u>ABC Liovin Drilling</u>	
DAY OF WEEK: <u>Monday</u>	DATE: <u>September 28, 2020</u>	
WEATHER: <u>Sunny, High 82° Low 64°</u>		



Backfilling the borehole at HSA-5 (looking northeast).



Waste encountered at HSA-4 (looking northwest).



DAILY FIELD REPORT

Report Sequence No.:004

PROJECT: <u>Edison Park Waste Delineation</u>		
LOCATION: <u>Huntington Beach, California</u>	PROJECT NO.: <u>HL1685A</u>	TASK NO.: <u>02</u>
DESCRIPTION: <u>Hollow-Stem Auger (HSA) drilling</u>	CONTRACTOR: <u>ABC Liovin Drilling</u>	
DAY OF WEEK: <u>Monday</u>	DATE: <u>September 28, 2020</u>	
WEATHER: <u>Sunny, High 82° Low 64°</u>		



Damage to the wire connecting the sampling barrel assembly to the lead auger at HSA-4; ABC fixing the wire (looking west).



Tilting of auger at HSA-4 (looking west).

Printed Name: Sneha Upadhyaya

Signature



DAILY FIELD REPORT

Report Sequence No.:004

PROJECT: <u>Edison Park Waste Delineation</u>		
LOCATION: <u>Huntington Beach, California</u>	PROJECT NO.: <u>HL1685A</u>	TASK NO.: <u>02</u>
DESCRIPTION: <u>Hollow-Stem Auger (HSA) drilling</u>	CONTRACTOR: <u>ABC Liovin Drilling</u>	
DAY OF WEEK: <u>Monday</u>	DATE: <u>September 28, 2020</u>	
WEATHER: <u>Sunny, High 82° Low 64°</u>		



Spoil (wood debris) retrieved from the auger at HSA-4.



Wood plugged in the lead auger at HSA-4.

Printed Name: Sneha Upadhyaya

Signature

DAILY FIELD REPORT

Report Sequence No.:004

PROJECT: <u>Edison Park Waste Delineation</u>		
LOCATION: <u>Huntington Beach, California</u>	PROJECT NO.: <u>HL1685A</u>	TASK NO.: <u>02</u>
DESCRIPTION: <u>Hollow-Stem Auger (HSA) drilling</u>	CONTRACTOR: <u>ABC Liovin Drilling</u>	
DAY OF WEEK: <u>Monday</u>	DATE: <u>September 28, 2020</u>	
WEATHER: <u>Sunny, High 82° Low 64°</u>		



Waste observed in the soil cuttings at HSA-3 (looking northeast).



Split spoon sample collected at 20 to 21.5 ft bgs at HSA-3. The interface between the waste and native soil is indicated.

DAILY FIELD REPORT

Report Sequence No.:004

PROJECT: <u>Edison Park Waste Delineation</u>		
LOCATION: <u>Huntington Beach, California</u>	PROJECT NO.: <u>HL1685A</u>	TASK NO.: <u>02</u>
DESCRIPTION: <u>Hollow-Stem Auger (HSA) drilling</u>	CONTRACTOR: <u>ABC Liovin Drilling</u>	
DAY OF WEEK: <u>Monday</u>	DATE: <u>September 28, 2020</u>	
WEATHER: <u>Sunny, High 82° Low 64°</u>		



Waste material observed in the spoil at HSA-2 (looking northeast).



Split spoon sample collected at 15 – 16.5 ft bgs at HSA-2. The interface between the waste and native soil is indicated.



Waste material observed at HSA-1 (looking northwest).



Split spoon sample collected at 10 – 11.5 ft bgs at HSA-1. The interface between the waste and native soil is indicated.



DAILY FIELD REPORT

Report Sequence No.:001

PROJECT: <u>Edison Park Additional Waste Delineation</u>		
LOCATION: <u>Huntington Beach, California</u>	PROJECT NO.: <u>HL1685B</u>	TASK NO.: <u>01</u>
DESCRIPTION: <u>Geophysical Survey for Locating Utilities</u>	CONTRACTOR: <u>GEOVision, Inc.,</u>	
DAY OF WEEK: <u>Thursday</u>	DATE: <u>March 11, 2021</u>	
WEATHER: <u>Sunny, High 64° Low 55°</u>		

Time	Field Work Activities
0700	Arrived on site and met with GEOVision field crew J. Weiss and J. Foster.
0705	Held a brief tailgate safety meeting. GEOVision crew acknowledged the THA.
0710	Performed a site walk with GEOVision crew to observe the proposed investigation locations (HSA-1A through HSA-8A).
0720	GEOVision started utility clearance survey at proposed location of HSA-1A using the RD 8000 electromagnetic utility locator, Fisher TW-6 deep search pipe locator/metal detector, 60 HDZ, SIR3000 Ground Penetrating Radar, and walk in tandem. No conflicts were found at HSA-1A.
0730	GEOVision performed utility clearance survey at proposed location of HSA-2A boring. No conflicts were found at HSA-2A location.
0745	GEOVision performed utility clearance survey at location of HSA-3A. Unknown anomalies were detected at the location of HSA-3A. GEOVision marked a new HSA-3A location 3 ft west of the existing location.
0800	GEOVision performed utility clearance survey at proposed location of HSA-4A boring. High voltage electrical lines and other unknown anomalies were detected within 5 ft of HSA-4A location. GEOVision marked a new HSA-4A location 3 ft north of the existing location.
0815	GEOVision performed utility clearance survey at proposed location of HSA-5A. Electrical lines were detected conflicting with the proposed HSA-5A location. GEOVision marked a new HSA-5A location 5.5 ft west of the existing location.
0825	GEOVision performed utility clearance survey at proposed location of HSA-6A. Some anomalies were detected within 5 ft of the HSA-6A location. GEOVision marked a new location 1.5 ft north of the existing location.
0840	GEOVision performed utility clearance survey at proposed location of HSA-7A. No conflicts were found at HSA-7A location.
0850	GEOVision performed utility clearance survey at HSA-8A location. Unknown utilities were detected conflicting with the HSA-8A location. GEOVision marked a new location 2.5 ft south of the existing location
0915	Geosyntec and GEOVision departed the site for the day.

Printed Name: Sneha Upadhyaya

Signature



DAILY FIELD REPORT

Report Sequence No.:001

PROJECT: <u>Edison Park Additional Waste Delineation</u>		
LOCATION: <u>Huntington Beach, California</u>	PROJECT NO.: <u>HL1685B</u>	TASK NO.: <u>01</u>
DESCRIPTION: <u>Geophysical Survey for Locating Utilities</u>	CONTRACTOR: <u>GEOVision, Inc.,</u>	
DAY OF WEEK: <u>Thursday</u>	DATE: <u>March 11, 2021</u>	
WEATHER: <u>Sunny, High 64° Low 55°</u>		



Location HSA-1A cleared of utilities (looking north)



Location HSA-2A cleared of utilities (looking north)



Marked anomalies at HSA-3A and the new HSA-3A location (looking north)



Marked utilities at HSA-4A and the new HSA-4A location (looking north)

Printed Name: Sneha Upadhyaya

Signature

DAILY FIELD REPORT

Report Sequence No.:001

PROJECT: <u>Edison Park Additional Waste Delineation</u>		
LOCATION: <u>Huntington Beach, California</u>	PROJECT NO.: <u>HL1685B</u>	TASK NO.: <u>01</u>
DESCRIPTION: <u>Geophysical Survey for Locating Utilities</u>	CONTRACTOR: <u>GEOVision, Inc.,</u>	
DAY OF WEEK: <u>Thursday</u>	DATE: <u>March 11, 2021</u>	
WEATHER: <u>Sunny, High 64° Low 55°</u>		



Electrical utility markings at existing HSA-5A and the new HSA-5A location (looking north)



Marked anomalies at HSA-6A and the new HSA-6A location (looking north)



Location HSA-7A cleared of utilities (looking north)



Marked anomalies at HSA-8 and the new HSA-8A location (looking north)

Printed Name: Sneha Upadhyaya

Signature



DAILY FIELD REPORT

Report Sequence No.:002

PROJECT: <u>Edison Park Additional Waste Delineation</u>		
LOCATION: <u>Huntington Beach, California</u>	PROJECT NO.: <u>HL1685B</u>	TASK NO.: <u>01</u>
DESCRIPTION: <u>Hollow-Stem Auger (HSA) drilling</u>	CONTRACTOR: <u>ABC Liovin Drilling</u>	
DAY OF WEEK: <u>Friday</u>	DATE: <u>March 12, 2021</u>	
WEATHER: <u>Sunny, High 68° Low 52°</u>		

Time	Field Work Activities
0650	Geosyntec field staff Sneha Upadhyaya arrived on site.
0705	ABC Liovin Drilling (ABC) arrived on site. Met with ABC crew N. De La Torres and C. Villicana.
0715	Conducted a brief safety meeting with ABC. ABC acknowledged the THA. Discussed the scope of work and plan for the day.
0720	Mobilized to proposed HSA-7A location.
0750	ABC started drilling through the concrete at HSA-7A. Hand augered the top 5 ft of soil. The soil cuttings were placed in 55-gallon drums.
0810	Started HSA drilling with CME85 drill rig.
0825	Split spoon sample collected at 10 – 11.5 ft bgs.
0830	Encountered GWT; the depth to GWT was measured to be approximately 13.5 ft bgs.
0835	Terminated boring HSA-7A at approximately 18 ft bgs.
0850	Backfilled the borehole at HSA-7A with hydrated bentonite chips and patched the surface with rapid setting concrete.
0900	Bill Borgo from ABC arrived at the site.
0915	Mobilized to proposed HSA-8A location.
0920	Bill Borgo departed the site.
0925	ABC started drilling through the concrete and noticed 2 distinct layers of concrete. ABC informed that this could be indicative of potential utilities underneath the concrete slab and this decided to move the drilling location approximately 5 ft south of the originally proposed HSA-8A location.
0950	ABC started drilling through the concrete at the new HSA-8A location. Hand augered the top 5 ft of soil. The soil cuttings were placed in 55-gallon drums.
1015	Started HSA drilling at HSA-8A with CME85 drill rig.
1020	First split spoon sample collected at 10 – 11.5 ft bgs.
1025	Encountered GWT; the depth to GWT was measured to be approximately 12.5 ft bgs.
1030	A second split spoon sample was collected at 15 – 16.5 ft bgs.
1035	Terminated boring HSA-8A at 16.5 ft bgs.
1100	Backfilled the borehole at HSA-8A with hydrated bentonite chips and patched the surface with rapid setting concrete.
1115	Mobilized to HSA-3A.
1120	ABC started drilling through the concrete at the HSA-3A location. Hand augered the top 5 ft of soil. The soil cuttings were placed in 55-gallon drums.
1145	Started HSA drilling at HSA-3A with CME85 drill rig.
1200	First split spoon sample collected at 10 – 11.5 ft bgs.

Printed Name: Sneha Upadhyaya and Karthik Viswanathan

Signature



DAILY FIELD REPORT

Report Sequence No.:002

PROJECT: <u>Edison Park Additional Waste Delineation</u>		
LOCATION: <u>Huntington Beach, California</u>	PROJECT NO.: <u>HL1685B</u>	TASK NO.: <u>01</u>
DESCRIPTION: <u>Hollow-Stem Auger (HSA) drilling</u>	CONTRACTOR: <u>ABC Liovin Drilling</u>	
DAY OF WEEK: <u>Friday</u>	DATE: <u>March 12, 2021</u>	
WEATHER: <u>Sunny, High 68° Low 52°</u>		

1210	A second split spoon sample was collected at 15 – 16.5 ft bgs.
1215	Encountered GWT; the depth to GWT was measured to be approximately 15 ft bgs.
1220	Terminated boring HSA-3A at 16.5 ft bgs.
1240	Backfilled the borehole at HSA-3A with hydrated bentonite chips and patched the surface with rapid setting concrete.
1250	Mobilized to HSA-2A.
1305	ABC started drilling through the concrete at the HSA-2A location. Hand augered the top 5 ft of soil. The soil cuttings were placed in 55-gallon drums.
1325	Started HSA drilling at HSA-2A with CME85 drill rig.
1340	First split spoon sample collected at 10 – 11.5 ft bgs.
1345	A second split spoon sample was collected at 15 – 16.5 ft bgs.
1350	Terminated boring HSA-2A at 16.5 ft bgs. No groundwater was encountered at this location.
1410	Backfilled the borehole at HSA-2A with hydrated bentonite chips and patched the surface with rapid setting concrete.
1420	Mobilized to HSA-4A.
1430	ABC started drilling through the concrete at the HSA-4A location. Hand augered the top 5 ft of soil. The soil cuttings were placed in 55-gallon drums.
1450	Started HSA drilling at HSA-4A with CME85 drill rig.
15:15	First split spoon sample collected at 10 – 11.5 ft bgs.
15:20	Encountered GWT; the depth to GWT was measured to be approximately 14.1 ft bgs.
15:25	A second split spoon sample was collected at 15 – 16.5 ft bgs.
1530	Terminated boring HSA-4A at 16.5 ft bgs.
1545	Backfilled the borehole at HSA-4A with hydrated bentonite chips and patched the surface with rapid setting concrete.
1555	Mobilized to HSA-5A.
1600	ABC started drilling through the concrete at the HSA-5A location. Hand augered the top 5 ft of soil. The soil cuttings were placed in 55-gallon drums.
1625	Started HSA drilling at HSA-4A with CME85 drill rig.
1630	K. Viswanathan (Geosyntec) arrived on-site.
1645	First split spoon sample collected at 10 – 11.5 ft bgs.
1650	A second split spoon sample was collected at 15 – 16.5 ft bgs.
1655	Encountered GWT; the depth to GWT was measured to be approximately 16.6 ft bgs.
1700	Terminated boring HSA-5A at 17 ft bgs.
1710	Mobilized to HSA-6A.

Printed Name: Sneha Upadhyaya and Karthik Viswanathan

Signature




DAILY FIELD REPORT

Report Sequence No.:002

PROJECT: <u>Edison Park Additional Waste Delineation</u>		
LOCATION: <u>Huntington Beach, California</u>	PROJECT NO.: <u>HL1685B</u>	TASK NO.: <u>01</u>
DESCRIPTION: <u>Hollow-Stem Auger (HSA) drilling</u>	CONTRACTOR: <u>ABC Liovin Drilling</u>	
DAY OF WEEK: <u>Friday</u>	DATE: <u>March 12, 2021</u>	
WEATHER: <u>Sunny, High 68° Low 52°</u>		

1715	Backfilled the borehole at HSA-5A with hydrated bentonite chips and patched the surface with rapid setting concrete. ABC started drilling through the concrete at the HSA-6A location. Hand augered the top 5 ft of soil. The soil cuttings were placed in 55-gallon drums.
1720	S. Upadhyaya (Geosyntec) departed the site.
1730	Started HSA drilling at HSA-3A with CME85 drill rig.
1735	First split spoon sample collected at 10 – 11.5 ft bgs.
1745	A second split spoon sample was collected at 15 – 16.5 ft bgs.
1800	Terminated boring HSA-6A at 16.5 ft bgs. No groundwater was encountered at this location.
1805	Backfilled the borehole at HSA-5A with hydrated bentonite chips and patched the surface with rapid setting concrete.
1830	ABC moved the 55-gallon drums (7 drums) within the fenced construction area south of the investigation area.
1845	Geosyntec and ABC personnel departed the site.



Drilling through concrete slab at HSA-7A (looking southeast)



Hand augering at HSA-7A (looking east)

Printed Name: Sneha Upadhyaya and Karthik Viswanathan

Signature

Sneha

Karthik

DAILY FIELD REPORT

Report Sequence No.:002

PROJECT: <u>Edison Park Additional Waste Delineation</u>		
LOCATION: <u>Huntington Beach, California</u>	PROJECT NO.: <u>HL1685B</u>	TASK NO.: <u>01</u>
DESCRIPTION: <u>Hollow-Stem Auger (HSA) drilling</u>	CONTRACTOR: <u>ABC Liovin Drilling</u>	
DAY OF WEEK: <u>Friday</u>	DATE: <u>March 12, 2021</u>	
WEATHER: <u>Sunny, High 68° Low 52°</u>		



Change in material observed in the drill cuttings at HSA-7A (looking east)



Split spoon sample collected at 10 – 11.5 ft bgs at HSA-7A.



Backfilling the borehole at HSA-7A with hydrated bentonite chips (looking southeast)



Surface patching with rapid set concrete at HSA-7A (looking southwest)



DAILY FIELD REPORT

Report Sequence No.:002

PROJECT: <u>Edison Park Additional Waste Delineation</u>		
LOCATION: <u>Huntington Beach, California</u>	PROJECT NO.: <u>HL1685B</u>	TASK NO.: <u>01</u>
DESCRIPTION: <u>Hollow-Stem Auger (HSA) drilling</u>	CONTRACTOR: <u>ABC Liovin Drilling</u>	
DAY OF WEEK: <u>Friday</u>	DATE: <u>March 12, 2021</u>	
WEATHER: <u>Sunny, High 68° Low 52°</u>		



Change in material observed in the drill cuttings at HSA-8A at approximately 2.5 ft bgs



Split spoon sample collected at 10 – 11.5 ft bgs at HSA-8A.



Split spoon sample collected at 10 – 11.5 ft bgs at HSA-3A.



Split spoon sample collected at 15 – 16.5 ft bgs at HSA-3A.



DAILY FIELD REPORT

Report Sequence No.:002

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LOCATION: <u>Huntington Beach, California</u>	PROJECT NO.: <u>HL1685B</u>	TASK NO.: <u>01</u>
DESCRIPTION: <u>Hollow-Stem Auger (HSA) drilling</u>	CONTRACTOR: <u>ABC Liovin Drilling</u>	
DAY OF WEEK: <u>Friday</u>	DATE: <u>March 12, 2021</u>	
WEATHER: <u>Sunny, High 68° Low 52°</u>		



Split spoon sample collected at 10 – 11.5 ft bgs at HSA-2A.



Split spoon sample collected at 15 – 16.5 ft bgs at HSA-2A.



Wood debris observed in the drill cuttings at HSA-4A



Brick pieces observed in the drill cuttings at HSA-4A

Printed Name: Sneha Upadhyaya and Karthik Viswanathan

Signature



DAILY FIELD REPORT

Report Sequence No.:002

PROJECT: <u>Edison Park Additional Waste Delineation</u>		
LOCATION: <u>Huntington Beach, California</u>	PROJECT NO.: <u>HL1685B</u>	TASK NO.: <u>01</u>
DESCRIPTION: <u>Hollow-Stem Auger (HSA) drilling</u>	CONTRACTOR: <u>ABC Liovin Drilling</u>	
DAY OF WEEK: <u>Friday</u>	DATE: <u>March 12, 2021</u>	
WEATHER: <u>Sunny, High 68° Low 52°</u>		



Split spoon sample collected at 10 – 11.5 ft bgs at HSA-4A.



Split spoon sample collected at 15 – 16.5 ft bgs at HSA-4A.



Split spoon sample collected at 10 – 11.5 ft bgs at HSA-5A.



Split spoon sample collected at 15 – 16.5 ft bgs at HSA-5A.

Printed Name: Sneha Upadhyaya and Karthik Viswanathan

Signature

Sneha *Karthik*



DAILY FIELD REPORT

Report Sequence No.:002

PROJECT: <u>Edison Park Additional Waste Delineation</u>		
LOCATION: <u>Huntington Beach, California</u>	PROJECT NO.: <u>HL1685B</u>	TASK NO.: <u>01</u>
DESCRIPTION: <u>Hollow-Stem Auger (HSA) drilling</u>		CONTRACTOR: <u>ABC Liovin Drilling</u>
DAY OF WEEK: <u>Friday</u>		DATE: <u>March 12, 2021</u>
WEATHER: <u>Sunny, High 68° Low 52°</u>		



Split spoon sample collected at 10 – 11.5 ft bgs at HSA-6A.



Split spoon sample collected at 15 – 16.5 ft bgs at HSA-6A.

Appendix F

Air Monitoring Logs

Edison Park Waste Delineation Project
Edison Park
21379 Magnolia Street, Huntington Beach, CA 92647

Daily Local Weather Monitoring Log - 09/24/2020

Time ^{1,4}	Ambient Temp ^{2,4}	Wind Speed ^{2,4}	Wind Direction ^{3,4}	Time ^{1,4}	Ambient Temp ^{2,4}	Wind Speed ^{2,4}	Wind Direction ^{3,4}
8:00	65	3.5	W	14:00	77	2.4	NW
8:20	65	5.1	W	14:15	77	2.7	NW
8:35	66	3.6	W	14:30	77	5.8	NW
8:50	66	1.8	W	14:45	77	5.4	NW
9:00	66	1.7	NW	15:00	77	4	NW
9:15	66	1.9	NW				
9:30	67	0.8	E				
9:45	67	1.3	E				
10:00	69	1.6	E				
10:15	70	2.4	NW				
10:30	70	2.4	W				
10:45	71	3.1	W				
11:00	72	3.9	NW				
11:15	72	4.1	NW				
11:30	74	3.5	NW				
11:45	74	5.3	NW				
12:00	74	3.1	NW				
12:15	74	3.4	W				
12:30	73	3	W				
12:45	73	2.8	W				
13:00	74	4.4	NW				
13:15	76	2.8	NW				
13:30	77	1.9	NW				
13:45	78	1.5	NW				

1 - Pacific Daylight Time (PDT)
 2 - Ambient Temperature (°F), and Wind Speed (miles/hour) - measured using Kestrel 4000 and from KCAHUNT143 weather static
 3 - Wind Direction from KCAHUNT143 weather station
 4 - Collect Readings Every 15 Minutes

Edison Park Waste Delineation Project
Edison Park
21379 Magnolia Street, Huntington Beach, CA 92647

Daily Local Weather Monitoring Log - 09/25/2020

Time ^{1,4}	Ambient Temp ^{2,4}	Wind Speed ^{2,4}	Wind Direction ^{3,4}	Time ^{1,4}	Ambient Temp ^{2,4}	Wind Speed ^{2,4}	Wind Direction ^{3,4}
7:15	65	2	NW	13:15	77	6.4	N
7:30	65	0.9	NW	13:30	76	5.4	N
7:45	66	2.1	W	13:45	76	5.1	NW
8:00	67	2.7	SW	14:00	75	4.8	NW
8:15	67	0.9	NW	14:15	75	6.7	NE
8:30	67	1.4	NW	14:30	74	6.1	NE
8:45	67	2.3	NW	14:45	74	5.4	NE
9:00	68	3.1	NW	15:00	74	4.5	NE
9:15	68	1.5	SW	15:15	74	4.8	NE
9:30	69	2.6	NW	15:30	74	5.1	N
9:45	69	2.1	NW				
10:00	70	3.5	NW				
10:15	72	3.6	NW				
10:30	72	2.6	NW				
10:45	72	3.4	NW				
11:00	72	2.7	SW				
11:15	72	2.1	W				
11:30	74	2.5	NW				
11:45	75	3.9	NW				
12:00	75	3	NW				
12:15	75	3.8	NW				
12:30	76	3.5	NW				
12:45	76	6	NW				
13:00	76	5.2	N				

1 - Pacific Daylight Time (PDT)
 2 - Ambient Temperature (°F), and Wind Speed (miles/hour) - measured using Kestrel 4000 and from KCAHUNT143 weather static
 3 - Wind Direction from KCAHUNT143 weather station
 4 - Collect Readings Every 15 Minutes

Edison Park Waste Delineation Project
Edison Park
21379 Magnolia Street, Huntington Beach, CA 92647

Daily Local Weather Monitoring Log - 09/28/2020

Time ^{1,4}	Ambient Temp ^{2,4}	Wind Speed ^{2,4}	Wind Direction ^{3,4}	Time ^{1,4}	Ambient Temp ^{2,4}	Wind Speed ^{2,4}	Wind Direction ^{3,4}
7:45	66	1	E	13:45	81	5.7	NE
8:00	66	1.2	E	14:00	81	5.1	NE
8:15	66	1.3	E	14:15	81	9	NE
8:30	68	1.7	NE	14:30	80	7.7	NE
8:45	70	1.9	NW	14:45	79	7.5	NE
9:00	70	2.2	NW	15:00	79	8.9	NE
9:15	70	2.5	W	15:15	78	3.3	NE
9:30	72	1.4	W	15:30	77	4.4	NE
9:45	72	2.5	SW	15:45	77	9.2	NE
10:00	72	1.2	SW	16:00	76	5.4	NE
10:15	73	1.8	SW	16:15	76	8	NE
10:30	73	2.1	SW	16:30	76	7.9	NE
10:45	73	2.5	NE	16:45	76	7.4	NE
11:00	74	4.2	NE	17:00	75	5.4	NE
11:15	75	3.8	NE				
11:30	75	3.4	NE				
11:45	75	3	NE				
12:00	78	5.5	NE				
12:15	78	4.8	NE				
12:30	81	6.5	NE				
12:45	81	5.4	NE				
13:00	81	5.2	NE				
13:15	81	4.4	NE				
13:30	81	5.2	NE				

1 - Pacific Daylight Time (PDT)
 2 - Ambient Temperature (°F), and Wind Speed (miles/hour) - measured using Kestrel 4000 and from KCAHUNT143 weather static
 3 - Wind Direction from KCAHUNT143 weather station
 4 - Collect Readings Every 15 Minutes

Edison Park Waste Delineation Project
Edison Park
21379 Magnolia Street, Huntington Beach, CA 92647

Daily Particulate Matter (PM) Monitoring Log

Date	Time ¹	Location ²	Equipment ID ³	Equipment Operator	Reading (mg/m ³) ⁴	Comments
24-Sep-20	8:00	TP-1	FA02926	EG	0.113	Background
24-Sep-20	8:05	UW	FA02926	EG	0.089	
24-Sep-20	8:12	DW	FA02926	EG	0.093	
24-Sep-20	9:00	UW	FA02926	EG	0.055	
24-Sep-20	9:10	DW	FA02926	EG	0.075	
24-Sep-20	10:00	UW	FA02926	EG	0.061	
24-Sep-20	10:10	DW	FA02926	EG	0.059	
24-Sep-20	11:00	UW	FA02926	EG	0.023	
24-Sep-20	11:05	DW	FA02926	EG	0.062	
24-Sep-20	11:15					Stop excavating
24-Sep-20	13:10	DW	FA02926	EG	0.036	
24-Sep-20	13:20	UW	FA02926	EG	0.037	Stop excavating mob to TP-3
24-Sep-20	14:20	DW	FA02926	EG	0.027	
24-Sep-20	14:25	UW	FA02926	EG	0.022	Stop excavating
25-Sep-20	7:15	TP-3	FA02926	EG	0.059	Background
25-Sep-20	7:21	UW	FA02926	EG	0.039	
25-Sep-20	7:26	DW	FA02926	EG	0.041	
25-Sep-20	8:15					Stop excavation at TP-2
25-Sep-20	8:53					Start excavation at TP-4
25-Sep-20	8:58	DW	FA02926	EG	0.043	
25-Sep-20	9:03	UW	FA02926	EG	0.041	
25-Sep-20	9:58	DW	FA02926	EG	0.053	
25-Sep-20	10:05	UW	FA02926	EG	0.047	
25-Sep-20	11:08	DW	FA02926	EG	0.048	
25-Sep-20	11:18	UW	FA02926	EG	0.035	Start backfilling at TP-4
25-Sep-20	12:50					Start excavating TP-5
25-Sep-20	12:55	DW	FA02926	EG	0.039	
25-Sep-20	13:00	UW	FA02926	EG	0.045	
25-Sep-20	14:05	DW	FA02926	EG	0.037	
25-Sep-20	14:15	UW	FA02926	EG	0.058	
25-Sep-20	15:10	DW	FA02926	EG	0.041	
25-Sep-20	15:20	UW	FA02926	EG	0.049	
28-Sep-20	7:45	DW	FA02926	EG	0.081	Background
28-Sep-20	7:50	UW	FA02926	EG	0.088	
28-Sep-20	8:00	DW	FA02926	EG	0.095	
28-Sep-20	8:08	UW	FA02926	EG	0.097	
28-Sep-20	9:05	DW	FA02926	EG	0.076	
28-Sep-20	9:10	UW	FA02926	EG	0.09	

Edison Park Waste Delineation Project
Edison Park
21379 Magnolia Street, Huntington Beach, CA 92647

Daily Particulate Matter (PM) Monitoring Log

Date	Time ¹	Location ²	Equipment ID ³	Equipment Operator	Reading (mg/m ³) ⁴	Comments
28-Sep-20	9:35					Stop boring at HSA5
28-Sep-20	10:55					Start boring at HSA4
28-Sep-20	11:00	DW	FA02926	EG	0.099	
28-Sep-20	11:05	UW	FA02926	EG	0.097	
28-Sep-20	12:00	DW	FA02926	EG	0.088	
28-Sep-20	12:08	UW	FA02926	EG	0.092	
28-Sep-20	13:05					Stop boring at HSA4
28-Sep-20	14:15	DW	FA02926	EG	0.059	
28-Sep-20	14:25	UW	FA02926	EG	0.078	
28-Sep-20	15:20	UW	FA02926	EG	0.058	
28-Sep-20	15:30	DW	FA02926	EG	0.065	
28-Sep-20	15:45					Stop boring at HSA2
28-Sep-20	16:45	DW	FA02926	EG	0.078	
28-Sep-20	16:50	UW	FA02926	EG	0.052	

Notes:

- 1 - Pacific Daylight Time (PDT)
- 2 - Upwind or Downwind (perimeter)
- 3 - DustTRAK DRX Handheld Aerosol
- 4 - Recorded every 60 minutes, when soil handling or excavation is in progress

Edison Park Waste Delineation Project
Edison Park
21379 Magnolia Street, Huntington Beach, CA 92647

Daily Total Organic Compounds (TOC) Monitoring Log

Date	Time ¹	Location ²	Equipment ID ³	Equipment Operator	Reading (ppm) ⁴	Comments
24-Sep-20	8:00	TP-1	FA02533	EG	0	
24-Sep-20	8:12	DW	FA02533	EG	0	
24-Sep-20	8:20	TP-1	FA02533	EG	0	
24-Sep-20	8:28	DW	FA02533	EG	0	
24-Sep-20	8:35	TP-1	FA02533	EG	0	
24-Sep-20	8:40	DW	FA02533	EG	0	
24-Sep-20	8:47	TP-1	FA02533	EG	0	
24-Sep-20	8:55	DW	FA02533	EG	0	
24-Sep-20	9:00	TP-1	FA02533	EG	0	
24-Sep-20	9:10	DW			0	
24-Sep-20	9:15	TP-1	FA02533	EG	0	
24-Sep-20	9:20	DW	FA02533	EG	0	
24-Sep-20	9:30	TP-1	FA02533	EG	0	
24-Sep-20	9:35	DW	FA02533	EG	0	
24-Sep-20	9:45	TP-1	FA02533	EG	0	
24-Sep-20	9:55	DW	FA02533	EG	0.2	
24-Sep-20	10:00	TP-1	FA02533	EG	0.1	
24-Sep-20	10:10	DW	FA02533	EG	0	
24-Sep-20	10:15	TP-1	FA02533	EG	0.1	
24-Sep-20	10:30	DW	FA02533	EG	0.1	
24-Sep-20	10:35	TP-1	FA02533	EG	0.1	
24-Sep-20	10:45	DW	FA02533	EG	0.1	
24-Sep-20	10:50	TP-1	FA02533	EG	0.1	
24-Sep-20	11:05	DW	FA02533	EG	0.1	
24-Sep-20	11:15	TP-1	FA02533	EG	0.1	
24-Sep-20	11:25	DW	FA02533	EG	0.1	
24-Sep-20	11:30	TP-1	FA02533	EG	0.1	
24-Sep-20	11:40	DW	FA02533	EG	0.1	
24-Sep-20	11:45	TP-1	FA02533	EG	0.1	
24-Sep-20	11:50					Stop excavation
24-Sep-20	13:05	TP-2	FA02533	EG	0	
24-Sep-20	13:10	DW	FA02533	EG	0	
24-Sep-20	13:20	TP-2	FA02533	EG	0	
24-Sep-20	13:30	DW	FA02533	EG	0	
24-Sep-20	13:35	TP-2	FA02533	EG	0	
24-Sep-20	13:45	DW	FA02533	EG	0.1	

Edison Park Waste Delineation Project
Edison Park
21379 Magnolia Street, Huntington Beach, CA 92647

Daily Total Organic Compounds (TOC) Monitoring Log

Date	Time ¹	Location ²	Equipment ID ³	Equipment Operator	Reading (ppm) ⁴	Comments
24-Sep-20	13:50	TP-2	FA02533	EG	0.1	Stop excavation mob to TP-3
24-Sep-20	14:15	TP-3	FA02533	EG	0.1	
24-Sep-20	14:20	DW	FA02533	EG	0.1	
24-Sep-20	14:30	TP-3	FA02533	EG	0.1	
24-Sep-20	14:40	DW	FA02533	EG	0.1	
24-Sep-20	14:45	TP-3	FA02533	EG	0.1	
24-Sep-20	14:55	DW	FA02533	EG	0	
24-Sep-20	15:00	TP-3	FA02533	EG	0.1	Stop excavation at TP-3
25-Sep-20	7:15	TP-3	FA02533	EG	0.1	Start excavation at TP-3
25-Sep-20	7:26	DW	FA02533	EG	0.1	
25-Sep-20	7:30	TP-3	FA02533	EG	0.2	
25-Sep-20	7:35	DW	FA02533	EG	0.3	
25-Sep-20	7:45	TP-3	FA02533	EG	0.1	
25-Sep-20	7:50	DW	FA02533	EG	0.2	
25-Sep-20	8:00	TP-3	FA02533	EG	0.1	
25-Sep-20	8:10	DW	FA02533	EG	0.1	
25-Sep-20	8:15	TP-3	FA02533	EG	0.1	Stop excavation at TP-3. Mob to TP-4
25-Sep-20	8:53	TP-4	FA02533	EG	0.2	
25-Sep-20	8:58	DW	FA02533	EG	0.2	
25-Sep-20	9:10	TP-4	FA02533	EG	0.2	
25-Sep-20	9:15	DW	FA02533	EG	0.1	
25-Sep-20	9:25	TP-4	FA02533	EG	0.2	
25-Sep-20	9:30	DW	FA02533	EG	0.1	
25-Sep-20	9:40	TP-4	FA02533	EG	0.2	
25-Sep-20	9:45	DW	FA02533	EG	0.2	
25-Sep-20	9:55	TP-4	FA02533	EG	0.2	
25-Sep-20	10:00	DW	FA02533	EG	0.1	
25-Sep-20	10:15	TP-4	FA02533	EG	0.1	
25-Sep-20	10:20	DW	FA02533	EG	0.1	
25-Sep-20	10:30	TP-4	FA02533	EG	0.1	Stop excavation at TP-4 and begin backfilling
25-Sep-20	10:55	TP-4	FA02533	EG	0.1	
25-Sep-20	11:00	DW	FA02533	EG	0.1	
25-Sep-20	11:05	TP-4	FA02533	EG	0.1	
25-Sep-20	11:15	DW	FA02533	EG	0.1	
25-Sep-20	12:50	TP-4	FA02533	EG	0.1	
25-Sep-20	12:55	DW	FA02533	EG	0.1	Finished backfilling TP-4

Edison Park Waste Delineation Project
Edison Park
21379 Magnolia Street, Huntington Beach, CA 92647

Daily Total Organic Compounds (TOC) Monitoring Log

Date	Time ¹	Location ²	Equipment ID ³	Equipment Operator	Reading (ppm) ⁴	Comments
25-Sep-20	13:05	TP-5	FA02533	EG	0.1	Start excavation at TP-5
25-Sep-20	13:10	DW	FA02533	EG	0.1	
25-Sep-20	13:20	TP-5	FA02533	EG	0.2	
25-Sep-20	13:30	DW	FA02533	EG	0.1	
25-Sep-20	13:35	TP-5	FA02533	EG	0.2	
25-Sep-20	13:50	DW	FA02533	EG	0.1	
25-Sep-20	13:55	TP-5	FA02533	EG	0.2	
25-Sep-20	14:05	DW	FA02533	EG	0.1	
25-Sep-20	14:10	TP-5	FA02533	EG	0.2	Begin backfilling at TP-5
25-Sep-20	14:25	DW	FA02533	EG	0.1	
25-Sep-20	14:40	TP-5	FA02533	EG	0.1	
25-Sep-20	15:15	TP-5	FA02533	EG	0.1	Excavate small trench
25-Sep-20	15:25	DW	FA02533	EG	0.1	
25-Sep-20	15:30	TP-5	FA02533	EG	0.1	Backfill done
28-Sep-20	7:45	DW	FA02533	EG	0.1	
28-Sep-20	7:55	HSA5	FA02533	EG	0.1	
28-Sep-20	8:00	DW	FA02533	EG	0.2	
28-Sep-20	8:10	HSA5	FA02533	EG	0.2	
28-Sep-20	8:15	DW	FA02533	EG	0.2	
28-Sep-20	8:25	HSA5	FA02533	EG	0.4	
28-Sep-20	8:30	DW	FA02533	EG	0.2	
28-Sep-20	8:40	HSA5	FA02533	EG	0.4	
28-Sep-20	8:50	DW	FA02533	EG	0.2	
28-Sep-20	8:55	HSA5	FA02533	EG	0.3	
28-Sep-20	9:05	DW	FA02533	EG	0.2	
28-Sep-20	9:15	HSA5	FA02533	EG	0.3	
28-Sep-20	9:20	DW	FA02533	EG	0.1	Stop boring HSA5
28-Sep-20	9:30	HSA5	FA02533	EG	0.3	Start boring HSA4
28-Sep-20	9:35	DW	FA02533	EG	0.1	
28-Sep-20	10:55	HSA4	FA02533	EG	0.1	
28-Sep-20	11:00	DW	FA02533	EG	0.2	
28-Sep-20	11:10	HSA4	FA02533	EG	0.2	
28-Sep-20	11:15	DW	FA02533	EG	0.2	
28-Sep-20	11:20	HSA4	FA02533	EG	0.3	
28-Sep-20	11:35	DW	FA02533	EG	0.2	
28-Sep-20	11:45	HSA4	FA02533	EG	0.3	

Edison Park Waste Delineation Project
Edison Park
21379 Magnolia Street, Huntington Beach, CA 92647

Daily Total Organic Compounds (TOC) Monitoring Log

Date	Time ¹	Location ²	Equipment ID ³	Equipment Operator	Reading (ppm) ⁴	Comments
28-Sep-20	11:50	DW	FA02533	EG	0.5	
28-Sep-20	12:00	HSA4	FA02533	EG	0.3	
28-Sep-20	12:05	DW	FA02533	EG	0.2	
28-Sep-20	12:15	HSA4	FA02533	EG	0.3	
28-Sep-20	12:20	DW	FA02533	EG	0.2	
28-Sep-20	12:30	HSA4	FA02533	EG	0.3	
28-Sep-20	12:35	DW	FA02533	EG	0.2	
28-Sep-20	12:45	HSA4	FA02533	EG	0.3	
28-Sep-20	12:50	DW	FA02533	EG	0.2	
28-Sep-20	13:00	HSA4	FA02533	EG	0.3	
28-Sep-20	14:20	HSA3	FA02533	EG	0.1	
28-Sep-20	14:25	DW	FA02533	EG	0.1	
28-Sep-20	14:35	HSA3	FA02533	EG	0.3	
28-Sep-20	14:40	DW	FA02533	EG	0.1	
28-Sep-20	14:50	HSA3	FA02533	EG	0.3	
28-Sep-20	14:55	DW	FA02533	EG	0.1	
28-Sep-20	14:58					Begin backfilling at HSA3
28-Sep-20	15:20					Begin boring at HSA2
28-Sep-20	15:25	HSA2	FA02533	EG	0.3	
28-Sep-20	15:35	DW	FA02533	EG	0.1	
28-Sep-20	15:40	HSA2	FA02533	EG	0.3	
28-Sep-20	15:45					Stop boring at HSA2 and backfill
28-Sep-20	16:30					Begin boring at HSA1
28-Sep-20	16:35	HSA1	FA02533	EG	0.4	
28-Sep-20	16:45	DW	FA02533	EG	0.1	Stop boring at HSA1

Notes:

- 1 - Pacific Daylight Time (PDT)
- 2 - Excavation Face or Perimeter (downwind)
- 3 - PID Monitor QRae III
- 4 - 15 seconds sustained readings, recorded every 15 minutes

APPENDIX B

LABORATORY ANALYTICAL TEST RESULTS

ANALYTICAL REPORT

Eurofins Calscience LLC
7440 Lincoln Way
Garden Grove, CA 92841
Tel: (714)895-5494

Laboratory Job ID: 570-53807-1

Client Project/Site: Edison Park Waste Delineation / HL1685B

For:

Geosyntec Consultants, Inc.
2100 Main Street
Suite 150
Huntington Beach, California 92648

Attn: Karthik Viswanathan



Authorized for release by:
3/19/2021 4:37:23 PM

Stephen Nowak, Project Manager I
(714)895-5494
Stephen.Nowak@eurofinset.com

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The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.



Table of Contents

Cover Page	1
Table of Contents	2
Definitions/Glossary	3
Case Narrative	4
Detection Summary	5
Client Sample Results	6
Surrogate Summary	11
QC Sample Results	12
QC Association Summary	25
Lab Chronicle	27
Certification Summary	28
Method Summary	29
Sample Summary	30
Chain of Custody	31
Receipt Checklists	32

Definitions/Glossary

Client: Geosyntec Consultants, Inc.
Project/Site: Edison Park Waste Delineation / HL1685B

Job ID: 570-53807-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.

Metals

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
▫	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Geosyntec Consultants, Inc.
Project/Site: Edison Park Waste Delineation / HL1685B

Job ID: 570-53807-1

Job ID: 570-53807-1

Laboratory: Eurofins Calscience LLC

Narrative

Job Narrative 570-53807-1

Comments

No additional comments.

Receipt

The sample was received on 3/15/2021 10:15 AM. Unless otherwise noted below, the sample arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 3.8° C.

GC/MS VOA

Method 8260B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 570-136182 and analytical batch 570-136236 were outside control limits. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC Semi VOA

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Metals

Method 6010B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 570-136938 and analytical batch 570-137251 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Organic Prep

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

VOA Prep

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Geosyntec Consultants, Inc.
Project/Site: Edison Park Waste Delineation / HL1685B

Job ID: 570-53807-1

Client Sample ID: EP-IDW-01

Lab Sample ID: 570-53807-1

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Acetone	27		20	ug/Kg	1		8260B	Total/NA
C6-C44	9.5		5.0	mg/Kg	1		8015B	Total/NA
Arsenic	6.38		2.48	mg/Kg	1		6010B	Total/NA
Barium	91.1		0.495	mg/Kg	1		6010B	Total/NA
Beryllium	1.06		0.248	mg/Kg	1		6010B	Total/NA
Cadmium	1.13		0.495	mg/Kg	1		6010B	Total/NA
Chromium	21.3		0.990	mg/Kg	1		6010B	Total/NA
Cobalt	10.2		0.990	mg/Kg	1		6010B	Total/NA
Copper	20.3		0.990	mg/Kg	1		6010B	Total/NA
Nickel	15.5		0.495	mg/Kg	1		6010B	Total/NA
Vanadium	42.1		0.990	mg/Kg	1		6010B	Total/NA
Zinc	57.6		9.90	mg/Kg	1		6010B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Calscience LLC

Client Sample Results

Client: Geosyntec Consultants, Inc.
 Project/Site: Edison Park Waste Delineation / HL1685B

Job ID: 570-53807-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Client Sample ID: EP-IDW-01
Date Collected: 03/12/21 18:20
Date Received: 03/15/21 10:15

Lab Sample ID: 570-53807-1
Matrix: Solid

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		0.99	ug/Kg		03/16/21 11:27	03/16/21 11:57	1
1,1,1-Trichloroethane	ND		0.99	ug/Kg		03/16/21 11:27	03/16/21 11:57	1
1,1,2,2-Tetrachloroethane	ND		2.0	ug/Kg		03/16/21 11:27	03/16/21 11:57	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		9.9	ug/Kg		03/16/21 11:27	03/16/21 11:57	1
1,1,2-Trichloroethane	ND		0.99	ug/Kg		03/16/21 11:27	03/16/21 11:57	1
1,1-Dichloroethane	ND		0.99	ug/Kg		03/16/21 11:27	03/16/21 11:57	1
1,1-Dichloroethene	ND		0.99	ug/Kg		03/16/21 11:27	03/16/21 11:57	1
1,1-Dichloropropene	ND		2.0	ug/Kg		03/16/21 11:27	03/16/21 11:57	1
1,2,3-Trichlorobenzene	ND	F1	2.0	ug/Kg		03/16/21 11:27	03/16/21 11:57	1
1,2,3-Trichloropropane	ND		2.0	ug/Kg		03/16/21 11:27	03/16/21 11:57	1
1,2,4-Trichlorobenzene	ND	F1	2.0	ug/Kg		03/16/21 11:27	03/16/21 11:57	1
1,2,4-Trimethylbenzene	ND		2.0	ug/Kg		03/16/21 11:27	03/16/21 11:57	1
1,2-Dibromo-3-Chloropropane	ND		9.9	ug/Kg		03/16/21 11:27	03/16/21 11:57	1
1,2-Dibromoethane	ND		0.99	ug/Kg		03/16/21 11:27	03/16/21 11:57	1
1,2-Dichlorobenzene	ND		0.99	ug/Kg		03/16/21 11:27	03/16/21 11:57	1
1,2-Dichloroethane	ND		0.99	ug/Kg		03/16/21 11:27	03/16/21 11:57	1
1,2-Dichloropropane	ND		0.99	ug/Kg		03/16/21 11:27	03/16/21 11:57	1
1,3,5-Trimethylbenzene	ND		2.0	ug/Kg		03/16/21 11:27	03/16/21 11:57	1
1,3-Dichlorobenzene	ND		0.99	ug/Kg		03/16/21 11:27	03/16/21 11:57	1
1,3-Dichloropropane	ND		0.99	ug/Kg		03/16/21 11:27	03/16/21 11:57	1
1,4-Dichlorobenzene	ND		0.99	ug/Kg		03/16/21 11:27	03/16/21 11:57	1
2,2-Dichloropropane	ND		5.0	ug/Kg		03/16/21 11:27	03/16/21 11:57	1
2-Butanone	ND		20	ug/Kg		03/16/21 11:27	03/16/21 11:57	1
2-Chlorotoluene	ND		0.99	ug/Kg		03/16/21 11:27	03/16/21 11:57	1
2-Hexanone	ND		20	ug/Kg		03/16/21 11:27	03/16/21 11:57	1
4-Chlorotoluene	ND		0.99	ug/Kg		03/16/21 11:27	03/16/21 11:57	1
4-Methyl-2-pentanone	ND		20	ug/Kg		03/16/21 11:27	03/16/21 11:57	1
Acetone	27		20	ug/Kg		03/16/21 11:27	03/16/21 11:57	1
Benzene	ND		0.99	ug/Kg		03/16/21 11:27	03/16/21 11:57	1
Bromobenzene	ND		0.99	ug/Kg		03/16/21 11:27	03/16/21 11:57	1
Bromochloromethane	ND		2.0	ug/Kg		03/16/21 11:27	03/16/21 11:57	1
Bromodichloromethane	ND		0.99	ug/Kg		03/16/21 11:27	03/16/21 11:57	1
Bromoform	ND		5.0	ug/Kg		03/16/21 11:27	03/16/21 11:57	1
Bromomethane	ND		20	ug/Kg		03/16/21 11:27	03/16/21 11:57	1
cis-1,2-Dichloroethene	ND		0.99	ug/Kg		03/16/21 11:27	03/16/21 11:57	1
cis-1,3-Dichloropropane	ND		0.99	ug/Kg		03/16/21 11:27	03/16/21 11:57	1
Carbon disulfide	ND		9.9	ug/Kg		03/16/21 11:27	03/16/21 11:57	1
Carbon tetrachloride	ND		0.99	ug/Kg		03/16/21 11:27	03/16/21 11:57	1
Chlorobenzene	ND		0.99	ug/Kg		03/16/21 11:27	03/16/21 11:57	1
Chloroethane	ND		2.0	ug/Kg		03/16/21 11:27	03/16/21 11:57	1
Chloroform	ND		0.99	ug/Kg		03/16/21 11:27	03/16/21 11:57	1
Chloromethane	ND	F1	20	ug/Kg		03/16/21 11:27	03/16/21 11:57	1
Dibromochloromethane	ND		2.0	ug/Kg		03/16/21 11:27	03/16/21 11:57	1
Dibromomethane	ND		0.99	ug/Kg		03/16/21 11:27	03/16/21 11:57	1
Dichlorodifluoromethane	ND		2.0	ug/Kg		03/16/21 11:27	03/16/21 11:57	1
Ethylbenzene	ND		0.99	ug/Kg		03/16/21 11:27	03/16/21 11:57	1
Isopropylbenzene	ND		0.99	ug/Kg		03/16/21 11:27	03/16/21 11:57	1
Methylene Chloride	ND		9.9	ug/Kg		03/16/21 11:27	03/16/21 11:57	1
Methyl-t-Butyl Ether (MTBE)	ND		2.0	ug/Kg		03/16/21 11:27	03/16/21 11:57	1

Client Sample Results

Client: Geosyntec Consultants, Inc.
 Project/Site: Edison Park Waste Delineation / HL1685B

Job ID: 570-53807-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Client Sample ID: EP-IDW-01
Date Collected: 03/12/21 18:20
Date Received: 03/15/21 10:15

Lab Sample ID: 570-53807-1
Matrix: Solid

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	ND	F1	9.9	ug/Kg		03/16/21 11:27	03/16/21 11:57	1
n-Butylbenzene	ND		0.99	ug/Kg		03/16/21 11:27	03/16/21 11:57	1
N-Propylbenzene	ND		2.0	ug/Kg		03/16/21 11:27	03/16/21 11:57	1
o-Xylene	ND		0.99	ug/Kg		03/16/21 11:27	03/16/21 11:57	1
m,p-Xylene	ND		2.0	ug/Kg		03/16/21 11:27	03/16/21 11:57	1
p-Isopropyltoluene	ND		0.99	ug/Kg		03/16/21 11:27	03/16/21 11:57	1
sec-Butylbenzene	ND		0.99	ug/Kg		03/16/21 11:27	03/16/21 11:57	1
Styrene	ND		0.99	ug/Kg		03/16/21 11:27	03/16/21 11:57	1
trans-1,2-Dichloroethene	ND		0.99	ug/Kg		03/16/21 11:27	03/16/21 11:57	1
trans-1,3-Dichloropropene	ND		2.0	ug/Kg		03/16/21 11:27	03/16/21 11:57	1
tert-Butylbenzene	ND		0.99	ug/Kg		03/16/21 11:27	03/16/21 11:57	1
Tetrachloroethene	ND		0.99	ug/Kg		03/16/21 11:27	03/16/21 11:57	1
Toluene	ND		0.99	ug/Kg		03/16/21 11:27	03/16/21 11:57	1
Trichloroethene	ND		2.0	ug/Kg		03/16/21 11:27	03/16/21 11:57	1
Trichlorofluoromethane	ND		9.9	ug/Kg		03/16/21 11:27	03/16/21 11:57	1
Vinyl acetate	ND		9.9	ug/Kg		03/16/21 11:27	03/16/21 11:57	1
Vinyl chloride	ND		0.99	ug/Kg		03/16/21 11:27	03/16/21 11:57	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
<i>1,2-Dichloroethane-d4 (Surr)</i>	106		71 - 155			03/16/21 11:27	03/16/21 11:57	1
<i>4-Bromofluorobenzene (Surr)</i>	95		80 - 120			03/16/21 11:27	03/16/21 11:57	1
<i>Dibromofluoromethane (Surr)</i>	96		79 - 133			03/16/21 11:27	03/16/21 11:57	1
<i>Toluene-d8 (Surr)</i>	96		80 - 120			03/16/21 11:27	03/16/21 11:57	1

Client Sample Results

Client: Geosyntec Consultants, Inc.
 Project/Site: Edison Park Waste Delineation / HL1685B

Job ID: 570-53807-1

Method: 8015B - Diesel Range Organics (DRO) (GC)

Client Sample ID: EP-IDW-01
Date Collected: 03/12/21 18:20
Date Received: 03/15/21 10:15

Lab Sample ID: 570-53807-1
Matrix: Solid

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
C6 as C6	ND		5.0	mg/Kg		03/16/21 14:07	03/17/21 03:11	1
C7 as C7	ND		5.0	mg/Kg		03/16/21 14:07	03/17/21 03:11	1
C8 as C8	ND		5.0	mg/Kg		03/16/21 14:07	03/17/21 03:11	1
C9-C10	ND		5.0	mg/Kg		03/16/21 14:07	03/17/21 03:11	1
C11-C12	ND		5.0	mg/Kg		03/16/21 14:07	03/17/21 03:11	1
C13-C14	ND		5.0	mg/Kg		03/16/21 14:07	03/17/21 03:11	1
C15-C16	ND		5.0	mg/Kg		03/16/21 14:07	03/17/21 03:11	1
C17-C18	ND		5.0	mg/Kg		03/16/21 14:07	03/17/21 03:11	1
C19-C20	ND		5.0	mg/Kg		03/16/21 14:07	03/17/21 03:11	1
C21-C22	ND		5.0	mg/Kg		03/16/21 14:07	03/17/21 03:11	1
C23-C24	ND		5.0	mg/Kg		03/16/21 14:07	03/17/21 03:11	1
C25-C28	ND		5.0	mg/Kg		03/16/21 14:07	03/17/21 03:11	1
C29-C32	ND		5.0	mg/Kg		03/16/21 14:07	03/17/21 03:11	1
C33-C36	ND		5.0	mg/Kg		03/16/21 14:07	03/17/21 03:11	1
C37-C40	ND		5.0	mg/Kg		03/16/21 14:07	03/17/21 03:11	1
C41-C44	ND		5.0	mg/Kg		03/16/21 14:07	03/17/21 03:11	1
C6-C44	9.5		5.0	mg/Kg		03/16/21 14:07	03/17/21 03:11	1
Diesel Range Organics [C10-C28]	ND		5.0	mg/Kg		03/16/21 14:07	03/17/21 03:11	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
<i>n</i> -Octacosane (Surr)	95		60 - 138			03/16/21 14:07	03/17/21 03:11	1

Client Sample Results

Client: Geosyntec Consultants, Inc.
 Project/Site: Edison Park Waste Delineation / HL1685B

Job ID: 570-53807-1

Method: 6010B - Metals (ICP)

Client Sample ID: EP-IDW-01
Date Collected: 03/12/21 18:20
Date Received: 03/15/21 10:15

Lab Sample ID: 570-53807-1
Matrix: Solid

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		2.97	mg/Kg		03/18/21 15:00	03/19/21 11:01	1
Arsenic	6.38		2.48	mg/Kg		03/18/21 15:00	03/19/21 11:01	1
Barium	91.1		0.495	mg/Kg		03/18/21 15:00	03/19/21 11:01	1
Beryllium	1.06		0.248	mg/Kg		03/18/21 15:00	03/19/21 11:01	1
Cadmium	1.13		0.495	mg/Kg		03/18/21 15:00	03/19/21 11:01	1
Chromium	21.3		0.990	mg/Kg		03/18/21 15:00	03/19/21 11:01	1
Cobalt	10.2		0.990	mg/Kg		03/18/21 15:00	03/19/21 11:01	1
Copper	20.3		0.990	mg/Kg		03/18/21 15:00	03/19/21 11:01	1
Lead	ND		4.95	mg/Kg		03/18/21 15:00	03/19/21 11:01	1
Molybdenum	ND		0.495	mg/Kg		03/18/21 15:00	03/19/21 11:01	1
Nickel	15.5		0.495	mg/Kg		03/18/21 15:00	03/19/21 11:01	1
Selenium	ND		4.95	mg/Kg		03/18/21 15:00	03/19/21 11:01	1
Silver	ND		0.990	mg/Kg		03/18/21 15:00	03/19/21 11:01	1
Thallium	ND		4.95	mg/Kg		03/18/21 15:00	03/19/21 11:01	1
Vanadium	42.1		0.990	mg/Kg		03/18/21 15:00	03/19/21 11:01	1
Zinc	57.6		9.90	mg/Kg		03/18/21 15:00	03/19/21 11:01	1

Client Sample Results

Client: Geosyntec Consultants, Inc.
Project/Site: Edison Park Waste Delineation / HL1685B

Job ID: 570-53807-1

Method: 7471A - Mercury (CVAA)

Client Sample ID: EP-IDW-01
Date Collected: 03/12/21 18:20
Date Received: 03/15/21 10:15

Lab Sample ID: 570-53807-1
Matrix: Solid

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0847	mg/Kg		03/18/21 15:00	03/19/21 12:06	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

Surrogate Summary

Client: Geosyntec Consultants, Inc.
 Project/Site: Edison Park Waste Delineation / HL1685B

Job ID: 570-53807-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Solid

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		DCA (71-155)	BFB (80-120)	DBFM (79-133)	TOL (80-120)
570-53807-1	EP-IDW-01	106	95	96	96
570-53807-1 MS	EP-IDW-01	107	101	103	102
570-53807-1 MSD	EP-IDW-01	105	101	103	103
LCS 570-136182/1-A	Lab Control Sample	100	99	102	102
LCSD 570-136182/2-A	Lab Control Sample Dup	100	102	102	102
MB 570-136182/3-A	Method Blank	108	98	98	97

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
 BFB = 4-Bromofluorobenzene (Surr)
 DBFM = Dibromofluoromethane (Surr)
 TOL = Toluene-d8 (Surr)

Method: 8015B - Diesel Range Organics (DRO) (GC)

Matrix: Solid

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	OTCSN1
		(60-138)
570-53646-A-4-A MS	Matrix Spike	86
570-53646-A-4-B MSD	Matrix Spike Duplicate	94
570-53807-1	EP-IDW-01	95
LCS 570-136343/2-A	Lab Control Sample	85
LCSD 570-136343/3-A	Lab Control Sample Dup	87
MB 570-136343/1-A	Method Blank	86

Surrogate Legend

OTCSN = n-Octacosane (Surr)

QC Sample Results

Client: Geosyntec Consultants, Inc.
 Project/Site: Edison Park Waste Delineation / HL1685B

Job ID: 570-53807-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 570-136182/3-A
Matrix: Solid
Analysis Batch: 136236

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 136182

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		1.0	ug/Kg		03/16/21 07:28	03/16/21 10:36	1
1,1,1-Trichloroethane	ND		1.0	ug/Kg		03/16/21 07:28	03/16/21 10:36	1
1,1,2,2-Tetrachloroethane	ND		2.0	ug/Kg		03/16/21 07:28	03/16/21 10:36	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		10	ug/Kg		03/16/21 07:28	03/16/21 10:36	1
1,1,2-Trichloroethane	ND		1.0	ug/Kg		03/16/21 07:28	03/16/21 10:36	1
1,1-Dichloroethane	ND		1.0	ug/Kg		03/16/21 07:28	03/16/21 10:36	1
1,1-Dichloroethene	ND		1.0	ug/Kg		03/16/21 07:28	03/16/21 10:36	1
1,1-Dichloropropene	ND		2.0	ug/Kg		03/16/21 07:28	03/16/21 10:36	1
1,2,3-Trichlorobenzene	ND		2.0	ug/Kg		03/16/21 07:28	03/16/21 10:36	1
1,2,3-Trichloropropane	ND		2.0	ug/Kg		03/16/21 07:28	03/16/21 10:36	1
1,2,4-Trichlorobenzene	ND		2.0	ug/Kg		03/16/21 07:28	03/16/21 10:36	1
1,2,4-Trimethylbenzene	ND		2.0	ug/Kg		03/16/21 07:28	03/16/21 10:36	1
1,2-Dibromo-3-Chloropropane	ND		10	ug/Kg		03/16/21 07:28	03/16/21 10:36	1
1,2-Dibromoethane	ND		1.0	ug/Kg		03/16/21 07:28	03/16/21 10:36	1
1,2-Dichlorobenzene	ND		1.0	ug/Kg		03/16/21 07:28	03/16/21 10:36	1
1,2-Dichloroethane	ND		1.0	ug/Kg		03/16/21 07:28	03/16/21 10:36	1
1,2-Dichloropropane	ND		1.0	ug/Kg		03/16/21 07:28	03/16/21 10:36	1
1,3,5-Trimethylbenzene	ND		2.0	ug/Kg		03/16/21 07:28	03/16/21 10:36	1
1,3-Dichlorobenzene	ND		1.0	ug/Kg		03/16/21 07:28	03/16/21 10:36	1
1,3-Dichloropropane	ND		1.0	ug/Kg		03/16/21 07:28	03/16/21 10:36	1
1,4-Dichlorobenzene	ND		1.0	ug/Kg		03/16/21 07:28	03/16/21 10:36	1
2,2-Dichloropropane	ND		5.0	ug/Kg		03/16/21 07:28	03/16/21 10:36	1
2-Butanone	ND		20	ug/Kg		03/16/21 07:28	03/16/21 10:36	1
2-Chlorotoluene	ND		1.0	ug/Kg		03/16/21 07:28	03/16/21 10:36	1
2-Hexanone	ND		20	ug/Kg		03/16/21 07:28	03/16/21 10:36	1
4-Chlorotoluene	ND		1.0	ug/Kg		03/16/21 07:28	03/16/21 10:36	1
4-Methyl-2-pentanone	ND		20	ug/Kg		03/16/21 07:28	03/16/21 10:36	1
Acetone	ND		20	ug/Kg		03/16/21 07:28	03/16/21 10:36	1
Benzene	ND		1.0	ug/Kg		03/16/21 07:28	03/16/21 10:36	1
Bromobenzene	ND		1.0	ug/Kg		03/16/21 07:28	03/16/21 10:36	1
Bromochloromethane	ND		2.0	ug/Kg		03/16/21 07:28	03/16/21 10:36	1
Bromodichloromethane	ND		1.0	ug/Kg		03/16/21 07:28	03/16/21 10:36	1
Bromoform	ND		5.0	ug/Kg		03/16/21 07:28	03/16/21 10:36	1
Bromomethane	ND		20	ug/Kg		03/16/21 07:28	03/16/21 10:36	1
cis-1,2-Dichloroethene	ND		1.0	ug/Kg		03/16/21 07:28	03/16/21 10:36	1
cis-1,3-Dichloropropane	ND		1.0	ug/Kg		03/16/21 07:28	03/16/21 10:36	1
Carbon disulfide	ND		10	ug/Kg		03/16/21 07:28	03/16/21 10:36	1
Carbon tetrachloride	ND		1.0	ug/Kg		03/16/21 07:28	03/16/21 10:36	1
Chlorobenzene	ND		1.0	ug/Kg		03/16/21 07:28	03/16/21 10:36	1
Chloroethane	ND		2.0	ug/Kg		03/16/21 07:28	03/16/21 10:36	1
Chloroform	ND		1.0	ug/Kg		03/16/21 07:28	03/16/21 10:36	1
Chloromethane	ND		20	ug/Kg		03/16/21 07:28	03/16/21 10:36	1
Dibromochloromethane	ND		2.0	ug/Kg		03/16/21 07:28	03/16/21 10:36	1
Dibromomethane	ND		1.0	ug/Kg		03/16/21 07:28	03/16/21 10:36	1
Dichlorodifluoromethane	ND		2.0	ug/Kg		03/16/21 07:28	03/16/21 10:36	1
Ethylbenzene	ND		1.0	ug/Kg		03/16/21 07:28	03/16/21 10:36	1
Isopropylbenzene	ND		1.0	ug/Kg		03/16/21 07:28	03/16/21 10:36	1
Methylene Chloride	ND		10	ug/Kg		03/16/21 07:28	03/16/21 10:36	1

QC Sample Results

Client: Geosyntec Consultants, Inc.
 Project/Site: Edison Park Waste Delineation / HL1685B

Job ID: 570-53807-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 570-136182/3-A
Matrix: Solid
Analysis Batch: 136236

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 136182

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl-t-Butyl Ether (MTBE)	ND		2.0	ug/Kg		03/16/21 07:28	03/16/21 10:36	1
Naphthalene	ND		10	ug/Kg		03/16/21 07:28	03/16/21 10:36	1
n-Butylbenzene	ND		1.0	ug/Kg		03/16/21 07:28	03/16/21 10:36	1
N-Propylbenzene	ND		2.0	ug/Kg		03/16/21 07:28	03/16/21 10:36	1
o-Xylene	ND		1.0	ug/Kg		03/16/21 07:28	03/16/21 10:36	1
m,p-Xylene	ND		2.0	ug/Kg		03/16/21 07:28	03/16/21 10:36	1
p-Isopropyltoluene	ND		1.0	ug/Kg		03/16/21 07:28	03/16/21 10:36	1
sec-Butylbenzene	ND		1.0	ug/Kg		03/16/21 07:28	03/16/21 10:36	1
Styrene	ND		1.0	ug/Kg		03/16/21 07:28	03/16/21 10:36	1
trans-1,2-Dichloroethene	ND		1.0	ug/Kg		03/16/21 07:28	03/16/21 10:36	1
trans-1,3-Dichloropropene	ND		2.0	ug/Kg		03/16/21 07:28	03/16/21 10:36	1
tert-Butylbenzene	ND		1.0	ug/Kg		03/16/21 07:28	03/16/21 10:36	1
Tetrachloroethene	ND		1.0	ug/Kg		03/16/21 07:28	03/16/21 10:36	1
Toluene	ND		1.0	ug/Kg		03/16/21 07:28	03/16/21 10:36	1
Trichloroethene	ND		2.0	ug/Kg		03/16/21 07:28	03/16/21 10:36	1
Trichlorofluoromethane	ND		10	ug/Kg		03/16/21 07:28	03/16/21 10:36	1
Vinyl acetate	ND		10	ug/Kg		03/16/21 07:28	03/16/21 10:36	1
Vinyl chloride	ND		1.0	ug/Kg		03/16/21 07:28	03/16/21 10:36	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	108		71 - 155	03/16/21 07:28	03/16/21 10:36	1
4-Bromofluorobenzene (Surr)	98		80 - 120	03/16/21 07:28	03/16/21 10:36	1
Dibromofluoromethane (Surr)	98		79 - 133	03/16/21 07:28	03/16/21 10:36	1
Toluene-d8 (Surr)	97		80 - 120	03/16/21 07:28	03/16/21 10:36	1

Lab Sample ID: LCS 570-136182/1-A
Matrix: Solid
Analysis Batch: 136236

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 136182

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
1,1,1,2-Tetrachloroethane	50.0	48.43		ug/Kg		97	70 - 130
1,1,1-Trichloroethane	50.0	46.20		ug/Kg		92	70 - 130
1,1,2,2-Tetrachloroethane	50.0	51.17		ug/Kg		102	70 - 130
1,1,2-Trichloro-1,2,2-trifluoroethane	50.0	41.44		ug/Kg		83	70 - 130
1,1,2-Trichloroethane	50.0	50.28		ug/Kg		101	70 - 130
1,1-Dichloroethane	50.0	46.72		ug/Kg		93	70 - 130
1,1-Dichloroethene	50.0	47.49		ug/Kg		95	74 - 122
1,1-Dichloropropene	50.0	46.75		ug/Kg		94	70 - 130
1,2,3-Trichlorobenzene	50.0	51.14		ug/Kg		102	70 - 130
1,2,3-Trichloropropane	50.0	50.79		ug/Kg		102	70 - 130
1,2,4-Trichlorobenzene	50.0	50.36		ug/Kg		101	70 - 130
1,2,4-Trimethylbenzene	50.0	49.41		ug/Kg		99	70 - 130
1,2-Dibromo-3-Chloropropane	50.0	50.89		ug/Kg		102	70 - 130
1,2-Dibromoethane	50.0	50.47		ug/Kg		101	70 - 130
1,2-Dichlorobenzene	50.0	48.68		ug/Kg		97	75 - 120
1,2-Dichloroethane	50.0	48.29		ug/Kg		97	70 - 130
1,2-Dichloropropane	50.0	49.28		ug/Kg		99	79 - 115
1,3,5-Trimethylbenzene	50.0	48.61		ug/Kg		97	70 - 130

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QC Sample Results

Client: Geosyntec Consultants, Inc.
 Project/Site: Edison Park Waste Delineation / HL1685B

Job ID: 570-53807-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 570-136182/1-A
Matrix: Solid
Analysis Batch: 136236

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 136182

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,3-Dichlorobenzene	50.0	48.72		ug/Kg		97	70 - 130
1,3-Dichloropropane	50.0	49.24		ug/Kg		98	70 - 130
1,4-Dichlorobenzene	50.0	46.79		ug/Kg		94	70 - 130
2,2-Dichloropropane	50.0	49.93		ug/Kg		100	70 - 130
2-Butanone	50.0	55.45		ug/Kg		111	70 - 130
2-Chlorotoluene	50.0	47.35		ug/Kg		95	70 - 130
2-Hexanone	50.0	54.55		ug/Kg		109	70 - 130
4-Chlorotoluene	50.0	48.07		ug/Kg		96	70 - 130
4-Methyl-2-pentanone	50.0	51.75		ug/Kg		104	70 - 130
Acetone	50.0	54.17		ug/Kg		108	70 - 130
Benzene	50.0	45.01		ug/Kg		90	78 - 120
Bromobenzene	50.0	47.72		ug/Kg		95	70 - 130
Bromochloromethane	50.0	48.38		ug/Kg		97	70 - 130
Bromodichloromethane	50.0	51.51		ug/Kg		103	70 - 130
Bromoform	50.0	52.81		ug/Kg		106	70 - 130
Bromomethane	50.0	53.26		ug/Kg		107	70 - 130
cis-1,2-Dichloroethene	50.0	49.54		ug/Kg		99	70 - 130
cis-1,3-Dichloropropene	50.0	51.19		ug/Kg		102	70 - 130
Carbon disulfide	50.0	48.28		ug/Kg		97	70 - 130
Carbon tetrachloride	50.0	47.14		ug/Kg		94	49 - 139
Chlorobenzene	50.0	46.39		ug/Kg		93	79 - 120
Chloroethane	50.0	47.14		ug/Kg		94	70 - 130
Chloroform	50.0	49.29		ug/Kg		99	70 - 130
Chloromethane	50.0	39.53		ug/Kg		79	70 - 130
Dibromochloromethane	50.0	53.56		ug/Kg		107	70 - 130
Dibromomethane	50.0	50.64		ug/Kg		101	70 - 130
Dichlorodifluoromethane	50.0	41.86		ug/Kg		84	70 - 130
Ethylbenzene	50.0	47.46		ug/Kg		95	76 - 120
Isopropylbenzene	50.0	48.63		ug/Kg		97	70 - 130
Methylene Chloride	50.0	47.58		ug/Kg		95	70 - 130
Methyl-t-Butyl Ether (MTBE)	50.0	47.76		ug/Kg		96	70 - 124
Naphthalene	50.0	47.38		ug/Kg		95	70 - 130
n-Butylbenzene	50.0	48.67		ug/Kg		97	77 - 123
N-Propylbenzene	50.0	47.56		ug/Kg		95	70 - 130
o-Xylene	50.0	50.38		ug/Kg		101	70 - 130
m,p-Xylene	100	96.11		ug/Kg		96	70 - 130
p-Isopropyltoluene	50.0	48.94		ug/Kg		98	70 - 130
sec-Butylbenzene	50.0	48.44		ug/Kg		97	70 - 130
Styrene	50.0	50.33		ug/Kg		101	70 - 130
trans-1,2-Dichloroethene	50.0	46.24		ug/Kg		92	70 - 130
trans-1,3-Dichloropropene	50.0	50.71		ug/Kg		101	70 - 130
tert-Butylbenzene	50.0	48.09		ug/Kg		96	70 - 130
Tetrachloroethene	50.0	45.69		ug/Kg		91	70 - 130
Toluene	50.0	47.19		ug/Kg		94	77 - 120
Trichloroethene	50.0	46.52		ug/Kg		93	70 - 130
Trichlorofluoromethane	50.0	44.58		ug/Kg		89	70 - 130
Vinyl acetate	50.0	55.69		ug/Kg		111	70 - 130
Vinyl chloride	50.0	42.41		ug/Kg		85	68 - 122

QC Sample Results

Client: Geosyntec Consultants, Inc.
 Project/Site: Edison Park Waste Delineation / HL1685B

Job ID: 570-53807-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 570-136182/1-A
Matrix: Solid
Analysis Batch: 136236

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 136182

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	100		71 - 155
4-Bromofluorobenzene (Surr)	99		80 - 120
Dibromofluoromethane (Surr)	102		79 - 133
Toluene-d8 (Surr)	102		80 - 120

Lab Sample ID: LCSD 570-136182/2-A
Matrix: Solid
Analysis Batch: 136236

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 136182

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec.		RPD	
							Limits	RPD	Limit	
1,1,1,2-Tetrachloroethane	50.0	47.55		ug/Kg		95	70 - 130	2	20	
1,1,1-Trichloroethane	50.0	44.51		ug/Kg		89	70 - 130	4	20	
1,1,2,2-Tetrachloroethane	50.0	52.39		ug/Kg		105	70 - 130	2	20	
1,1,2-Trichloro-1,2,2-trifluoroethane	50.0	40.04		ug/Kg		80	70 - 130	3	20	
1,1,2-Trichloroethane	50.0	48.47		ug/Kg		97	70 - 130	4	20	
1,1-Dichloroethane	50.0	45.06		ug/Kg		90	70 - 130	4	20	
1,1-Dichloroethene	50.0	45.46		ug/Kg		91	74 - 122	4	20	
1,1-Dichloropropene	50.0	44.77		ug/Kg		90	70 - 130	4	20	
1,2,3-Trichlorobenzene	50.0	48.77		ug/Kg		98	70 - 130	5	20	
1,2,3-Trichloropropane	50.0	49.29		ug/Kg		99	70 - 130	3	20	
1,2,4-Trichlorobenzene	50.0	49.35		ug/Kg		99	70 - 130	2	20	
1,2,4-Trimethylbenzene	50.0	47.41		ug/Kg		95	70 - 130	4	20	
1,2-Dibromo-3-Chloropropane	50.0	49.22		ug/Kg		98	70 - 130	3	20	
1,2-Dibromoethane	50.0	49.91		ug/Kg		100	70 - 130	1	20	
1,2-Dichlorobenzene	50.0	47.84		ug/Kg		96	75 - 120	2	20	
1,2-Dichloroethane	50.0	45.67		ug/Kg		91	70 - 130	6	20	
1,2-Dichloropropane	50.0	47.19		ug/Kg		94	79 - 115	4	25	
1,3,5-Trimethylbenzene	50.0	47.59		ug/Kg		95	70 - 130	2	20	
1,3-Dichlorobenzene	50.0	46.65		ug/Kg		93	70 - 130	4	20	
1,3-Dichloropropane	50.0	48.49		ug/Kg		97	70 - 130	2	20	
1,4-Dichlorobenzene	50.0	45.61		ug/Kg		91	70 - 130	3	20	
2,2-Dichloropropane	50.0	48.31		ug/Kg		97	70 - 130	3	20	
2-Butanone	50.0	52.32		ug/Kg		105	70 - 130	6	20	
2-Chlorotoluene	50.0	46.43		ug/Kg		93	70 - 130	2	20	
2-Hexanone	50.0	51.94		ug/Kg		104	70 - 130	5	20	
4-Chlorotoluene	50.0	48.57		ug/Kg		97	70 - 130	1	20	
4-Methyl-2-pentanone	50.0	48.76		ug/Kg		98	70 - 130	6	20	
Acetone	50.0	50.31		ug/Kg		101	70 - 130	7	20	
Benzene	50.0	43.12		ug/Kg		86	78 - 120	4	20	
Bromobenzene	50.0	46.97		ug/Kg		94	70 - 130	2	20	
Bromochloromethane	50.0	47.46		ug/Kg		95	70 - 130	2	20	
Bromodichloromethane	50.0	48.85		ug/Kg		98	70 - 130	5	20	
Bromoform	50.0	53.33		ug/Kg		107	70 - 130	1	20	
Bromomethane	50.0	50.93		ug/Kg		102	70 - 130	4	20	
cis-1,2-Dichloroethene	50.0	48.17		ug/Kg		96	70 - 130	3	20	
cis-1,3-Dichloropropene	50.0	49.14		ug/Kg		98	70 - 130	4	20	
Carbon disulfide	50.0	46.48		ug/Kg		93	70 - 130	4	20	
Carbon tetrachloride	50.0	45.38		ug/Kg		91	49 - 139	4	20	

Eurofins Calscience LLC

QC Sample Results

Client: Geosyntec Consultants, Inc.
 Project/Site: Edison Park Waste Delineation / HL1685B

Job ID: 570-53807-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 570-136182/2-A
Matrix: Solid
Analysis Batch: 136236

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 136182

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chlorobenzene	50.0	45.51		ug/Kg		91	79 - 120	2	20
Chloroethane	50.0	46.80		ug/Kg		94	70 - 130	1	20
Chloroform	50.0	47.74		ug/Kg		95	70 - 130	3	20
Chloromethane	50.0	39.64		ug/Kg		79	70 - 130	0	20
Dibromochloromethane	50.0	52.57		ug/Kg		105	70 - 130	2	20
Dibromomethane	50.0	47.92		ug/Kg		96	70 - 130	6	20
Dichlorodifluoromethane	50.0	41.72		ug/Kg		83	70 - 130	0	20
Ethylbenzene	50.0	46.56		ug/Kg		93	76 - 120	2	20
Isopropylbenzene	50.0	47.64		ug/Kg		95	70 - 130	2	20
Methylene Chloride	50.0	46.24		ug/Kg		92	70 - 130	3	20
Methyl-t-Butyl Ether (MTBE)	50.0	46.09		ug/Kg		92	70 - 124	4	20
Naphthalene	50.0	46.78		ug/Kg		94	70 - 130	1	20
n-Butylbenzene	50.0	46.87		ug/Kg		94	77 - 123	4	25
N-Propylbenzene	50.0	46.40		ug/Kg		93	70 - 130	2	20
o-Xylene	50.0	49.43		ug/Kg		99	70 - 130	2	20
m,p-Xylene	100	93.58		ug/Kg		94	70 - 130	3	20
p-Isopropyltoluene	50.0	47.94		ug/Kg		96	70 - 130	2	20
sec-Butylbenzene	50.0	47.17		ug/Kg		94	70 - 130	3	20
Styrene	50.0	49.52		ug/Kg		99	70 - 130	2	20
trans-1,2-Dichloroethene	50.0	44.40		ug/Kg		89	70 - 130	4	20
trans-1,3-Dichloropropene	50.0	48.86		ug/Kg		98	70 - 130	4	20
tert-Butylbenzene	50.0	48.75		ug/Kg		98	70 - 130	1	20
Tetrachloroethene	50.0	44.88		ug/Kg		90	70 - 130	2	20
Toluene	50.0	45.11		ug/Kg		90	77 - 120	4	20
Trichloroethene	50.0	43.99		ug/Kg		88	70 - 130	6	20
Trichlorofluoromethane	50.0	46.56		ug/Kg		93	70 - 130	4	20
Vinyl acetate	50.0	53.52		ug/Kg		107	70 - 130	4	20
Vinyl chloride	50.0	43.04		ug/Kg		86	68 - 122	1	20

Surrogate	LCSD %Recovery	LCSD Qualifier	LCSD Limits
1,2-Dichloroethane-d4 (Surr)	100		71 - 155
4-Bromofluorobenzene (Surr)	102		80 - 120
Dibromofluoromethane (Surr)	102		79 - 133
Toluene-d8 (Surr)	102		80 - 120

Lab Sample ID: 570-53807-1 MS
Matrix: Solid
Analysis Batch: 136236

Client Sample ID: EP-IDW-01
Prep Type: Total/NA
Prep Batch: 136182

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	ND		51.8	44.14		ug/Kg		85	70 - 130
1,1,1-Trichloroethane	ND		51.8	47.35		ug/Kg		91	70 - 130
1,1,1,2,2-Tetrachloroethane	ND		51.8	45.83		ug/Kg		89	70 - 130
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		51.8	41.81		ug/Kg		81	70 - 130
1,1,2-Trichloroethane	ND		51.8	42.48		ug/Kg		82	70 - 130
1,1-Dichloroethane	ND		51.8	44.86		ug/Kg		87	70 - 130
1,1-Dichloroethene	ND		51.8	45.23		ug/Kg		87	47 - 143
1,1-Dichloropropene	ND		51.8	47.83		ug/Kg		92	70 - 130

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QC Sample Results

Client: Geosyntec Consultants, Inc.
 Project/Site: Edison Park Waste Delineation / HL1685B

Job ID: 570-53807-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 570-53807-1 MS

Matrix: Solid

Analysis Batch: 136236

Client Sample ID: EP-IDW-01

Prep Type: Total/NA

Prep Batch: 136182

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2,3-Trichlorobenzene	ND	F1	51.8	37.72		ug/Kg		73	70 - 130
1,2,3-Trichloropropane	ND		51.8	42.57		ug/Kg		82	70 - 130
1,2,4-Trichlorobenzene	ND	F1	51.8	38.06		ug/Kg		74	70 - 130
1,2,4-Trimethylbenzene	ND		51.8	46.30		ug/Kg		89	70 - 130
1,2-Dibromo-3-Chloropropane	ND		51.8	39.88		ug/Kg		77	70 - 130
1,2-Dibromoethane	ND		51.8	40.08		ug/Kg		77	64 - 124
1,2-Dichlorobenzene	ND		51.8	42.29		ug/Kg		82	35 - 131
1,2-Dichloroethane	ND		51.8	39.96		ug/Kg		77	70 - 130
1,2-Dichloropropane	ND		51.8	43.27		ug/Kg		84	79 - 115
1,3,5-Trimethylbenzene	ND		51.8	46.68		ug/Kg		90	70 - 130
1,3-Dichlorobenzene	ND		51.8	42.85		ug/Kg		83	70 - 130
1,3-Dichloropropane	ND		51.8	40.83		ug/Kg		79	70 - 130
1,4-Dichlorobenzene	ND		51.8	40.88		ug/Kg		79	70 - 130
2,2-Dichloropropane	ND		51.8	50.35		ug/Kg		97	70 - 130
2-Butanone	ND		51.8	49.88		ug/Kg		96	70 - 130
2-Chlorotoluene	ND		51.8	44.85		ug/Kg		87	70 - 130
2-Hexanone	ND		51.8	45.87		ug/Kg		89	70 - 130
4-Chlorotoluene	ND		51.8	44.54		ug/Kg		86	70 - 130
4-Methyl-2-pentanone	ND		51.8	42.25		ug/Kg		82	70 - 130
Acetone	27		51.8	71.05		ug/Kg		84	70 - 130
Benzene	ND		51.8	42.26		ug/Kg		82	61 - 127
Bromobenzene	ND		51.8	41.40		ug/Kg		80	70 - 130
Bromochloromethane	ND		51.8	41.01		ug/Kg		79	70 - 130
Bromodichloromethane	ND		51.8	43.78		ug/Kg		85	70 - 130
Bromoform	ND		51.8	42.48		ug/Kg		82	70 - 130
Bromomethane	ND		51.8	47.33		ug/Kg		91	70 - 130
cis-1,2-Dichloroethene	ND		51.8	45.26		ug/Kg		87	70 - 130
cis-1,3-Dichloropropene	ND		51.8	42.21		ug/Kg		82	70 - 130
Carbon disulfide	ND		51.8	48.30		ug/Kg		92	70 - 130
Carbon tetrachloride	ND		51.8	47.57		ug/Kg		92	51 - 135
Chlorobenzene	ND		51.8	42.38		ug/Kg		82	57 - 123
Chloroethane	ND		51.8	41.47		ug/Kg		80	70 - 130
Chloroform	ND		51.8	46.22		ug/Kg		89	70 - 130
Chloromethane	ND	F1	51.8	34.00	F1	ug/Kg		66	70 - 130
Dibromochloromethane	ND		51.8	43.66		ug/Kg		84	70 - 130
Dibromomethane	ND		51.8	40.02		ug/Kg		77	70 - 130
Dichlorodifluoromethane	ND		51.8	41.21		ug/Kg		80	70 - 130
Ethylbenzene	ND		51.8	46.31		ug/Kg		89	57 - 129
Isopropylbenzene	ND		51.8	48.27		ug/Kg		93	70 - 130
Methylene Chloride	ND		51.8	41.82		ug/Kg		81	70 - 130
Methyl-t-Butyl Ether (MTBE)	ND		51.8	38.27		ug/Kg		74	57 - 123
Naphthalene	ND	F1	51.8	33.61	F1	ug/Kg		65	70 - 130
n-Butylbenzene	ND		51.8	46.77		ug/Kg		90	77 - 123
N-Propylbenzene	ND		51.8	46.82		ug/Kg		90	70 - 130
o-Xylene	ND		51.8	47.43		ug/Kg		92	70 - 130
m,p-Xylene	ND		104	92.43		ug/Kg		89	70 - 130
p-Isopropyltoluene	ND		51.8	47.74		ug/Kg		92	70 - 130
sec-Butylbenzene	ND		51.8	47.69		ug/Kg		92	70 - 130
Styrene	ND		51.8	44.60		ug/Kg		86	70 - 130

Eurofins Calscience LLC

QC Sample Results

Client: Geosyntec Consultants, Inc.
 Project/Site: Edison Park Waste Delineation / HL1685B

Job ID: 570-53807-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 570-53807-1 MS
Matrix: Solid
Analysis Batch: 136236

Client Sample ID: EP-IDW-01
Prep Type: Total/NA
Prep Batch: 136182

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec.	
	Result	Qualifier	Added	Result	Qualifier				Limits	RPD
trans-1,2-Dichloroethene	ND		51.8	45.14		ug/Kg		87	70 - 130	
trans-1,3-Dichloropropene	ND		51.8	39.56		ug/Kg		76	70 - 130	
tert-Butylbenzene	ND		51.8	47.89		ug/Kg		93	70 - 130	
Tetrachloroethene	ND		51.8	45.57		ug/Kg		88	70 - 130	
Toluene	ND		51.8	44.42		ug/Kg		86	63 - 123	
Trichloroethene	ND		51.8	44.43		ug/Kg		86	44 - 158	
Trichlorofluoromethane	ND		51.8	44.07		ug/Kg		85	70 - 130	
Vinyl acetate	ND		51.8	41.32		ug/Kg		80	70 - 130	
Vinyl chloride	ND		51.8	38.17		ug/Kg		74	49 - 139	
MS MS										
Surrogate	%Recovery	Qualifier	Limits							
1,2-Dichloroethane-d4 (Surr)	107		71 - 155							
4-Bromofluorobenzene (Surr)	101		80 - 120							
Dibromofluoromethane (Surr)	103		79 - 133							
Toluene-d8 (Surr)	102		80 - 120							

Lab Sample ID: 570-53807-1 MSD
Matrix: Solid
Analysis Batch: 136236

Client Sample ID: EP-IDW-01
Prep Type: Total/NA
Prep Batch: 136182

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec.		RPD	
	Result	Qualifier	Added	Result	Qualifier				Limits	RPD	Limit	
1,1,1,2-Tetrachloroethane	ND		50.5	44.60		ug/Kg		88	70 - 130	1	20	
1,1,1-Trichloroethane	ND		50.5	49.24		ug/Kg		97	70 - 130	4	20	
1,1,2,2-Tetrachloroethane	ND		50.5	42.78		ug/Kg		85	70 - 130	7	20	
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		50.5	41.15		ug/Kg		81	70 - 130	2	20	
1,1,2-Trichloroethane	ND		50.5	44.37		ug/Kg		88	70 - 130	4	20	
1,1-Dichloroethane	ND		50.5	47.83		ug/Kg		95	70 - 130	6	20	
1,1-Dichloroethene	ND		50.5	45.11		ug/Kg		89	47 - 143	0	25	
1,1-Dichloropropene	ND		50.5	50.26		ug/Kg		100	70 - 130	5	20	
1,2,3-Trichlorobenzene	ND	F1	50.5	33.56	F1	ug/Kg		66	70 - 130	12	20	
1,2,3-Trichloropropane	ND		50.5	40.58		ug/Kg		80	70 - 130	5	20	
1,2,4-Trichlorobenzene	ND	F1	50.5	34.65	F1	ug/Kg		69	70 - 130	9	20	
1,2,4-Trimethylbenzene	ND		50.5	46.70		ug/Kg		92	70 - 130	1	20	
1,2-Dibromo-3-Chloropropane	ND		50.5	37.66		ug/Kg		75	70 - 130	6	20	
1,2-Dibromoethane	ND		50.5	42.65		ug/Kg		84	64 - 124	6	20	
1,2-Dichlorobenzene	ND		50.5	39.41		ug/Kg		78	35 - 131	7	25	
1,2-Dichloroethane	ND		50.5	43.61		ug/Kg		86	70 - 130	9	20	
1,2-Dichloropropane	ND		50.5	46.74		ug/Kg		93	79 - 115	8	25	
1,3,5-Trimethylbenzene	ND		50.5	47.29		ug/Kg		94	70 - 130	1	20	
1,3-Dichlorobenzene	ND		50.5	41.05		ug/Kg		81	70 - 130	4	20	
1,3-Dichloropropane	ND		50.5	43.58		ug/Kg		86	70 - 130	7	20	
1,4-Dichlorobenzene	ND		50.5	38.95		ug/Kg		77	70 - 130	5	20	
2,2-Dichloropropane	ND		50.5	52.83		ug/Kg		105	70 - 130	5	20	
2-Butanone	ND		50.5	57.22		ug/Kg		113	70 - 130	14	20	
2-Chlorotoluene	ND		50.5	44.77		ug/Kg		89	70 - 130	0	20	
2-Hexanone	ND		50.5	46.36		ug/Kg		92	70 - 130	1	20	
4-Chlorotoluene	ND		50.5	44.11		ug/Kg		87	70 - 130	1	20	
4-Methyl-2-pentanone	ND		50.5	44.03		ug/Kg		87	70 - 130	4	20	

Eurofins Calscience LLC

QC Sample Results

Client: Geosyntec Consultants, Inc.
 Project/Site: Edison Park Waste Delineation / HL1685B

Job ID: 570-53807-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 570-53807-1 MSD
Matrix: Solid
Analysis Batch: 136236

Client Sample ID: EP-IDW-01
Prep Type: Total/NA
Prep Batch: 136182

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec.	RPD	Limit
	Result	Qualifier	Added	Result	Qualifier				Limits		
Acetone	27		50.5	82.53		ug/Kg		109	70 - 130	15	20
Benzene	ND		50.5	45.67		ug/Kg		90	61 - 127	8	20
Bromobenzene	ND		50.5	41.39		ug/Kg		82	70 - 130	0	20
Bromochloromethane	ND		50.5	43.86		ug/Kg		87	70 - 130	7	20
Bromodichloromethane	ND		50.5	46.85		ug/Kg		93	70 - 130	7	20
Bromoform	ND		50.5	40.70		ug/Kg		81	70 - 130	4	20
Bromomethane	ND		50.5	49.70		ug/Kg		98	70 - 130	5	20
cis-1,2-Dichloroethene	ND		50.5	48.38		ug/Kg		96	70 - 130	7	20
cis-1,3-Dichloropropene	ND		50.5	45.23		ug/Kg		90	70 - 130	7	20
Carbon disulfide	ND		50.5	45.92		ug/Kg		90	70 - 130	5	20
Carbon tetrachloride	ND		50.5	49.41		ug/Kg		98	51 - 135	4	29
Chlorobenzene	ND		50.5	43.65		ug/Kg		86	57 - 123	3	20
Chloroethane	ND		50.5	41.14		ug/Kg		81	70 - 130	1	20
Chloroform	ND		50.5	49.02		ug/Kg		97	70 - 130	6	20
Chloromethane	ND	F1	50.5	36.19		ug/Kg		72	70 - 130	6	20
Dibromochloromethane	ND		50.5	45.05		ug/Kg		89	70 - 130	3	20
Dibromomethane	ND		50.5	43.33		ug/Kg		86	70 - 130	8	20
Dichlorodifluoromethane	ND		50.5	40.57		ug/Kg		80	70 - 130	2	20
Ethylbenzene	ND		50.5	47.90		ug/Kg		95	57 - 129	3	22
Isopropylbenzene	ND		50.5	47.85		ug/Kg		95	70 - 130	1	20
Methylene Chloride	ND		50.5	45.35		ug/Kg		90	70 - 130	8	20
Methyl-t-Butyl Ether (MTBE)	ND		50.5	43.29		ug/Kg		86	57 - 123	12	21
Naphthalene	ND	F1	50.5	30.72	F1	ug/Kg		61	70 - 130	9	20
n-Butylbenzene	ND		50.5	46.95		ug/Kg		93	77 - 123	0	21
N-Propylbenzene	ND		50.5	47.76		ug/Kg		95	70 - 130	2	20
o-Xylene	ND		50.5	48.62		ug/Kg		96	70 - 130	2	20
m,p-Xylene	ND		101	95.46		ug/Kg		95	70 - 130	3	20
p-Isopropyltoluene	ND		50.5	47.86		ug/Kg		95	70 - 130	0	20
sec-Butylbenzene	ND		50.5	48.47		ug/Kg		96	70 - 130	2	20
Styrene	ND		50.5	44.81		ug/Kg		89	70 - 130	0	20
trans-1,2-Dichloroethene	ND		50.5	47.17		ug/Kg		93	70 - 130	4	20
trans-1,3-Dichloropropene	ND		50.5	41.20		ug/Kg		82	70 - 130	4	20
tert-Butylbenzene	ND		50.5	48.62		ug/Kg		96	70 - 130	1	20
Tetrachloroethene	ND		50.5	47.32		ug/Kg		94	70 - 130	4	20
Toluene	ND		50.5	47.37		ug/Kg		94	63 - 123	6	20
Trichloroethene	ND		50.5	47.01		ug/Kg		93	44 - 158	6	20
Trichlorofluoromethane	ND		50.5	43.36		ug/Kg		86	70 - 130	2	20
Vinyl acetate	ND		50.5	42.76		ug/Kg		85	70 - 130	3	20
Vinyl chloride	ND		50.5	42.63		ug/Kg		84	49 - 139	11	47

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	105		71 - 155
4-Bromofluorobenzene (Surr)	101		80 - 120
Dibromofluoromethane (Surr)	103		79 - 133
Toluene-d8 (Surr)	103		80 - 120

QC Sample Results

Client: Geosyntec Consultants, Inc.
 Project/Site: Edison Park Waste Delineation / HL1685B

Job ID: 570-53807-1

Method: 8015B - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 570-136343/1-A
Matrix: Solid
Analysis Batch: 136311

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 136343

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
C6 as C6	ND		5.0	mg/Kg		03/16/21 14:05	03/16/21 23:20	1
C7 as C7	ND		5.0	mg/Kg		03/16/21 14:05	03/16/21 23:20	1
C8 as C8	ND		5.0	mg/Kg		03/16/21 14:05	03/16/21 23:20	1
C9-C10	ND		5.0	mg/Kg		03/16/21 14:05	03/16/21 23:20	1
C11-C12	ND		5.0	mg/Kg		03/16/21 14:05	03/16/21 23:20	1
C13-C14	ND		5.0	mg/Kg		03/16/21 14:05	03/16/21 23:20	1
C15-C16	ND		5.0	mg/Kg		03/16/21 14:05	03/16/21 23:20	1
C17-C18	ND		5.0	mg/Kg		03/16/21 14:05	03/16/21 23:20	1
C19-C20	ND		5.0	mg/Kg		03/16/21 14:05	03/16/21 23:20	1
C21-C22	ND		5.0	mg/Kg		03/16/21 14:05	03/16/21 23:20	1
C23-C24	ND		5.0	mg/Kg		03/16/21 14:05	03/16/21 23:20	1
C25-C28	ND		5.0	mg/Kg		03/16/21 14:05	03/16/21 23:20	1
C29-C32	ND		5.0	mg/Kg		03/16/21 14:05	03/16/21 23:20	1
C33-C36	ND		5.0	mg/Kg		03/16/21 14:05	03/16/21 23:20	1
C37-C40	ND		5.0	mg/Kg		03/16/21 14:05	03/16/21 23:20	1
C41-C44	ND		5.0	mg/Kg		03/16/21 14:05	03/16/21 23:20	1
C6-C44	ND		5.0	mg/Kg		03/16/21 14:05	03/16/21 23:20	1
Diesel Range Organics [C10-C28]	ND		5.0	mg/Kg		03/16/21 14:05	03/16/21 23:20	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
<i>n</i> -Octacosane (Surr)	86		60 - 138	03/16/21 14:05	03/16/21 23:20	1

Lab Sample ID: LCS 570-136343/2-A
Matrix: Solid
Analysis Batch: 136311

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 136343

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Diesel Range Organics [C10-C28]	400	432.0		mg/Kg		108	80 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
<i>n</i> -Octacosane (Surr)	85		60 - 138

Lab Sample ID: LCSD 570-136343/3-A
Matrix: Solid
Analysis Batch: 136311

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 136343

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Diesel Range Organics [C10-C28]	400	446.0		mg/Kg		112	80 - 130	3	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
<i>n</i> -Octacosane (Surr)	87		60 - 138

QC Sample Results

Client: Geosyntec Consultants, Inc.
Project/Site: Edison Park Waste Delineation / HL1685B

Job ID: 570-53807-1

Method: 8015B - Diesel Range Organics (DRO) (GC) (Continued)

Lab Sample ID: 570-53646-A-4-A MS
Matrix: Solid
Analysis Batch: 136311

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 136343

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits	
Diesel Range Organics [C10-C28]	6.2		402	438.9		mg/Kg		108	43 - 165	
Surrogate	%Recovery	MS Qualifier	MS Limits							
<i>n-Octacosane (Surr)</i>	86		60 - 138							

Lab Sample ID: 570-53646-A-4-B MSD
Matrix: Solid
Analysis Batch: 136311

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 136343

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Diesel Range Organics [C10-C28]	6.2		393	445.4		mg/Kg		112	43 - 165	1	35
Surrogate	%Recovery	MSD Qualifier	MSD Limits								
<i>n-Octacosane (Surr)</i>	94		60 - 138								

Method: 6010B - Metals (ICP)

Lab Sample ID: MB 570-136938/1-A
Matrix: Solid
Analysis Batch: 137251

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 136938

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		2.96	mg/Kg		03/18/21 15:00	03/19/21 10:14	1
Arsenic	ND		2.46	mg/Kg		03/18/21 15:00	03/19/21 10:14	1
Barium	ND		0.493	mg/Kg		03/18/21 15:00	03/19/21 10:14	1
Beryllium	ND		0.246	mg/Kg		03/18/21 15:00	03/19/21 10:14	1
Cadmium	ND		0.493	mg/Kg		03/18/21 15:00	03/19/21 10:14	1
Chromium	ND		0.985	mg/Kg		03/18/21 15:00	03/19/21 10:14	1
Cobalt	ND		0.985	mg/Kg		03/18/21 15:00	03/19/21 10:14	1
Copper	ND		0.985	mg/Kg		03/18/21 15:00	03/19/21 10:14	1
Lead	ND		4.93	mg/Kg		03/18/21 15:00	03/19/21 10:14	1
Molybdenum	ND		0.493	mg/Kg		03/18/21 15:00	03/19/21 10:14	1
Nickel	ND		0.493	mg/Kg		03/18/21 15:00	03/19/21 10:14	1
Selenium	ND		4.93	mg/Kg		03/18/21 15:00	03/19/21 10:14	1
Silver	ND		0.985	mg/Kg		03/18/21 15:00	03/19/21 10:14	1
Thallium	ND		4.93	mg/Kg		03/18/21 15:00	03/19/21 10:14	1
Vanadium	ND		0.985	mg/Kg		03/18/21 15:00	03/19/21 10:14	1
Zinc	ND		9.85	mg/Kg		03/18/21 15:00	03/19/21 10:14	1

Lab Sample ID: LCS 570-136938/2-A
Matrix: Solid
Analysis Batch: 137251

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 136938

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Antimony	25.3	26.68		mg/Kg		106	80 - 120
Arsenic	25.3	24.33		mg/Kg		96	80 - 120
Barium	25.3	26.89		mg/Kg		106	80 - 120

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QC Sample Results

Client: Geosyntec Consultants, Inc.
 Project/Site: Edison Park Waste Delineation / HL1685B

Job ID: 570-53807-1

Method: 6010B - Metals (ICP) (Continued)

Lab Sample ID: LCS 570-136938/2-A
Matrix: Solid
Analysis Batch: 137251

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 136938

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Beryllium	25.3	25.01		mg/Kg		99	80 - 120
Cadmium	25.3	24.99		mg/Kg		99	80 - 120
Chromium	25.3	25.27		mg/Kg		100	80 - 120
Cobalt	25.3	25.20		mg/Kg		100	80 - 120
Copper	25.3	25.76		mg/Kg		102	80 - 120
Lead	25.3	25.62		mg/Kg		101	80 - 120
Molybdenum	25.3	25.84		mg/Kg		102	80 - 120
Nickel	25.3	26.52		mg/Kg		105	80 - 120
Selenium	25.3	24.29		mg/Kg		96	80 - 120
Silver	12.6	12.62		mg/Kg		100	80 - 120
Thallium	25.3	26.68		mg/Kg		106	80 - 120
Vanadium	25.3	24.49		mg/Kg		97	80 - 120
Zinc	25.3	25.63		mg/Kg		101	80 - 120

Lab Sample ID: LCSD 570-136938/3-A
Matrix: Solid
Analysis Batch: 137251

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 136938

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Antimony	24.9	27.05		mg/Kg		109	80 - 120	1	20
Arsenic	24.9	24.54		mg/Kg		99	80 - 120	1	20
Barium	24.9	26.43		mg/Kg		106	80 - 120	2	20
Beryllium	24.9	24.80		mg/Kg		100	80 - 120	1	20
Cadmium	24.9	24.73		mg/Kg		99	80 - 120	1	20
Chromium	24.9	24.93		mg/Kg		100	80 - 120	1	20
Cobalt	24.9	24.92		mg/Kg		100	80 - 120	1	20
Copper	24.9	25.49		mg/Kg		102	80 - 120	1	20
Lead	24.9	25.68		mg/Kg		103	80 - 120	0	20
Molybdenum	24.9	25.78		mg/Kg		104	80 - 120	0	20
Nickel	24.9	26.12		mg/Kg		105	80 - 120	2	20
Selenium	24.9	23.63		mg/Kg		95	80 - 120	3	20
Silver	12.4	12.41		mg/Kg		100	80 - 120	2	20
Thallium	24.9	25.24		mg/Kg		101	80 - 120	6	20
Vanadium	24.9	24.12		mg/Kg		97	80 - 120	2	20
Zinc	24.9	25.12		mg/Kg		101	80 - 120	2	20

Lab Sample ID: 570-54150-A-5-B MS
Matrix: Solid
Analysis Batch: 137251

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 136938

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	ND	F1	26.0	11.68	F1	mg/Kg		45	50 - 115
Arsenic	3.94		26.0	29.43		mg/Kg		98	75 - 125
Barium	34.4	F1	26.0	76.81	F1	mg/Kg		163	75 - 125
Beryllium	0.258		26.0	27.17		mg/Kg		103	75 - 125
Cadmium	ND		26.0	25.59		mg/Kg		98	75 - 125
Chromium	2.51		26.0	28.80		mg/Kg		101	75 - 125
Cobalt	1.89		26.0	28.19		mg/Kg		101	75 - 125
Copper	3.41		26.0	30.07		mg/Kg		102	75 - 125

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QC Sample Results

Client: Geosyntec Consultants, Inc.
 Project/Site: Edison Park Waste Delineation / HL1685B

Job ID: 570-53807-1

Method: 6010B - Metals (ICP) (Continued)

Lab Sample ID: 570-54150-A-5-B MS
Matrix: Solid
Analysis Batch: 137251

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 136938

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Lead	ND		26.0	30.34		mg/Kg		104	75 - 125
Molybdenum	ND		26.0	26.22		mg/Kg		101	75 - 125
Nickel	2.68		26.0	30.48		mg/Kg		107	75 - 125
Selenium	ND		26.0	21.29		mg/Kg		82	75 - 125
Silver	ND		13.0	13.16		mg/Kg		101	75 - 125
Thallium	ND		26.0	24.83		mg/Kg		95	75 - 125
Vanadium	7.87		26.0	34.04		mg/Kg		100	75 - 125
Zinc	ND		26.0	34.82		mg/Kg		99	75 - 125

Lab Sample ID: 570-54150-A-5-C MSD
Matrix: Solid
Analysis Batch: 137251

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 136938

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Antimony	ND	F1	25.9	10.68	F1	mg/Kg		41	50 - 115	9	20
Arsenic	3.94		25.9	30.54		mg/Kg		103	75 - 125	4	20
Barium	34.4	F1	25.9	87.53	F1	mg/Kg		205	75 - 125	13	20
Beryllium	0.258		25.9	27.00		mg/Kg		103	75 - 125	1	20
Cadmium	ND		25.9	25.16		mg/Kg		97	75 - 125	2	20
Chromium	2.51		25.9	28.59		mg/Kg		101	75 - 125	1	20
Cobalt	1.89		25.9	26.79		mg/Kg		96	75 - 125	5	20
Copper	3.41		25.9	29.69		mg/Kg		101	75 - 125	1	20
Lead	ND		25.9	29.24		mg/Kg		100	75 - 125	4	20
Molybdenum	ND		25.9	25.35		mg/Kg		98	75 - 125	3	20
Nickel	2.68		25.9	29.00		mg/Kg		102	75 - 125	5	20
Selenium	ND		25.9	21.94		mg/Kg		85	75 - 125	3	20
Silver	ND		13.0	13.07		mg/Kg		101	75 - 125	1	20
Thallium	ND		25.9	24.64		mg/Kg		95	75 - 125	1	20
Vanadium	7.87		25.9	33.55		mg/Kg		99	75 - 125	1	20
Zinc	ND		25.9	35.43		mg/Kg		102	75 - 125	2	20

Method: 7471A - Mercury (CVAA)

Lab Sample ID: MB 570-136940/1-A
Matrix: Solid
Analysis Batch: 137221

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 136940

Analyte	MB Result	MB Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0877	mg/Kg		03/18/21 15:00	03/19/21 11:30	1

Lab Sample ID: LCS 570-136940/2-A
Matrix: Solid
Analysis Batch: 137221

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 136940

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.820	0.8204		mg/Kg		100	85 - 121

QC Sample Results

Client: Geosyntec Consultants, Inc.
 Project/Site: Edison Park Waste Delineation / HL1685B

Job ID: 570-53807-1

Method: 7471A - Mercury (CVAA) (Continued)

Lab Sample ID: LCSD 570-136940/3-A
Matrix: Solid
Analysis Batch: 137221

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 136940

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	RPD Limit
Mercury	0.806	0.8081		mg/Kg		100	85 - 121	2	10

Lab Sample ID: 570-54150-A-5-E MS
Matrix: Solid
Analysis Batch: 137221

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 136940

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits	RPD	RPD Limit
Mercury	ND		0.806	0.7923		mg/Kg		98	71 - 137		

Lab Sample ID: 570-54150-A-5-F MSD
Matrix: Solid
Analysis Batch: 137221

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 136940

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	RPD Limit
Mercury	ND		0.833	0.8099		mg/Kg		97	71 - 137	2	14

QC Association Summary

Client: Geosyntec Consultants, Inc.
 Project/Site: Edison Park Waste Delineation / HL1685B

Job ID: 570-53807-1

GC/MS VOA

Prep Batch: 136182

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-53807-1	EP-IDW-01	Total/NA	Solid	5030C	
MB 570-136182/3-A	Method Blank	Total/NA	Solid	5030C	
LCS 570-136182/1-A	Lab Control Sample	Total/NA	Solid	5030C	
LCSD 570-136182/2-A	Lab Control Sample Dup	Total/NA	Solid	5030C	
570-53807-1 MS	EP-IDW-01	Total/NA	Solid	5030C	
570-53807-1 MSD	EP-IDW-01	Total/NA	Solid	5030C	

Analysis Batch: 136236

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-53807-1	EP-IDW-01	Total/NA	Solid	8260B	136182
MB 570-136182/3-A	Method Blank	Total/NA	Solid	8260B	136182
LCS 570-136182/1-A	Lab Control Sample	Total/NA	Solid	8260B	136182
LCSD 570-136182/2-A	Lab Control Sample Dup	Total/NA	Solid	8260B	136182
570-53807-1 MS	EP-IDW-01	Total/NA	Solid	8260B	136182
570-53807-1 MSD	EP-IDW-01	Total/NA	Solid	8260B	136182

GC Semi VOA

Analysis Batch: 136311

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-53807-1	EP-IDW-01	Total/NA	Solid	8015B	136343
MB 570-136343/1-A	Method Blank	Total/NA	Solid	8015B	136343
LCS 570-136343/2-A	Lab Control Sample	Total/NA	Solid	8015B	136343
LCSD 570-136343/3-A	Lab Control Sample Dup	Total/NA	Solid	8015B	136343
570-53646-A-4-A MS	Matrix Spike	Total/NA	Solid	8015B	136343
570-53646-A-4-B MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B	136343

Prep Batch: 136343

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-53807-1	EP-IDW-01	Total/NA	Solid	3550C	
MB 570-136343/1-A	Method Blank	Total/NA	Solid	3550C	
LCS 570-136343/2-A	Lab Control Sample	Total/NA	Solid	3550C	
LCSD 570-136343/3-A	Lab Control Sample Dup	Total/NA	Solid	3550C	
570-53646-A-4-A MS	Matrix Spike	Total/NA	Solid	3550C	
570-53646-A-4-B MSD	Matrix Spike Duplicate	Total/NA	Solid	3550C	

Metals

Prep Batch: 136938

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-53807-1	EP-IDW-01	Total/NA	Solid	3050B	
MB 570-136938/1-A	Method Blank	Total/NA	Solid	3050B	
LCS 570-136938/2-A	Lab Control Sample	Total/NA	Solid	3050B	
LCSD 570-136938/3-A	Lab Control Sample Dup	Total/NA	Solid	3050B	
570-54150-A-5-B MS	Matrix Spike	Total/NA	Solid	3050B	
570-54150-A-5-C MSD	Matrix Spike Duplicate	Total/NA	Solid	3050B	

Prep Batch: 136940

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-53807-1	EP-IDW-01	Total/NA	Solid	7471A	
MB 570-136940/1-A	Method Blank	Total/NA	Solid	7471A	
LCS 570-136940/2-A	Lab Control Sample	Total/NA	Solid	7471A	

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QC Association Summary

Client: Geosyntec Consultants, Inc.
 Project/Site: Edison Park Waste Delineation / HL1685B

Job ID: 570-53807-1

Metals (Continued)

Prep Batch: 136940 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 570-136940/3-A	Lab Control Sample Dup	Total/NA	Solid	7471A	
570-54150-A-5-E MS	Matrix Spike	Total/NA	Solid	7471A	
570-54150-A-5-F MSD	Matrix Spike Duplicate	Total/NA	Solid	7471A	

Analysis Batch: 137221

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-53807-1	EP-IDW-01	Total/NA	Solid	7471A	136940
MB 570-136940/1-A	Method Blank	Total/NA	Solid	7471A	136940
LCS 570-136940/2-A	Lab Control Sample	Total/NA	Solid	7471A	136940
LCSD 570-136940/3-A	Lab Control Sample Dup	Total/NA	Solid	7471A	136940
570-54150-A-5-E MS	Matrix Spike	Total/NA	Solid	7471A	136940
570-54150-A-5-F MSD	Matrix Spike Duplicate	Total/NA	Solid	7471A	136940

Analysis Batch: 137251

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-53807-1	EP-IDW-01	Total/NA	Solid	6010B	136938
MB 570-136938/1-A	Method Blank	Total/NA	Solid	6010B	136938
LCS 570-136938/2-A	Lab Control Sample	Total/NA	Solid	6010B	136938
LCSD 570-136938/3-A	Lab Control Sample Dup	Total/NA	Solid	6010B	136938
570-54150-A-5-B MS	Matrix Spike	Total/NA	Solid	6010B	136938
570-54150-A-5-C MSD	Matrix Spike Duplicate	Total/NA	Solid	6010B	136938

Lab Chronicle

Client: Geosyntec Consultants, Inc.
 Project/Site: Edison Park Waste Delineation / HL1685B

Job ID: 570-53807-1

Client Sample ID: EP-IDW-01

Lab Sample ID: 570-53807-1

Date Collected: 03/12/21 18:20

Matrix: Solid

Date Received: 03/15/21 10:15

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030C			5.05 g	5 mL	136182	03/16/21 11:27	BE5H	ECL 2
Total/NA	Analysis	8260B		1	5 mL	5 mL	136236	03/16/21 11:57	BE5H	ECL 2
Instrument ID: GCMSGGG										
Total/NA	Prep	3550C			9.97 g	10 mL	136343	03/16/21 14:07	EM5C	ECL 1
Total/NA	Analysis	8015B		1			136311	03/17/21 03:11	N1A	ECL 1
Instrument ID: GC48										
Total/NA	Prep	3050B			2.02 g	100 mL	136938	03/18/21 15:00	SP7J	ECL 1
Total/NA	Analysis	6010B		1			137251	03/19/21 11:01	ULPF	ECL 1
Instrument ID: ICP8										
Total/NA	Prep	7471A			0.59 g	100 mL	136940	03/18/21 15:00	SP7J	ECL 1
Total/NA	Analysis	7471A		1			137221	03/19/21 12:06	VYQ5	ECL 1
Instrument ID: HG7										

Laboratory References:

ECL 1 = Eurofins Calscience LLC Lincoln, 7440 Lincoln Way, Garden Grove, CA 92841, TEL (714)895-5494
 ECL 2 = Eurofins Calscience LLC Lampson, 7445 Lampson Ave, Garden Grove, CA 92841, TEL (714)895-5494

Accreditation/Certification Summary

Client: Geosyntec Consultants, Inc.
Project/Site: Edison Park Waste Delineation / HL1685B

Job ID: 570-53807-1

Laboratory: Eurofins Calscience LLC

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
California	Los Angeles County Sanitation Districts	10109	09-30-21
California	SCAQMD LAP	17LA0919	11-30-21
California	State	2944	09-30-21
Guam	State	20-003R	10-31-20 *
Nevada	State	CA00111	07-31-21
Oregon	NELAP	CA300001	01-30-22
USDA	US Federal Programs	P330-20-00034	02-10-23
Washington	State	C916-18	10-11-21

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Geosyntec Consultants, Inc.
Project/Site: Edison Park Waste Delineation / HL1685B

Job ID: 570-53807-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	ECL 2
8015B	Diesel Range Organics (DRO) (GC)	SW846	ECL 1
6010B	Metals (ICP)	SW846	ECL 1
7471A	Mercury (CVAA)	SW846	ECL 1
3050B	Preparation, Metals	SW846	ECL 1
3550C	Ultrasonic Extraction	SW846	ECL 1
5030C	Purge and Trap	SW846	ECL 2
7471A	Preparation, Mercury	SW846	ECL 1

Protocol References:

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

Laboratory References:

ECL 1 = Eurofins Calscience LLC Lincoln, 7440 Lincoln Way, Garden Grove, CA 92841, TEL (714)895-5494

ECL 2 = Eurofins Calscience LLC Lampson, 7445 Lampson Ave, Garden Grove, CA 92841, TEL (714)895-5494

Sample Summary

Client: Geosyntec Consultants, Inc.
Project/Site: Edison Park Waste Delineation / HL1685B

Job ID: 570-53807-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
570-53807-1	EP-IDW-01	Solid	03/12/21 18:20	03/15/21 10:15	

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Calscience

CHAIN OF CUSTODY RECORD

DATE: 03/15/21 53807

570-53807 Chain of Custody 1 OF 1

7440 Lincoln Way, Garden Grove, CA 92841-1427 • (714) 895-5494
For courier service / sample drop off information, contact us26_sales@eurofins.com or call us

LABORATORY CLIENT

Geosyntec Consultants, Inc.

ADDRESS: 2100 Main St., Suite 150

CITY: Huntington Beach

STATE: CA ZIP: 92648

TEL: 714-465-1250

E-MAIL: kviswanathan@geosyntec.com

CLIENT PROJECT NAME / NUMBER

Edison Park Waste Delineation / HL1685B

PO NO

100024134

PROJECT CONTACT:

Karthik Viswanathan

SAMPLER(S) (PRINT)

K. Viswanathan

TURNAROUND TIME (Rush surcharges may apply to any TAT not "STANDARD"):

SAME DAY 24 HR 48 HR 72 HR 5 DAYS STANDARD

COELT EDF

GLOBAL ID

LOG CODE

SPECIAL INSTRUCTIONS:

REQUESTED ANALYSES

Please check box or fill in blank as needed

ANALYSIS	UNPRESERVED	PRESERVED	FIELD FILTERED
8260B Routine Volatiles List	X		
8015B C6-C14 w/Carbon Chains	X		
6010B Title 22 Metals	X		
7471A Mercury	X		

Relinquished by (Signature)

Relinquished by (Signature)

Relinquished by (Signature)

Received by (Signature/Affiliation)

Date: 3/15/21

Time: 10:15

Date

Time

Date

Time

06/02/14 Revision 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

Login Sample Receipt Checklist

Client: Geosyntec Consultants, Inc.

Job Number: 570-53807-1

Login Number: 53807
List Number: 1
Creator: Soriano, Precy

List Source: Eurofins Calscience

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	





ALPHA SCIENTIFIC CORPORATION

Environmental Laboratories

10-08-2020

Mr. John Farmer
American Integrated Services
1502 E. Opp Street
Wilmington, CA 90744

Project: HB-40219
Project Site: 21377 Magnolia St., Huntington Beach, CA 92646
Sample Date: 10-02-2020
Lab Job No.: A010003

Dear Mr. Farmer:

Enclosed please find the analytical report for the sample(s) received by Alpha Scientific Corporation on 10-02-2020 and analyzed by the following EPA methods:

EPA 8015M (Total Petroleum Hydrocarbons)
EPA 8260B (VOCs & Oxygenates by GC/MS)
EPA 6010B/7471A for CAM Metals

All analyses have met the QA/QC criteria of this laboratory.

The sample(s) arrived in good conditions (i.e., chilled, intact) and with a chain of custody record attached.

Alpha Scientific Corporation is a CA ELAP certified laboratory (Certificate Number 3007). Thank you for giving us the opportunity to serve you. Please feel free to call me at (562) 809-8880 if our laboratory can be of further service to you.

Sincerely,

Roger Wang, Ph.D.
Laboratory Director

Enclosures

This cover letter is an integral part of this analytical report.



ALPHA SCIENTIFIC CORPORATION

Environmental Laboratories

Client: American Integrated Services	Lab Job No.: A010003
Project: HB-40219	
Project Site: 21377 Magnolia St., Huntington Beach, CA 92646	Date Sampled: 10-02-2020
Matrix: Soil	Date Received: 10-02-2020
Batch No. for TPH-g: AMJ02-GS1	Date Analyzed: 10-02-2020
Batch No. for TPH-d&o:BJ05-DS1	Date Analyzed: 10-05-2020
	Date Reported: 10-08-2020

EPA 8015M (Total Petroleum Hydrocarbons)
Reporting Unit: mg/kg (ppm)

Sample ID	Lab ID	DF for TPH-G	C4-C12 TPH-G*	Surrog Rec.% TPH-G	DF for TPH-D/O	C13-C23 TPH-D	C24-C40 TPH-O	Surrog Rec.% TPH-D/O
MDL			0.2			2	20	
PQL			0.5			5	40	
Method Blank		1	ND	91	1	ND	ND	98
DRM-1, DRM-2, DRM-3	A010003-1,2,3	1	ND	93	1	11.5	67.5	100

* Gasoline Range TPH result is obtained from purge and trap analysis using LUFT-GC/MS method;
 MDL: Method Detection Limit;
 PQL: Practical Quantitation Limit;
 ND: Not Detected (below MDL);
 J: Result is between MDL and PQL.;
 Note: Surrogate recovery acceptance limits are 70-130%.



ALPHA SCIENTIFIC CORPORATION

Environmental Laboratories

Client: American Integrated Services
Project: HB-40219

Lab Job No.: A010003
Matrix: Soil

Date Reported: 10-08-2020
Date Sampled: 10-02-2020

EPA 8260B (VOCs by GC/MS, Page 1 of 2)

Reporting Unit: $\mu\text{g}/\text{kg}(\text{ppb})$

DATE ANALYZED			10-02	10-02-20			
DILUTION FACTOR			1	1			
LAB SAMPLE I.D.			MB	A010003-1,2,3			
CLIENT SAMPLE I.D.				DRM-1, DRM-2, DRM-3			
COMPOUND	MDL	PQL					
Dichlorodifluoromethane	2	5	ND	ND			
Chloromethane	2	5	ND	ND			
Vinyl Chloride	2	5	ND	ND			
Bromomethane	2	5	ND	ND			
Chloroethane	2	5	ND	ND			
Trichlorofluoromethane	2	5	ND	ND			
1,1-Dichloroethene	2	5	ND	ND			
Iodomethane	2	5	ND	ND			
Methylene Chloride	5	10	ND	ND			
trans-1,2-Dichloroethene	2	5	ND	ND			
1,1-Dichloroethane	2	5	ND	ND			
2,2-Dichloropropane	2	5	ND	ND			
cis-1,2-Dichloroethene	2	5	ND	ND			
Bromochloromethane	2	5	ND	ND			
Chloroform	2	5	ND	ND			
1,2-Dichloroethane (EDC)	2	5	ND	ND			
1,1,1-Trichloroethane	2	5	ND	ND			
Carbon tetrachloride	2	5	ND	ND			
1,1-Dichloropropene	2	5	ND	ND			
Benzene	1	2	ND	ND			
Trichloroethene	2	5	ND	ND			
1,2-Dichloropropane	2	5	ND	ND			
Bromodichloromethane	2	5	ND	ND			
Dibromomethane	2	5	ND	ND			
Trans-1,3-Dichloropropene	2	5	ND	ND			
cis-1,3-Dichloropropene	2	5	ND	ND			
1,1,2-Trichloroethane	2	5	ND	ND			
1,3-Dichloropropane	2	5	ND	ND			
Dibromochloromethane	2	5	ND	ND			
2-Chloroethylvinyl ether	2	10	ND	ND			
Bromoform	2	5	ND	ND			
Isopropylbenzene	2	5	ND	ND			
Bromobenzene	2	5	ND	ND			
Toluene	1	2	ND	ND			



ALPHA SCIENTIFIC CORPORATION

Environmental Laboratories

Client: American Integrated Services
Project: HB-40219

Lab Job No.: A010003
Matrix: Soil

Date Reported: 10-08-2020
Date Sampled: 10-02-2020

EPA 8260B (VOCs by GC/MS, Page 2 of 2) Reporting Unit: ppb

COMPOUND	MDL	PQL	MB	DRM-1, DRM-2, DRM-3			
Tetrachloroethene	2	5	ND	ND			
1,2-Dibromoethane(EDB)	2	5	ND	ND			
Chlorobenzene	2	5	ND	ND			
1,1,1,2-Tetrachloroethane	2	5	ND	ND			
Ethylbenzene	1	2	ND	ND			
Total Xylenes	2	4	ND	ND			
Styrene	2	5	ND	ND			
1,1,2,2-Tetrachloroethane	2	5	ND	ND			
1,2,3-Trichloropropane	2	5	ND	ND			
n-Propylbenzene	2	5	ND	ND			
2-Chlorotoluene	2	5	ND	ND			
4-Chlorotoluene	2	5	ND	ND			
1,3,5-Trimethylbenzene	2	5	ND	ND			
tert-Butylbenzene	2	5	ND	ND			
1,2,4-Trimethylbenzene	2	5	ND	ND			
Sec-Butylbenzene	2	5	ND	ND			
1,3-Dichlorobenzene	2	5	ND	ND			
p-Isopropyltoluene	2	5	ND	ND			
1,4-Dichlorobenzene	2	5	ND	ND			
1,2-Dichlorobenzene	2	5	ND	ND			
n-Butylbenzene	2	5	ND	ND			
1,2,4-Trichlorobenzene	2	5	ND	ND			
1,2-Dibromo-3-Chloropropane	2	5	ND	ND			
Hexachlorobutadiene	2	5	ND	ND			
Naphthalene	2	5	ND	ND			
1,2,3-Trichlorobenzene	2	5	ND	ND			
Acetone	75	100	ND	ND			
2-Butanone (MEK)	50	100	ND	ND			
Carbon Disulfide	25	50	ND	ND			
4-Methyl-2-pentanone	50	100	ND	ND			
2-Hexanone	50	100	ND	ND			
Vinyl Acetate	25	50	ND	ND			
Ethanol	500	1000	ND	ND			
MTBE	2	5	ND	ND			
ETBE	2	5	ND	ND			
DIPE	2	5	ND	ND			
TAME	2	5	ND	ND			
TBA	20	50	ND	ND			
SURROGATE	Accept Limit%	%RC	%RC				
Dibromofluoro-methane	79-126	98	98				
Toluene-d8	79-121	95	96				
Bromofluoro-benzene	71-131	94	96				

MB=Method Blank; MDL=Method Detection Limit; PQL=Practical Quantitation Limit; ND=Not Detected (below DF × MDL); J=Result is between DF × MDL and DF × PQL. m=Matrix interference.



ALPHA SCIENTIFIC CORPORATION

Environmental Laboratories

Client: American Integrated Services
 Project: HB-40219
 Project Site: 21377 Magnolia St., Huntington Beach, CA 92646
 Matrix: Soil
 Digestion Method: EPA 3050B
 Batch No.: 1005-MS1

Lab Job No.: A010003
 Date Sampled: 10-02-2020
 Date Received: 10-02-2020
 Date Digested: 10-05-2020
 Date Analyzed: 10-05-2020
 Date Reported: 10-08-2020

EPA 6010B/7471A for CAM Metals (TTLC)
 Reporting Units: mg/kg (ppm)

Element	EPA	Method Blank	A010003-1,2,3				MDL	PQL
	Method		DRM-1, DRM-2, DRM-3					
Antimony (Sb)	6010B	ND	2.0				1	2
Arsenic (As)	6010B	ND	7.6				0.5	1
Barium (Ba)	6010B	ND	120				1	2
Beryllium (Be)	6010B	ND	ND				1	2
Cadmium (Cd)	6010B	ND	ND				1	2
Chromium (Cr)	6010B	ND	24.4				1	2
Cobalt (Co)	6010B	ND	11.7				1	2
Copper (Cu)	6010B	ND	37.2				1	2
Lead (Pb)	6010B	ND	58.0				1	2
Molybdenum (Mo)	6010B	ND	1.7J				1	2
Nickel (Ni)	6010B	ND	ND				1	2
Selenium (Se)	6010B	ND	ND				0.5	1
Silver (Ag)	6010B	ND	ND				1	2
Thallium (Tl)	6010B	ND	ND				1	2
Vanadium (V)	6010B	ND	100				1	2
Zinc (Zn)	6010B	ND	125				1	2
Mercury (Hg)	7471A	ND	ND				0.1	0.2

MDL: Method Detection Limit;
 PQL: Practical Quantitation Limit;
 ND: Not Detected (less than MDL);
 J: Result is between MDL and PQL.



ALPHA SCIENTIFIC CORPORATION

Environmental Laboratories

10-08-2020

TPH-Gasoline Batch QA/QC Report

Client: American Integrated Services
Project: HB-40219
Matrix: Soil
Batch No: AMJ02-GS1

Lab Job No: A010003
Lab Sample I.D.: EA010004-1
Date Analyzed: 10-02-2020

I. MS/MSD Report Unit: ppb

Analyte	Sample Conc.	Spike Conc.	MS	MSD	MS %Rec.	MSD %Rec.	% RPD	%RPD Accept. Limit	%Rec Accept. Limit
TPH-g	ND	1,000	843	871	84.3	87.1	3.3	30	70-130

II. LCS Result Unit: ppb

Analyte	LCS Value	True Value	Rec.%	Accept. Limit
TPH-g	877	1,000	87.7	80-120

ND: Not Detected (at the specified limit).



ALPHA SCIENTIFIC CORPORATION

Environmental Laboratories

10-08-2020

EPA 8015M (TPH) Batch QA/QC Report

Client: American Integrated Services
Project: HB-40219
Matrix: Soil
Batch No: BJ05-DS1

Lab Job No: A010003
Lab Sample I.D.: EA010005-1
Date Analyzed: 10-05-2020

I. MS/MSD Report Unit: ppm

Analyte	Sample Conc.	Spike Conc.	MS	MSD	MS %Rec.	MSD %Rec.	% RPD	%RPD Accept. Limit	%Rec Accept. Limit
TPH-D	ND	200	160	199	80.0	99.5	21.7	30	70-130

II. LCS Result Unit: ppm

Analyte	LCS Value	True Value	Rec.%	Accept. Limit
TPH-D	191	200	95.5	80-120

ND: Not Detected (at the specified limit)



ALPHA SCIENTIFIC CORPORATION

Environmental Laboratories

10-08-2020

EPA 8260B Batch QA/QC Report

Client: American Integrated Services
 Project: HB-40219
 Matrix: Soil
 Batch No: 1002-VOAS1

Lab Job No: A010003
 Lab Sample I.D.: EA010004-2
 Date Analyzed: 10-03-2020

I. MS/MSD Report Unit: ppb

Analyte	Sample Conc.	Spike Conc.	MS	MSD	MS %Rec.	MSD %Rec.	% RPD	%RPD Accept. Limit	%Rec Accept. Limit
1,1-Dichloroethene	ND	20	18.1	16.8	90.5	84.0	7.4	30	70-130
Benzene	ND	20	19.8	19.2	99.0	96.0	3.1	30	70-130
Trichloro-ethene	ND	20	20.4	18.9	102.0	94.5	7.6	30	70-130
Toluene	ND	20	19.4	18.5	97.0	92.5	4.7	30	70-130
Chlorobenzene	ND	20	20.1	19.3	100.5	96.5	4.1	30	70-130

II. LCS Result Unit: ppb

Analyte	LCS Value	True Value	Rec.%	Accept. Limit
1,1-Dichloroethene	16.5	20	82.5	80-120
Benzene	19.1	20	95.5	80-120
Trichloro-ethene	19.0	20	95.0	80-120
Toluene	19.4	20	97.0	80-120
Chlorobenzene	18.5	20	92.5	80-120

ND: Not Detected (at the specified limit).



ALPHA SCIENTIFIC CORPORATION

Environmental Laboratories

10-08-2020

EPA 6010B/7471A for CAM Metals (TTLC) Batch QA/QC Report

Client: American Integrated Services
Project: HB-40219
Matrix: Soil
Batch No.: 1005-MS1

Lab Job No: A010003
Lab Sample I.D.: EA010004-1
Date Analyzed: 10-05-2020

I. MS/MSD Report Unit: ppm

Analyte	EPA Method	Sample Conc.	Spike Conc.	MS %Rec.	MSD %Rec.	% RPD	%RPD Accept. Limit	%Rec Accept. Limit
Antimony (Sb)	6010B	2.2	10	99.4	102.2	2.8	30	70-130
Arsenic (As)	6010B	1.5	10	93.6	96.9	3.5	30	70-130
Barium (Ba)	6010B	106	10	93.8	93.4	0.5	30	70-130
Beryllium (Be)	6010B	ND	10	89.3	88.7	0.7	30	70-130
Cadmium (Cd)	6010B	ND	10	98.8	99.3	0.4	30	70-130
Chromium (Cr)	6010B	18.1	10	94.0	92.6	1.4	30	70-130
Cobalt (Co)	6010B	9.2	10	100.8	96.0	4.9	30	70-130
Copper (Cu)	6010B	25.2	10	104.8	98.6	6.1	30	70-130
Lead (Pb)	6010B	26.9	10	96.9	96.7	0.3	30	70-130
Molybdenum (Mo)	6010B	ND	10	101.7	101.9	0.2	30	70-130
Nickel (Ni)	6010B	ND	10	91.1	93.1	2.1	30	70-130
Selenium (Se)	6010B	ND	10	100.1	100.9	0.7	30	70-130
Silver (Ag)	6010B	ND	10	110.5	113.7	2.9	30	70-130
Thallium (Tl)	6010B	ND	10	89.2	88.0	1.3	30	70-130
Vanadium (V)	6010B	71.6	10	95.1	94.4	0.8	30	70-130
Zinc (Zn)	6010B	58.5	10	98.0	98.3	0.2	30	70-130

ND: Not Detected.



ALPHA SCIENTIFIC CORPORATION

Environmental Laboratories

10-08-2020

EPA 6010B/7471A for CAM Metals Batch QA/QC Report

Client: American Integrated Services
Project: HB-40219
Matrix: Soil
Batch No.: 1005-MS1

Lab Job No: A010003
Lab Sample I.D.: LCS
Date Analyzed: 10-05-2020

II. LCS Result Unit: ppm

Analyte	EPA Method	LCS Value	True Value	Rec.%	Accept. Limit
Antimony (Sb)	6010B	11.25	10	112.5	80-120
Arsenic (As)	6010B	9.877	10	98.8	80-120
Barium (Ba)	6010B	9.760	10	97.6	80-120
Beryllium (Be)	6010B	9.451	10	94.5	80-120
Cadmium (Cd)	6010B	10.49	10	104.9	80-120
Chromium (Cr)	6010B	9.681	10	96.8	80-120
Cobalt (Co)	6010B	10.50	10	105.0	80-120
Copper (Cu)	6010B	9.770	10	97.7	80-120
Lead (Pb)	6010B	10.28	10	102.8	80-120
Molybdenum (Mo)	6010B	10.15	10	101.5	80-120
Nickel (Ni)	6010B	10.40	10	104.0	80-120
Selenium (Se)	6010B	10.41	10	104.1	80-120
Silver (Ag)	6010B	10.86	10	108.6	80-120
Thallium (Tl)	6010B	10.44	10	104.4	80-120
Vanadium (V)	6010B	9.403	10	94.0	80-120
Zinc (Zn)	6010B	10.58	10	105.8	80-120

ND: Not Detected (at the specified limit).

Alpha Scientific Corporation Sample Acceptance Checklist

Section 1

Client: ALS Project: HB-40219 Lab Job# AD10003

Date Received: 10-2-20

Sample(s) received in cooler(s)? Yes No (skip to Section 2)

Cooler(s) packed with: Ice Ice Packs Packing Material

Cooler Temperature (°C): #1: 4.2 #2: #3: #4: #5:

(Acceptable range is 0°C to 6°C or arriving on ice for samples received on the same day as collected.)

(Ambient Temperature for vapor or air samples is acceptable).

If sample(s) received outside acceptable range, Project Manager contacted by (Personnel Initial):

Section 2

	YES	NO	N/A
Was a COC received?	✓		
Were client sample IDs present?	✓		
Were sample(s) collection dates present?	✓		
Was the COC signed?	✓		
Were tests clearly indicated?	✓		
Did all samples arrive intact? If no, indicate below.	✓		
Did all container labels agree with COC?	✓		
Were correct containers used for the tests required?	✓		
Was there sufficient sample amount for requested tests?	✓		
Were the samples correctly preserved?	✓		
Was there headspace in VOA vials?			✓
Were Custody seals present?		✓	
If yes-were they intact?			✓

Section 3

Explanations/Comments: _____

Section 4

Was the Project Manager notified of anomalies? Yes No N/A

Via Phone: By: _____ Date/Time _____

By Email: Sent to: _____

Project Manager's response: _____

Completed by: ML Date: 10-2-20

Alpha Scientific Corporation
 16760 Gridley Road
 Cerritos, CA 90703

Email: asc90703@gmail.com
 Tel: (562) 809-8880
 Fax: (562) 809-8801



ALPHA SCIENTIFIC CORPORATION

Environmental Laboratories

10-12-2020

Mr. John Farmer
American Integrated Services
1502 E. Opp Street
Wilmington, CA 90744

Project: HB-40219
Project Site: 21377 Magnolia St., Huntington Beach, CA 92646
Sample Date: 10-02-2020
Lab Job No.: A010003A

Dear Mr. Farmer:

Enclosed please find the analytical report for the sample(s) received by Alpha Scientific Corporation on 10-02-2020 and analyzed by the following EPA methods

EPA 6010B (Lead, STLC)

All analyses have met the QA/QC criteria of this laboratory.

The sample(s) arrived in good conditions (i.e., chilled, intact) and with a chain of custody record attached.

Alpha Scientific Corporation is a CA ELAP certified laboratory (Certificate Number 3007). Thank you for giving us the opportunity to serve you. Please feel free to call me at (562) 809-8880 if our laboratory can be of further service to you.

Sincerely,

Roger Wang, Ph.D.
Laboratory Director

Enclosures

This cover letter is an integral part of this analytical report.



ALPHA SCIENTIFIC CORPORATION

Environmental Laboratories

Client: American Integrated Services
Project: HB-40219
Project Site: 21377 Magnolia St., Huntington Beach, CA 92646
Matrix: Soil
Batch No.: 1012-MS1

Lab Job No.: A010003A
Date Sampled: 10-02-2020
Date Received: 10-02-2020
Date Analyzed: 10-12-2020
Date Reported: 10-12-2020

EPA 6010B (Lead, STLC)
Reporting Unit: mg/L (ppm)

Sample ID	Lab ID	Lead (Pb), STLC			
MDL		0.1			
PQL		0.2			
Extraction Blank		ND			
DRM-1, DRM-2, DRM-3	A010003-1,2,3	1.52			

Note: Sample Preparation: Extraction Procedures, STLC Metals, Title 22, Chapter 11, Appendix II-1, 48 hours (10-07 to 10-09-2020).

MDL: Method Detection Limit;
PQL: Practical Quantitation Limit;
ND: Not Detected (Below MDL)
J: Result is between MDL and PQL.



ALPHA SCIENTIFIC CORPORATION

Environmental Laboratories

10-12-2020

EPA 6010B (Lead) Batch QA/QC Report

Client: American Integrated Services
Project: HB-40219
Matrix: Soil
Batch No.: 1012-MS1

Lab Job No: A010003A
Lab Sample I.D.: A010016-1
Date Analyzed: 10-12-2020

I. MS/MSD Report Unit: ppm

Analyte	Sample Conc.	Spike Conc.	MS %Rec.	MSD %Rec.	% RPD	%RPD Accept. Limit	%Rec Accept. Limit
Lead (Pb)	19.6	10	100.8	103.9	3.0	30	70-130

II. LCS Result Unit: ppm

Analyte	LCS Value	True Value	Rec.%	Accept. Limit
Lead (Pb)	10.58	10.0	105.8	80-120

ND: Not Detected (at the specified limit).

APPENDIX C

GEOSYNTEC (2023) GEOPHYSICAL OIL WELL LOCATING SURVEY REPORT

27 July 2023

Mr. Patrick Bannon
Capital Projects Administrator
Public Works Department – Engineering
City of Huntington Beach
2000 Main Street
Huntington Beach, California 92648

**Subject: Letter Report – Geophysical Oil Well Locating Survey
Edison Park, Huntington Beach, California**

Dear Mr. Bannon:

Geosyntec Consultants, Inc. (Geosyntec) prepared this letter report for the City of Huntington Beach, Public Works Department (City). This letter documents the geophysical survey performed to locate the existing oil wells at the Edison Park, located at 21377 Magnolia Street, Huntington Beach, California (Site). The services documented in this letter were performed in general accordance with the Professional Services Contract between the City and Geosyntec for As-Needed General Environmental Engineering Services, dated February 2021 and the scope of work described in our proposal dated July 3, 2023.

BACKGROUND AND PROJECT UNDERSTANDING

A review of the State of California Geologic Energy Management Division (CalGEM) database indicated the presence of two historical oil wells [Aldrich Fee #1 (API: 0405905847) and Aldrich #2 (API: 0405901101)] located at the northeast corner of the Site, within the approximate areas of proposed park improvements. The status of the two oil wells are listed as “plugged” per CalGEM’s database. While CalGEM records provide the approximate locations of the wells, the exact locations of these oil wells were unknown/needed to be confirmed to avoid potential disturbance to the wells.

Accordingly, the objective of this project was to perform a non-intrusive geophysical survey to attempt to identify the interpreted locations of the two oil wells at the Site.

GEOPHYSICAL SURVEY

Geosyntec retained the services of a **GEOVision** Geophysical Services (**GEOVision**), a geophysical specialty subcontractor to perform geophysical mapping survey at and near

the approximate locations of the two subject oil wells. The geophysical survey was performed on July 18, 2023, under the observation of Geosyntec field personnel.

The approximate location of the two oil wells were identified in the field using a Geometrics G858 cesium magnetometer (G858). This instrument measures the intensity of the magnetic field of the earth. Metallic-cased oil wells generally give rise to very high amplitude and broad magnetic anomalies and can typically be located using a magnetometer.

Once positive anomalies were detected for the two subject oil wells, magnetic data was acquired along a rectangular grid centered on the expected well locations. The magnetometer was used in conjunction with a Global Positioning System (GPS) for spatial control. The magnetometer was used to identify the magnetic field maxima associated with the well casing, the location of which was surveyed using GPS. The magnetic data and spatial data were stored in the instruments internal memory and downloaded to a laptop computer upon completion of the survey for data processing and interpretation.

Additional details on the geophysical method, field procedures, data processing, and results are provided in the Geophysical Oil Well Locating Survey Report prepared by **GEOVision** and included here as Attachment A. Geosyntec's Daily Field Report with photo logs summarizing the field activities is included here as Attachment B.

Approximate interpreted locations of the centers of the two Oil Wells based on the geophysical interpretation are shown in Figure 1 and summarized in Table 1.

Table 1. Approximate Interpreted Coordinates of the Center of the Identified Oil Wells

Oil Well Name	Interpreted Easting (US Survey Feet)	Interpreted Northing (US Survey Feet)
Aldrich Fee #1	6037822.8	2185799.7
Aldrich #2	6037540.1	2185767.1

LIMITATIONS

Please note, the geophysical survey to locate the existing wells is a non-intrusive method and results can be affected by several factors that include soil characteristics at the site,

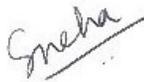
Mr. Patrick Bannon
27 July 2023
Page 3

condition of the well casing and soil cover. The accuracy of the location identified by this method can vary and is generally considered approximate. The actual location of the well will require confirmation/verification via intrusive (i.e., excavation) work.

CLOSURE

We appreciate the opportunity to assist the City on this important project. Should you have any questions about this letter or require additional information, please do not hesitate to call Yonas Zemuy at (714) 465-1256.

Sincerely,



Sneha Upadhyaya, Ph.D., E.I.T. (CA)
Senior Staff Professional



Yonas Zemuy, P.E. (AZ, CA, NV)
Senior Principal Engineer

Attachments:

Figure 1 – Approximate Inferred Locations of the Oil Wells
Attachment A: **GEO**Vision Geophysical Oil Well Locating Survey Report
Attachment B: Geosyntec Daily Field Report

FIGURE

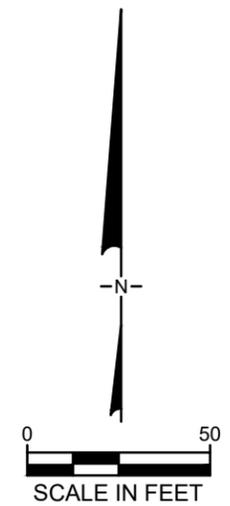
N:\ACADD\EDISON PARK\EDISON PARK-SC1369\FIGURES\1369F001 - Last Saved by: KViswanathan on 7/25/23



LEGEND

- 
 APPROXIMATE LIMITS OF EXISTING CANNERY STREET FORMER REFUSE DISPOSAL STATION WASTE [TRC, 2001]
- 
 LATERAL LIMITS OF WASTE MATERIAL DELINEATED DURING GEOSYNTEC 2020 AND 2021 EXPLORATIONS
- 
 INTERPRETED LOCATION OF OIL WELL

AERIAL BACKGROUND IMAGERY: © 2023 MICROSOFT CORPORATION, © 2023 MAXAR, © CNES (2023) DISTRIBUTION AIRBUS DS



APPROXIMATE INFERRED LOCATION OF THE OIL WELLS
 GEOPHYSICAL OIL WELL LOCATING SURVEY
 EDISON PARK
 HUNTINGTON BEACH, CALIFORNIA



FIGURE

1

PROJECT NO: SC1369

JULY 2023

ATTACHMENT A: GEOVISION GEOPHYSICAL OIL WELL LOCATING SURVEY REPORT



July 25, 2023
Project Number 23241

Mr. Yonas Zemuy
Geosyntec Consultants
3530 Hyland Avenue, Suite 100
Costa Mesa, California 92625

**Subject: Steel Oil Well Location at 21377 Magnolia Street, Huntington Beach,
California**

Mr. Zemuy:

On July 18th, 2023, a geophysical investigation was conducted for two suspected oil wells at the site located above, in Edison Park in the city of Huntington Beach.

METHODOLOGY

The geophysical instrument used during this investigation consisted of a Geometrics G858 optically pumped cesium-vapor magnetometer (G858). This magnetometer measures the intensity of the earth's magnetic field in nanoteslas (nT) and, optionally, the vertical gradient of the earth's magnetic field in nanoteslas per meter (nT/m). Buried ferrous metallic objects give rise to anomalies in the earth's magnetic field. These anomalies are generally dipolar with a positive response south and a negative response north of the object. The dimensions and amplitude of a magnetic anomaly are a function of the size, mass, depth, and magnetic properties of the source. Magnetometers can typically locate a metallic-cased oil well to depths of over 15 feet providing background noise levels are not too high and the steel is not extensively corroded.

FIELD PROCEDURE

Before conducting a magnetic survey, an attempt was made to locate each of the existing oil wells using the magnetometer in search mode. Two areas with anomalies were relatively clear and therefore a magnetic survey was conducted in these areas. The magnetometer was used in conjunction with the GPS system for spatial control. GPS data were collected in the geodetic coordinate system and then converted to California State Plane 1983, NAD83 (Conus), Zone VI (0406) in US Survey Feet, during data processing. Positions were taken using a Spectra Precision GPS system with Centerpoint RTX corrections.

Prior to data acquisition, the G858 was programmed with the appropriate sampling interval and GPS input settings. Spatial information was sent to the console at 1 second intervals using a GGA NMEA stream. Magnetic data and spatial data were downloaded

to a laptop computer at the end of the survey using the program MAGMAP 2000 by Geometrics, Inc.

Details on the geophysical method can be found in the attached technical note titled “Magnetic Method”.

DATA PROCESSING

A color-enhanced contour map of the magnetic data was generated using the GEOSOFT® Oasis montaj™ geophysical mapping system. The map was color-enhanced to aid in the interpretation of subtle anomalies. Prior to map generation, a number of preprocessing steps were completed and included:

- Backup of all original field data files to computer.
- Correcting of all data acquisition errors (typically removing null data and erroneous GPS points).
- Reformatting field data files to free format XYZ files containing at a minimum GPS time and field measurements.
- Merging GPS position data and geophysical data using commercial and in-house software.
- Merging of multiple data files into a single file and sorting, if necessary.
- Converting of data files to State Plane northings and eastings.

These data adjustments were made using a combination of commercial and proprietary software. Adjustments made to data files and resulting file names were documented and are retained in project files.

The output of the data preprocessing was a data file containing the magnetic total field response. Data processing steps included the following:

- Reformatting of data files to GEOSOFT® format.
- Generating final map scale.
- Gridding data using down- and cross-line splines or minimum curvature.
- Masking grid in areas where data not acquired (i.e. around site perimeter or building).
- Applying Hanning filter to smooth the data, as necessary.
- Generating color zone file describing color for different data ranges.
- Contouring the data.
- Generating map surrounds (title block, legend, scale, color bar, north arrow, etc.).
- Annotating anomalies.
- Merging various plot files and plotting final map.

The names of the files generated and the processing parameters used were documented and are retained in project files. Files generated during the processing sequence were archived on a backup drive.

RESULTS

A site map with geophysical interpretation is presented in Figure 1. A map of total magnetic field response of the surveyed areas is presented in Figure 2. The coordinates

shown on the maps reference the California State Plane, NAD83 (Conus), Zone VI (0406), US survey feet coordinate system. The color bar indicates the amplitude of the measured quantity with magenta and dark blue indicating high and low amplitudes, respectively. Light orange, yellow, and light green indicate average "background" values of the measured quantity. A typical magnetic oil well response is a round anomaly that is high in amplitude, shown in the attached Technical Note. However, atypical magnetic oil well responses can occur, though less common.

There were two broad, positive high amplitude anomalies located within the surveyed areas, with values over 48,000 nT, indicative of metal oil wells. For reference, background magnetic field strength at this site was around 46,000 nT. GPS locations from the approximate center of each such anomaly are provided in Table 1. The characteristics of the anomalies indicate that the top of the metallic casings are likely located within the upper 15 feet. Other anomalies such as buried electric lines, an unknown line, and a small buried metallic object located within the survey area are labeled on the figures.

Well Name	Interpreted Easting (US Survey feet)	Interpreted Northing (US Survey feet)	Peak Amplitude (nT)
Aldrich Fee 1	6037822.8	2185799.7	49,800
Aldrich 2	6037540.1	2185767.1	48,300

Table 1: Coordinates of Possible Oil Well Anomalies

We recommend the source of each anomaly is uncovered to confirm its source and location.

If you have any questions concerning this investigation, please call us at 951-549-1234, or email at efeldman@geovision.com.

Sincerely,
GEO*Vision* Geophysical Services




Emily Feldman, PGp

Project Geophysicist

Attachments:

Figure 1 – Site Map with Geophysical Interpretation

Figure 2 – Total Magnetic Field Response

Technical Note – Magnetic Method



-  Street Light Pole
-  Monitoring Well
-  Small Buried Metallic Object / Debris
-  Underground Electric Line
-  Underground Utility Line (Unknown type)
-  Interpreted Location of Oil Well

Notes:
 Coordinate System: NAD 1983 StatePlane California VI FIPS 0406 Feet
 Base map source: City of Huntington Beach (2022), Maxar

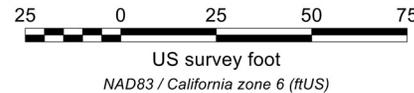
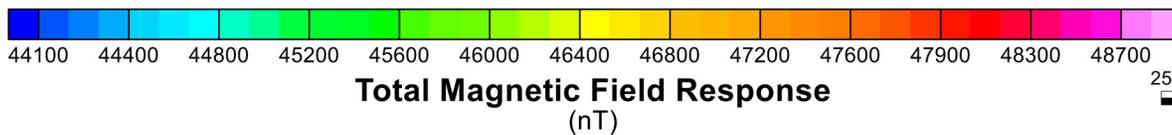
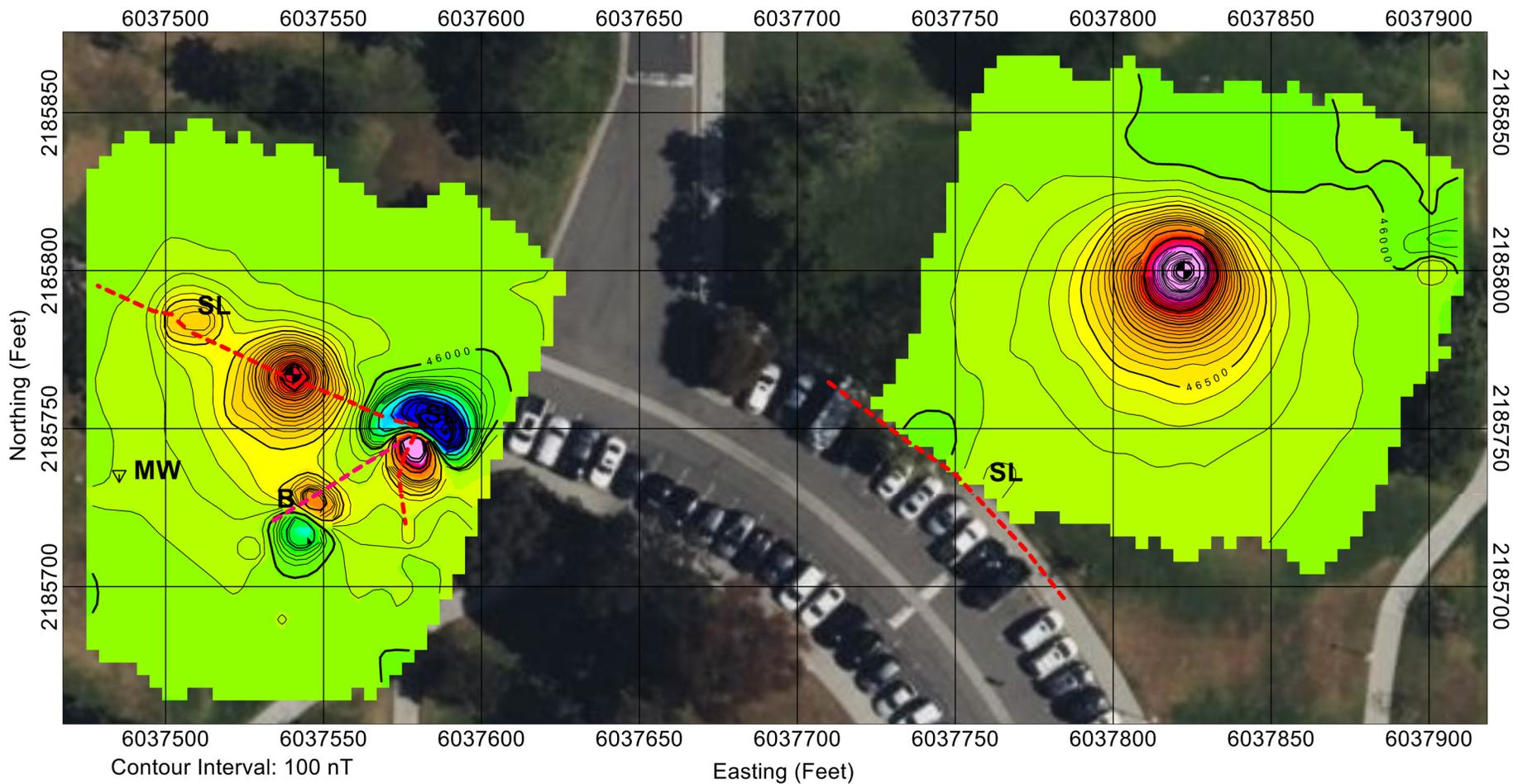
GE*Vision*
 geophysical services

Date:	7/25/2023
GV Project:	23241
Developed by:	E Feldman
Drawn by:	T Rodriguez
Approved by:	A Martin
File Name:	GV_23241

FIGURE 1
SITE MAP
WITH GEOPHYSICAL INTERPRETATION

SITE LOCATED AT
 21377 MAGNOLIA ST
 HUNTINGTON BEACH, CALIFORNIA

CREATED FOR
 GEOSYNTEC



LEGEND

-  Approximate GV Located Oil Well
-  **MW** Monitoring Well
-  **B** Buried Metallic Object
-  **SL** Streetlight
-  Located Utility Line

Aerial Source: Azure Maps Imagery, 2023

	<p>Figure 2</p>
	<p>Total Magnetic Field Response G858 Magnetometer</p>
	<p>Site Located at 21377 Magnolia St Huntington Beach, California</p>
	<p>Created for Geosyntec</p>

MAGNETIC METHOD



The magnetic method involves the measurement of the earth's magnetic field intensity. Typically the total magnetic field and/or vertical magnetic gradient is measured. Measurements of the horizontal or vertical component or horizontal gradient of the magnetic field may also be made.

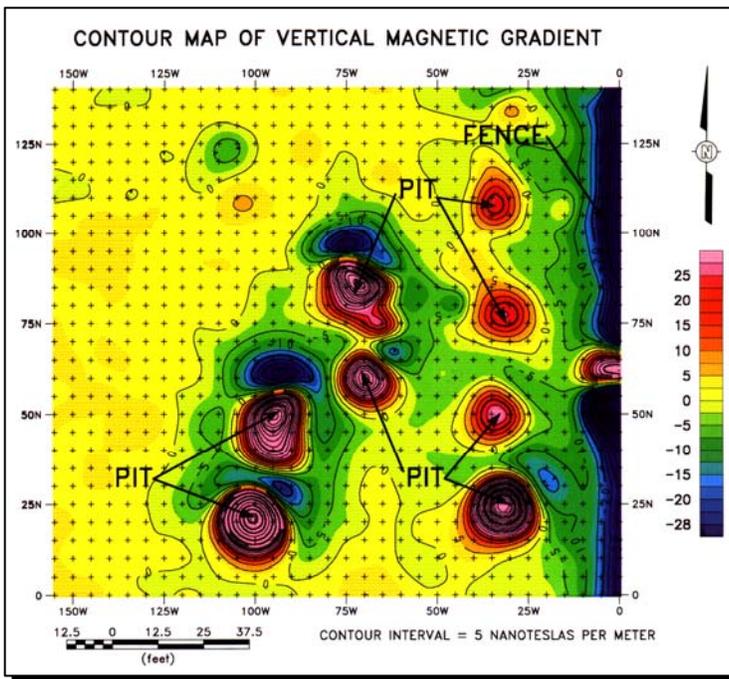
Anomalies in the earth's magnetic field are caused by induced or remanent magnetism. Induced magnetic anomalies are the result of secondary magnetization induced in a ferrous body by the earth's magnetic field. The shape, dimensions, and amplitude of an induced magnetic anomaly is a function of the orientation, geometry, size, depth, and magnetic susceptibility of the body as well as the intensity and inclination of the earth's magnetic field in the survey area. Buried ferrous metallic objects, such as pipes, drums, tanks, and debris generally give rise to dipolar anomalies with a positive response south and a negative response north of the object. The magnetic method is an effective way to search for small metallic objects because magnetic anomalies have spatial dimensions much larger than those of the objects. An oil well typically gives rise to a monopolar anomaly with a very high amplitude, positive peak several feet south of the well and a low amplitude, broad negative response to the north. The magnetic anomaly over a buried oil well often has a diameter of over 50 feet and amplitude of several thousand nanoteslas, depending on depth and casing characteristics. Magnetometers can typically locate an abandoned oil well to depths of over 20 feet providing that background noise levels are not too high and the well casing is not significantly corroded. Magnetometers are not able to detect nonferrous metals such as aluminum and brass.



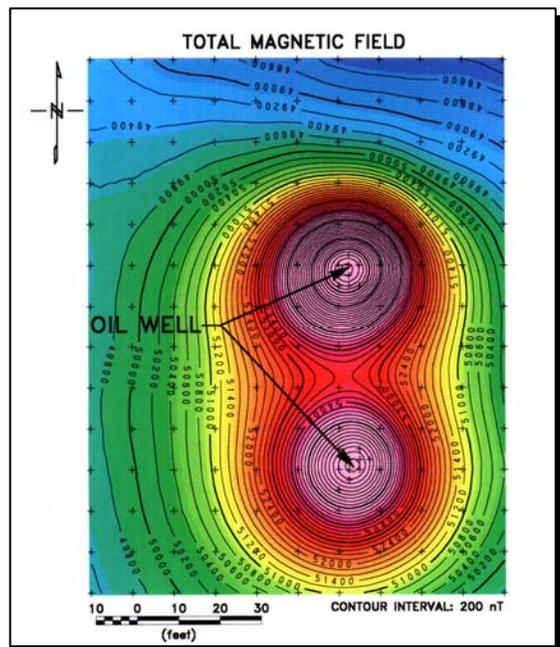
Geometrics G-858 Magnetometer

The magnetic method is typically used to:

- Locate abandoned steel well casings
- Locate buried tanks and pipes
- Locate pits and trenches containing buried metallic debris
- Detect buried unexploded ordnance (UXO)
- Map old waste sites and landfill boundaries
- Clear drilling locations
- Map basement faults and geology
- Investigate archaeological sites



Magnetic Survey to Locate Pits Containing Buried Metallic Containers



Magnetic Survey to Locate Abandoned Oil Wells

ATTACHMENT B: GEOSYNTEC DAILY FIELD REPORT



DAILY FIELD REPORT

PROJECT: <u>Edison Park Geotech Support</u>		
LOCATION: <u>Huntington Beach, California</u>	PROJECT NO.: <u>SC1369</u>	TASK NO.: <u>03</u>
DESCRIPTION: <u>Geophysical Oil Well Locating Survey</u>	CONTRACTOR: <u>GEOVision</u>	
DAY OF WEEK: <u>Tuesday</u>	DATE: <u>July 18, 2023</u>	
WEATHER: <u>Sunny, Low 64°F High 82°F</u>		

Time	Field Work Activities
0700	S. Upadhyaya (Geosyntec) arrived on site at the Edison Park and met with GEOVision crew E. Feldman and E. Vasquez.
0705	Geosyntec and GEOVision discussed health and safety.
0710	GEOVision started the geophysical oil well locating survey at the northeastern corner of the Edison Park using the Geometrics G858 cesium magnetometer. Other equipment used included Fisher metal detector and Ground Penetrating Radar (GPR).
0730-0945	GEOVision detected strong anomalies that were identified as the potential location of the two oil wells. GEOVision collected magnetic data around the center of the identified approximate locations of the two wells and surveyed the approximate location of the two oil wells using GPS units. GEOVision also marked the approximate centers of the wells in the field using stakes/whiskers (flushed to ground).
0945	GEOVision completed the survey.
1000	GEOVision departed the site. S. Upadhyaya (Geosyntec) measured straight line distances to the oil wells from atleast three fixed objects and removed the “No Parking” signs per City’s request.
1030	Geosyntec departed the site.
Hours on-site: 3.5 hrs; Travel time: 0.5 hrs	

DAILY FIELD REPORT

PROJECT: <u>Edison Park Geotech Support</u>		
LOCATION: <u>Huntington Beach, California</u>	PROJECT NO.: <u>SC1369</u>	TASK NO.: <u>03</u>
DESCRIPTION: <u>Geophysical Oil Well Locating Survey</u>	CONTRACTOR: <u>GEOVision</u>	
DAY OF WEEK: <u>Tuesday</u>	DATE: <u>July 18, 2023</u>	
WEATHER: <u>Sunny, Low 64°F High 82°F</u>		



Approximate Inferred Oil Well #1 location (looking west)



Approximate Inferred Oil Well #2 location (looking south)



Geophysical survey being performed using the magnetometer at Oil Well #1 location (looking south)

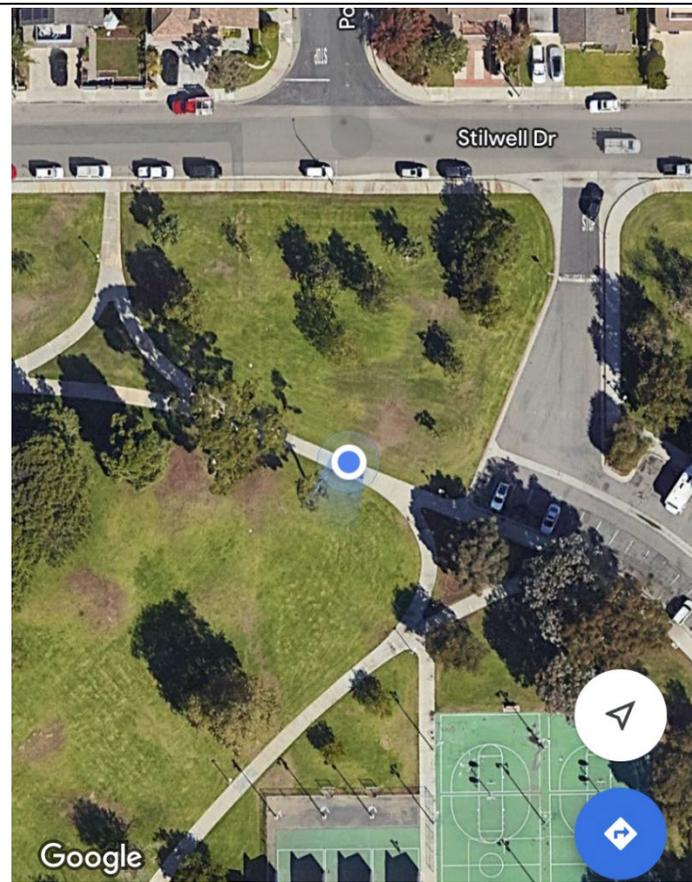


Geophysical survey being performed using the Fisher metal detector around the Oil Well #2 area.

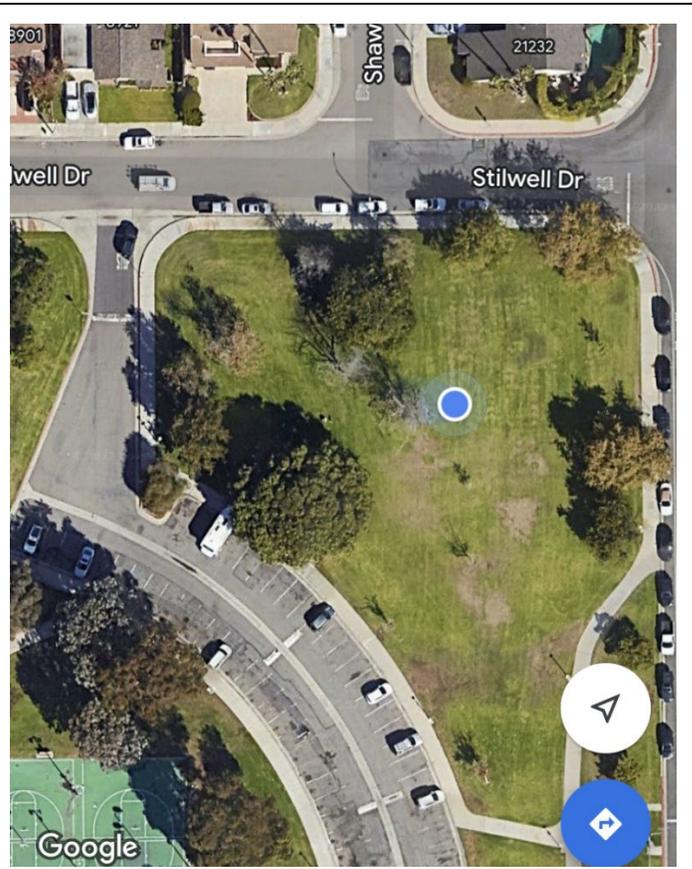


DAILY FIELD REPORT

PROJECT: <u>Edison Park Geotech Support</u>		
LOCATION: <u>Huntington Beach, California</u>	PROJECT NO.: <u>SC1369</u>	TASK NO.: <u>03</u>
DESCRIPTION: <u>Geophysical Oil Well Locating Survey</u>	CONTRACTOR: <u>GEOVision</u>	
DAY OF WEEK: <u>Tuesday</u>	DATE: <u>July 18, 2023</u>	
WEATHER: <u>Sunny, Low 64°F High 82°F</u>		



Approximate inferred location of Oil Well #2



Approximate inferred location of Oil Well #1

APPENDIX D

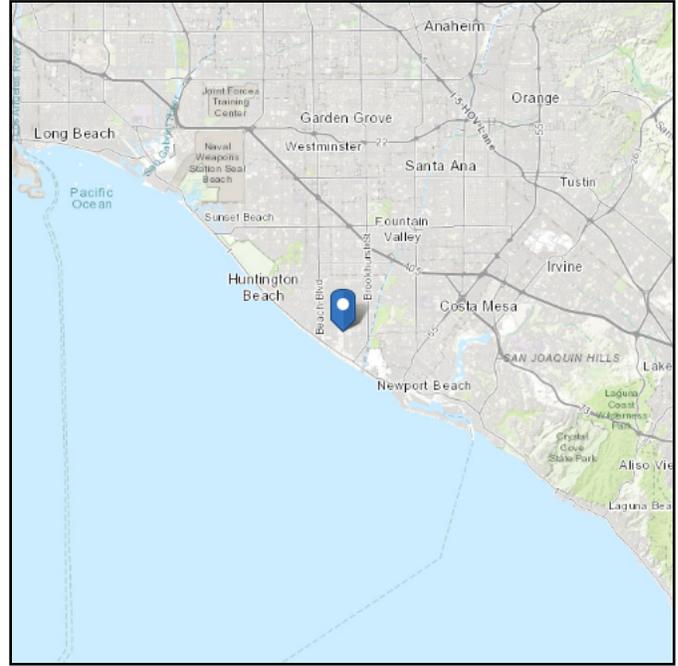
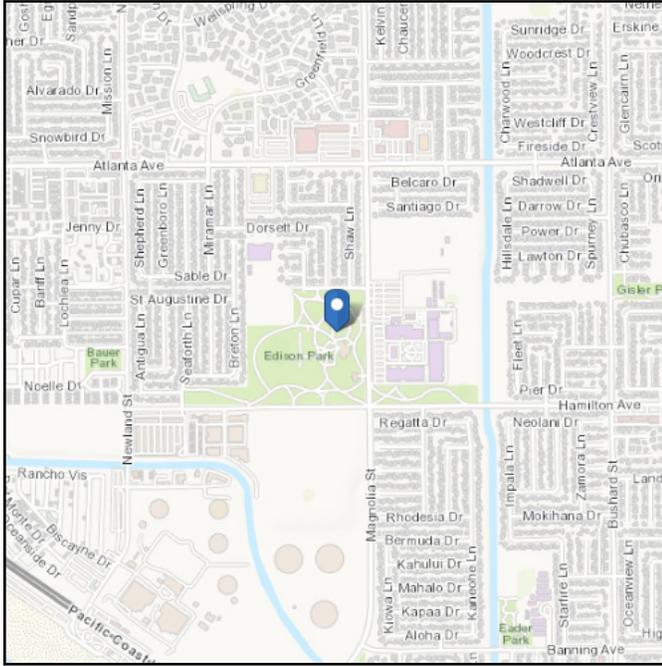
ASCE7 HAZARD TOOL OUTPUT

ASCE 7 Hazards Report

Address:
No Address at This Location

Standard: ASCE/SEI 7-16
Risk Category: II
Soil Class: D - Default (see Section 11.4.3)

Latitude: 33.652693
Longitude: -117.9721
Elevation: 6.7946934949892395 ft (NAVD 88)



Site Soil Class: D - Default (see Section 11.4.3)

Results:

S_s :	1.391	S_{D1} :	N/A
S_1 :	0.502	T_L :	8
F_a :	1.2	PGA :	0.606
F_v :	N/A	PGA _M :	0.728
S_{MS} :	1.67	F_{PGA} :	1.2
S_{M1} :	N/A	I_e :	1
S_{DS} :	1.113	C_v :	1.378

Ground motion hazard analysis may be required. See ASCE/SEI 7-16 Section 11.4.8.

Data Accessed: Mon Sep 11 2023

Date Source: [USGS Seismic Design Maps](#)

The ASCE 7 Hazard Tool is provided for your convenience, for informational purposes only, and is provided “as is” and without warranties of any kind. The location data included herein has been obtained from information developed, produced, and maintained by third party providers; or has been extrapolated from maps incorporated in the ASCE 7 standard. While ASCE has made every effort to use data obtained from reliable sources or methodologies, ASCE does not make any representations or warranties as to the accuracy, completeness, reliability, currency, or quality of any data provided herein. Any third-party links provided by this Tool should not be construed as an endorsement, affiliation, relationship, or sponsorship of such third-party content by or from ASCE.

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