Appendix D
Phase II ESA

PHASE II ENVIRONMENTAL SITE ASSESSMENT

Cypress College Student Housing Study
Cypress, California

Prepared for:

North Orange County Community College District/Cypress College
Campus Capital Projects Office
9200 Valley View Street
Cypress, California 90630

Prepared by:

Langan Engineering and Environmental Services, Inc.
18575 Jamboree Road, Suite 150
Irvine, California 92612

Rachel Owen
Staff Geologist

Christopher Funk, PG
Project Geologist

Robert S. (Rory) Johnston, PE, RCE 42332
Principal/Vice President

LANGAN

23 March 2023
Langan Project No. 700123501

TABLE OF CONTENTS

TABLES

FIGURES

APPENDICES

1.0 INTRODUCTION AND BACKGROUND

Langan Engineering & Environmental Services, Inc. (Langan) has prepared this Phase II Environmental Assessment (ESA) report on behalf of North Orange County Community College District (Client) for the Cypress College Student Housing Feasibility Study (the Project) based on the Request for Proposal (RFP) #CC2022-14 for Geotechnical, Geohazard, and Phase II ESA dated 1 August 2022. This report documents background information, field investigation methods, soil sample analytical results, and conclusions of the Phase II ESA completed between November 7 and November 9, 2022 at the property located at 9131 Holder Street, Cypress, California (the Site; **Figure 1**).

1.1 Site Location and History

The Site consists of land identified by Orange County as Assessor Parcel Numbers (APNs) 134-031-09, 134-031-10, and 134-031-11. The Site encompasses approximately 2.75 acres and is currently developed with a concrete and asphalt paved parking lot owned by Cypress College. The Site is identified as Lot 6, near the northeastern corner of the Cypress College property. The Site is bound to the north by Peppertree Apartments; to the east by Holder Street followed by Orange County Fire Authority (OCFA) Fire Station 63; to the south by the Cypress College Baseball Field; and to the west by the Cypress College Maintenance Facility.

Based on review of historical Google Earth satellite images, the Site was historically developed with office buildings (eastern portion) and a parking lot (western portion) as early as 1985. Based on discussions with the Client, the office buildings were mobile and had raised steel pier foundations. The office buildings were utilized as a High School Laboratory, Adult Learning High School Laboratory, Computer Laboratory, Maintenance and Operations Building, DSA Building, and Child Day Care. By 2011, the satellite images show the offices buildings removed and the entire Site utilized as a parking lot. One of Langan's borings was completed directly beneath the former Maintenance and Operations buildings (Section 2.0).

1.3 Proposed Development

It is understood that the conceptual proposed development at the Site is for a student housing facility, which may include two three-story structures (~27,000 square foot each) built in 2 phases within Lot 6. The anticipated grading depth during Site redevelopment is five feet below ground surface (bgs).

1.3 Purpose

The purpose of this Phase II ESA was to obtain additional information on the subsurface soil conditions at the Site during the geotechnical and geohazard investigation per the North Orange County Community College District (RFP) #CC2022-14. This Phase II ESA provides additional information to support the feasibility study of building Student Housing on campus.

2.0 FIELD INVESTIGATION

The Phase II ESA, implemented between November 7 and November 9, 2022, was completed during the geotechnical and geohazard investigation and included:

- Drilling nine hollow stem auger (HSA) soil borings
- Advancing one hand auger soil boring.
- Collection/analysis of four soil samples

Additionally, four cone penetration test (CPT) locations (CPT-1 through CPT-4) were completed as part of the geotechnical and geohazard investigation (**Figure 2**). However, soil was not generated from these locations and will not be discussed further in this report. The geotechnical and geohazard investigations are outlined in a report under separate cover. The following sections outline the scope of services for the Phase II ESA.

2.1 Health and Safety Plan (HASP)

Prior to performing on-site activities, a Site Specific Health and Safety Plan (HASP) was prepared. The HASP was discussed prior to starting the geotechnical, geohazard, and Phase II ESA each day and signed by all parties present on Site during Site activities.

2.2 Utility Locates and Geophysical Survey

Prior to performing on-site intrusive activities, 811 "Underground Service Alert of Southern California" was contacted to attempt to clear the boring locations. Additionally, a private utility survey was conducted by SoCal Locators on November 7, 2022 to attempt to clear the boring locations of subsurface utilities or obstructions. SoCal Locators used a combination of ground penetrating radar (GPR) and electromagnetic induction (EMI) equipment.

2.3 Subsurface Investigation

The Phase II ESA included the advancement of eight HSA soil borings (LB-1 through LB-8) and one hand auger soil boring (LB-9). The approximate locations of the soil borings are shown in **Figure 2**. Details on the soil boring installation and sampling procedure are discussed in more detail in the following sections. Langan did not perform a Phase I ESA for the Site; the scope of services for the Phase II was outlined in the above referenced RFP.

2.3.1 Soil Boring Procedure

A total of eight HSA borings and one hand auger boring were advanced by Martini Drilling, of Garden Grove, California for the geotechnical investigation, geohazard investigation, and Phase II ESA.

Four of the HSA borings (LB-2, LB-4, LB-6, and LB-7) were drilled to a depth of 25 feet bgs and the other four HSA borings (LB-1, LB-3, LB-5, and LB-8) were drilled to a depth of 50 feet bgs.

The locations of HSA borings were evenly spaced throughout the Site. Soil was extracted in five foot intervals with a 3.0-inch-outer-diameter split-barrel and a 2.0 inch-outer-diameter split spoon. One hand auger (LB-9) boring was advanced to 5 feet bgs at the location of the former Maintenance and Operations building.

Boring logs were prepared to describe observed soil types, geologic deposits, and visual or olfactory observations regarding the materials recovered. The soil was observed and logged per the Unified Soil Classification System (USCS). Recovered soil was field-screened for Volatile Organic Compounds (VOCs) at approximately one foot intervals using a photoionization detector (PID) field-calibrated to 100 parts per million (ppm) of isobutylene gas. Included in the boring logs were times and dates of soil boring activities, equipment used, and soil recovery. Soil boring logs are provided in **Appendix A**.

Generated asphalt, aggregate base, and soil investigation derived waste (IDW) was stored in ten labeled 55-gallon drums on-Site behind a locked utility area located at the southern edge of the Site.

2.3.2 Soil Sampling Procedure

In total, four soil samples were collected from the borings for environmental screening per the RFP. The soil samples were collected from 3.0-inch-outer-diameter split-barrel samplers at approximately one foot intervals (approximately six inches above and below the sampling depth). The samples were collected from areas with field indicators consisting of elevated PID concentrations, olfactory observations, or staining. If no areas of potential environmental concern were observed, a sample was collected randomly at 0.5 feet bgs or 5 feet bgs for laboratory analysis.

The following soil samples were collected and submitted for analysis:

- **LB-2-0.5** collected from LB-2 HSA boring at approximately 0.5 feet bgs from artificial fill area. No elevated PID readings, odors, or staining was detected from the soil boring.
- **LB-4-5** collected from LB-4 HSA boring at approximately 5 feet bgs from artificial fill area. No elevated PID readings, odors, or staining were detected from the soil boring.
- **LB-7-5** collected from LB-7 HSA boring at approximately 5 feet bgs from artificial fill area. The soil screened at 5 feet bgs recorded a PID reading of 8.0 ppm.
- **LB-6-20** collected from LB-6 HSA boring at approximately 20 feet bgs. The soil screened at 20 feet bgs recorded a PID reading 5.5 ppm.

Soil samples were analyzed for the following per the RFP:

- Total Petroleum Hydrocarbons (TPH) – Gasoline Range Organics (GRO) , Diesel Range Organics (DRO), and Oil Range Organics (ORO) via EPA Method 8015B;
- Volatile Organic Compounds (VOCs) via EPA Method 8260B; and
- Title 22 Metals via EPA Methods 6010B/7471A.

One composite soil sample was collected from the IDW stored in ten labeled 55-gallon drums on Site. The composite sample was analyzed for Semi Volatile Organic Compounds (SVOCs) via EPA Method 8270C in addition to the analytes listed above per waste disposal protocol.

Soil collected for VOC analyses was obtained using a TerraCore™ core sampler. To collect the TerraCore™ soil sample, the sampler was pushed into the soil until the coring body was approximately full. The sampler was then removed from the soil and the plunger depressed to deposit the sample into the sample vial preserved with laboratory-supplied chemical preservatives. Soil collected for TPH - GRO, DRO, ORO, Title 22 Metals, and SVOCs analyses was obtained using a stainless steel hand trowel and placed into two laboratory supplied eight ounce glass jars.

Samples were placed in a cooler on ice and delivered under chain of custody (COC) to the Pace Analytical Laboratories field office in Signal Hill, California. After sample collection, the soil borings were backfilled with cement-grout-slurry and restored flush to the existing grade with a concrete patch to match the surrounding surface.

The environmental laboratory data package is included as **Appendix B**.

3.0 OBSERVATIONS AND RESULTS

3.1 Field Investigation Observations

Subsurface conditions consist of asphalt ranging from surface to approximately two to four inches bgs and aggregate base ranging from surface to approximately seven inches bgs.

Artificial fill was observed in all borings below the asphalt and aggregate base. The artificial fill was composed of brown, silty fine sand and ranged from directly beneath the asphalt to six feet bgs. Following the artificial fill, alluvial deposits were observed at depth in each boring.

The alluvial soils consisted of loose to medium dense silty fine sand, loose to very dense sands, sands with silt, silty sands, and clay. The alluvial material represents deposition by streams and rivers during flood events (Saucedo et al., 2016).

Detectable PID readings were measured in the southwest corner of the Site at boring locations LB-6 and LB-7 with the highest measured readings of 5.5 ppm and 8.0 ppm, respectively. Soil screened from other boring locations on Site (LB-1 through LB-5, LB-8, and LB-9) registered PID readings of 0.0.

Groundwater was encountered in the borings from 10 to 12 feet bgs. These results are consistent with historic high groundwater levels in the area (CGS, 1998). A groundwater elevation survey was not completed as part of this Phase II ESA; therefore, groundwater flow direction could not be accurately determined. In addition, groundwater sampling was not requested as part of this Phase II as outlined in the RFP; findings and conclusions regarding groundwater quality cannot be offered at this time.

3.2 Soil Sample Results

The soil sample analytical results were compared to:

- Environmental Protection Agency (EPA) Regional Screening Level (RSL) Summary Table (THQ=1.0), Industrial Soil, November 2022.
- San Francisco Bay Regional Water Quality Control Board (SFB RWQCB) Commercial/Industrial: Shallow Soil Exposure Environmental Screening Levels (ESLs), 2019 Rev. 2.
- Arsenic was compared to the background level for Southern California of 12 mg/kg which is the upper limit of ambient arsenic concentrations published in DTSC HERO HHRA Note 11.

TPH, VOCs, and Title 22 Metals were reported at concentrations below the applicable screening levels in the samples collected and analyzed. Below is a summary of compounds detected in soil samples at concentrations above laboratory reporting limits:

- Fifteen metal constituents were detected above laboratory reporting limits in LB-2-0.5, LB-4-5, and LB-7-5. Thirteen metal constituents were detected above laboratory reporting

limits in LB-6-20. The detected metal constituents were below applicable screening levels in the samples except arsenic, which was detected at concentrations between 1.7 and 3.3 mg/kg. The detected concentrations of arsenic are below the reported background levels for Southern California of 12 mg/kg

- TPH - ORO was detected above laboratory reporting limits of 120 mg/kg, 39 mg/kg in Samples LB-2-0.5 and LB-7-5, respectively. The detected TPH was below the applicable screening levels in the samples.

The analytical results are summarized in **Table 1**, which include the IDW analytical results for reference. The IDW sample was non-detect SVOCs and TPH and below applicable screening levels for VOCs and Title 22 Metals. Copies of the laboratory analytical reports are included in **Appendix B**.

4.0 SUMMARY OF FINDINGS

Nine soil borings were completed across the Site during the Phase II ESA in November 2022 in conjunction with geotechnical and geohazard investigations. Field indications of impacts were not observed during the investigation. Limited PID readings (<10 ppm) were measured in the southwest corner of the Site in two boring locations. Groundwater was encountered at approximately 10-12 feet bgs; however, groundwater was not analyzed per the RFP scope of services.

Four soil samples were collected from the borings and were analyzed for VOCs, TPH, and Title 22 Metals. The analytical results were either non-detect or below applicable screening levels for VOCs, TPH, and Metals. Furthermore, analytical results of the IDW sample were also either non-detect or below applicable screening levels for VOCs, TPH, Metals, and SVOCs.

5.0 DISCLAIMER

The user of this report recognizes that actual conditions will vary from those encountered at the locations where sampling, surveys, observations or explorations are made by Langan and that the data, interpretation, and recommendations of Langan are based solely on the information available to it. Furthermore, the user of this report recognizes that passage of time, natural occurrences, and/or direct or indirect human intervention at or near the Site may substantially alter discovered conditions. Langan shall not be responsible for interpretations by others of the information it develops or provides to the user of this report. It should also be recognized that changes in Site conditions, uses or regulations may also influence remediation approaches and costs.

6.0 RELIANCE

This Phase II ESA is prepared for the exclusive use and reliance of the client (North Orange County Community College District/Cypress College). Use or reliance by any other party is prohibited.

7.0 REFERENCES

California Department of Conservation, California Geologic Survey (CGS), "Seismic Hazard Zone Report for the Los Alamitos 7.5-Minute Quadrangle, Los Angeles and Orange Counties, California" (EZRIM), dated 1998.

Department of Toxic Substances Control (DTSC), Human and Ecological Risk Office (HERO) Human Health Risk Assessment (HHRA) Note No. 3, dated June 2020 revised May 2022.

Department of Toxic Substances Control (DTSC), Human and Ecological Risk Office (HERO) Human Health Risk Assessment (HHRA) Note No.11, dated December 2020.

Environmental Protection Agency (EPA), Regional Screening Level (RSL) Summary Table (THQ=1.0), dated May 2022.

San Francisco Bay Regional Water Quality Control Board (SFB RWQCB), Residential: Shallow Soil Exposure Environmental Screening Levels (ESLs), 2019 Revision 2.

Saucedo, Jorge J., H. Gary Greene, Michael P. Kennedy, and Stephen P. Bezore (2016), Geological Map of the Long Beach 30-minute by 60-minute Quadrangle, California. Digital Database by Janet Tilden, Jason D. Little, Marina T. Mascorro, and Eric W. Ford. Version 2.0. California Geological Survey, Regional Geologic Map Series, Map 5. Map Scale 1:100,000.

TABLE

Table 1
Sample Analytical Results
Cypress College Student Housing Study

Analyte	CAS Number	STLC Limit	EPA RSL Industrial Soil	Soil Direct Exposure Commercial/ Industrial ESL	Location	IDW	LB-2	LB-4	LB-6	LB-7
					Sample Name	IDW-1	LB-2-0.5	LB-4-5	LB-6-20	LB-7-5
					Sample Date	11/09/2022	11/07/2022	11/08/2022	11/09/2022	11/09/2022
					Sample Depth	-	0.5	5	20	5
					Unit	Result	Result	Result	Result	Result
Volatile Organic Compounds										
1,1,1,2-Tetrachloroethane	630-20-6	NS	8.75	8.9	mg/kg	<0.0039 U	<0.004 U	<0.0041 U	<0.004 U	<0.0041 U
1,1,1-Trichloroethane	71-55-6	NS	35559.59	7300	mg/kg	<0.0039 U	<0.004 U	<0.0041 U	<0.004 U	<0.0041 U
1,1,2,2-Tetrachloroethane	79-34-5	NS	2.67	2.7	mg/kg	<0.0039 U	<0.004 U	<0.0041 U	<0.004 U	<0.0041 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	NS	28138.63	NS	mg/kg	<0.0039 U	<0.004 U	<0.0041 U	<0.004 U	<0.0041 U
1,1,2-Trichloroethane	79-00-5	NS	5.046	5.1	mg/kg	<0.0039 U	<0.004 U	<0.0041 U	<0.004 U	<0.0041 U
1,1-Dichloroethane	75-34-3	NS	15.54	16	mg/kg	<0.0039 U	<0.004 U	<0.0041 U	<0.004 U	<0.0041 U
1,1-Dichloroethene	75-35-4	NS	995.22	350	mg/kg	<0.0039 U	<0.004 U	<0.0041 U	<0.004 U	<0.0041 U
1,1-Dichloropropene	563-58-6	NS	NS	NS	mg/kg	<0.0039 U	<0.004 U	<0.0041 U	<0.004 U	<0.0041 U
1,2,3-Trichlorobenzene	87-61-6	NS	934.4	NS	mg/kg	<0.0039 U	<0.004 U	<0.0041 U	<0.004 U	<0.0041 U
1,2,3-Trichloropropane	96-18-4	NS	0.11	0.11	mg/kg	<0.0039 U	<0.004 U	<0.0041 U	<0.004 U	<0.0041 U
1,2,4-Trichlorobenzene	120-82-1	NS	112.77	110	mg/kg	<0.0039 U	<0.004 U	<0.0041 U	<0.004 U	<0.0041 U
1,2,4-Trimethylbenzene	95-63-6	NS	1765.22	NS	mg/kg	<0.0039 U	<0.004 U	<0.0041 U	<0.004 U	<0.0041 U
1,2-Dibromo-3-Chloropropane	96-12-8	NS	0.064	0.059	mg/kg	<0.0039 U	<0.004 U	<0.0041 U	<0.004 U	<0.0041 U
1,2-Dibromoethane (Ethylene Dibromide)	106-93-4	NS	0.16	0.16	mg/kg	<0.0039 U	<0.004 U	<0.0041 U	<0.004 U	<0.0041 U
1,2-Dichlorobenzene	95-50-1	NS	9327.22	9400	mg/kg	<0.0039 U	<0.004 U	<0.0041 U	<0.004 U	<0.0041 U
1,2-Dichloroethane	107-06-2	NS	2.04	2.1	mg/kg	<0.0039 U	<0.004 U	<0.0041 U	<0.004 U	<0.0041 U
1,2-Dichloropropane	78-87-5	NS	10.99	4.4	mg/kg	<0.0039 U	<0.004 U	<0.0041 U	<0.004 U	<0.0041 U
1,3,5-Trimethylbenzene (Mesitylene)	108-67-8	NS	1512.26	NS	mg/kg	<0.0039 U	<0.004 U	<0.0041 U	<0.004 U	<0.0041 U
1,3-Dichlorobenzene	541-73-1	NS	NS	NS	mg/kg	<0.0039 U	<0.004 U	<0.0041 U	<0.004 U	<0.0041 U
1,3-Dichloropropane	142-28-9	NS	23360	NS	mg/kg	<0.0039 U	<0.004 U	<0.0041 U	<0.004 U	<0.0041 U
1,4-Dichlorobenzene	106-46-7	NS	11.42	12	mg/kg	<0.0039 U	<0.004 U	<0.0041 U	<0.004 U	<0.0041 U
2,2-Dichloropropane	594-20-7	NS	NS	NS	mg/kg	<0.0039 U	<0.004 U	<0.0041 U	<0.004 U	<0.0041 U
2-Chlorotoluene	95-49-8	NS	23360	NS	mg/kg	<0.0039 U	<0.004 U	<0.0041 U	<0.004 U	<0.0041 U
4-Chlorotoluene	106-43-4	NS	23360	NS	mg/kg	<0.0039 U	<0.004 U	<0.0041 U	<0.004 U	<0.0041 U
Benzene	71-43-2	NS	5.084	1.4	mg/kg	0.0013 J	<0.004 U	<0.0041 U	<0.004 U	<0.0041 U
Bromobenzene	108-86-1	NS	1780.39	NS	mg/kg	<0.0039 U	<0.004 U	<0.0041 U	<0.004 U	<0.0041 U
Bromochloromethane	74-97-5	NS	627.76	NS	mg/kg	<0.0039 U	<0.004 U	<0.0041 U	<0.004 U	<0.0041 U
Bromodichloromethane	75-27-4	NS	1.28	1.3	mg/kg	<0.0039 U	<0.004 U	<0.0041 U	<0.004 U	<0.0041 U
Bromoform	75-25-2	NS	85.74	80	mg/kg	<0.0039 U	<0.004 U	<0.0041 U	<0.004 U	<0.0041 U
Bromomethane	74-83-9	NS	30.052	30	mg/kg	<0.0039 U	<0.004 U	<0.0041 U	<0.004 U	<0.0041 U
Carbon Tetrachloride	56-23-5	NS	2.87	2.7	mg/kg	<0.0039 U	<0.004 U	<0.0041 U	<0.004 U	<0.0041 U
Chlorobenzene	108-90-7	NS	1331.45	1300	mg/kg	<0.0039 U	<0.004 U	<0.0041 U	<0.004 U	<0.0041 U
Chloroethane	75-00-3	NS	22685.16	59000	mg/kg	<0.0039 U	<0.004 U	<0.0041 U	<0.004 U	<0.0041 U
Chloroform	67-66-3	NS	1.38	1.4	mg/kg	<0.0039 U	<0.004 U	<0.0041 U	<0.004 U	<0.0041 U
Chloromethane	74-87-3	NS	463.48	470	mg/kg	<0.0039 U	<0.004 U	<0.0041 U	<0.004 U	<0.0041 U
Cis-1,2-Dichloroethene	156-59-2	NS	370	85	mg/kg	<0.0039 U	<0.004 U	<0.0041 U	<0.004 U	<0.0041 U
Cis-1,3-Dichloropropene	10061-01-5	NS	NS	NS	mg/kg	<0.0039 U	<0.004 U	<0.0041 U	<0.004 U	<0.0041 U
Cymene	99-87-6	NS	NS	NS	mg/kg	<0.0039 U	<0.004 U	<0.0041 U	<0.004 U	<0.0041 U
Dibromochloromethane	124-48-1	NS	38.93	39	mg/kg	<0.0039 U	<0.004 U	<0.0041 U	<0.004 U	<0.0041 U
Dibromomethane	74-95-3	NS	98.9	NS	mg/kg	<0.0039 U	<0.004 U	<0.0041 U	<0.004 U	<0.0041 U
Dichlorodifluoromethane	75-71-8	NS	367.59	NS	mg/kg	<0.0039 U	<0.004 U	<0.0041 U	<0.004 U	<0.0041 U
Ethylbenzene	100-41-4	NS	25.42	26	mg/kg	<0.0039 U	<0.004 U	<0.0041 U	<0.004 U	<0.0041 U

Table 1
Sample Analytical Results
Cypress College Student Housing Study

Analyte	CAS Number	STLC Limit	EPA RSL Industrial Soil	Soil Direct Exposure Commercial/ Industrial ESL	Location	IDW	LB-2	LB-4	LB-6	LB-7
					Sample Name	IDW-1	LB-2-0.5	LB-4-5	LB-6-20	LB-7-5
					Sample Date	11/09/2022	11/07/2022	11/08/2022	11/09/2022	11/09/2022
					Sample Depth	-	0.5	5	20	5
					Unit	Result	Result	Result	Result	Result
Hexachlorobutadiene	87-68-3	NS	5.26	5.3	mg/kg	<0.0039 U	<0.004 U	<0.0041 U	<0.004 U	<0.0041 U
Isopropylbenzene (Cumene)	98-82-8	NS	9947.64	NS	mg/kg	<0.0039 U	<0.004 U	<0.0041 U	<0.004 U	<0.0041 U
M,P-Xylene	179601-23-1	NS	NS	NS	mg/kg	<0.0039 U	<0.004 U	<0.0041 U	<0.004 U	<0.0041 U
Methylene Chloride	75-09-2	NS	1016.66	25	mg/kg	<0.0078 U	<0.0079 U	<0.0083 U	<0.0081 U	<0.0081 U
Naphthalene	91-20-3	NS	8.57	17	mg/kg	<0.0039 U	<0.004 U	<0.0041 U	<0.004 U	<0.0041 U
n-Butylbenzene	104-51-8	NS	58400	NS	mg/kg	<0.0039 U	<0.004 U	<0.0041 U	<0.004 U	<0.0041 U
n-Propylbenzene	103-65-1	NS	24266.4	NS	mg/kg	<0.0039 U	<0.004 U	<0.0041 U	<0.004 U	<0.0041 U
o-Xylene (1,2-Dimethylbenzene)	95-47-6	NS	2790.63	NS	mg/kg	<0.0039 U	<0.004 U	<0.0041 U	<0.004 U	<0.0041 U
Sec-Butylbenzene	135-98-8	NS	116800	NS	mg/kg	<0.0039 U	<0.004 U	<0.0041 U	<0.004 U	<0.0041 U
Styrene	100-42-5	NS	34829.095	33000	mg/kg	<0.0039 U	<0.004 U	<0.0041 U	<0.004 U	<0.0041 U
T-Butylbenzene	98-06-6	NS	116800	NS	mg/kg	<0.0039 U	<0.004 U	<0.0041 U	<0.004 U	<0.0041 U
Tert-Butyl Methyl Ether	1634-04-4	NS	205.07	210	mg/kg	<0.0039 U	<0.004 U	<0.0041 U	<0.004 U	<0.0041 U
Tetrachloroethene (PCE)	127-18-4	NS	103.4	2.7	mg/kg	<0.0039 U	<0.004 U	<0.0041 U	<0.004 U	<0.0041 U
Toluene	108-88-3	NS	46827.5	5300	mg/kg	0.0011 J	<0.004 U	<0.0041 U	<0.004 U	<0.0041 U
Total Xylenes	1330-20-7	NS	2485.89	2500	mg/kg	<0.0078 U	<0.0079 U	<0.0083 U	<0.0081 U	<0.0081 U
Trans-1,2-Dichloroethene	156-60-5	NS	301.89	600	mg/kg	<0.0039 U	<0.004 U	<0.0041 U	<0.004 U	<0.0041 U
Trans-1,3-Dichloropropene	10061-02-6	NS	NS	NS	mg/kg	<0.0039 U	<0.004 U	<0.0041 U	<0.004 U	<0.0041 U
Trichloroethene (TCE)	79-01-6	NS	6.045	6.1	mg/kg	<0.0039 U	<0.004 U	<0.0041 U	<0.004 U	<0.0041 U
Trichlorofluoromethane	75-69-4	NS	350400	NS	mg/kg	<0.0039 U	<0.004 U	<0.0041 U	<0.004 U	<0.0041 U
Vinyl Chloride	75-01-4	NS	1.68	0.15	mg/kg	<0.0039 U	<0.004 U	<0.0041 U	<0.004 U	<0.0041 U
Semi-Volatile Organic Compounds										
1,2,4-Trichlorobenzene	120-82-1	NS	112.77	110	mg/kg	<1 UD	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	NS	9327.22	9400	mg/kg	<1 UD	NA	NA	NA	NA
1,2-Diphenylhydrazine	122-66-7	NS	2.87	NS	mg/kg	<1 UD	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	NS	NS	NS	mg/kg	<1 UD	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	NS	11.42	12	mg/kg	<1 UD	NA	NA	NA	NA
2,2-Oxybis(2-Chloropropane)	39638-32-9	NS	NS	NS	mg/kg	<1 UD	NA	NA	NA	NA
2,4,5-Trichlorophenol	95-95-4	NS	82066.27	120000	mg/kg	<2 UD	NA	NA	NA	NA
2,4,6-Trichlorophenol	88-06-2	NS	208.89	47	mg/kg	<2 UD	NA	NA	NA	NA
2,4-Dichlorophenol	120-83-2	NS	2461.99	3500	mg/kg	<1 UD	NA	NA	NA	NA
2,4-Dimethylphenol	105-67-9	NS	16413.25	23000	mg/kg	<1 UD	NA	NA	NA	NA
2,4-Dinitrophenol	51-28-5	NS	1641.33	2300	mg/kg	<5 UD	NA	NA	NA	NA
2,4-Dinitrotoluene	121-14-2	NS	7.37	11	mg/kg	<1 UD	NA	NA	NA	NA
2,6-Dinitrotoluene	606-20-2	NS	1.54	NS	mg/kg	<1 UD	NA	NA	NA	NA
2-Aminonaphthalene (Beta Naphthylamine)	91-59-8	NS	1.28	NS	mg/kg	<30 UD	NA	NA	NA	NA
2-Chloronaphthalene	91-58-7	NS	60275.63	NS	mg/kg	<1 UD	NA	NA	NA	NA
2-Chlorophenol	95-57-8	NS	5840	5800	mg/kg	<1 UD	NA	NA	NA	NA
2-Methylnaphthalene	91-57-6	NS	3013.78	3000	mg/kg	<1 UD	NA	NA	NA	NA
2-Methylphenol (o-Cresol)	95-48-7	NS	41032.66	NS	mg/kg	<1 UD	NA	NA	NA	NA
2-Nitroaniline	88-74-4	NS	7986.46	NS	mg/kg	<1 UD	NA	NA	NA	NA
2-Nitrophenol	88-75-5	NS	NS	NS	mg/kg	<1 UD	NA	NA	NA	NA
3 & 4 Methylphenol (m&p Cresol)	65794-96-9	NS	NS	NS	mg/kg	<2 UD	NA	NA	NA	NA
3,3'-Dichlorobenzidine	91-94-1	NS	5.11	2.7	mg/kg	<2 UD	NA	NA	NA	NA

Table 1
Sample Analytical Results
Cypress College Student Housing Study

Analyte	CAS Number	STLC Limit	EPA RSL Industrial Soil	Soil Direct Exposure Commercial/ Industrial ESL	Location	IDW	LB-2	LB-4	LB-6	LB-7
					Sample Name	IDW-1	LB-2-0.5	LB-4-5	LB-6-20	LB-7-5
					Sample Date	11/09/2022	11/07/2022	11/08/2022	11/09/2022	11/09/2022
					Sample Depth	-	0.5	5	20	5
					Unit	Result	Result	Result	Result	Result
3-Nitroaniline	99-09-2	NS	NS	NS	mg/kg	<2 UD	NA	NA	NA	NA
4,4'-DDD	72-54-8	NS	9.6	12	mg/kg	<1 UD	NA	NA	NA	NA
4,4'-DDE	72-55-9	NS	9.3	8.3	mg/kg	<1 UD	NA	NA	NA	NA
4,4'-DDT	50-29-3	NS	8.53	8.5	mg/kg	<1 UD	NA	NA	NA	NA
4,6-Dinitro-2-Methylphenol	534-52-1	NS	65.65	NS	mg/kg	<5 UD	NA	NA	NA	NA
4-Bromophenyl Phenyl Ether	101-55-3	NS	NS	NS	mg/kg	<1 UD	NA	NA	NA	NA
4-Chloro-3-Methylphenol	59-50-7	NS	82066.27	NS	mg/kg	<2 UD	NA	NA	NA	NA
4-Chloroaniline	106-47-8	NS	11.49	16	mg/kg	<1 UD	NA	NA	NA	NA
4-Chlorophenyl Phenyl Ether	7005-72-3	NS	NS	NS	mg/kg	<1 UD	NA	NA	NA	NA
4-Nitroaniline	100-01-6	NS	114.89	NS	mg/kg	<2 UD	NA	NA	NA	NA
4-Nitrophenol	100-02-7	NS	NS	NS	mg/kg	<2 UD	NA	NA	NA	NA
Acenaphthene	83-32-9	NS	45206.72	45000	mg/kg	<1 UD	NA	NA	NA	NA
Acenaphthylene	208-96-8	NS	NS	NS	mg/kg	<1 UD	NA	NA	NA	NA
Aldrin	309-00-2	NS	0.18	0.15	mg/kg	<1 UD	NA	NA	NA	NA
Alpha BHC (Alpha Hexachlorocyclohexane)	319-84-6	NS	0.36	NS	mg/kg	<1 UD	NA	NA	NA	NA
Alpha Endosulfan	959-98-8	NS	NS	NS	mg/kg	<2 UD	NA	NA	NA	NA
Aniline (Phenylamine, Aminobenzene)	62-53-3	NS	403.12	NS	mg/kg	<2 UD	NA	NA	NA	NA
Anthracene	120-12-7	NS	226033.6	230000	mg/kg	<1 UD	NA	NA	NA	NA
Benzidine	92-87-5	NS	0.01	NS	mg/kg	<30 UD	NA	NA	NA	NA
Benzo(a)anthracene	56-55-3	NS	20.61	20	mg/kg	<1 UD	NA	NA	NA	NA
Benzo(a)pyrene	50-32-8	NS	2.11	2.1	mg/kg	<1 UD	NA	NA	NA	NA
Benzo(b)fluoranthene	205-99-2	NS	21.095	21	mg/kg	<1 UD	NA	NA	NA	NA
Benzo(b+k)fluoranthene	205-99-2&K	NS	NS	NS	mg/kg	<1 UD	NA	NA	NA	NA
Benzo(g,h,i)Perylene	191-24-2	NS	NS	NS	mg/kg	<1 UD	NA	NA	NA	NA
Benzo(k)fluoranthene	207-08-9	NS	210.95	210	mg/kg	<1 UD	NA	NA	NA	NA
Benzoic Acid	65-85-0	NS	3282650.85	NS	mg/kg	<5 UD	NA	NA	NA	NA
Benzyl Alcohol	100-51-6	NS	82066.27	NS	mg/kg	<1 UD	NA	NA	NA	NA
Benzyl Butyl Phthalate	85-68-7	NS	1209.4	NS	mg/kg	<1 UD	NA	NA	NA	NA
Beta Bhc (Beta Hexachlorocyclohexane)	319-85-7	NS	1.28	NS	mg/kg	<1 UD	NA	NA	NA	NA
Beta Endosulfan	33213-65-9	NS	NS	NS	mg/kg	<2 UD	NA	NA	NA	NA
Bis(2-chloroethoxy) methane	111-91-1	NS	2461.99	NS	mg/kg	<1 UD	NA	NA	NA	NA
Bis(2-chloroethyl) ether (2-chloroethyl ether)	111-44-4	NS	1.032	0.47	mg/kg	<1 UD	NA	NA	NA	NA
Bis(2-ethylhexyl) phthalate	117-81-7	NS	164.13	160	mg/kg	<2 UD	NA	NA	NA	NA
Chrysene	218-01-9	NS	2109.49	2100	mg/kg	<1 UD	NA	NA	NA	NA
Delta Bhc (Delta Hexachlorocyclohexane)	319-86-8	NS	NS	NS	mg/kg	<1 UD	NA	NA	NA	NA
Dibenz(a,h)anthracene	53-70-3	NS	2.11	2.1	mg/kg	<1 UD	NA	NA	NA	NA
Dibenzofuran	132-64-9	NS	1168	NS	mg/kg	<1 UD	NA	NA	NA	NA
Dibutyl phthalate	84-74-2	NS	82066.27	NS	mg/kg	<1 UD	NA	NA	NA	NA
Dieldrin	60-57-1	NS	0.14	0.16	mg/kg	<1 UD	NA	NA	NA	NA
Diethyl phthalate	84-66-2	NS	656530.17	660000	mg/kg	<1 UD	NA	NA	NA	NA
Dimethyl phthalate	131-11-3	NS	NS	NS	mg/kg	<1 UD	NA	NA	NA	NA
Dioctyl phthalate	117-84-0	NS	8206.63	NS	mg/kg	<1 UD	NA	NA	NA	NA
Endosulfan Sulfate	1031-07-8	NS	4923.98	NS	mg/kg	<1 UD	NA	NA	NA	NA

Table 1
Sample Analytical Results
Cypress College Student Housing Study

Analyte	CAS Number	STLC Limit	EPA RSL Industrial Soil	Soil Direct Exposure Commercial/ Industrial ESL	Location	IDW	LB-2	LB-4	LB-6	LB-7
					Sample Name	IDW-1	LB-2-0.5	LB-4-5	LB-6-20	LB-7-5
					Sample Date	11/09/2022	11/07/2022	11/08/2022	11/09/2022	11/09/2022
					Sample Depth	-	0.5	5	20	5
					Unit	Result	Result	Result	Result	Result
Endrin	72-20-8	NS	246.2	290	mg/kg	<2 UD	NA	NA	NA	NA
Endrin Aldehyde	7421-93-4	NS	NS	NS	mg/kg	<5 UD	NA	NA	NA	NA
Fluoranthene	206-44-0	NS	30137.81	30000	mg/kg	<1 UD	NA	NA	NA	NA
Fluorene	86-73-7	NS	30137.81	30000	mg/kg	<1 UD	NA	NA	NA	NA
Gamma Bhc (Lindane)	58-89-9	NS	2.54	2.5	mg/kg	<1 UD	NA	NA	NA	NA
Heptachlor	76-44-8	NS	0.63	0.53	mg/kg	<1 UD	NA	NA	NA	NA
Heptachlor Epoxide	1024-57-3	NS	0.33	0.28	mg/kg	<1 UD	NA	NA	NA	NA
Hexachlorobenzene	118-74-1	NS	0.96	0.78	mg/kg	<1 UD	NA	NA	NA	NA
Hexachlorobutadiene	87-68-3	NS	5.26	5.3	mg/kg	<1 UD	NA	NA	NA	NA
Hexachlorocyclopentadiene	77-47-4	NS	7.45	NS	mg/kg	<1 UD	NA	NA	NA	NA
Hexachloroethane	67-72-1	NS	8.047	7.8	mg/kg	<1 UD	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	193-39-5	NS	21.095	21	mg/kg	<1 UD	NA	NA	NA	NA
Isophorone	78-59-1	NS	2418.8	NS	mg/kg	<1 UD	NA	NA	NA	NA
Naphthalene	91-20-3	NS	8.57	17	mg/kg	<1 UD	NA	NA	NA	NA
Nitrobenzene	98-95-3	NS	22.45	NS	mg/kg	<1 UD	NA	NA	NA	NA
n-Nitrosodimethylamine	62-75-9	NS	0.034	NS	mg/kg	<1 UD	NA	NA	NA	NA
n-Nitrosodi-N-Propylamine	621-64-7	NS	0.33	NS	mg/kg	<1 UD	NA	NA	NA	NA
n-Nitrosodiphenylamine	86-30-6	NS	468.92	NS	mg/kg	<1 UD	NA	NA	NA	NA
Pentachlorophenol	87-86-5	NS	3.97	4	mg/kg	<2 UD	NA	NA	NA	NA
Phenanthrene	85-01-8	NS	NS	NS	mg/kg	<1 UD	NA	NA	NA	NA
Phenol	108-95-2	NS	246147.92	350000	mg/kg	<1 UD	NA	NA	NA	NA
Pyrene	129-00-0	NS	22603.36	23000	mg/kg	<1 UD	NA	NA	NA	NA
Petroleum Hydrocarbons										
TPH - Diesel (C10-C23)	TPH-D	NS	NS	1200	mg/kg	<10 U	<20 UD	<10 U	<10 U	<20 UD
TPH - Gasoline (C6-C12)	TPH-G	NS	NS	2000	mg/kg	<1 U	<1 U	<1 U	<1 U	<1 U
TPH - Motor Oil (C18-C36)	TPH-MO	NS	NS	180000	mg/kg	<20 U	120 D	<20 U	<20 U	39 JD
Metals										
Antimony	7440-36-0	NS	467.078	160	mg/kg	0.49 J	1.2 J	0.36 J	<5 U	1.4 J
Arsenic	7440-38-2	NS	**3**	0.31	mg/kg	**5.8**	**3.2**	1.7	**3.3**	1.8
Barium	7440-39-3	NS	216603.31	220000	mg/kg	130	57	51	45	45
Beryllium	7440-41-7	NS	2291.056	230	mg/kg	0.16 J	0.23 J	0.21 J	0.19 J	0.22 J
Cadmium	7440-43-9	NS	99.72	1100	mg/kg	0.36 J	0.31 J	0.16 J	0.15 J	0.16 J
Chromium, Total	7440-47-3	NS	NS	NS	mg/kg	12	13	12	11	10
Cobalt	7440-48-4	NS	347	350	mg/kg	6.9	6.2	6.1	4.9	5.4
Copper	7440-50-8	NS	46720	47000	mg/kg	460	9.7	7.3	7.8	6.9
Lead	7439-92-1	NS	800	320	mg/kg	0.8 J	11	1.8 J	1.3 J	1.4 J
Mercury	7439-97-6	NS	45.61	190	mg/kg	0.032 J	0.033 J	0.035 J	0.016 J	0.023 J
Molybdenum	7439-98-7	NS	5837.14	5800	mg/kg	<2.5 U	0.98 J	0.69 J	0.73 J	0.93 J
Nickel	7440-02-0	NS	22384.18	11000	mg/kg	7.7	9	8	7.3	7.1
Selenium	7782-49-2	NS	5839.71	5800	mg/kg	<1 UB	<1 U	<1 U	<1 U	<1 U
Silver	7440-22-4	NS	5840	5800	mg/kg	0.72	0.23 J	0.12 J	<0.5 U	0.11 J
Thallium	7440-28-0	NS	11.68	12	mg/kg	<5 U	<5 U	<5 U	<5 U	<5 U
Vanadium	7440-62-2	NS	5829.087	5800	mg/kg	21	30	29	22	27

Table 1
Sample Analytical Results
Cypress College Student Housing Study

Analyte	CAS Number	STLC Limit	EPA RSL Industrial Soil	Soil Direct Exposure Commercial/ Industrial ESL	Location	IDW	LB-2	LB-4	LB-6	LB-7
					Sample Name	IDW-1	LB-2-0.5	LB-4-5	LB-6-20	LB-7-5
					Sample Date	11/09/2022	11/07/2022	11/08/2022	11/09/2022	11/09/2022
					Sample Depth	-	0.5	5	20	5
					Unit	Result	Result	Result	Result	Result
Zinc	7440-66-6	NS	350400	350000	mg/kg	19	51	37	29	32
STLC Metals										
Copper	7440-50-8	25	NS	NS	mg/L	0.21	NA	NA	NA	NA

Notes:

Soil results were compared to the USEPA Industrial Soil RSL using a TCR of 1x10-6 and a THQ of 1 (November 2022) and San Francisco Bay RWQCB Soil Direct Exposure Human Health Risk Levels - Commercial/Industrial, Lower of Cancer Risk and Noncancer Hazard Values (January 2019)

EPA - Environmental Protection Agency

RSL - Regional Screening Level

TCR - Target Cancer Risk

THQ - Target Hazard Quotient

RWQCB - Regional Water Quality Control Board

STLC - Soluble Threshold Limit Concentration

ESL - Environmental Screening Level

CAS - Chemical Abstract Service

NS - No standard

mg/kg - Milligrams per kilogram

NA - Not Analyzed

RL - Reporting Limit

<RL - Not detected

Qualifiers:

D - The concentration reported is a result of a diluted sample.

J - The analyte was detected above the method detection limit (MDL), but below the RL; therefore, the result is an estimated concentration.

U - The analyte was analyzed for, but was not detected at a level greater than or equal to the RL; the value shown in the table is the RL.

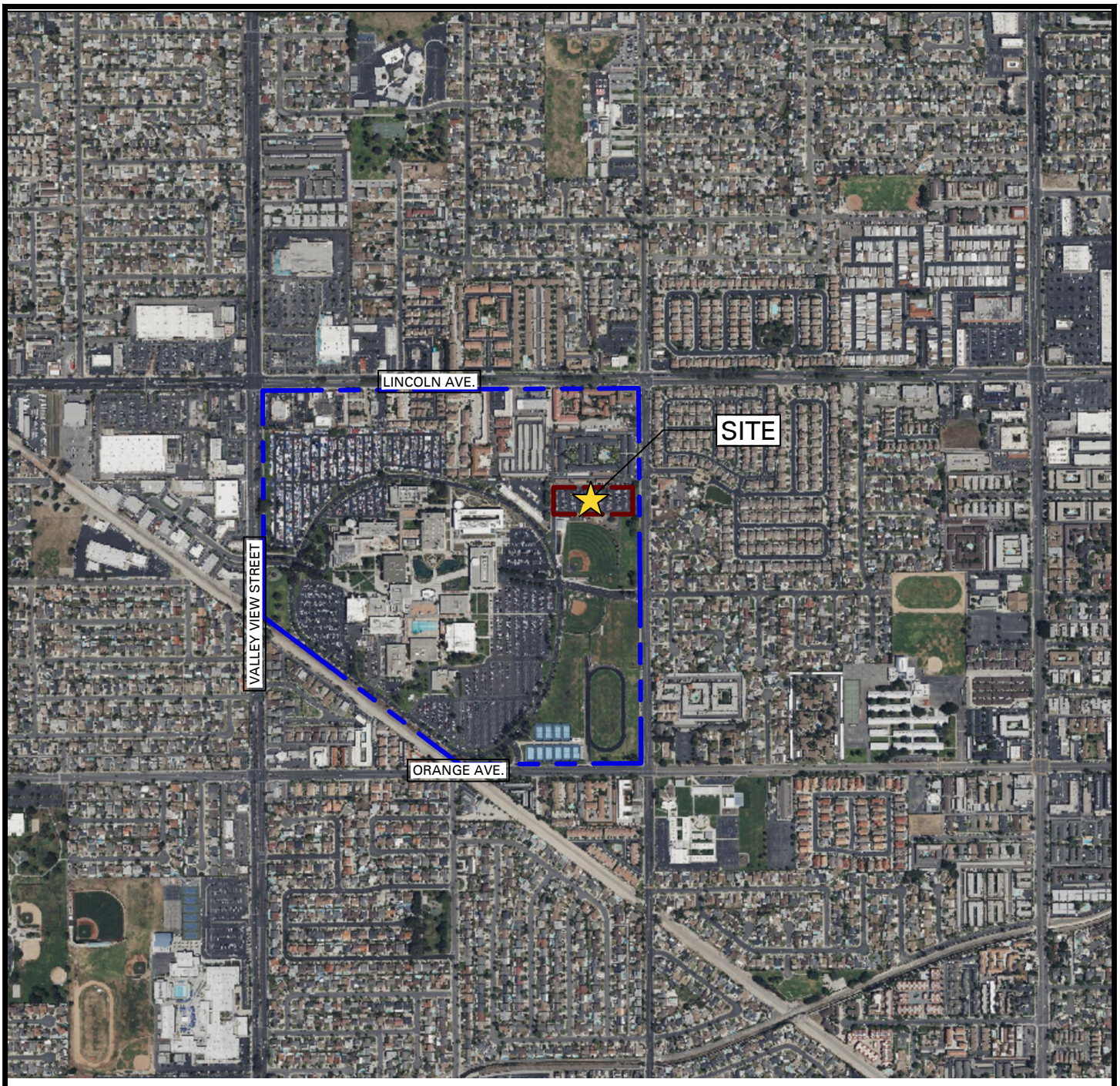
B - The analyte was found in the associated analysis batch blank.

Exceedance Summary:

10 - Result exceeds EPA RSL Industrial Soil

10 - Result exceeds Soil Direct Exposure Commercial/Industrial ESL

FIGURES



LEGEND:

SITE LIMITS

CYPRESS COLLEGE LIMITS

1000 500 0 1000

SCALE IN FEET

NOTES:

1. BACKGROUND REFERENCED FROM BING IMAGES ON 03 NOVEMBER 2022.

LANGAN

Langan Engineering and Environmental Services, Inc.

18575 Jamboree Road, Suite 150
Irvine, CA 92612

T: 949.561.9200 F: 949.561.9201 www.langan.com

Project

CYPRESS COLLEGE STUDENT HOUSING

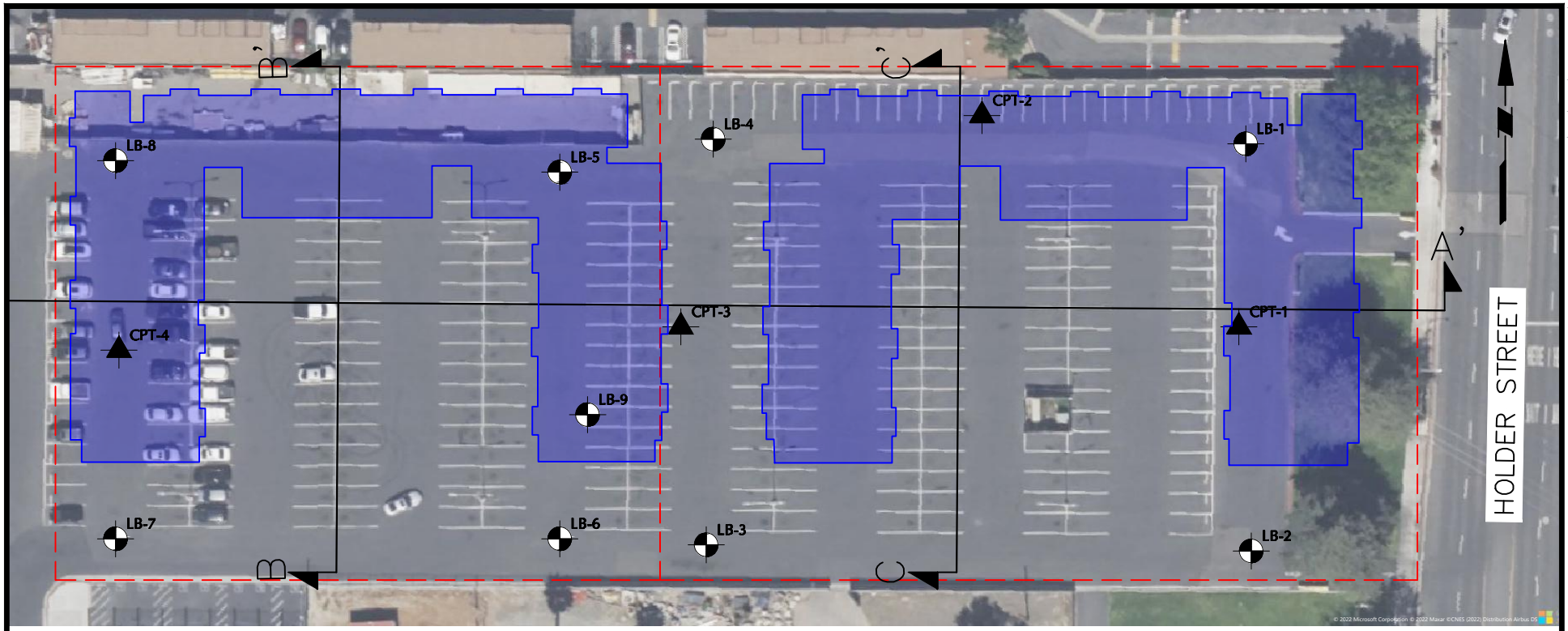
CYPRESS
ORANGE COUNTY CALIFORNIA

Figure Title

SITE VICINITY MAP

Project No.	Figure No.
700123501	1
Date: NOVEMBER 2022	
Scale: AS SHOWN	
Drawn By: JMG	

Filename: \\langan.com\data\IRV\data5\700123501\Project Data_Discipline\Geotechnical\CAD\Site Vicinity Map.dwg Date: 02 NOV User: ktran Style Table: Langan.stb Layout: 8.5x11 P



LANGAN

LEGEND:

- APPROXIMATE SITE LIMITS.
- APPROXIMATE LOCATION OF CROSS-SECTIONS.
- LB-1 APPROXIMATE BORING LOCATION AND DEPTH.
- CPT-1 APPROXIMATE CPT LOCATION AND DEPTH.
- APPROXIMATE PROPOSED BUILDING LIMITS

NOTES:

1. BACKGROUND IMAGE REFERENCED FROM GOOGLE MAPS ACCESSED ON 10 AUGUST 2022.
2. APPROXIMATE SITE LIMITS ARE REFERENCE FROM REQUEST TITLED, "REQUEST FOR PROPOSAL #CC2022-014" BY CAMPUS CAPITAL PROJECTS OFFICE.
3. PROPOSED BUILDING LIMITS ARE APPROXIMATE AND REFERENCED FROM PROPOSAL TITLED, " REQUEST FOR PROPOSAL #CC2022-014" DATED 01 AUGUST 2022, PREPARED BY CYPRESS COLLEGE.

65 0 32.5 65

SCALE IN FEET

LANGAN
Langan Engineering and Environmental Services, Inc.
18575 Jamboree Road, Suite 150
Irvine, CA 92612
T: 949.561.9200 F: 949.561.9201 www.langan.com

Project: **CYPRESS COLLEGE STUDENT HOUSING**
CYPRESS
ORANGE COUNTY CALIFORNIA

Figure Title: **EXPLORATION MAP**

Project No. 700123501
Date NOVEMBER 2022
Scale AS SHOWN
Drawn By AW

Figure No. 2

Filename: \\langan.com\data\IRV\data5\700123501\Project Data_Discipline\Geotechnical\CAD\Cypress College - PBLM.dwg Date: 02 Nov 2022 Time: 11 am User: jmagana Style Table: Langan.stb Layout: PBLM

APPENDIX A

SOIL BORINGS

LANGAN

Log of Boring **LB-1** Sheet 1 of 2

Project: Cypress College Student Housing	Project No.: 700123501
Location: 9131 Holder Street, Cypress, CA	Elevation and Datum: Approx. 58
Drilling Company: Martini Drilling	Date Started: 11/07/2022 / Date Finished: 11/07/2022
Drilling Equipment: Truck Mounted CME75 Drill Rig	Completion Depth: 51.5 ft / Rock Depth:
Size and Type of Bit: 8-inch O.D. HSA	Number of Samples: Disturbed 11 / Undisturbed - / Core -
Casing Diameter (in): - / Casing Depth (ft): -	Water Level (ft.): First ▽ 10 / Completion ▼ / 24 HR. ▼
Casing Hammer: - / Weight (lbs): - / Drop (in): -	Drilling Foreman: Jeff Frazer
Sampler: 2-inch Split Spoon & 3-inch O.D. California Modified	Field Engineer: Jose Magana Guardado
Sampler Hammer: Auto / Weight (lbs): 140 / Drop (in): 30	

Material Symbol	Elev. (ft)	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. resist BL/6in	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
	+58.0		0					Boring was Hand Auger from 0 to 5 feet.
	+57.8	AC Thickness = 2 inches						
	+57.7	AB Thickness = 2 inches						
	+56.5	**UNDOCUMENTED FILL** Brown, silty fine SAND, [SM], moist.	2					
	+55.0	**YOUNG ALLUVIUM** Medium dense, light reddish brown, clayey fine to medium SAND, [SC], moist.		S-1	SS	18	7 10 11	PID = 0.0 ppm
		Medium dense, light brown, fine SAND, [SP], moist.	4					
		Loose, light brown, fine SAND, [SP], moist.		S-2	SS	18	2 4 5	PID = 0.0 ppm
			6					
			8					
		Loose, gray, fine SAND, [SP], wet.	▽ 10	S-3	CR	18	1 5 4	Groundwater encountered at 10 feet. PID = 0.0 ppm
			12					
			14					
		Loose, light brown to gray, coarse SAND, [SP], wet.	16	S-4	SS	18	1 4 4	PID = 0.0 ppm
	+40.0		18					
		Firm, gray, silty CLAY, trace coarse sand, [CL], wet.	20	S-5	CR	18	3 3 6	PID = 0.0 ppm
			22					
			24					
		Firm, gray, silty CLAY, [CL], wet.	26	S-6	SS	4	3 2 3	PID = 0.0 ppm
			28					
			30					

\\LANGAN.COM\DATA\IRV\DATA5\700123501\PROJECT DATA_DISCIPLINE\GEOTECHNICAL\GINTLOGS\700123501_ENTERPRISE.GPJ 12/14/2022 4:39:19 PM Report: Log - LANGAN

LANGAN

Log of Boring **LB-1** Sheet 2 of 2

Project	Project No.
Cypress College Student Housing	700123501
Location	**Elevation and Datum**
9131 Holder Street, Cypress, CA	Approx. 58

Material Symbol	Elev. (ft)	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. resist BL/6in	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
	+28.0	Firm, gray, silty CLAY, some fine sand, [CL], wet.	30	S-7	CR	14	2 3 6	PID = 0.0 ppm
			32					
			34					
		Stiff, gray, silty CLAY, some fine sand, [CL], wet.	36	S-8	SS	18	3 5 7	PID = 0.0 ppm
			38					
		Hard, gray, silty CLAY, some fine sand, [CL], wet.	40	S-9	CR	18	8 22 31	PID = 0.0 ppm
	+16.9	Dense, light brownish gray, medium to coarse SAND, [SP], wet.	42					
			44					
		Medium dense, light brownish gray, coarse SAND, [SP], wet.	46	S-10	SS	18	3 4 14	PID = 0.0 ppm
			48					
		Very dense, light brownish gray, medium to coarse SAND, [SP], wet.	50	S-11	CR	18	20 50 50/6"	PID = 0.0 ppm
	+6.5	End of boring at 51.5 feet. Groundwater encountered at 10 feet. Boring backfilled with cement grout.	52					
			54					
			56					
			58					
			60					
			62					
			64					
			66					
			67.5					

LANGAN

Log of Boring **LB-2** Sheet 1 of 1

Project: Cypress College Student Housing	Project No.: 700123501
Location: 9131 Holder Street, Cypress, CA	Elevation and Datum: Approx. 57
Drilling Company: Martini Drilling	Date Started: 11/07/2022 / Date Finished: 11/07/2022
Drilling Equipment: Truck Mounted CME75 Drill Rig	Completion Depth: 26.5 ft / Rock Depth:
Size and Type of Bit: 8-inch O.D. HSA	Number of Samples: Disturbed 5 / Undisturbed - / Core -
Casing Diameter (in): - / Casing Depth (ft): -	Water Level (ft.): First ▽ 10.5 / Completion ▼ / 24 HR. ▼
Casing Hammer: - / Weight (lbs): - / Drop (in): -	Drilling Foreman: Jeff Frazer
Sampler: 2-inch Split Spoon & 3-inch O.D. California Modified	Field Engineer: Jose Magana Guardado
Sampler Hammer: Auto / Weight (lbs): 140 / Drop (in): 30	

Material Symbol	Elev. (ft)	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. resist BL/6in	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
	+57.0		0					Boring was Hand Auger from 0 to 5 feet.
	+56.8	AC Thickness = 3 inches						
	+56.2	AB Thickness = 7 inches						
		UNDOCUMENTED FILL Reddish brown, silty fine SAND, [SM], moist.	2					
	+54.0	**YOUNG ALLUVIUM**	4					
		Medium dense, light brown, medium to coarse SAND, [SP], moist.	6	S-1	CR	18	6 8 10	PID = 0.0 ppm
	+49.0		8					
	+46.5	Loose, grayish brown, silty fine SAND, [SM], wet. ▽	10	S-2	SS	18	1 3 3	PID = 0.0 ppm Groundwater encountered at 10.5 feet.
		Loose, dark grayish brown, medium SAND, [SP], moist.	12					
	+44.0		14					
		Medium dense, dark gray, silty fine SAND, [SM], wet.	16	S-3	CR	18	7 9 18	PID = 0.0 ppm
			18					
		Loose, grayish brown, silty fine SAND, [SM], wet.	20	S-4	SS	18	1 2 3	PID = 0.0 ppm
			22					
		Medium dense, dark gray, silty fine SAND, [SM], wet.	24					
			26	S-5	CR	18	5 12 17	PID = 0.0 ppm
	+30.5	End of boring at 26.5 feet. Groundwater encountered at 10.5 feet. Boring backfilled with cement grout.	28					
			30					

\\LANGAN.COM\DATA\IRV\DATA5\700123501\PROJECT DATA_DISCIPLINE\GEOTECHNICAL\GINTLOGS\700123501_ENTERPRISE.GPJ ... 12/14/2022 4:39:23 PM ... Report: Log - LANGAN

LANGAN

Log of Boring **LB-3** Sheet 1 of 2

Project: Cypress College Student Housing	Project No.: 700123501
Location: 9131 Holder Street, Cypress, CA	Elevation and Datum: Approx. 56.6
Drilling Company: Martini Drilling	Date Started: 11/07/2022 / Date Finished: 11/07/2022
Drilling Equipment: Truck Mounted CME75 Drill Rig	Completion Depth: 50.5 ft / Rock Depth:
Size and Type of Bit: 8-inch O.D. HSA	Number of Samples: Disturbed 10 / Undisturbed - / Core -
Casing Diameter (in): - / Casing Depth (ft): -	Water Level (ft.): First ▽ 10.2 / Completion / 24 HR.
Casing Hammer: - / Weight (lbs): - / Drop (in): -	Drilling Foreman: Jeff Frazer
Sampler: 2-inch Split Spoon & 3-inch O.D. California Modified	Field Engineer: Jose Magana Guardado
Sampler Hammer: Auto / Weight (lbs): 140 / Drop (in): 30	

Material Symbol	Elev. (ft)	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. resist BL/6in	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
	+56.6		0					Boring was Hand Auger from 0 to 5 feet.
	+56.4	AC Thickness = 2.5 inches						
		UNDOCUMENTED FILL Reddish-brown, silty fine SAND, [SM], moist.	2					
	+53.6	Reddish-brown, silty fine SAND, [SM], moist.	4					
	+51.6	**YOUNG ALLUVIUM** Medium dense, light brown, fine to medium, SAND, [SP], moist.	6	S-1	CR	18	5 8 12	PID = 0.0 ppm
			8					
	+46.6		10					
	+46.1	Soft, light brown, silty CLAY, [CL], moist. Very loose, dark borwn, fine, SAND, [SP], dry.		S-2	SPT	18	1 2 2	PID = 0.0 ppm
			12					
		No recovery	14	S-3	CR	0	8 24 24	PID = 0.0 ppm
			16					
			18					
		Loose, light brown, coarse SAND, [SP], wet.	20	S-4	SPT	18	1 2 3	PID = 0.0 ppm
	+35.4	Medium stiff, gray, silty CLAY, [CL], wet.						
	+33.6		22					
		Medium dense, gray, silty fine SAND, [SM], wet.	24					
			26	S-5	CR	18	3 10 15	PID = 0.0 ppm
	+28.6		28					
			30					

LANGAN

Log of Boring **LB-3** Sheet 2 of 2

Project	Project No.
Cypress College Student Housing	700123501
Location	**Elevation and Datum**
9131 Holder Street, Cypress, CA	Approx. 56.6

Material Symbol	Elev. (ft)	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. resist BL/6in	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
	+26.6	Stiff, gray, silty CLAY, trace sand, [CL], wet.	30	S-6	SPT	18	2 4 7	PID = 0.0 ppm
			32					
			34					
		Hard, gray, silty CLAY, [CL], wet.		S-7	CR	18	19 31 31	PID = 0.0 ppm
	+20.6		36					
	+20.1	Very dense, light brown, fine to medium SAND, [SP], wet.						
			38					
		Medium dense, light brown, fine to medium SAND, [SP], wet.	40	S-8	SPT	18	3 8 14	PID = 0.0 ppm
			42					
			44					
		Very dense, light brown, fine to medium SAND, [SP], wet.		S-9	CR	18	16 37 50/5"	PID = 0.0 ppm
			46					
			48					
		Dense, light brown, medium to coarse SAND, [SP], wet.	50	S-10	SPT	18	10 22 20	PID = 0.0 ppm
	+5.1							
		End of Boring at 51.5 feet. Ground water was encountered at 10.2 feet. Boring was backfilled with cement grout.	52					
			54					
			56					
			58					
			60					
			62					
			64					
			66					
			67.5					

LANGAN

Log of Boring **LB-4** Sheet 1 of 1

Project: Cypress College Student Housing	Project No.: 700123501
Location: 9131 Holder Street, Cypress, CA	Elevation and Datum: Approx. 57
Drilling Company: Martini Drilling	Date Started: 11/08/2022 / Date Finished: 11/08/2022
Drilling Equipment: Truck Mounted CME75 Drill Rig	Completion Depth: 26.5 ft / Rock Depth:
Size and Type of Bit: 8-inch O.D. HSA	Number of Samples: Disturbed 10 / Undisturbed - / Core -
Casing Diameter (in): - / Casing Depth (ft): -	Water Level (ft.): First ▽ 10 / Completion ▼ / 24 HR. ▼
Casing Hammer: - / Weight (lbs): - / Drop (in): -	Drilling Foreman: Jeff Frazer
Sampler: 2-inch Split Spoon & 3-inch O.D. California Modified	Field Engineer: Jose Magana Guardado
Sampler Hammer: Auto / Weight (lbs): 140 / Drop (in): 30	

Material Symbol	Elev. (ft)	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. resist BL/6in	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
	+57.0		0					Boring was Hand Auger from 0 to 5 feet.
	+56.8	AC Thickness = 2.5 inches						
	+56.4	AB Thickness = 4 inches						
		UNDOCUMENTED FILL Brown, silty fine SAND, [SM], moist.	2					
	+54.0	Brown, silty fine SAND, [SM], moist.	4					
		Loose, dark brown, silty fine SAND, [SM], moist.		S-1	SS	18	2 2 3	PID = 0.0 ppm
	+51.0	**YOUNG ALLUVIUM** Loose, light brown, fine to medium SAND, [SP], moist.	6					
	+49.0		8					
		Medium stiff, gray brown, clayey SILT, [ML], moist.	10	S-2	CR	18	2 3 3	PID = 0.0 ppm
			12					
			14					
		Stiff, gray brown, clayey SILT, [ML], moist.		S-3	SS	18	2 6 8	PID = 0.0 ppm
	+41.0	Medium dense, dark brown, fine to medium SAND, [SP], wet.	16					
			18					
		Loose, dark brown, fine to medium SAND, [SP], wet.	20	S-4	CR	18	6 4 5	PID = 0.0 ppm
	+36.0	No Recovery.						
			22					
			24					
		Soft, gray, silty CLAY, [CL], wet.		S-5	SS	18	2 2 2	Observed sample fall out of sampler onto floor, sample consisted of Soft, gray, silty CLAY, [CL], wet. PID = 0.0 ppm
	+30.5		26					
		End of Boring at 26.5 feet. Groundwater was encountered at 10 feet. Boring was backfilled with cement grout.	28					
			30					

LANGAN

Log of Boring **LB-5** Sheet 1 of 2

Project: Cypress College Student Housing	Project No.: 700123501
Location: 9131 Holder Street, Cypress, CA	Elevation and Datum: Approx. 57
Drilling Company: Martini Drilling	Date Started: 11/08/2022 / Date Finished: 11/08/2022
Drilling Equipment: Truck Mounted CME75 Drill Rig	Completion Depth: 51.5 ft / Rock Depth:
Size and Type of Bit: 8-inch O.D. HSA	Number of Samples: Disturbed 11 / Undisturbed - / Core -
Casing Diameter (in): - / Casing Depth (ft): -	Water Level (ft.): First ▽ 10.5 / Completion ▼ / 24 HR. ▼
Casing Hammer: - / Weight (lbs): - / Drop (in): -	Drilling Foreman: Jeff Frazer
Sampler: 2-inch Split Spoon & 3-inch O.D. California Modified	Field Engineer: Jose Magana Guardado
Sampler Hammer: Auto / Weight (lbs): 140 / Drop (in): 30	

Material Symbol	Elev. (ft)	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. resist BL/6in	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
	+57.0		0					Boring was Hand Auger from 0 to 5 feet.
	+56.8	AC Thickness = 2.5 inches						
	+56.3	AB Thickness = 6 inches						
		UNDOCUMENTED FILL Brown, silty fine SAND, [SM], moist.	2					
	+54.0	**YOUNG ALLUVIUM**	4					
		Medium dense, light brown, fine SAND, [SP], moist.	6	S-1	CR	18	4 10 16	PID = 0.0 ppm
		Loose, light brown, loose, fine to medium SAND, [SP], moist.	8	S-2	CR	18	4 4 4	PID = 0.0 ppm
	+47.5		10	S-3	SS	18	1 1 1	PID = 0.0 ppm Groundwater encountered at 10.5 feet.
		Soft, gray brown, clayey SILT, some fine sand, [ML], wet. ▽						
	+44.0		12					
		Dense, light brown, medium to coarse SAND, [SP], wet.	14					
			16	S-4	CR	18	10 20 22	PID = 0.0 ppm
			18					
	+36.5	Very dense, light brown, medium to coarse SAND, [SP], wet.	20	S-5	SS	18	1 50/4"	PID = 0.0 ppm
		Stiff, gray, silty CLAY, [CL], moist.	22					
			24					
		Stiff, gray, silty CLAY, some fine sand, [CL], wet.	26	S-6	CR	16	3 5 16	PID = 0.0 ppm
	+29.0		28					
			30					

LANGAN

Log of Boring **LB-5** Sheet 2 of 2

Project	Project No.
Cypress College Student Housing	700123501
Location	**Elevation and Datum**
9131 Holder Street, Cypress, CA	Approx. 57

Material Symbol	Elev. (ft)	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. resist BL/6in	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
	+27.0	Medium dense, grayish brown, silty fine to medium SAND, some clay, [SM], moist.	30	S-7	SS	13	3 4 6	PID = 0.0 ppm
			32					
			34					
		Medium dense, grayish brown, silty fine SAND, some clay, [SM], moist.	36	S-8	CR	18	6 13 16	PID = 0.0 ppm
			38					
		Medium dense, grayish brown, silty fine SAND, some clay, [SM], moist.	40	S-9	SS	13	3 7 10	PID = 0.0 ppm
	+14.0		42					
		Medium dense, light brown, medium to coarse SAND, [SP], wet.	44					
			46	S-10	CR	0	3 12 23	PID = 0.0 ppm
			48					
		Dense, light brown, medium to coarse SAND, [SP], wet.	50	S-11	SS	0	8 25 21	PID = 0.0 ppm
	+5.5	End of boring at 51.5 feet. Groundwater encountered at 10.5 feet. Boring backfilled with cement grout.	52					
			54					
			56					
			58					
			60					
			62					
			64					
			66					
			67.5					

LANGAN

Log of Boring **LB-6** Sheet 1 of 1

Project: Cypress College Student Housing	Project No.: 700123501
Location: 9131 Holder Street, Cypress, CA	Elevation and Datum: Approx. 56.6
Drilling Company: Martini Drilling	Date Started: 11/09/2022 — Date Finished: 11/09/2022
Drilling Equipment: Truck Mounted CME75 Drill Rig	Completion Depth: 26.5 ft — Rock Depth:
Size and Type of Bit: 8-inch O.D. HSA	Number of Samples: Disturbed 5 — Undisturbed - — Core -
Casing Diameter (in): - — Casing Depth (ft): -	Water Level (ft.): First ▽ 9.5 — Completion ▼ — 24 HR. ▼
Casing Hammer: - — Weight (lbs): - — Drop (in): -	Drilling Foreman: Jeff Frazer
Sampler: 2-inch Split Spoon & 3-inch O.D. California Modified	Field Engineer: Jose Magana Guardado
Sampler Hammer: Auto — Weight (lbs): 140 — Drop (in): 30	

Material Symbol	Elev. (ft)	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. resist BL/6in	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
	+56.6		0					
	+56.4	AC Thickness = 2 inches						Boring was Hand Auger from 0 to 5 feet.
	+56.1	AB Thickness = 4 inches						
		UNDOCUMENTED FILL	2					
		Brown, silty fine SAND, [SM], moist.						
	+53.1	**YOUNG ALLUVIUM**	4					
		Loose, light brown, fine to medium SAND, [SP], moist.	6	S-1	SS	18	3 3 5	PID = 0.6 ppm
	+48.6		8					
			10					Groundwater encountered at 9.5 feet.
	+46.1	Firm, grayish brown, silty CLAY, [CL], moist.		S-2	CR	16	6 8 8	PID = 1.7 ppm
		Medium dense, grayish brown, fine to medium SAND, [SP], wet.	12					
			14					
		Medium dense, light brown, medium to coarse SAND, [SP], wet.		S-3	SS	12	2 6 6	PID = 3.8 ppm
	+40.6	Medium dense, grayish brown, silty fine SAND, [SM], wet.	16					
	+38.6		18					
		Loose, light brown, medium to coarse SAND, [SP], wet.	20	S-4	CR	18	3 5 6	PID = 5.5 ppm
	+33.6		22					
			24					
		Medium dense, grayish brown, silty fine SAND, some clay, [SM], wet.	26	S-5	SS	18	3 5 5	PID = 1.0 ppm
	+30.1	End of boring at 26.5 feet. Groundwater encountered at 9.5 feet. Boring backfilled with cement grout.	28					
			30					

\\LANGAN.COM\DATA\IRV\DATA5\700123501\PROJECT DATA_DISCIPLINE\GEOTECHNICAL\GINTLOGS\700123501_ENTERPRISE.GPJ ... 12/15/2022 7:58:53 AM ... Report: Log - LANGAN

LANGAN

Log of Boring **LB-7** Sheet 1 of 1

Project: Cypress College Student Housing	Project No.: 700123501
Location: 9131 Holder Street, Cypress, CA	Elevation and Datum: Approx. 56
Drilling Company: Martini Drilling	Date Started: 11/09/2022 / Date Finished: 11/09/2022
Drilling Equipment: Truck Mounted CME75 Drill Rig	Completion Depth: 26.5 ft / Rock Depth:
Size and Type of Bit: 8-inch O.D. HSA	Number of Samples: Disturbed 5 / Undisturbed - / Core -
Casing Diameter (in): - / Casing Depth (ft): -	Water Level (ft.): First ▽ 12 / Completion ▼ / 24 HR. ▼
Casing Hammer: - / Weight (lbs): - / Drop (in): -	Drilling Foreman: Jeff Frazer
Sampler: 2-inch Split Spoon & 3-inch O.D. California Modified	Field Engineer: Jose Magana Guardado
Sampler Hammer: Auto / Weight (lbs): 140 / Drop (in): 30	

Material Symbol	Elev. (ft)	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. resist BL/6in	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
	+56.0		0					Boring was Hand Auger from 0 to 5 feet.
	+55.6	Asphalt thickness = 4 inches						
		UNDOCUMENTED FILL Grayish brown, silty fine SAND, [SM], moist.	2	B-1	BAG			
	+53.0	**YOUNG ALLUVIUM**	4					
		Medium dense, light brown, fine SAND, [SP], moist.	6	S-1	CR	14	6 10 12	PID = 8.0 ppm
			8					
		Very loose, light brown, fine SAND, [SP], wet.	10	S-2A	SS	18	1 1 1	PID = 1.1 ppm
	+45.3	Very loose, grayish brown, silty fine SAND, [SM], some clay, wet. ▽	12					Groundwater encountered at 12 feet.
		Medium dense, grayish brown, silty fine SAND, [SM], moist.	14					
			16	S-3	CR	18	5 7 18	PID = 1.3 ppm
	+38.0		18					
		Firm, grayish brown, clayey SILT, [ML], some coarse sand, moist.	20	S-4	SS	18	1 3 3	PID = 1.6 ppm
	+33.0		22					
		Firm, grayish brown, silty CLAY, [CL], wet.	24					
			26	S-5	CR	18	4 5 6	PID = 0.2 ppm
	+29.5	End of boring at 26.5 feet. Groundwater encountered at 12 feet. Boring backfilled with cement grout.	28					
			30					

LANGAN

Log of Boring **LB-8** Sheet 1 of 2

Project: Cypress College Student Housing	Project No.: 700123501
Location: 9131 Holder Street, Cypress, CA	Elevation and Datum: Approx. 56
Drilling Company: Martini Drilling	Date Started: 11/08/2022 / Date Finished: 11/08/2022
Drilling Equipment: Truck Mounted CME75 Drill Rig	Completion Depth: 51.5 ft / Rock Depth:
Size and Type of Bit: 8-inch O.D. HSA	Number of Samples: Disturbed 10 / Undisturbed - / Core -
Casing Diameter (in): - / Casing Depth (ft): -	Water Level (ft.): First ▽ 10.5 / Completion ▼ / 24 HR. ▼
Casing Hammer: - / Weight (lbs): - / Drop (in): -	Drilling Foreman: Jeff Frazer
Sampler: 2-inch Split Spoon & 3-inch O.D. California Modified	Field Engineer: Jose Magana Guardado
Sampler Hammer: Auto / Weight (lbs): 140 / Drop (in): 30	

Material Symbol	Elev. (ft)	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. resist BL/6in	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
	+56.0		0					Boring was Hand Auger from 0 to 5 feet.
	+55.8	AC Thickness = 2.5 inches						
	+55.3	AB Thickness = 6 inches						
		UNDOCUMENTED FILL						
		Brown, silty fine SAND, [SM], moist.	2					
	+52.5	**YOUNG ALLUVIUM**	4					
		Medium dense, light brown, fine to medium SAND, [SP], moist.	6	S-1	SS	18	1 4 6	PID = 0.0 ppm
	+48.0		8					
		Loose, brownish gray, silty fine SAND, [SM], wet. ▽	10	S-2	CR	18	1 2 4	PID = 0.0 ppm Groundwater encountered at 10.5 feet
	+43.0		12					
		Medium dense, light brown, medium to coarse SAND, [SP], moist.	14					
		Medium dense, dark grayish brown, fine to medium SAND, [SP], moist.	16	S-3	SS	18	5 11 10	PID = 0.0 ppm
	+38.0		18					
		Firm, grayish brown, silty CLAY, some fine sand, [CL], moist.	20	S-4	CR	18	3 5 5	PID = 0.0 ppm
	+33.0		22					
		Medium dense, light brown, medium to coarse SAND, [SP], wet.	24					
	+30.3	Medium dense, grayish brown, silty fine SAND, some clay, [SM], moist.	26	S-5	SS	14	3 5 5	PID = 0.0 ppm
			28					
			30					

LANGAN

Log of Boring **LB-8** Sheet 2 of 2

Project	Project No.
Cypress College Student Housing	700123501
Location	**Elevation and Datum**
9131 Holder Street, Cypress, CA	Approx. 56

Material Symbol	Elev. (ft)	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. resist BL/6in	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
	+26.0	Medium dense, grayish brown, silty fine SAND, some clay, [SM], moist.	30	S-6	CR	18	7 8 9	PID = 0.0 ppm
			32					
			34					
		Dense, grayish brown, silty fine SAND, [SM], moist.	36	S-7	SS	13	4 8 11	PID = 0.0 ppm
			38					
		Dense, grayish brown, silty fine SAND, some clay, [SM], moist.	40	S-8	CR	18	9 17 38	PID = 0.0 ppm
	+13.0		42					
		Dense, light brown, medium to coarse SAND, [SP], wet.	44					
			46	S-9	SS	16	4 13 21	PID = 0.0 ppm
	+8.0		48					
		Very dense, grayish brown, silty fine SAND, [SM], wet.	50	S-10	CR	18	13 32 50/6"	PID = 0.0 ppm
	+4.5	End of boring at 51.5 feet. Groundwater encountered at 10.5 feet. Boring backfilled with cement grout.	52					
			54					
			56					
			58					
			60					
			62					
			64					
			66					
			67.5					

LANGAN

Log of Boring **LB-9** Sheet 1 of 1

Project: Cypress College Student Housing	Project No.: 700123501
Location: 9131 Holder Street, Cypress, CA	Elevation and Datum: Approx. 57
Drilling Company: Martini Drilling	Date Started: 11/09/2022 / Date Finished: 11/09/2022
Drilling Equipment: Hand Auger	Completion Depth: 6 ft / Rock Depth:
Size and Type of Bit: 4-inch O.D. Hand Auger	Number of Samples: Disturbed 0 / Undisturbed - / Core -
Casing Diameter (in): - / Casing Depth (ft): -	Water Level (ft.): First ▽ / Completion ▼ / 24 HR. ▼
Casing Hammer: - / Weight (lbs): - / Drop (in): -	Drilling Foreman: Jeff Frazer
Sampler:	Field Engineer: Jose Magana Guardado
Sampler Hammer: / Weight (lbs): / Drop (in):	

Material Symbol	Elev. (ft)	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. resist BL/6in	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
	+57.0		0					Boring was Hand Auger from 0 to 5 feet.
	+56.8	AC Thickness = 3 inches						
		UNDOCUMENTED FILL Light brown, silty fine SAND, [SM], moist.	2					
	+54.0	**YOUNG ALLUVIUM**	4					
		Light brown, fine SAND, [SP], moist.		S-1	HA	12		Bag sample collected from 5 to 6 feet. PID = 0.0 ppm
	+51.0	End of boring at 6 feet. No groundwater encountered. Boring backfilled with soil cuttings.	6					
			8					
			10					
			12					
			14					
			16					
			18					
			20					
			22					
			24					
			26					
			28					
			30					

APPENDIX B

LABORATORY ANALYTICAL REPORTS

Date of Report: 01/24/2023

Rachel Owen

Langan Engineering & Environmental Services
18575 Jamboree Road Suite 150
Irvine, CA 92612

Client Project:	700123501
BCL Project:	Cypress College Student Housing
BCL Work Order:	2227419
Invoice ID:	B463904, B468188

Enclosed are the results of analyses for samples received by the laboratory on 11/9/2022. If you have any questions concerning this report, please feel free to contact me.

Revised Report: This report supercedes Report ID 1001371084

Sincerely,

Contact Person: Brianna Schutte
Client Services Rep

Stuart Buttram
Operations Manager

Certifications: CA ELAP #1186; NV #CA00014; OR ELAP #4032-001; AK UST101

Table of Contents

Chain of Custody Form

Pace ANALYTICAL SERVICES 4100 Atlas Ct. – Bakersfield, CA 93308 – 661.327.4911 – Fax: 661.327.1918 – www.pacelabs.com

Page 1 of 1

Report To: Client: Langan	Project #: 700123501
Attn: Chris Funk	Project Name: Cypress College Student Housing
Street Address: 18575 Jamboree Rd Suite 150	BID#:
City, State, Zip: Irvine, CA, 92612	Sampler(s) Name Printed: Rachel Owen
Phone: (610) 737-5208 Fax:	
Email: cfunk@langan.com	
Work Order #: 22-27419	

Analysis Requested: VOCs 8260B; SVOCs 8270; TPH gro, dro, oro 8015B; Title 22 metals 6010B 7471A

Comments: please provide PDF and Langan EqEdd

Result Request **Surcharge: ☒ STD (10 Days) ☐ 5 Day** ☐ 4 Day** ☐ 3 Day** ☐ 2 Day** ☐ 1 Day** — Rush requests must be approved

Sample #	Description	Date Sampled	Time Sampled	VOCs 8260B	SVOCs 8270	TPH gro, dro, oro 8015B	Title 22 metals 6010B 7471A	Soil	Sludge	Drinking Water	Ground Water	Waste Water	Other	Notes
-1	IDW-1	11/9/22	11:00	X	X	X	X	X						

CHK BY: MG — DISTRIBUTION: [illegible] — SUB-OUT ☐

Billing ☐ Same as above

Client:
Address:
City: State: Zip:
Attn:
P.O. #:

System # (Needed for CLIP)

GIS/Key ☐ Well Star ☐

EDF Required Geotracker ☐ Yes ☐ No   Global ID –

Relinquished By	Date	Time	Received By	Date	Time
1. Rachel Owen	11/9/22	1230	1. [signature]	11/9	1230
2. [signature]	11/9	1300	2. Miguel Acero	11/9/22	1600
3. Miguel Acero	11/9/22	1600	3. Isbet Olivero	11/9/22	2035

Pace Analytical Bakersfield does not accept samples containing radioactive material above background levels. Samples containing radioactive material must be disclosed prior to receipt. Any samples suspected of containing radioactive material above background levels will not be accepted and will be returned to client.

REV 12/2021

PACE ANALYTICAL — COOLER RECEIPT FORM — Page 1 Of 1

Submission #: 22-27419

SHIPPING INFORMATION
Fed Ex ☐ UPS ☐ GSO / GLS ☐ Hand Delivery ☐
Pace Lab Field Service ☑ Other ☐ (Specify)_____

SHIPPING CONTAINER
Ice Chest ☑ None ☐ Box ☐
Other ☐ (Specify)_____

FREE LIQUID
YES ☐ NO ☑
WTB

Refrigerant: Ice ☑ Blue Ice ☐ None ☐ Other ☐ Comments:

Custody Seals: Ice Chest ☐ Intact? Yes ☐ No ☐ Containers ☐ Intact? Yes ☐ No ☐ None ☑ Comments:

All samples received? Yes ☑ No ☐ All samples containers intact? Yes ☑ No ☐ Description(s) match COC? Yes ☑ No ☐

COC Received ☑ YES ☐ NO

Emissivity: 0.97 Container: Clear Thermometer ID: 274

Temperature: (A) 1.8 °C / (C) 1.9 °C

Date/Time 11/9/22

Analyst Init IR2055

SAMPLE CONTAINERS	SAMPLE NUMBERS 1	2	3	4	5	6	7	8	9	10
QT PE UNPRES										
4oz / 8oz / 16oz PE UNPRES										
2oz Cr^{+6}										
QT INORGANIC CHEMICAL METALS										
INORGANIC CHEMICAL METALS 4oz / 8oz / 16oz										
PT CYANIDE										
PT NITROGEN FORMS										
PT TOTAL SULFIDE										
2oz. NITRATE / NITRITE										
PT TOTAL ORGANIC CARBON										
PT CHEMICAL OXYGEN DEMAND										
PtA PHENOLICS										
40ml VOA VIAL TRAVEL BLANK										
40ml VOA VIAL										
QT EPA 1664B										
PT ODOR										
RADIOLOGICAL										
BACTERIOLOGICAL										
40 ml VOA VIAL- 504										
QT EPA 508/608.3/8081A										
QT EPA 515.1/8151A										
QT EPA 525.2										
QT EPA 525.2 TRAVEL BLANK										
40ml EPA 547										
40ml EPA 531.1										
8oz EPA 548.1										
QT EPA 549.2										
QT EPA 8015M										
QT EPA 8270C										
8oz / 16oz / 32oz AMBER										
8oz / 16oz / 32oz JAR	D-C									
SOIL SLEEVE										
PCB VIAL										
PLASTIC BAG										
TEDLAR BAG										
FERROUS IRON										
ENCORE										
SMART KIT	A-C									
SUMMA CANISTER										

Comments:

Sample Numbering Completed By: TODD L. Date/Time: 11-15-22 1700

A = Actual / C = Corrected

Rev 23 05/20/22

[S:\MPDocs\NewPerfect\LAB_DOCS\FORMS\SAMPREC rev 23]

Pace Analytical
ENVIRONMENTAL SCIENCES

Langan Engineering & Environmental Services	**Reported:** 01/24/2023 16:05
18575 Jamboree Road Suite 150	Project: Cypress College Student Housing
Irvine, CA 92612	Project Number: 700123501
	Project Manager: Rachel Owen

Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information			
2227419-01	**COC Number:**	---	**Receive Date:**	11/09/2022 20:55
	Project Number:	---	**Sampling Date:**	11/09/2022 11:00
	Sampling Location:	Cypress College	**Sample Depth:**	---
	Sampling Point:	1DW-1	**Lab Matrix:**	Solids
	Sampled By:	---	**Sample Type:**	Soil

Pace Analytical
ENVIRONMENTAL SCIENCES

Langan Engineering & Environmental Services
18575 Jamboree Road Suite 150
Irvine, CA 92612

Reported: 01/24/2023 16:05
Project: Cypress College Student Housing
Project Number: 700123501
Project Manager: Rachel Owen

Volatile Organic Analysis (EPA Method 8260B/5035)

BCL Sample ID: 2227419-01 | **Client Sample Name:** Cypress College, 1DW-1, 11/9/2022 11:00:00AM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	DCN
Benzene	**0.0013**	**mg/kg**	**0.0039**	**0.00052**	**EPA-8260B**	ND	**J**	1
Bromobenzene	ND	mg/kg	0.0039	0.00068	EPA-8260B	ND		1
Bromochloromethane	ND	mg/kg	0.0039	0.00063	EPA-8260B	ND		1
Bromodichloromethane	ND	mg/kg	0.0039	0.00061	EPA-8260B	ND		1
Bromoform	ND	mg/kg	0.0039	0.00054	EPA-8260B	ND		1
Bromomethane	ND	mg/kg	0.0039	0.0013	EPA-8260B	ND		1
n-Butylbenzene	ND	mg/kg	0.0039	0.00059	EPA-8260B	ND		1
sec-Butylbenzene	ND	mg/kg	0.0039	0.00055	EPA-8260B	ND		1
tert-Butylbenzene	ND	mg/kg	0.0039	0.00066	EPA-8260B	ND		1
Carbon tetrachloride	ND	mg/kg	0.0039	0.00061	EPA-8260B	ND		1
Chlorobenzene	ND	mg/kg	0.0039	0.00060	EPA-8260B	ND		1
Chloroethane	ND	mg/kg	0.0039	0.00086	EPA-8260B	ND		1
Chloroform	ND	mg/kg	0.0039	0.00070	EPA-8260B	ND		1
Chloromethane	ND	mg/kg	0.0039	0.00086	EPA-8260B	ND		1
2-Chlorotoluene	ND	mg/kg	0.0039	0.00068	EPA-8260B	ND		1
4-Chlorotoluene	ND	mg/kg	0.0039	0.00054	EPA-8260B	ND		1
Dibromochloromethane	ND	mg/kg	0.0039	0.00062	EPA-8260B	ND		1
1,2-Dibromo-3-chloropropane	ND	mg/kg	0.0039	0.00075	EPA-8260B	ND		1
1,2-Dibromoethane	ND	mg/kg	0.0039	0.00064	EPA-8260B	ND		1
Dibromomethane	ND	mg/kg	0.0039	0.0011	EPA-8260B	ND		1
1,2-Dichlorobenzene	ND	mg/kg	0.0039	0.00061	EPA-8260B	ND		1
1,3-Dichlorobenzene	ND	mg/kg	0.0039	0.00057	EPA-8260B	ND		1
1,4-Dichlorobenzene	ND	mg/kg	0.0039	0.00057	EPA-8260B	ND		1
Dichlorodifluoromethane	ND	mg/kg	0.0039	0.00061	EPA-8260B	ND		1
1,1-Dichloroethane	ND	mg/kg	0.0039	0.00050	EPA-8260B	ND		1
1,2-Dichloroethane	ND	mg/kg	0.0039	0.00057	EPA-8260B	ND		1
1,1-Dichloroethene	ND	mg/kg	0.0039	0.00086	EPA-8260B	ND		1
cis-1,2-Dichloroethene	ND	mg/kg	0.0039	0.00042	EPA-8260B	ND		1
trans-1,2-Dichloroethene	ND	mg/kg	0.0039	0.0029	EPA-8260B	ND		1
1,2-Dichloropropane	ND	mg/kg	0.0039	0.00062	EPA-8260B	ND		1
1,3-Dichloropropane	ND	mg/kg	0.0039	0.00052	EPA-8260B	ND		1
2,2-Dichloropropane	ND	mg/kg	0.0039	0.00052	EPA-8260B	ND		1
1,1-Dichloropropene	ND	mg/kg	0.0039	0.00052	EPA-8260B	ND		1

Pace Analytical
ENVIRONMENTAL SCIENCES

Langan Engineering & Environmental Services
18575 Jamboree Road Suite 150
Irvine, CA 92612

Reported: 01/24/2023 16:05
Project: Cypress College Student Housing
Project Number: 700123501
Project Manager: Rachel Owen

Volatile Organic Analysis (EPA Method 8260B/5035)

BCL Sample ID: 2227419-01 | **Client Sample Name:** Cypress College, 1DW-1, 11/9/2022 11:00:00AM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	DCN
cis-1,3-Dichloropropene	ND	mg/kg	0.0039	0.00045	EPA-8260B	ND		1
trans-1,3-Dichloropropene	ND	mg/kg	0.0039	0.00051	EPA-8260B	ND		1
Ethylbenzene	ND	mg/kg	0.0039	0.00054	EPA-8260B	ND		1
Hexachlorobutadiene	ND	mg/kg	0.0039	0.00052	EPA-8260B	ND		1
Isopropylbenzene	ND	mg/kg	0.0039	0.00062	EPA-8260B	ND		1
p-Isopropyltoluene	ND	mg/kg	0.0039	0.00046	EPA-8260B	ND		1
Methylene chloride	ND	mg/kg	0.0078	0.00086	EPA-8260B	ND		1
Methyl t-butyl ether	ND	mg/kg	0.0039	0.00044	EPA-8260B	ND		1
Naphthalene	ND	mg/kg	0.0039	0.00077	EPA-8260B	ND		1
n-Propylbenzene	ND	mg/kg	0.0039	0.00055	EPA-8260B	ND		1
Styrene	ND	mg/kg	0.0039	0.00048	EPA-8260B	ND		1
1,1,1,2-Tetrachloroethane	ND	mg/kg	0.0039	0.00074	EPA-8260B	ND		1
1,1,2,2-Tetrachloroethane	ND	mg/kg	0.0039	0.00065	EPA-8260B	ND		1
Tetrachloroethene	ND	mg/kg	0.0039	0.00075	EPA-8260B	ND		1
Toluene	**0.0011**	**mg/kg**	**0.0039**	**0.00054**	**EPA-8260B**	ND	**J**	1
1,2,3-Trichlorobenzene	ND	mg/kg	0.0039	0.0012	EPA-8260B	ND		1
1,2,4-Trichlorobenzene	ND	mg/kg	0.0039	0.0011	EPA-8260B	ND		1
1,1,1-Trichloroethane	ND	mg/kg	0.0039	0.00052	EPA-8260B	ND		1
1,1,2-Trichloroethane	ND	mg/kg	0.0039	0.00073	EPA-8260B	ND		1
Trichloroethene	ND	mg/kg	0.0039	0.00058	EPA-8260B	ND		1
Trichlorofluoromethane	ND	mg/kg	0.0039	0.0012	EPA-8260B	ND		1
1,2,3-Trichloropropane	ND	mg/kg	0.0039	0.0015	EPA-8260B	ND		1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	mg/kg	0.0039	0.00078	EPA-8260B	ND		1
1,2,4-Trimethylbenzene	ND	mg/kg	0.0039	0.00062	EPA-8260B	ND		1
1,3,5-Trimethylbenzene	ND	mg/kg	0.0039	0.00051	EPA-8260B	ND		1
Vinyl chloride	ND	mg/kg	0.0039	0.00046	EPA-8260B	ND		1
Total Xylenes	ND	mg/kg	0.0078	0.0019	EPA-8260B	ND		1
p- & m-Xylenes	ND	mg/kg	0.0039	0.0012	EPA-8260B	ND		1
o-Xylene	ND	mg/kg	0.0039	0.00072	EPA-8260B	ND		1
1,2-Dichloroethane-d4 (Surrogate)	125	%	70 - 121 (LCL - UCL)		EPA-8260B		S09	1
Toluene-d8 (Surrogate)	105	%	81 - 117 (LCL - UCL)		EPA-8260B			1
4-Bromofluorobenzene (Surrogate)	102	%	74 - 121 (LCL - UCL)		EPA-8260B			1

Pace Analytical
ENVIRONMENTAL SCIENCES

Langan Engineering & Environmental Services
18575 Jamboree Road Suite 150
Irvine, CA 92612

Reported: 01/24/2023 16:05
Project: Cypress College Student Housing
Project Number: 700123501
Project Manager: Rachel Owen

Volatile Organic Analysis (EPA Method 8260B/5035)

BCL Sample ID: 2227419-01 | **Client Sample Name:** Cypress College, 1DW-1, 11/9/2022 11:00:00AM

DCN	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	
1	EPA-8260B	11/17/22 15:31	11/18/22 02:28	BYM	MS-V18	0.778	B154135	EPA 5035 Soil MS

DCN = Data Continuation Number

Langan Engineering & Environmental Services
18575 Jamboree Road Suite 150
Irvine, CA 92612

Reported: 01/24/2023 16:05
Project: Cypress College Student Housing
Project Number: 700123501
Project Manager: Rachel Owen

Base Neutral and Acid Extractables Organic Analysis (EPA Method 8270C)

BCL Sample ID: 2227419-01 | **Client Sample Name:** Cypress College, 1DW-1, 11/9/2022 11:00:00AM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	DCN
Acenaphthene	ND	mg/kg	1.0	0.067	EPA-8270C	ND	A10	1
Acenaphthylene	ND	mg/kg	1.0	0.067	EPA-8270C	ND	A10	1
Aldrin	ND	mg/kg	1.0	0.067	EPA-8270C	ND	A10	1
Aniline	ND	mg/kg	2.0	0.11	EPA-8270C	ND	A10	1
Anthracene	ND	mg/kg	1.0	0.067	EPA-8270C	ND	A10	1
Benzidine	ND	mg/kg	30	0.093	EPA-8270C	ND	A10	1
Benzo[a]anthracene	ND	mg/kg	1.0	0.077	EPA-8270C	ND	A10	1
Benzo[b]fluoranthene	ND	mg/kg	1.0	0.067	EPA-8270C	ND	A10	1
Benzo[k]fluoranthene	ND	mg/kg	1.0	0.082	EPA-8270C	ND	A10	1
Benzo[b+k]fluoranthene	ND	mg/kg	1.0	0.082	EPA-8270C	ND	A10	1
Benzo[a]pyrene	ND	mg/kg	1.0	0.067	EPA-8270C	ND	A10	1
Benzo[g,h,i]perylene	ND	mg/kg	1.0	0.13	EPA-8270C	ND	A10	1
Benzoic acid	ND	mg/kg	5.0	0.14	EPA-8270C	ND	A10	1
Benzyl alcohol	ND	mg/kg	1.0	0.067	EPA-8270C	ND	A10	1
Benzyl butyl phthalate	ND	mg/kg	1.0	0.067	EPA-8270C	ND	A10	1
alpha-BHC	ND	mg/kg	1.0	0.067	EPA-8270C	ND	A10	1
beta-BHC	ND	mg/kg	1.0	0.075	EPA-8270C	ND	A10	1
delta-BHC	ND	mg/kg	1.0	0.067	EPA-8270C	ND	A10	1
gamma-BHC (Lindane)	ND	mg/kg	1.0	0.067	EPA-8270C	ND	A10	1
bis(2-Chloroethoxy)methane	ND	mg/kg	1.0	0.067	EPA-8270C	ND	A10	1
bis(2-Chloroethyl) ether	ND	mg/kg	1.0	0.097	EPA-8270C	ND	A10	1
bis(2-Chloroisopropyl)ether	ND	mg/kg	1.0	0.067	EPA-8270C	ND	A10	1
bis(2-Ethylhexyl)phthalate	ND	mg/kg	2.0	0.067	EPA-8270C	ND	A10	1
4-Bromophenyl phenyl ether	ND	mg/kg	1.0	0.067	EPA-8270C	ND	A10	1
4-Chloroaniline	ND	mg/kg	1.0	0.15	EPA-8270C	ND	A10	1
2-Chloronaphthalene	ND	mg/kg	1.0	0.067	EPA-8270C	ND	A10	1
4-Chlorophenyl phenyl ether	ND	mg/kg	1.0	0.067	EPA-8270C	ND	A10	1
Chrysene	ND	mg/kg	1.0	0.067	EPA-8270C	ND	A10	1
4,4'-DDD	ND	mg/kg	1.0	0.067	EPA-8270C	ND	A10	1
4,4'-DDE	ND	mg/kg	1.0	0.068	EPA-8270C	ND	A10	1
4,4'-DDT	ND	mg/kg	1.0	0.067	EPA-8270C	ND	A10	1
Dibenzo[a,h]anthracene	ND	mg/kg	1.0	0.067	EPA-8270C	ND	A10	1
Dibenzofuran	ND	mg/kg	1.0	0.067	EPA-8270C	ND	A10	1

Langan Engineering & Environmental Services
18575 Jamboree Road Suite 150
Irvine, CA 92612

Reported: 01/24/2023 16:05
Project: Cypress College Student Housing
Project Number: 700123501
Project Manager: Rachel Owen

Base Neutral and Acid Extractables Organic Analysis (EPA Method 8270C)

BCL Sample ID: 2227419-01 | **Client Sample Name:** Cypress College, 1DW-1, 11/9/2022 11:00:00AM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	DCN
1,2-Dichlorobenzene	ND	mg/kg	1.0	0.067	EPA-8270C	ND	A10	1
1,3-Dichlorobenzene	ND	mg/kg	1.0	0.067	EPA-8270C	ND	A10	1
1,4-Dichlorobenzene	ND	mg/kg	1.0	0.067	EPA-8270C	ND	A10	1
3,3-Dichlorobenzidine	ND	mg/kg	2.0	0.067	EPA-8270C	ND	A10	1
Dieldrin	ND	mg/kg	1.0	0.077	EPA-8270C	ND	A10	1
Diethyl phthalate	ND	mg/kg	1.0	0.067	EPA-8270C	ND	A10	1
Dimethyl phthalate	ND	mg/kg	1.0	0.067	EPA-8270C	ND	A10	1
Di-n-butyl phthalate	ND	mg/kg	1.0	0.067	EPA-8270C	ND	A10	1
2,4-Dinitrotoluene	ND	mg/kg	1.0	0.085	EPA-8270C	ND	A10	1
2,6-Dinitrotoluene	ND	mg/kg	1.0	0.067	EPA-8270C	ND	A10	1
Di-n-octyl phthalate	ND	mg/kg	1.0	0.067	EPA-8270C	ND	A10	1
1,2-Diphenylhydrazine	ND	mg/kg	1.0	0.067	EPA-8270C	ND	A10	1
Endosulfan I	ND	mg/kg	2.0	0.088	EPA-8270C	ND	A10	1
Endosulfan II	ND	mg/kg	2.0	0.088	EPA-8270C	ND	A10	1
Endosulfan sulfate	ND	mg/kg	1.0	0.067	EPA-8270C	ND	A10	1
Endrin	ND	mg/kg	2.0	0.086	EPA-8270C	ND	A10	1
Endrin aldehyde	ND	mg/kg	5.0	0.070	EPA-8270C	ND	A10	1
Fluoranthene	ND	mg/kg	1.0	0.067	EPA-8270C	ND	A10	1
Fluorene	ND	mg/kg	1.0	0.067	EPA-8270C	ND	A10	1
Heptachlor	ND	mg/kg	1.0	0.067	EPA-8270C	ND	A10	1
Heptachlor epoxide	ND	mg/kg	1.0	0.13	EPA-8270C	ND	A10	1
Hexachlorobenzene	ND	mg/kg	1.0	0.067	EPA-8270C	ND	A10	1
Hexachlorobutadiene	ND	mg/kg	1.0	0.067	EPA-8270C	ND	A10	1
Hexachlorocyclopentadiene	ND	mg/kg	1.0	0.15	EPA-8270C	ND	A10	1
Hexachloroethane	ND	mg/kg	1.0	0.067	EPA-8270C	ND	A10	1
Indeno[1,2,3-cd]pyrene	ND	mg/kg	1.0	0.069	EPA-8270C	ND	A10	1
Isophorone	ND	mg/kg	1.0	0.067	EPA-8270C	ND	A10	1
2-Methylnaphthalene	ND	mg/kg	1.0	0.067	EPA-8270C	ND	A10	1
Naphthalene	ND	mg/kg	1.0	0.067	EPA-8270C	ND	A10	1
2-Naphthylamine	ND	mg/kg	30	0.36	EPA-8270C	ND	A10	1
2-Nitroaniline	ND	mg/kg	1.0	0.067	EPA-8270C	ND	A10	1
3-Nitroaniline	ND	mg/kg	2.0	0.067	EPA-8270C	ND	A10	1
4-Nitroaniline	ND	mg/kg	2.0	0.11	EPA-8270C	ND	A10	1

Pace Analytical
ENVIRONMENTAL SCIENCES

Langan Engineering & Environmental Services
18575 Jamboree Road Suite 150
Irvine, CA 92612

Reported: 01/24/2023 16:05
Project: Cypress College Student Housing
Project Number: 700123501
Project Manager: Rachel Owen

Base Neutral and Acid Extractables Organic Analysis (EPA Method 8270C)

BCL Sample ID: 2227419-01 | **Client Sample Name:** Cypress College, 1DW-1, 11/9/2022 11:00:00AM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	DCN
Nitrobenzene	ND	mg/kg	1.0	0.067	EPA-8270C	ND	A10	1
N-Nitrosodimethylamine	ND	mg/kg	1.0	0.40	EPA-8270C	ND	A10	1
N-Nitrosodi-N-propylamine	ND	mg/kg	1.0	0.067	EPA-8270C	ND	A10	1
N-Nitrosodiphenylamine	ND	mg/kg	1.0	0.067	EPA-8270C	ND	A10	1
Phenanthrene	ND	mg/kg	1.0	0.067	EPA-8270C	ND	A10	1
Pyrene	ND	mg/kg	1.0	0.067	EPA-8270C	ND	A10	1
1,2,4-Trichlorobenzene	ND	mg/kg	1.0	0.067	EPA-8270C	ND	A10	1
4-Chloro-3-methylphenol	ND	mg/kg	2.0	0.067	EPA-8270C	ND	A10	1
2-Chlorophenol	ND	mg/kg	1.0	0.067	EPA-8270C	ND	A10	1
2,4-Dichlorophenol	ND	mg/kg	1.0	0.067	EPA-8270C	ND	A10	1
2,4-Dimethylphenol	ND	mg/kg	1.0	0.067	EPA-8270C	ND	A10	1
4,6-Dinitro-2-methylphenol	ND	mg/kg	5.0	0.067	EPA-8270C	ND	A10	1
2,4-Dinitrophenol	ND	mg/kg	5.0	0.067	EPA-8270C	ND	A10	1
2-Methylphenol	ND	mg/kg	1.0	0.067	EPA-8270C	ND	A10	1
3- & 4-Methylphenol	ND	mg/kg	2.0	0.14	EPA-8270C	ND	A10	1
2-Nitrophenol	ND	mg/kg	1.0	0.067	EPA-8270C	ND	A10	1
4-Nitrophenol	ND	mg/kg	2.0	0.18	EPA-8270C	ND	A10	1
Pentachlorophenol	ND	mg/kg	2.0	0.17	EPA-8270C	ND	A10	1
Phenol	ND	mg/kg	1.0	0.067	EPA-8270C	ND	A10	1
2,4,5-Trichlorophenol	ND	mg/kg	2.0	0.11	EPA-8270C	ND	A10	1
2,4,6-Trichlorophenol	ND	mg/kg	2.0	0.067	EPA-8270C	ND	A10	1
2-Fluorophenol (Surrogate)	64.5	%	20 - 130 (LCL - UCL)		EPA-8270C		A10	1
Phenol-d5 (Surrogate)	62.7	%	30 - 130 (LCL - UCL)		EPA-8270C		A10	1
Nitrobenzene-d5 (Surrogate)	50.5	%	30 - 130 (LCL - UCL)		EPA-8270C		A10	1
2-Fluorobiphenyl (Surrogate)	0	%	30 - 140 (LCL - UCL)		EPA-8270C		A10,S09	1
2,4,6-Tribromophenol (Surrogate)	53.7	%	20 - 150 (LCL - UCL)		EPA-8270C		A10	1
p-Terphenyl-d14 (Surrogate)	50.0	%	30 - 150 (LCL - UCL)		EPA-8270C		A10	1

DCN	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-8270C	11/17/22 17:00	11/18/22 15:01	CMM	MS-B8	10.135	B154548	EPA 3550B

DCN = Data Continuation Number

Pace Analytical
ENVIRONMENTAL SCIENCES

Langan Engineering & Environmental Services
18575 Jamboree Road Suite 150
Irvine, CA 92612

Reported: 01/24/2023 16:05
Project: Cypress College Student Housing
Project Number: 700123501
Project Manager: Rachel Owen

Purgeable Aromatics and Total Petroleum Hydrocarbons

BCL Sample ID: 2227419-01 | **Client Sample Name:** Cypress College, 1DW-1, 11/9/2022 11:00:00AM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	DCN
Gasoline Range Organics (C4 - C12)	ND	mg/kg	1.0	0.20	EPA-8015B	ND		1
a,a,a-Trifluorotoluene (FID Surrogate)	50.0	%	70 - 130 (LCL - UCL)		EPA-8015B		A10,S09	1

DCN	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-8015B	11/19/22 11:11	11/20/22 14:23	SEM	GC-V8	1	B154246	EPA 5030 Soil GC

DCN = Data Continuation Number

Pace Analytical
ENVIRONMENTAL SCIENCES

Langan Engineering & Environmental Services
18575 Jamboree Road Suite 150
Irvine, CA 92612

Reported: 01/24/2023 16:05
Project: Cypress College Student Housing
Project Number: 700123501
Project Manager: Rachel Owen

Total Petroleum Hydrocarbons

BCL Sample ID: 2227419-01 | **Client Sample Name:** Cypress College, 1DW-1, 11/9/2022 11:00:00AM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	DCN
TPH - Diesel (FFP)	ND	mg/kg	10	2.2	EPA-8015B/FFP	ND		1
TPH - Motor Oil	ND	mg/kg	20	7.0	EPA-8015B/FFP	ND		1
Tetracosane (Surrogate)	111	%	40 - 130 (LCL - UCL)		EPA-8015B/FFP			1

DCN	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-8015B/FFP	11/17/22 12:30	11/18/22 07:01	BUP	GC-19	1.007	B154547	EPA 3550B

DCN = Data Continuation Number

Pace Analytical
ENVIRONMENTAL SCIENCES

Langan Engineering & Environmental Services
18575 Jamboree Road Suite 150
Irvine, CA 92612

Reported: 01/24/2023 16:05
Project: Cypress College Student Housing
Project Number: 700123501
Project Manager: Rachel Owen

WET Test (STLC)

BCL Sample ID: 2227419-01 | **Client Sample Name:** Cypress College, 1DW-1, 11/9/2022 11:00:00AM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	DCN
Copper	**0.21**	**mg/L**	**0.10**	**0.012**	**EPA-6010B**	0.027		1

DCN	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-6010B	01/23/23 11:42	01/23/23 13:38	JCC	PE-OP3	1	B158472	EPA 3005A

DCN = Data Continuation Number

Pace Analytical
ENVIRONMENTAL SCIENCES

Langan Engineering & Environmental Services
18575 Jamboree Road Suite 150
Irvine, CA 92612

Reported: 01/24/2023 16:05
Project: Cypress College Student Housing
Project Number: 700123501
Project Manager: Rachel Owen

Total Concentrations (TTLC)

BCL Sample ID: 2227419-01 | **Client Sample Name:** Cypress College, 1DW-1, 11/9/2022 11:00:00AM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	DCN
Antimony	**0.49**	**mg/kg**	**5.0**	**0.33**	**EPA-6010B**	ND	**J**	1
Arsenic	**5.8**	**mg/kg**	**1.0**	**0.40**	**EPA-6010B**	ND		1
Barium	**130**	**mg/kg**	**0.50**	**0.18**	**EPA-6010B**	ND		1
Beryllium	**0.16**	**mg/kg**	**0.50**	**0.047**	**EPA-6010B**	ND	**J**	1
Cadmium	**0.36**	**mg/kg**	**0.50**	**0.052**	**EPA-6010B**	ND	**J**	1
Chromium	**12**	**mg/kg**	**0.50**	**0.050**	**EPA-6010B**	0.068		1
Cobalt	**6.9**	**mg/kg**	**2.5**	**0.098**	**EPA-6010B**	ND		1
Copper	**460**	**mg/kg**	**1.0**	**0.050**	**EPA-6010B**	ND		1
Lead	**0.80**	**mg/kg**	**2.5**	**0.41**	**EPA-6010B**	ND	**J**	1
Mercury	**0.032**	**mg/kg**	**0.16**	**0.016**	**EPA-7471A**	ND	**J**	2
Molybdenum	ND	mg/kg	2.5	0.050	EPA-6010B	ND		1
Nickel	**7.7**	**mg/kg**	**0.50**	**0.15**	**EPA-6010B**	ND		1
Selenium	ND	mg/kg	1.0	0.98	EPA-6010B	ND		1
Silver	**0.72**	**mg/kg**	**0.50**	**0.067**	**EPA-6010B**	ND		1
Thallium	ND	mg/kg	5.0	0.64	EPA-6010B	ND		1
Vanadium	**21**	**mg/kg**	**0.50**	**0.11**	**EPA-6010B**	ND		1
Zinc	**19**	**mg/kg**	**2.5**	**0.087**	**EPA-6010B**	0.34		1

DCN	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-6010B	11/18/22 10:00	11/22/22 13:03	JCC	PE-OP3	0.971	B154191	EPA 3050B
2	EPA-7471A	11/23/22 11:05	11/23/22 14:31	TMT	CETAC3	1.025	B154464	EPA 7471A

DCN = Data Continuation Number

Langan Engineering & Environmental Services
18575 Jamboree Road Suite 150
Irvine, CA 92612

Reported: 01/24/2023 16:05
Project: Cypress College Student Housing
Project Number: 700123501
Project Manager: Rachel Owen

Volatile Organic Analysis (EPA Method 8260B/5035)

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals	Run #
QC Batch ID: B154135							
Benzene	B154135-BLK1	ND	mg/kg	0.0050	0.00067		1
Bromobenzene	B154135-BLK1	ND	mg/kg	0.0050	0.00087		1
Bromochloromethane	B154135-BLK1	ND	mg/kg	0.0050	0.00081		1
Bromodichloromethane	B154135-BLK1	ND	mg/kg	0.0050	0.00078		1
Bromoform	B154135-BLK1	ND	mg/kg	0.0050	0.00070		1
Bromomethane	B154135-BLK1	ND	mg/kg	0.0050	0.0017		1
n-Butylbenzene	B154135-BLK1	ND	mg/kg	0.0050	0.00076		1
sec-Butylbenzene	B154135-BLK1	ND	mg/kg	0.0050	0.00071		1
tert-Butylbenzene	B154135-BLK1	ND	mg/kg	0.0050	0.00085		1
Carbon tetrachloride	B154135-BLK1	ND	mg/kg	0.0050	0.00078		1
Chlorobenzene	B154135-BLK1	ND	mg/kg	0.0050	0.00077		1
Chloroethane	B154135-BLK1	ND	mg/kg	0.0050	0.0011		1
Chloroform	B154135-BLK1	ND	mg/kg	0.0050	0.00090		1
Chloromethane	B154135-BLK1	ND	mg/kg	0.0050	0.0011		1
2-Chlorotoluene	B154135-BLK1	ND	mg/kg	0.0050	0.00087		1
4-Chlorotoluene	B154135-BLK1	ND	mg/kg	0.0050	0.00070		1
Dibromochloromethane	B154135-BLK1	ND	mg/kg	0.0050	0.00080		1
1,2-Dibromo-3-chloropropane	B154135-BLK1	ND	mg/kg	0.0050	0.00096		1
1,2-Dibromoethane	B154135-BLK1	ND	mg/kg	0.0050	0.00082		1
Dibromomethane	B154135-BLK1	ND	mg/kg	0.0050	0.0014		1
1,2-Dichlorobenzene	B154135-BLK1	ND	mg/kg	0.0050	0.00079		1
1,3-Dichlorobenzene	B154135-BLK1	ND	mg/kg	0.0050	0.00073		1
1,4-Dichlorobenzene	B154135-BLK1	ND	mg/kg	0.0050	0.00073		1
Dichlorodifluoromethane	B154135-BLK1	ND	mg/kg	0.0050	0.00079		1
1,1-Dichloroethane	B154135-BLK1	ND	mg/kg	0.0050	0.00064		1
1,2-Dichloroethane	B154135-BLK1	ND	mg/kg	0.0050	0.00073		1
1,1-Dichloroethene	B154135-BLK1	ND	mg/kg	0.0050	0.0011		1
cis-1,2-Dichloroethene	B154135-BLK1	ND	mg/kg	0.0050	0.00054		1
trans-1,2-Dichloroethene	B154135-BLK1	ND	mg/kg	0.0050	0.0037		1
1,2-Dichloropropane	B154135-BLK1	ND	mg/kg	0.0050	0.00080		1
1,3-Dichloropropane	B154135-BLK1	ND	mg/kg	0.0050	0.00067		1
2,2-Dichloropropane	B154135-BLK1	ND	mg/kg	0.0050	0.00067		1
1,1-Dichloropropene	B154135-BLK1	ND	mg/kg	0.0050	0.00067		1
cis-1,3-Dichloropropene	B154135-BLK1	ND	mg/kg	0.0050	0.00058		1

Pace Analytical
ENVIRONMENTAL SCIENCES

Langan Engineering & Environmental Services
18575 Jamboree Road Suite 150
Irvine, CA 92612

Reported: 01/24/2023 16:05
Project: Cypress College Student Housing
Project Number: 700123501
Project Manager: Rachel Owen

Volatile Organic Analysis (EPA Method 8260B/5035)

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals	Run #
QC Batch ID: B154135							
trans-1,3-Dichloropropene	B154135-BLK1	ND	mg/kg	0.0050	0.00066		1
Ethylbenzene	B154135-BLK1	ND	mg/kg	0.0050	0.00069		1
Hexachlorobutadiene	B154135-BLK1	ND	mg/kg	0.0050	0.00067		1
Isopropylbenzene	B154135-BLK1	ND	mg/kg	0.0050	0.00080		1
p-Isopropyltoluene	B154135-BLK1	ND	mg/kg	0.0050	0.00059		1
Methylene chloride	B154135-BLK1	ND	mg/kg	0.010	0.0011		1
Methyl t-butyl ether	B154135-BLK1	ND	mg/kg	0.0050	0.00056		1
Naphthalene	B154135-BLK1	ND	mg/kg	0.0050	0.00099		1
n-Propylbenzene	B154135-BLK1	ND	mg/kg	0.0050	0.00071		1
Styrene	B154135-BLK1	ND	mg/kg	0.0050	0.00062		1
1,1,1,2-Tetrachloroethane	B154135-BLK1	ND	mg/kg	0.0050	0.00095		1
1,1,2,2-Tetrachloroethane	B154135-BLK1	ND	mg/kg	0.0050	0.00084		1
Tetrachloroethene	B154135-BLK1	ND	mg/kg	0.0050	0.00097		1
Toluene	B154135-BLK1	ND	mg/kg	0.0050	0.00069		1
1,2,3-Trichlorobenzene	B154135-BLK1	ND	mg/kg	0.0050	0.0015		1
1,2,4-Trichlorobenzene	B154135-BLK1	ND	mg/kg	0.0050	0.0014		1
1,1,1-Trichloroethane	B154135-BLK1	ND	mg/kg	0.0050	0.00067		1
1,1,2-Trichloroethane	B154135-BLK1	ND	mg/kg	0.0050	0.00094		1
Trichloroethene	B154135-BLK1	ND	mg/kg	0.0050	0.00074		1
Trichlorofluoromethane	B154135-BLK1	ND	mg/kg	0.0050	0.0015		1
1,2,3-Trichloropropane	B154135-BLK1	ND	mg/kg	0.0050	0.0019		1
1,1,2-Trichloro-1,2,2-trifluoroethane	B154135-BLK1	ND	mg/kg	0.0050	0.0010		1
1,2,4-Trimethylbenzene	B154135-BLK1	ND	mg/kg	0.0050	0.00080		1
1,3,5-Trimethylbenzene	B154135-BLK1	ND	mg/kg	0.0050	0.00066		1
Vinyl chloride	B154135-BLK1	ND	mg/kg	0.0050	0.00059		1
Total Xylenes	B154135-BLK1	ND	mg/kg	0.010	0.0025		1
p- & m-Xylenes	B154135-BLK1	ND	mg/kg	0.0050	0.0015		1
o-Xylene	B154135-BLK1	ND	mg/kg	0.0050	0.00093		1
1,2-Dichloroethane-d4 (Surrogate)	**B154135-BLK1**	**114**	%	**70 - 121 (LCL - UCL)**			1
Toluene-d8 (Surrogate)	**B154135-BLK1**	**106**	%	**81 - 117 (LCL - UCL)**			1
4-Bromofluorobenzene (Surrogate)	**B154135-BLK1**	**101**	%	**74 - 121 (LCL - UCL)**			1

Run #	QC Sample ID	QC Type	Method	Prep Date	Run Date Time	Analyst	Instrument	Dilution
1	B154135-BLK1	PB	EPA-8260B	11/17/22	11/18/22 00:37	BYM	MS-V18	1

Langan Engineering & Environmental Services
18575 Jamboree Road Suite 150
Irvine, CA 92612

Reported: 01/24/2023 16:05
Project: Cypress College Student Housing
Project Number: 700123501
Project Manager: Rachel Owen

Volatile Organic Analysis (EPA Method 8260B/5035)

Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits Percent Recovery	Control Limits RPD	Lab Quals	Run #
QC Batch ID: B154135											
Benzene	B154135-BS1	LCS	0.13137	0.12500	mg/kg	105		70 - 130			1
Bromodichloromethane	B154135-BS1	LCS	0.12446	0.12500	mg/kg	99.6		70 - 130			1
Chlorobenzene	B154135-BS1	LCS	0.11663	0.12500	mg/kg	93.3		70 - 130			1
Chloroethane	B154135-BS1	LCS	0.12756	0.12500	mg/kg	102		70 - 130			1
1,4-Dichlorobenzene	B154135-BS1	LCS	0.11231	0.12500	mg/kg	89.8		70 - 130			1
1,1-Dichloroethane	B154135-BS1	LCS	0.12871	0.12500	mg/kg	103		70 - 130			1
1,1-Dichloroethene	B154135-BS1	LCS	0.13624	0.12500	mg/kg	109		70 - 130			1
Toluene	B154135-BS1	LCS	0.12615	0.12500	mg/kg	101		70 - 130			1
Trichloroethene	B154135-BS1	LCS	0.12150	0.12500	mg/kg	97.2		70 - 130			1
1,2-Dichloroethane-d4 (Surrogate)	B154135-BS1	LCS	0.056140	0.050000	mg/kg	112		70 - 121			1
Toluene-d8 (Surrogate)	B154135-BS1	LCS	0.051150	0.050000	mg/kg	102		81 - 117			1
4-Bromofluorobenzene (Surrogate)	B154135-BS1	LCS	0.051840	0.050000	mg/kg	104		74 - 121			1

Run #	QC Sample ID	QC Type	Method	Prep Date	Run Date Time	Analyst	Instrument	Dilution
1	B154135-BS1	LCS	EPA-8260B	11/17/22	11/17/22 23:09	BYM	MS-V18	1

Pace Analytical
ENVIRONMENTAL SCIENCES

Langan Engineering & Environmental Services
18575 Jamboree Road Suite 150
Irvine, CA 92612

Reported: 01/24/2023 16:05
Project: Cypress College Student Housing
Project Number: 700123501
Project Manager: Rachel Owen

Volatile Organic Analysis (EPA Method 8260B/5035)

Quality Control Report - Precision & Accuracy

Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	Control Limits RPD	Control Limits Percent Recovery	Lab Quals	R#
QC Batch ID: B154135	Used client sample: N											
Benzene	MS	2226013-48	ND	0.12204	0.12500	mg/kg		97.6		70 - 130		1
	MSD	2226013-48	ND	0.12167	0.12500	mg/kg	0.3	97.3	20	70 - 130		2
Bromodichloromethane	MS	2226013-48	ND	0.11915	0.12500	mg/kg		95.3		70 - 130		1
	MSD	2226013-48	ND	0.11752	0.12500	mg/kg	1.4	94.0	20	70 - 130		2
Chlorobenzene	MS	2226013-48	ND	0.12014	0.12500	mg/kg		96.1		70 - 130		1
	MSD	2226013-48	ND	0.11857	0.12500	mg/kg	1.3	94.9	20	70 - 130		2
Chloroethane	MS	2226013-48	ND	0.12367	0.12500	mg/kg		98.9		70 - 130		1
	MSD	2226013-48	ND	0.12340	0.12500	mg/kg	0.2	98.7	20	70 - 130		2
1,4-Dichlorobenzene	MS	2226013-48	ND	0.11715	0.12500	mg/kg		93.7		70 - 130		1
	MSD	2226013-48	ND	0.11589	0.12500	mg/kg	1.1	92.7	20	70 - 130		2
1,1-Dichloroethane	MS	2226013-48	ND	0.11837	0.12500	mg/kg		94.7		70 - 130		1
	MSD	2226013-48	ND	0.11766	0.12500	mg/kg	0.6	94.1	20	70 - 130		2
1,1-Dichloroethene	MS	2226013-48	ND	0.12367	0.12500	mg/kg		98.9		70 - 130		1
	MSD	2226013-48	ND	0.12355	0.12500	mg/kg	0.1	98.8	20	70 - 130		2
Toluene	MS	2226013-48	ND	0.12020	0.12500	mg/kg		96.2		70 - 130		1
	MSD	2226013-48	ND	0.11930	0.12500	mg/kg	0.8	95.4	20	70 - 130		2
Trichloroethene	MS	2226013-48	ND	0.11328	0.12500	mg/kg		90.6		70 - 130		1
	MSD	2226013-48	ND	0.11257	0.12500	mg/kg	0.6	90.1	20	70 - 130		2
1,2-Dichloroethane-d4 (Surrogate)	MS	2226013-48	ND	0.055240	0.050000	mg/kg		110		70 - 121		1
	MSD	2226013-48	ND	0.055550	0.050000	mg/kg	0.6	111		70 - 121		2
Toluene-d8 (Surrogate)	MS	2226013-48	ND	0.050890	0.050000	mg/kg		102		81 - 117		1
	MSD	2226013-48	ND	0.050630	0.050000	mg/kg	0.5	101		81 - 117		2
4-Bromofluorobenzene (Surrogate)	MS	2226013-48	ND	0.049410	0.050000	mg/kg		98.8		74 - 121		1
	MSD	2226013-48	ND	0.049890	0.050000	mg/kg	1.0	99.8		74 - 121		2

Run #	QC Sample ID	QC Type	Method	Prep Date	Run Date Time	Analyst	Instrument	Dilution
1	B154135-MS1	MS	EPA-8260B	11/17/22	11/17/22 23:31	BYM	MS-V18	1
2	B154135-MSD1	MSD	EPA-8260B	11/17/22	11/17/22 23:53	BYM	MS-V18	1

Langan Engineering & Environmental Services
18575 Jamboree Road Suite 150
Irvine, CA 92612

Reported: 01/24/2023 16:05
Project: Cypress College Student Housing
Project Number: 700123501
Project Manager: Rachel Owen

Base Neutral and Acid Extractables Organic Analysis (EPA Method 8270C)

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals	Run #
QC Batch ID: B154548							
Acenaphthene	B154548-BLK1	ND	mg/kg	0.10	0.0067		1
Acenaphthylene	B154548-BLK1	ND	mg/kg	0.10	0.0067		1
Aldrin	B154548-BLK1	ND	mg/kg	0.10	0.0067		1
Aniline	B154548-BLK1	ND	mg/kg	0.20	0.011		1
Anthracene	B154548-BLK1	ND	mg/kg	0.10	0.0067		1
Benzidine	B154548-BLK1	ND	mg/kg	3.0	0.0093		1
Benzo[a]anthracene	B154548-BLK1	ND	mg/kg	0.10	0.0077		1
Benzo[b]fluoranthene	B154548-BLK1	ND	mg/kg	0.10	0.0067		1
Benzo[k]fluoranthene	B154548-BLK1	ND	mg/kg	0.10	0.0082		1
Benzo[b+k]fluoranthene	B154548-BLK1	ND	mg/kg	0.10	0.0082		1
Benzo[a]pyrene	B154548-BLK1	ND	mg/kg	0.10	0.0067		1
Benzo[g,h,i]perylene	B154548-BLK1	ND	mg/kg	0.10	0.013		1
Benzoic acid	B154548-BLK1	ND	mg/kg	0.50	0.014		1
Benzyl alcohol	B154548-BLK1	ND	mg/kg	0.10	0.0067		1
Benzyl butyl phthalate	B154548-BLK1	ND	mg/kg	0.10	0.0067		1
alpha-BHC	B154548-BLK1	ND	mg/kg	0.10	0.0067		1
beta-BHC	B154548-BLK1	ND	mg/kg	0.10	0.0075		1
delta-BHC	B154548-BLK1	ND	mg/kg	0.10	0.0067		1
gamma-BHC (Lindane)	B154548-BLK1	ND	mg/kg	0.10	0.0067		1
bis(2-Chloroethoxy)methane	B154548-BLK1	ND	mg/kg	0.10	0.0067		1
bis(2-Chloroethyl) ether	B154548-BLK1	ND	mg/kg	0.10	0.0097		1
bis(2-Chloroisopropyl)ether	B154548-BLK1	ND	mg/kg	0.10	0.0067		1
bis(2-Ethylhexyl)phthalate	B154548-BLK1	ND	mg/kg	0.20	0.0067		1
4-Bromophenyl phenyl ether	B154548-BLK1	ND	mg/kg	0.10	0.0067		1
4-Chloroaniline	B154548-BLK1	ND	mg/kg	0.10	0.015		1
2-Chloronaphthalene	B154548-BLK1	ND	mg/kg	0.10	0.0067		1
4-Chlorophenyl phenyl ether	B154548-BLK1	ND	mg/kg	0.10	0.0067		1
Chrysene	B154548-BLK1	ND	mg/kg	0.10	0.0067		1
4,4'-DDD	B154548-BLK1	ND	mg/kg	0.10	0.0067		1
4,4'-DDE	B154548-BLK1	ND	mg/kg	0.10	0.0068		1
4,4'-DDT	B154548-BLK1	ND	mg/kg	0.10	0.0067		1
Dibenzo[a,h]anthracene	B154548-BLK1	ND	mg/kg	0.10	0.0067		1
Dibenzofuran	B154548-BLK1	ND	mg/kg	0.10	0.0067		1
1,2-Dichlorobenzene	B154548-BLK1	ND	mg/kg	0.10	0.0067		1

Langan Engineering & Environmental Services
18575 Jamboree Road Suite 150
Irvine, CA 92612

Reported: 01/24/2023 16:05
Project: Cypress College Student Housing
Project Number: 700123501
Project Manager: Rachel Owen

Base Neutral and Acid Extractables Organic Analysis (EPA Method 8270C)

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals	Run #
QC Batch ID: B154548							
1,3-Dichlorobenzene	B154548-BLK1	ND	mg/kg	0.10	0.0067		1
1,4-Dichlorobenzene	B154548-BLK1	ND	mg/kg	0.10	0.0067		1
3,3-Dichlorobenzidine	B154548-BLK1	ND	mg/kg	0.20	0.0067		1
Dieldrin	B154548-BLK1	ND	mg/kg	0.10	0.0077		1
Diethyl phthalate	B154548-BLK1	ND	mg/kg	0.10	0.0067		1
Dimethyl phthalate	B154548-BLK1	ND	mg/kg	0.10	0.0067		1
Di-n-butyl phthalate	B154548-BLK1	ND	mg/kg	0.10	0.0067		1
2,4-Dinitrotoluene	B154548-BLK1	ND	mg/kg	0.10	0.0085		1
2,6-Dinitrotoluene	B154548-BLK1	ND	mg/kg	0.10	0.0067		1
Di-n-octyl phthalate	B154548-BLK1	ND	mg/kg	0.10	0.0067		1
1,2-Diphenylhydrazine	B154548-BLK1	ND	mg/kg	0.10	0.0067		1
Endosulfan I	B154548-BLK1	ND	mg/kg	0.20	0.0088		1
Endosulfan II	B154548-BLK1	ND	mg/kg	0.20	0.0088		1
Endosulfan sulfate	B154548-BLK1	ND	mg/kg	0.10	0.0067		1
Endrin	B154548-BLK1	ND	mg/kg	0.20	0.0086		1
Endrin aldehyde	B154548-BLK1	ND	mg/kg	0.50	0.0070		1
Fluoranthene	B154548-BLK1	ND	mg/kg	0.10	0.0067		1
Fluorene	B154548-BLK1	ND	mg/kg	0.10	0.0067		1
Heptachlor	B154548-BLK1	ND	mg/kg	0.10	0.0067		1
Heptachlor epoxide	B154548-BLK1	ND	mg/kg	0.10	0.013		1
Hexachlorobenzene	B154548-BLK1	ND	mg/kg	0.10	0.0067		1
Hexachlorobutadiene	B154548-BLK1	ND	mg/kg	0.10	0.0067		1
Hexachlorocyclopentadiene	B154548-BLK1	ND	mg/kg	0.10	0.015		1
Hexachloroethane	B154548-BLK1	ND	mg/kg	0.10	0.0067		1
Indeno[1,2,3-cd]pyrene	B154548-BLK1	ND	mg/kg	0.10	0.0069		1
Isophorone	B154548-BLK1	ND	mg/kg	0.10	0.0067		1
2-Methylnaphthalene	B154548-BLK1	ND	mg/kg	0.10	0.0067		1
Naphthalene	B154548-BLK1	ND	mg/kg	0.10	0.0067		1
2-Naphthylamine	B154548-BLK1	ND	mg/kg	3.0	0.036		1
2-Nitroaniline	B154548-BLK1	ND	mg/kg	0.10	0.0067		1
3-Nitroaniline	B154548-BLK1	ND	mg/kg	0.20	0.0067		1
4-Nitroaniline	B154548-BLK1	ND	mg/kg	0.20	0.011		1
Nitrobenzene	B154548-BLK1	ND	mg/kg	0.10	0.0067		1
N-Nitrosodimethylamine	B154548-BLK1	ND	mg/kg	0.10	0.040		1

Langan Engineering & Environmental Services
18575 Jamboree Road Suite 150
Irvine, CA 92612

Reported: 01/24/2023 16:05
Project: Cypress College Student Housing
Project Number: 700123501
Project Manager: Rachel Owen

Base Neutral and Acid Extractables Organic Analysis (EPA Method 8270C)

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals	Run #
QC Batch ID: B154548							
N-Nitrosodi-N-propylamine	B154548-BLK1	ND	mg/kg	0.10	0.0067		1
N-Nitrosodiphenylamine	B154548-BLK1	ND	mg/kg	0.10	0.0067		1
Phenanthrene	B154548-BLK1	ND	mg/kg	0.10	0.0067		1
Pyrene	B154548-BLK1	ND	mg/kg	0.10	0.0067		1
1,2,4-Trichlorobenzene	B154548-BLK1	ND	mg/kg	0.10	0.0067		1
4-Chloro-3-methylphenol	B154548-BLK1	ND	mg/kg	0.20	0.0067		1
2-Chlorophenol	B154548-BLK1	ND	mg/kg	0.10	0.0067		1
2,4-Dichlorophenol	B154548-BLK1	ND	mg/kg	0.10	0.0067		1
2,4-Dimethylphenol	B154548-BLK1	ND	mg/kg	0.10	0.0067		1
4,6-Dinitro-2-methylphenol	B154548-BLK1	ND	mg/kg	0.50	0.0067		1
2,4-Dinitrophenol	B154548-BLK1	ND	mg/kg	0.50	0.0067		1
2-Methylphenol	B154548-BLK1	ND	mg/kg	0.10	0.0067		1
3- & 4-Methylphenol	B154548-BLK1	ND	mg/kg	0.20	0.014		1
2-Nitrophenol	B154548-BLK1	ND	mg/kg	0.10	0.0067		1
4-Nitrophenol	B154548-BLK1	ND	mg/kg	0.20	0.018		1
Pentachlorophenol	B154548-BLK1	ND	mg/kg	0.20	0.017		1
Phenol	B154548-BLK1	ND	mg/kg	0.10	0.0067		1
2,4,5-Trichlorophenol	B154548-BLK1	ND	mg/kg	0.20	0.011		1
2,4,6-Trichlorophenol	B154548-BLK1	ND	mg/kg	0.20	0.0067		1
2-Fluorophenol (Surrogate)	**B154548-BLK1**	**79.8**	%	**20 - 130 (LCL - UCL)**			1
Phenol-d5 (Surrogate)	**B154548-BLK1**	**78.2**	%	**30 - 130 (LCL - UCL)**			1
Nitrobenzene-d5 (Surrogate)	**B154548-BLK1**	**65.8**	%	**30 - 130 (LCL - UCL)**			1
2-Fluorobiphenyl (Surrogate)	**B154548-BLK1**	**92.6**	%	**30 - 140 (LCL - UCL)**			1
2,4,6-Tribromophenol (Surrogate)	**B154548-BLK1**	**85.7**	%	**20 - 150 (LCL - UCL)**			1
p-Terphenyl-d14 (Surrogate)	**B154548-BLK1**	**85.8**	%	**30 - 150 (LCL - UCL)**			1

Run #	QC Sample ID	QC Type	Method	Prep Date	Run Date Time	Analyst	Instrument	Dilution
1	B154548-BLK1	PB	EPA-8270C	11/17/22	11/18/22 13:00	CMM	MS-B8	0.984

Pace Analytical
ENVIRONMENTAL SCIENCES

Langan Engineering & Environmental Services
18575 Jamboree Road Suite 150
Irvine, CA 92612

Reported: 01/24/2023 16:05
Project: Cypress College Student Housing
Project Number: 700123501
Project Manager: Rachel Owen

Base Neutral and Acid Extractables Organic Analysis (EPA Method 8270C)

Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits Percent Recovery	Control Limits RPD	Lab Quals	Run #
QC Batch ID: B154548											
Acenaphthene	B154548-BS1	LCS	1.1105	1.6393	mg/kg	67.7		50 - 130			1
1,4-Dichlorobenzene	B154548-BS1	LCS	1.1626	1.6393	mg/kg	70.9		50 - 130			1
2,4-Dinitrotoluene	B154548-BS1	LCS	1.2830	1.6393	mg/kg	78.3		50 - 130			1
Hexachlorobenzene	B154548-BS1	LCS	1.3734	1.6393	mg/kg	83.8		40 - 130			1
Hexachlorobutadiene	B154548-BS1	LCS	1.2233	1.6393	mg/kg	74.6		50 - 130			1
Hexachloroethane	B154548-BS1	LCS	1.2626	1.6393	mg/kg	77.0		50 - 130			1
Nitrobenzene	B154548-BS1	LCS	1.1977	1.6393	mg/kg	73.1		50 - 130			1
N-Nitrosodi-N-propylamine	B154548-BS1	LCS	1.2226	1.6393	mg/kg	74.6		40 - 120			1
Pyrene	B154548-BS1	LCS	1.3459	1.6393	mg/kg	82.1		40 - 150			1
1,2,4-Trichlorobenzene	B154548-BS1	LCS	1.2652	1.6393	mg/kg	77.2		50 - 120			1
4-Chloro-3-methylphenol	B154548-BS1	LCS	1.4174	1.6393	mg/kg	86.5		50 - 130			1
2-Chlorophenol	B154548-BS1	LCS	1.2698	1.6393	mg/kg	77.5		50 - 130			1
2-Methylphenol	B154548-BS1	LCS	1.3118	1.6393	mg/kg	80.0		50 - 130			1
3- & 4-Methylphenol	B154548-BS1	LCS	2.9607	3.2787	mg/kg	90.3		50 - 130			1
4-Nitrophenol	B154548-BS1	LCS	1.1875	1.6393	mg/kg	72.4		30 - 130			1
Pentachlorophenol	B154548-BS1	LCS	1.3043	1.6393	mg/kg	79.6		20 - 130			1
Phenol	B154548-BS1	LCS	1.1043	1.6393	mg/kg	67.4		40 - 120			1
2,4,6-Trichlorophenol	B154548-BS1	LCS	1.3184	1.6393	mg/kg	80.4		50 - 130			1
2-Fluorophenol (Surrogate)	B154548-BS1	LCS	1.0800	1.3115	mg/kg	82.3		20 - 130			1
Phenol-d5 (Surrogate)	B154548-BS1	LCS	1.0397	1.3115	mg/kg	79.3		30 - 130			1
Nitrobenzene-d5 (Surrogate)	B154548-BS1	LCS	0.89049	1.3115	mg/kg	67.9		30 - 130			1
2-Fluorobiphenyl (Surrogate)	B154548-BS1	LCS	1.1852	1.3115	mg/kg	90.4		30 - 140			1
2,4,6-Tribromophenol (Surrogate)	B154548-BS1	LCS	1.2561	1.3115	mg/kg	95.8		20 - 150			1
p-Terphenyl-d14 (Surrogate)	B154548-BS1	LCS	0.56689	0.65574	mg/kg	86.5		30 - 150			1

Run #	QC Sample ID	QC Type	Method	Prep Date	Run Date Time	Analyst	Instrument	Dilution
1	B154548-BS1	LCS	EPA-8270C	11/17/22	11/18/22 13:28	CMM	MS-B8	0.984

Langan Engineering & Environmental Services
18575 Jamboree Road Suite 150
Irvine, CA 92612

Reported: 01/24/2023 16:05
Project: Cypress College Student Housing
Project Number: 700123501
Project Manager: Rachel Owen

Base Neutral and Acid Extractables Organic Analysis (EPA Method 8270C)

Quality Control Report - Precision & Accuracy

Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	Control Limits RPD	Control Limits Percent Recovery	Lab Quals	R#
QC Batch ID: B154548	Used client sample: Y - Description: 1DW-1, 11/09/2022 11:00											
Acenaphthene	MS	2227419-01	ND	1.3872	1.6835	mg/kg		82.4		30 - 140		1
	MSD	2227419-01	ND	1.3906	1.6835	mg/kg	0.2	82.6	30	30 - 140		2
1,4-Dichlorobenzene	MS	2227419-01	ND	1.1212	1.6835	mg/kg		66.6		50 - 130		1
	MSD	2227419-01	ND	1.1145	1.6835	mg/kg	0.6	66.2	30	50 - 130		2
2,4-Dinitrotoluene	MS	2227419-01	ND	0.95623	1.6835	mg/kg		56.8		50 - 130	J	1
	MSD	2227419-01	ND	0.98653	1.6835	mg/kg	3.1	58.6	30	50 - 130	J	2
Hexachlorobenzene	MS	2227419-01	ND	1.3939	1.6835	mg/kg		82.8		50 - 130		1
	MSD	2227419-01	ND	1.3838	1.6835	mg/kg	0.7	82.2	30	50 - 130		2
Hexachlorobutadiene	MS	2227419-01	ND	1.2660	1.6835	mg/kg		75.2		50 - 130		1
	MSD	2227419-01	ND	1.2795	1.6835	mg/kg	1.1	76.0	30	50 - 130		2
Hexachloroethane	MS	2227419-01	ND	1.3333	1.6835	mg/kg		79.2		50 - 130		1
	MSD	2227419-01	ND	1.3131	1.6835	mg/kg	1.5	78.0	30	50 - 130		2
Nitrobenzene	MS	2227419-01	ND	1.2290	1.6835	mg/kg		73.0		30 - 120		1
	MSD	2227419-01	ND	1.2492	1.6835	mg/kg	1.6	74.2	30	30 - 120		2
N-Nitrosodi-N-propylamine	MS	2227419-01	ND	1.1717	1.6835	mg/kg		69.6		20 - 130		1
	MSD	2227419-01	ND	1.1919	1.6835	mg/kg	1.7	70.8	30	20 - 130		2
Pyrene	MS	2227419-01	ND	1.4478	1.6835	mg/kg		86.0		40 - 140		1
	MSD	2227419-01	ND	1.3939	1.6835	mg/kg	3.8	82.8	30	40 - 140		2
1,2,4-Trichlorobenzene	MS	2227419-01	ND	1.3064	1.6835	mg/kg		77.6		50 - 130		1
	MSD	2227419-01	ND	1.3401	1.6835	mg/kg	2.5	79.6	30	50 - 130		2
4-Chloro-3-methylphenol	MS	2227419-01	ND	1.3704	1.6835	mg/kg		81.4		50 - 130	J	1
	MSD	2227419-01	ND	1.3771	1.6835	mg/kg	0.5	81.8	30	50 - 130	J	2
2-Chlorophenol	MS	2227419-01	ND	1.1751	1.6835	mg/kg		69.8		50 - 130		1
	MSD	2227419-01	ND	1.1886	1.6835	mg/kg	1.1	70.6	30	50 - 130		2
2-Methylphenol	MS	2227419-01	ND	1.2626	1.6835	mg/kg		75.0		50 - 130		1
	MSD	2227419-01	ND	1.2828	1.6835	mg/kg	1.6	76.2	30	50 - 130		2
3- & 4-Methylphenol	MS	**2227419-01**	**ND**	**0.15825**	**3.3670**	**mg/kg**		**4.7**		**50 - 130**	**J,Q03**	1
	MSD	**2227419-01**	**ND**	**0.15152**	**3.3670**	**mg/kg**	**4.3**	**4.5**	**30**	**50 - 130**	**J,Q03**	2
4-Nitrophenol	MS	2227419-01	ND	0.58249	1.6835	mg/kg		34.6		30 - 140	J	1
	MSD	2227419-01	ND	0.61616	1.6835	mg/kg	5.6	36.6	30	30 - 140	J	2
Pentachlorophenol	MS	2227419-01	ND	1.2020	1.6835	mg/kg		71.4		30 - 130	J	1
	MSD	2227419-01	ND	1.1852	1.6835	mg/kg	1.4	70.4	30	30 - 130	J	2
Phenol	MS	2227419-01	ND	1.0673	1.6835	mg/kg		63.4		40 - 150		1
	MSD	2227419-01	ND	1.0741	1.6835	mg/kg	0.6	63.8	30	40 - 150		2
2,4,6-Trichlorophenol	MS	2227419-01	ND	1.2795	1.6835	mg/kg		76.0		50 - 130	J	1
	MSD	2227419-01	ND	1.2929	1.6835	mg/kg	1.0	76.8	30	50 - 130	J	2

Pace Analytical
ENVIRONMENTAL SCIENCES

Langan Engineering & Environmental Services	**Reported:** 01/24/2023 16:05
18575 Jamboree Road Suite 150	Project: Cypress College Student Housing
Irvine, CA 92612	Project Number: 700123501
	Project Manager: Rachel Owen

Base Neutral and Acid Extractables Organic Analysis (EPA Method 8270C)

Quality Control Report - Precision & Accuracy

Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	Control Limits RPD	Control Limits Percent Recovery	Lab Quals	R#
QC Batch ID: B154548	Used client sample: Y - Description: 1DW-1, 11/09/2022 11:00											
2-Fluorophenol (Surrogate)	MS	2227419-01	ND	1.0135	1.3468	mg/kg		75.3		20 - 130		1
	MSD	2227419-01	ND	0.89899	1.3468	mg/kg	12.0	66.8		20 - 130		2
Phenol-d5 (Surrogate)	MS	2227419-01	ND	1.0236	1.3468	mg/kg		76.0		30 - 130		1
	MSD	2227419-01	ND	0.98990	1.3468	mg/kg	3.3	73.5		30 - 130		2
Nitrobenzene-d5 (Surrogate)	MS	2227419-01	ND	0.88889	1.3468	mg/kg		66.0		30 - 130		1
	MSD	2227419-01	ND	0.80808	1.3468	mg/kg	9.5	60.0		30 - 130		2
2-Fluorobiphenyl (Surrogate)	MS	**2227419-01**	**ND**	**0.24916**	**1.3468**	**mg/kg**		**18.5**		**30 - 140**	**S09**	1
	MSD	**2227419-01**	**ND**	**0.087542**	**1.3468**	**mg/kg**	**96.0**	**6.5**		**30 - 140**	**S09**	2
2,4,6-Tribromophenol (Surrogate)	MS	2227419-01	ND	1.0438	1.3468	mg/kg		77.5		20 - 150		1
	MSD	2227419-01	ND	0.89562	1.3468	mg/kg	15.3	66.5		20 - 150		2
p-Terphenyl-d14 (Surrogate)	MS	2227419-01	ND	0.54882	0.67340	mg/kg		81.5		30 - 150		1
	MSD	2227419-01	ND	0.47811	0.67340	mg/kg	13.8	71.0		30 - 150		2

Run #	QC Sample ID	QC Type	Method	Prep Date	Run Date Time	Analyst	Instrument	Dilution
1	B154548-MS1	MS	EPA-8270C	11/17/22	11/18/22 14:05	CMM	MS-B8	10.101
2	B154548-MSD1	MSD	EPA-8270C	11/17/22	11/18/22 14:33	CMM	MS-B8	10.101

Pace Analytical
ENVIRONMENTAL SCIENCES

Langan Engineering & Environmental Services
18575 Jamboree Road Suite 150
Irvine, CA 92612

Reported: 01/24/2023 16:05
Project: Cypress College Student Housing
Project Number: 700123501
Project Manager: Rachel Owen

Purgeable Aromatics and Total Petroleum Hydrocarbons

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals	Run #
QC Batch ID: B154246							
Gasoline Range Organics (C4 - C12)	B154246-BLK1	ND	mg/kg	1.0	0.20		1
a,a,a-Trifluorotoluene (FID Surrogate)	**B154246-BLK1**	**75.0**	%	**70 - 130 (LCL - UCL)**			1

Run #	QC Sample ID	QC Type	Method	Prep Date	Run Date Time	Analyst	Instrument	Dilution
1	B154246-BLK1	PB	EPA-8015B	11/19/22	11/19/22 22:59	SEM	GC-V8	1

Langan Engineering & Environmental Services
18575 Jamboree Road Suite 150
Irvine, CA 92612

Reported: 01/24/2023 16:05
Project: Cypress College Student Housing
Project Number: 700123501
Project Manager: Rachel Owen

Purgeable Aromatics and Total Petroleum Hydrocarbons

Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits Percent Recovery	Control Limits RPD	Lab Quals	Run #
QC Batch ID: B154246											
Gasoline Range Organics (C4 - C12)	B154246-BS1	LCS	4.3290	5.0000	mg/kg	86.6		85 - 115			1
	B154246-BSD1	LCSD	4.3430	5.0000	mg/kg	86.9	0.3	85 - 115	20		2
a,a,a-Trifluorotoluene (FID Surrogate)	B154246-BS1	LCS	0.036000	0.040000	mg/kg	90.0		70 - 130			1
	B154246-BSD1	LCSD	0.038000	0.040000	mg/kg	95.0	5.4	70 - 130			2

Run #	QC Sample ID	QC Type	Method	Prep Date	Run Date Time	Analyst	Instrument	Dilution
1	B154246-BS1	LCS	EPA-8015B	11/19/22	11/20/22 01:26	SEM	GC-V8	1
2	B154246-BSD1	LCSD	EPA-8015B	11/19/22	11/20/22 01:51	SEM	GC-V8	1

Pace Analytical
ENVIRONMENTAL SCIENCES

Langan Engineering & Environmental Services
18575 Jamboree Road Suite 150
Irvine, CA 92612

Reported: 01/24/2023 16:05
Project: Cypress College Student Housing
Project Number: 700123501
Project Manager: Rachel Owen

Purgeable Aromatics and Total Petroleum Hydrocarbons

Quality Control Report - Precision & Accuracy

Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	Control Limits RPD	Control Limits Percent Recovery	Lab Quals	R#
QC Batch ID: B154246	Used client sample: N											
Gasoline Range Organics (C4 - C12)	MS	2226013-24	ND	4.3640	5.0000	mg/kg		87.3		70 - 130		1
	MSD	2226013-24	ND	4.3920	5.0000	mg/kg	0.6	87.8	20	70 - 130		2
a,a,a-Trifluorotoluene (FID Surrogate)	MS	2226013-24	ND	0.036000	0.040000	mg/kg		90.0		70 - 130		1
	MSD	2226013-24	ND	0.035000	0.040000	mg/kg	2.8	87.5		70 - 130		2

Run #	QC Sample ID	QC Type	Method	Prep Date	Run Date Time	Analyst	Instrument	Dilution
1	B154246-MS1	MS	EPA-8015B	11/19/22	11/20/22 02:15	SEM	GC-V8	1
2	B154246-MSD1	MSD	EPA-8015B	11/19/22	11/20/22 02:39	SEM	GC-V8	1

Pace Analytical
ENVIRONMENTAL SCIENCES

Langan Engineering & Environmental Services
18575 Jamboree Road Suite 150
Irvine, CA 92612

Reported: 01/24/2023 16:05
Project: Cypress College Student Housing
Project Number: 700123501
Project Manager: Rachel Owen

Total Petroleum Hydrocarbons

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals	Run #
QC Batch ID: B154547							
TPH - Diesel (FFP)	B154547-BLK1	ND	mg/kg	10	2.2		1
TPH - Motor Oil	B154547-BLK1	ND	mg/kg	20	7.0		1
Tetracosane (Surrogate)	**B154547-BLK1**	**115**	%	**40 - 130 (LCL - UCL)**			1

Run #	QC Sample ID	QC Type	Method	Prep Date	Run Date Time	Analyst	Instrument	Dilution
1	B154547-BLK1	PB	EPA-8015B/FFP	11/17/22	11/18/22 06:07	BUP	GC-19	1.014

Pace Analytical
ENVIRONMENTAL SCIENCES

Langan Engineering & Environmental Services
18575 Jamboree Road Suite 150
Irvine, CA 92612

Reported: 01/24/2023 16:05
Project: Cypress College Student Housing
Project Number: 700123501
Project Manager: Rachel Owen

Total Petroleum Hydrocarbons

Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits Percent Recovery	Control Limits RPD	Lab Quals	Run #
QC Batch ID: B154547											
TPH - Diesel (FFP)	B154547-BS1	LCS	55.484	83.333	mg/kg	66.6		64 - 124			1
Tetracosane (Surrogate)	B154547-BS1	LCS	2.6080	3.3333	mg/kg	78.2		40 - 130			1

Run #	QC Sample ID	QC Type	Method	Prep Date	Run Date Time	Analyst	Instrument	Dilution
1	B154547-BS1	LCS	EPA-8015B/FFP	11/17/22	11/18/22 06:34	BUP	GC-19	1

Pace Analytical
ENVIRONMENTAL SCIENCES

Langan Engineering & Environmental Services
18575 Jamboree Road Suite 150
Irvine, CA 92612

Reported: 01/24/2023 16:05
Project: Cypress College Student Housing
Project Number: 700123501
Project Manager: Rachel Owen

Total Petroleum Hydrocarbons

Quality Control Report - Precision & Accuracy

Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	Control Limits RPD	Control Limits Percent Recovery	Lab Quals	R#
QC Batch ID: B154547	Used client sample: Y - Description: 1DW-1, 11/09/2022 11:00											
TPH - Diesel (FFP)	MS	2227419-01	ND	72.080	84.746	mg/kg		85.1		52 - 131		1
	MSD	2227419-01	ND	73.215	82.781	mg/kg	1.6	88.4	30	52 - 131		2
Tetracosane (Surrogate)	MS	**2227419-01**	**ND**	**4.1602**	**3.3898**	**mg/kg**		**123**		**40 - 130**		1
	MSD	**2227419-01**	**ND**	**4.3293**	**3.3113**	**mg/kg**	**4.0**	**131**		**40 - 130**	**S09**	2

Run #	QC Sample ID	QC Type	Method	Prep Date	Run Date Time	Analyst	Instrument	Dilution
1	B154547-MS1	MS	EPA-8015B/FFP	11/17/22	11/18/22 07:29	BUP	GC-19	1.017
2	B154547-MSD1	MSD	EPA-8015B/FFP	11/17/22	11/18/22 07:56	BUP	GC-19	0.993

Pace Analytical
ENVIRONMENTAL SCIENCES

Langan Engineering & Environmental Services
18575 Jamboree Road Suite 150
Irvine, CA 92612

Reported: 01/24/2023 16:05
Project: Cypress College Student Housing
Project Number: 700123501
Project Manager: Rachel Owen

WET Test (STLC)

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals	Run #
QC Batch ID: B158472							
Copper	**B158472-BLK1**	**0.027004**	**mg/L**	**0.10**	**0.012**	**J**	1

Run #	QC Sample ID	QC Type	Method	Prep Date	Run Date Time	Analyst	Instrument	Dilution
1	B158472-BLK1	PB	EPA-6010B	01/23/23	01/23/23 13:16	JCC	PE-OP3	1

Pace Analytical
ENVIRONMENTAL SCIENCES

Langan Engineering & Environmental Services
18575 Jamboree Road Suite 150
Irvine, CA 92612

Reported: 01/24/2023 16:05
Project: Cypress College Student Housing
Project Number: 700123501
Project Manager: Rachel Owen

WET Test (STLC)

Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits Percent Recovery	Control Limits RPD	Lab Quals	Run #
QC Batch ID: B158472											
Copper	B158472-BS1	LCS	19.376	20.000	mg/L	96.9		85 - 115			1

Run #	QC Sample ID	QC Type	Method	Prep Date	Run Date Time	Analyst	Instrument	Dilution
1	B158472-BS1	LCS	EPA-6010B	01/23/23	01/23/23 13:18	JCC	PE-OP3	1

Pace Analytical
ENVIRONMENTAL SCIENCES

Langan Engineering & Environmental Services
18575 Jamboree Road Suite 150
Irvine, CA 92612

Reported: 01/24/2023 16:05
Project: Cypress College Student Housing
Project Number: 700123501
Project Manager: Rachel Owen

WET Test (STLC)

Quality Control Report - Precision & Accuracy

Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	Control Limits RPD	Control Limits Percent Recovery	Lab Quals	R#
QC Batch ID: B158472	Used client sample: N											
Copper	DUP	2229286-42	0.41637	0.41562		mg/L	0.2		20			1
	MS	2229286-42	0.41637	20.002	20.408	mg/L		96.0		75 - 125		2

Run #	QC Sample ID	QC Type	Method	Prep Date	Run Date Time	Analyst	Instrument	Dilution
1	B158472-DUP1	DUP	EPA-6010B	01/23/23	01/23/23 13:21	JCC	PE-OP3	1
2	B158472-MS1	MS	EPA-6010B	01/23/23	01/23/23 13:25	JCC	PE-OP3	1.020

Pace Analytical
ENVIRONMENTAL SCIENCES

Langan Engineering & Environmental Services
18575 Jamboree Road Suite 150
Irvine, CA 92612

Reported: 01/24/2023 16:05
Project: Cypress College Student Housing
Project Number: 700123501
Project Manager: Rachel Owen

Total Concentrations (TTLC)

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals	Run #
QC Batch ID: B154191							
Antimony	B154191-BLK1	ND	mg/kg	5.0	0.33		1
Arsenic	B154191-BLK1	ND	mg/kg	1.0	0.40		1
Barium	B154191-BLK1	ND	mg/kg	0.50	0.18		1
Beryllium	B154191-BLK1	ND	mg/kg	0.50	0.047		1
Cadmium	B154191-BLK1	ND	mg/kg	0.50	0.052		1
Chromium	**B154191-BLK1**	**0.069760**	**mg/kg**	**0.50**	**0.050**	**J**	1
Cobalt	B154191-BLK1	ND	mg/kg	2.5	0.098		1
Copper	B154191-BLK1	ND	mg/kg	1.0	0.050		1
Lead	B154191-BLK1	ND	mg/kg	2.5	0.41		1
Molybdenum	B154191-BLK1	ND	mg/kg	2.5	0.050		1
Nickel	B154191-BLK1	ND	mg/kg	0.50	0.15		1
Selenium	B154191-BLK1	ND	mg/kg	1.0	0.98		1
Silver	B154191-BLK1	ND	mg/kg	0.50	0.067		1
Thallium	B154191-BLK1	ND	mg/kg	5.0	0.64		1
Vanadium	B154191-BLK1	ND	mg/kg	0.50	0.11		1
Zinc	**B154191-BLK1**	**0.35462**	**mg/kg**	**2.5**	**0.087**	**J**	1
QC Batch ID: B154464							
Mercury	B154464-BLK1	ND	mg/kg	0.16	0.016		2

Run #	QC Sample ID	QC Type	Method	Prep Date	Run Date Time	Analyst	Instrument	Dilution
1	B154191-BLK1	PB	EPA-6010B	11/18/22	11/21/22 15:28	JCC	PE-OP3	1
2	B154464-BLK1	PB	EPA-7471A	11/23/22	11/23/22 14:12	TMT	CETAC3	1

Langan Engineering & Environmental Services
18575 Jamboree Road Suite 150
Irvine, CA 92612

Reported: 01/24/2023 16:05
Project: Cypress College Student Housing
Project Number: 700123501
Project Manager: Rachel Owen

Total Concentrations (TTLC)

Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits Percent Recovery	Control Limits RPD	Lab Quals	Run #
QC Batch ID: B154191											
Antimony	B154191-BS1	LCS	119.04	100.00	mg/kg	119		75 - 125			1
Arsenic	B154191-BS1	LCS	17.879	20.000	mg/kg	89.4		75 - 125			1
Barium	B154191-BS1	LCS	111.77	100.00	mg/kg	112		75 - 125			1
Beryllium	B154191-BS1	LCS	9.8485	10.000	mg/kg	98.5		75 - 125			1
Cadmium	B154191-BS1	LCS	9.8588	10.000	mg/kg	98.6		75 - 125			1
Chromium	B154191-BS1	LCS	98.961	100.00	mg/kg	99.0		75 - 125			1
Cobalt	B154191-BS1	LCS	100.19	100.00	mg/kg	100		75 - 125			1
Copper	B154191-BS1	LCS	97.952	100.00	mg/kg	98.0		75 - 125			1
Lead	B154191-BS1	LCS	104.35	100.00	mg/kg	104		75 - 125			1
Molybdenum	B154191-BS1	LCS	100.13	100.00	mg/kg	100		75 - 125			1
Nickel	B154191-BS1	LCS	104.14	100.00	mg/kg	104		75 - 125			1
Selenium	B154191-BS1	LCS	18.408	20.000	mg/kg	92.0		75 - 125			1
Silver	B154191-BS1	LCS	9.5204	10.000	mg/kg	95.2		75 - 125			1
Thallium	B154191-BS1	LCS	112.63	100.00	mg/kg	113		75 - 125			1
Vanadium	B154191-BS1	LCS	98.107	100.00	mg/kg	98.1		75 - 125			1
Zinc	B154191-BS1	LCS	97.516	100.00	mg/kg	97.5		75 - 125			1
QC Batch ID: B154464											
Mercury	B154464-BS1	LCS	0.75680	0.80000	mg/kg	94.6		80 - 120			2

Run #	QC Sample ID	QC Type	Method	Prep Date	Run Date Time	Analyst	Instrument	Dilution
1	B154191-BS1	LCS	EPA-6010B	11/18/22	11/21/22 15:30	JCC	PE-OP3	1
2	B154464-BS1	LCS	EPA-7471A	11/23/22	11/23/22 14:14	TMT	CETAC3	1

Langan Engineering & Environmental Services
18575 Jamboree Road Suite 150
Irvine, CA 92612

Reported: 01/24/2023 16:05
Project: Cypress College Student Housing
Project Number: 700123501
Project Manager: Rachel Owen

Total Concentrations (TTLC)

Quality Control Report - Precision & Accuracy

Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	Control Limits RPD	Control Limits Percent Recovery	Lab Quals	R#
QC Batch ID: B154191	Used client sample: N											
Antimony	DUP	2219811-09RE1	ND	ND		mg/kg			20			1
	MS	2219811-09RE1	ND	73.154	100.00	mg/kg		73.2		16 - 119		2
	MSD	2219811-09RE1	ND	69.376	100.00	mg/kg	5.3	69.4	20	16 - 119		3
Arsenic	DUP	2219811-09RE1	1.7417	2.0399		mg/kg	15.8		20			1
	MS	2219811-09RE1	1.7417	19.945	20.000	mg/kg		91.0		75 - 125		2
	MSD	2219811-09RE1	1.7417	18.905	20.000	mg/kg	5.4	85.8	20	75 - 125		3
Barium	DUP	**2219811-09RE1**	**21.961**	**28.132**		**mg/kg**	**24.6**		**20**		**Q01**	1
	MS	**2219811-09RE1**	**21.961**	**138.17**	**100.00**	**mg/kg**		**116**		**75 - 125**		2
	MSD	**2219811-09RE1**	**21.961**	**132.44**	**100.00**	**mg/kg**	**4.2**	**110**	**20**	**75 - 125**		3
Beryllium	DUP	2219811-09RE1	0.048273	ND		mg/kg			20			1
	MS	2219811-09RE1	0.048273	9.9739	10.000	mg/kg		99.3		75 - 125		2
	MSD	2219811-09RE1	0.048273	9.7021	10.000	mg/kg	2.8	96.5	20	75 - 125		3
Cadmium	DUP	2219811-09RE1	0.089396	ND		mg/kg			20			1
	MS	2219811-09RE1	0.089396	10.080	10.000	mg/kg		99.9		75 - 125		2
	MSD	2219811-09RE1	0.089396	9.5026	10.000	mg/kg	5.9	94.1	20	75 - 125		3
Chromium	DUP	2219811-09RE1	3.2462	3.5724		mg/kg	9.6		20			1
	MS	2219811-09RE1	3.2462	101.62	100.00	mg/kg		98.4		75 - 125		2
	MSD	2219811-09RE1	3.2462	98.270	100.00	mg/kg	3.4	95.0	20	75 - 125		3
Cobalt	DUP	2219811-09RE1	1.5081	1.5249		mg/kg	1.1		20		J	1
	MS	2219811-09RE1	1.5081	99.993	100.00	mg/kg		98.5		75 - 125		2
	MSD	2219811-09RE1	1.5081	97.015	100.00	mg/kg	3.0	95.5	20	75 - 125		3
Copper	DUP	2219811-09RE1	1.9214	1.8531		mg/kg	3.6		20			1
	MS	2219811-09RE1	1.9214	101.57	100.00	mg/kg		99.7		75 - 125		2
	MSD	2219811-09RE1	1.9214	98.485	100.00	mg/kg	3.1	96.6	20	75 - 125		3
Lead	DUP	**2219811-09RE1**	**0.68899**	**0.41364**		**mg/kg**	**49.9**		**20**		**J,A02**	1
	MS	**2219811-09RE1**	**0.68899**	**104.30**	**100.00**	**mg/kg**		**104**		**75 - 125**		2
	MSD	**2219811-09RE1**	**0.68899**	**98.589**	**100.00**	**mg/kg**	**5.6**	**97.9**	**20**	**75 - 125**		3
Molybdenum	DUP	2219811-09RE1	0.40505	0.37627		mg/kg	7.4		20		J	1
	MS	2219811-09RE1	0.40505	96.721	100.00	mg/kg		96.3		75 - 125		2
	MSD	2219811-09RE1	0.40505	93.950	100.00	mg/kg	2.9	93.5	20	75 - 125		3
Nickel	DUP	2219811-09RE1	1.5601	1.5925		mg/kg	2.1		20			1
	MS	2219811-09RE1	1.5601	104.16	100.00	mg/kg		103		75 - 125		2
	MSD	2219811-09RE1	1.5601	101.08	100.00	mg/kg	3.0	99.5	20	75 - 125		3
Selenium	DUP	2219811-09RE1	ND	ND		mg/kg			20			1
	MS	2219811-09RE1	ND	18.922	20.000	mg/kg		94.6		75 - 125		2
	MSD	2219811-09RE1	ND	18.510	20.000	mg/kg	2.2	92.5	20	75 - 125		3
Silver	DUP	2219811-09RE1	ND	ND		mg/kg			20			1
	MS	2219811-09RE1	ND	9.4608	10.000	mg/kg		94.6		75 - 125		2
	MSD	2219811-09RE1	ND	9.3199	10.000	mg/kg	1.5	93.2	20	75 - 125		3

Pace Analytical
ENVIRONMENTAL SCIENCES

Langan Engineering & Environmental Services	**Reported:** 01/24/2023 16:05
18575 Jamboree Road Suite 150	Project: Cypress College Student Housing
Irvine, CA 92612	Project Number: 700123501
	Project Manager: Rachel Owen

Total Concentrations (TTLC)

Quality Control Report - Precision & Accuracy

Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	Control Limits RPD	Control Limits Percent Recovery	Lab Quals	R#
QC Batch ID: B154191	Used client sample: N											
Thallium	DUP	2219811-09RE1	ND	ND		mg/kg			20			1
	MS	2219811-09RE1	ND	108.05	100.00	mg/kg		108		75 - 125		2
	MSD	2219811-09RE1	ND	102.39	100.00	mg/kg	5.4	102	20	75 - 125		3
Vanadium	DUP	2219811-09RE1	5.9548	6.5919		mg/kg	10.2		20			1
	MS	2219811-09RE1	5.9548	104.48	100.00	mg/kg		98.5		75 - 125		2
	MSD	2219811-09RE1	5.9548	100.95	100.00	mg/kg	3.4	95.0	20	75 - 125		3
Zinc	DUP	2219811-09RE1	6.1194	6.7386		mg/kg	9.6		20			1
	MS	2219811-09RE1	6.1194	103.85	100.00	mg/kg		97.7		75 - 125		2
	MSD	2219811-09RE1	6.1194	101.78	100.00	mg/kg	2.0	95.7	20	75 - 125		3
QC Batch ID: B154464	Used client sample: N											
Mercury	DUP	2227190-20	ND	ND		mg/kg			20			4
	MS	2227190-20	ND	0.78710	0.80645	mg/kg		97.6		80 - 120		5
	MSD	2227190-20	ND	0.73548	0.80645	mg/kg	6.8	91.2	20	80 - 120		6

Run #	QC Sample ID	QC Type	Method	Prep Date	Run Date Time	Analyst	Instrument	Dilution
1	B154191-DUP1	DUP	EPA-6010B	11/18/22	11/21/22 15:34	JCC	PE-OP3	1
2	B154191-MS1	MS	EPA-6010B	11/18/22	11/21/22 15:38	JCC	PE-OP3	1
3	B154191-MSD1	MSD	EPA-6010B	11/18/22	11/21/22 15:40	JCC	PE-OP3	1
4	B154464-DUP1	DUP	EPA-7471A	11/23/22	11/23/22 14:18	TMT	CETAC3	1.008
5	B154464-MS1	MS	EPA-7471A	11/23/22	11/23/22 14:24	TMT	CETAC3	1.008
6	B154464-MSD1	MSD	EPA-7471A	11/23/22	11/23/22 14:26	TMT	CETAC3	1.008

Langan Engineering & Environmental Services
18575 Jamboree Road Suite 150
Irvine, CA 92612

Reported: 01/24/2023 16:05
Project: Cypress College Student Housing
Project Number: 700123501
Project Manager: Rachel Owen

Notes And Definitions

J	Estimated Value (CLP Flag)
MDL	Method Detection Limit
ND	Analyte Not Detected
PQL	Practical Quantitation Limit
A02	The difference between duplicate readings is less than the quantitation limit.
A10	Detection and quantitation limits were raised due to matrix interference.
Q01	Sample precision is not within the control limits.
Q03	Matrix spike recovery(s) was(were) not within the control limits.
S09	The surrogate recovery for this compound was not within the control limits.

Date of Report: 11/30/2022

Chris Funk

Langan Engineering & Environmental Services
18575 Jamboree Road Suite 150
Irvine, CA 92612

Client Project:	700123501
BCL Project:	Cypress College Student Housing
BCL Work Order:	2227420
Invoice ID:	B463882

Enclosed are the results of analyses for samples received by the laboratory on 11/9/2022. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Contact Person: Brianna Schutte
Client Services Rep

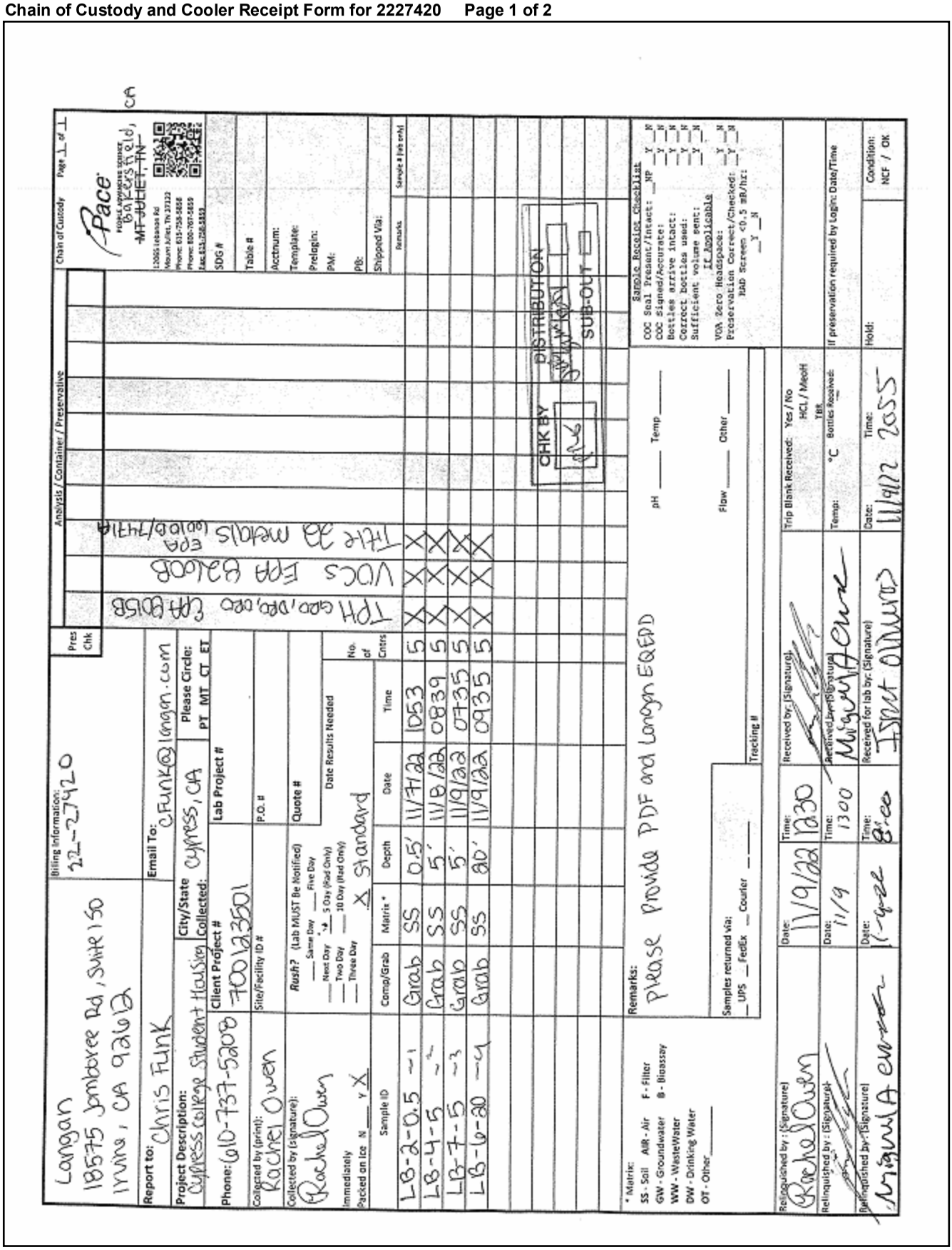
Stuart Buttram
Operations Manager

Certifications: CA ELAP #1186; NV #CA00014; OR ELAP #4032-001; AK UST101

Table of Contents

Pace Analytical
ENVIRONMENTAL SCIENCES

Chain of Custody and Cooler Receipt Form for 2227420 Page 1 of 2



PACE ANALYTICAL — COOLER RECEIPT FORM — Page 1 Of 1

Submission #: 22-27420

SHIPPING INFORMATION
Fed Ex ☐ UPS ☐ GSO / GLS ☐ Hand Delivery ☐
Pace Lab Field Service ☑ Other ☐ (Specify)_____

SHIPPING CONTAINER
Ice Chest ☑ None ☐ Box ☐
Other ☐ (Specify)_____

FREE LIQUID
YES ☐ NO ☐
W/S

Refrigerant: Ice ☑ Blue Ice ☐ None ☐ Other ☐ Comments:

Custody Seals: Ice Chest ☐ Intact? Yes ☐ No ☐ | Containers ☐ Intact? Yes ☐ No ☐ | None ☑ Comments:

All samples received? Yes ☑ No ☐ All samples containers intact? Yes ☑ No ☐ Description(s) match COC? Yes ☑ No ☐

COC Received ☑ YES ☐ NO

Emissivity: 0.97 Container: clear Thermometer ID: 271

Temperature: (A) 1-8 °C / (C) 1-C1 °C

Date/Time 11/9/22

Analyst Init TO2 2055

SAMPLE CONTAINERS	SAMPLE NUMBERS 1	2	3	4	5	6	7	8	9	10
QT PE UNPRES										
4oz / 8oz / 16oz PE UNPRES										
2oz Cr+6										
QT INORGANIC CHEMICAL METALS										
INORGANIC CHEMICAL METALS 4oz / 8oz / 16oz										
PT CYANIDE										
PT NITROGEN FORMS										
PT TOTAL SULFIDE										
2oz NITRATE / NITRITE										
PT TOTAL ORGANIC CARBON										
PT CHEMICAL OXYGEN DEMAND										
PtA PHENOLICS										
40ml VOA VIAL TRAVEL BLANK										
40ml VOA VIAL X18	A-C	A-C	A-C	A-C						
QT EPA 1664B										
PT ODOR										
RADIOLOGICAL										
BACTERIOLOGICAL										
40 ml VOA VIAL- 504										
QT EPA 508/608.3/8081A										
QT EPA 515.1/8151A										
QT EPA 525.2										
QT EPA 525.2 TRAVEL BLANK										
40ml EPA 547										
40ml EPA 531.1										
8oz EPA 548.1										
QT EPA 549.2										
QT EPA 8015M										
QT EPA 8270C										
8oz / 16oz / 32oz AMBER										
8oz / 16oz / 32oz JAR	D	D	D	D						
~~SOIL GLASS~~ 402 SAS	E	E	E	E						
PCB VIAL										
PLASTIC BAG										
TEDLAR BAG										
FERROUS IRON										
ENCORE										
SMART KIT										
SUMMA CANISTER										

Comments:

Sample Numbering Completed By: TODD C Date/Time: 11-15-22 1730

A = Actual / C = Corrected

Rev 23 05/20/22

Pace Analytical
ENVIRONMENTAL SCIENCES

Langan Engineering & Environmental Services
18575 Jamboree Road Suite 150
Irvine, CA 92612

Reported: 11/30/2022 15:54
Project: Cypress College Student Housing
Project Number: 700123501
Project Manager: Chris Funk

Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information			
2227420-01	**COC Number:**	---	**Receive Date:**	11/09/2022 20:55
	Project Number:	---	**Sampling Date:**	11/07/2022 10:53
	Sampling Location:	LB-2-0.5	**Sample Depth:**	---
	Sampling Point:	LB-2-0.5	**Lab Matrix:**	Solids
	Sampled By:	---	**Sample Type:**	Soil
2227420-02	**COC Number:**	---	**Receive Date:**	11/09/2022 20:55
	Project Number:	---	**Sampling Date:**	11/08/2022 08:39
	Sampling Location:	LB-4-5	**Sample Depth:**	---
	Sampling Point:	LB-4-5	**Lab Matrix:**	Solids
	Sampled By:	---	**Sample Type:**	Soil
2227420-03	**COC Number:**	---	**Receive Date:**	11/09/2022 20:55
	Project Number:	---	**Sampling Date:**	11/09/2022 07:35
	Sampling Location:	LB-7-5	**Sample Depth:**	---
	Sampling Point:	LB-7-5	**Lab Matrix:**	Solids
	Sampled By:	---	**Sample Type:**	Soil
2227420-04	**COC Number:**	---	**Receive Date:**	11/09/2022 20:55
	Project Number:	---	**Sampling Date:**	11/09/2022 09:35
	Sampling Location:	LB-6-20	**Sample Depth:**	---
	Sampling Point:	LB-6-20	**Lab Matrix:**	Solids
	Sampled By:	---	**Sample Type:**	Soil

Pace Analytical
ENVIRONMENTAL SCIENCES

Langan Engineering & Environmental Services
18575 Jamboree Road Suite 150
Irvine, CA 92612

Reported: 11/30/2022 15:54
Project: Cypress College Student Housing
Project Number: 700123501
Project Manager: Chris Funk

Volatile Organic Analysis (EPA Method 8260B/5035)

BCL Sample ID: 2227420-01 | **Client Sample Name:** LB-2-0.5, LB-2-0.5, 11/7/2022 10:53:00AM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	DCN
Benzene	ND	mg/kg	0.0040	0.00053	EPA-8260B	ND		1
Bromobenzene	ND	mg/kg	0.0040	0.00069	EPA-8260B	ND		1
Bromochloromethane	ND	mg/kg	0.0040	0.00064	EPA-8260B	ND		1
Bromodichloromethane	ND	mg/kg	0.0040	0.00062	EPA-8260B	ND		1
Bromoform	ND	mg/kg	0.0040	0.00056	EPA-8260B	ND		1
Bromomethane	ND	mg/kg	0.0040	0.0014	EPA-8260B	ND		1
n-Butylbenzene	ND	mg/kg	0.0040	0.00060	EPA-8260B	ND		1
sec-Butylbenzene	ND	mg/kg	0.0040	0.00056	EPA-8260B	ND		1
tert-Butylbenzene	ND	mg/kg	0.0040	0.00068	EPA-8260B	ND		1
Carbon tetrachloride	ND	mg/kg	0.0040	0.00062	EPA-8260B	ND		1
Chlorobenzene	ND	mg/kg	0.0040	0.00061	EPA-8260B	ND		1
Chloroethane	ND	mg/kg	0.0040	0.00087	EPA-8260B	ND		1
Chloroform	ND	mg/kg	0.0040	0.00072	EPA-8260B	ND		1
Chloromethane	ND	mg/kg	0.0040	0.00087	EPA-8260B	ND		1
2-Chlorotoluene	ND	mg/kg	0.0040	0.00069	EPA-8260B	ND		1
4-Chlorotoluene	ND	mg/kg	0.0040	0.00056	EPA-8260B	ND		1
Dibromochloromethane	ND	mg/kg	0.0040	0.00064	EPA-8260B	ND		1
1,2-Dibromo-3-chloropropane	ND	mg/kg	0.0040	0.00076	EPA-8260B	ND		1
1,2-Dibromoethane	ND	mg/kg	0.0040	0.00065	EPA-8260B	ND		1
Dibromomethane	ND	mg/kg	0.0040	0.0011	EPA-8260B	ND		1
1,2-Dichlorobenzene	ND	mg/kg	0.0040	0.00063	EPA-8260B	ND		1
1,3-Dichlorobenzene	ND	mg/kg	0.0040	0.00058	EPA-8260B	ND		1
1,4-Dichlorobenzene	ND	mg/kg	0.0040	0.00058	EPA-8260B	ND		1
Dichlorodifluoromethane	ND	mg/kg	0.0040	0.00063	EPA-8260B	ND		1
1,1-Dichloroethane	ND	mg/kg	0.0040	0.00051	EPA-8260B	ND		1
1,2-Dichloroethane	ND	mg/kg	0.0040	0.00058	EPA-8260B	ND		1
1,1-Dichloroethene	ND	mg/kg	0.0040	0.00087	EPA-8260B	ND		1
cis-1,2-Dichloroethene	ND	mg/kg	0.0040	0.00043	EPA-8260B	ND		1
trans-1,2-Dichloroethene	ND	mg/kg	0.0040	0.0029	EPA-8260B	ND		1
1,2-Dichloropropane	ND	mg/kg	0.0040	0.00064	EPA-8260B	ND		1
1,3-Dichloropropane	ND	mg/kg	0.0040	0.00053	EPA-8260B	ND		1
2,2-Dichloropropane	ND	mg/kg	0.0040	0.00053	EPA-8260B	ND		1
1,1-Dichloropropene	ND	mg/kg	0.0040	0.00053	EPA-8260B	ND		1

Pace Analytical
ENVIRONMENTAL SCIENCES

Langan Engineering & Environmental Services
18575 Jamboree Road Suite 150
Irvine, CA 92612

Reported: 11/30/2022 15:54
Project: Cypress College Student Housing
Project Number: 700123501
Project Manager: Chris Funk

Volatile Organic Analysis (EPA Method 8260B/5035)

BCL Sample ID: 2227420-01 | **Client Sample Name:** LB-2-0.5, LB-2-0.5, 11/7/2022 10:53:00AM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	DCN
cis-1,3-Dichloropropene	ND	mg/kg	0.0040	0.00046	EPA-8260B	ND		1
trans-1,3-Dichloropropene	ND	mg/kg	0.0040	0.00052	EPA-8260B	ND		1
Ethylbenzene	ND	mg/kg	0.0040	0.00055	EPA-8260B	ND		1
Hexachlorobutadiene	ND	mg/kg	0.0040	0.00053	EPA-8260B	ND		1
Isopropylbenzene	ND	mg/kg	0.0040	0.00064	EPA-8260B	ND		1
p-Isopropyltoluene	ND	mg/kg	0.0040	0.00047	EPA-8260B	ND		1
Methylene chloride	ND	mg/kg	0.0079	0.00087	EPA-8260B	ND		1
Methyl t-butyl ether	ND	mg/kg	0.0040	0.00045	EPA-8260B	ND		1
Naphthalene	ND	mg/kg	0.0040	0.00079	EPA-8260B	ND		1
n-Propylbenzene	ND	mg/kg	0.0040	0.00056	EPA-8260B	ND		1
Styrene	ND	mg/kg	0.0040	0.00049	EPA-8260B	ND		1
1,1,1,2-Tetrachloroethane	ND	mg/kg	0.0040	0.00076	EPA-8260B	ND		1
1,1,2,2-Tetrachloroethane	ND	mg/kg	0.0040	0.00067	EPA-8260B	ND		1
Tetrachloroethene	ND	mg/kg	0.0040	0.00077	EPA-8260B	ND		1
Toluene	ND	mg/kg	0.0040	0.00055	EPA-8260B	ND		1
1,2,3-Trichlorobenzene	ND	mg/kg	0.0040	0.0012	EPA-8260B	ND		1
1,2,4-Trichlorobenzene	ND	mg/kg	0.0040	0.0011	EPA-8260B	ND		1
1,1,1-Trichloroethane	ND	mg/kg	0.0040	0.00053	EPA-8260B	ND		1
1,1,2-Trichloroethane	ND	mg/kg	0.0040	0.00075	EPA-8260B	ND		1
Trichloroethene	ND	mg/kg	0.0040	0.00059	EPA-8260B	ND		1
Trichlorofluoromethane	ND	mg/kg	0.0040	0.0012	EPA-8260B	ND		1
1,2,3-Trichloropropane	ND	mg/kg	0.0040	0.0015	EPA-8260B	ND		1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	mg/kg	0.0040	0.00079	EPA-8260B	ND		1
1,2,4-Trimethylbenzene	ND	mg/kg	0.0040	0.00064	EPA-8260B	ND		1
1,3,5-Trimethylbenzene	ND	mg/kg	0.0040	0.00052	EPA-8260B	ND		1
Vinyl chloride	ND	mg/kg	0.0040	0.00047	EPA-8260B	ND		1
Total Xylenes	ND	mg/kg	0.0079	0.0020	EPA-8260B	ND		1
p- & m-Xylenes	ND	mg/kg	0.0040	0.0012	EPA-8260B	ND		1
o-Xylene	ND	mg/kg	0.0040	0.00074	EPA-8260B	ND		1
1,2-Dichloroethane-d4 (Surrogate)	125	%	70 - 121 (LCL - UCL)		EPA-8260B		S09	1
Toluene-d8 (Surrogate)	106	%	81 - 117 (LCL - UCL)		EPA-8260B			1
4-Bromofluorobenzene (Surrogate)	102	%	74 - 121 (LCL - UCL)		EPA-8260B			1

Pace Analytical
ENVIRONMENTAL SCIENCES

Langan Engineering & Environmental Services
18575 Jamboree Road Suite 150
Irvine, CA 92612

Reported: 11/30/2022 15:54
Project: Cypress College Student Housing
Project Number: 700123501
Project Manager: Chris Funk

Volatile Organic Analysis (EPA Method 8260B/5035)

BCL Sample ID: 2227420-01 | **Client Sample Name:** LB-2-0.5, LB-2-0.5, 11/7/2022 10:53:00AM

DCN	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	
1	EPA-8260B	11/17/22 15:31	11/18/22 02:50	BYM	MS-V18	0.795	B154135	EPA 5035 Soil MS

DCN = Data Continuation Number

Pace Analytical
ENVIRONMENTAL SCIENCES

Langan Engineering & Environmental Services
18575 Jamboree Road Suite 150
Irvine, CA 92612

Reported: 11/30/2022 15:54
Project: Cypress College Student Housing
Project Number: 700123501
Project Manager: Chris Funk

Purgeable Aromatics and Total Petroleum Hydrocarbons

BCL Sample ID: 2227420-01 | **Client Sample Name:** LB-2-0.5, LB-2-0.5, 11/7/2022 10:53:00AM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	DCN
Gasoline Range Organics (C4 - C12)	ND	mg/kg	1.0	0.20	EPA-8015B	ND		1
a,a,a-Trifluorotoluene (FID Surrogate)	70.0	%	70 - 130 (LCL - UCL)		EPA-8015B			1

DCN	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-8015B	11/19/22 11:11	11/20/22 14:47	SEM	GC-V8	1	B154246	EPA 5030 Soil GC

DCN = Data Continuation Number

Pace Analytical
ENVIRONMENTAL SCIENCES

Langan Engineering & Environmental Services
18575 Jamboree Road Suite 150
Irvine, CA 92612

Reported: 11/30/2022 15:54
Project: Cypress College Student Housing
Project Number: 700123501
Project Manager: Chris Funk

Total Petroleum Hydrocarbons

BCL Sample ID: 2227420-01 | **Client Sample Name:** LB-2-0.5, LB-2-0.5, 11/7/2022 10:53:00AM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	DCN
TPH - Diesel (FFP)	ND	mg/kg	20	4.4	EPA-8015B/FFP	ND	A10	1
TPH - Motor Oil	**120**	**mg/kg**	**40**	**14**	**EPA-8015B/FFP**	ND	**A10,A57**	1
Tetracosane (Surrogate)	61.1	%	40 - 130 (LCL - UCL)		EPA-8015B/FFP		A10	1

DCN	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-8015B/FFP	11/16/22 21:00	11/18/22 04:35	BUP	GC-2	1.993	B154103	EPA 3550B

DCN = Data Continuation Number

Pace Analytical
ENVIRONMENTAL SCIENCES

Langan Engineering & Environmental Services
18575 Jamboree Road Suite 150
Irvine, CA 92612

Reported: 11/30/2022 15:54
Project: Cypress College Student Housing
Project Number: 700123501
Project Manager: Chris Funk

Total Concentrations (TTLC)

BCL Sample ID: 2227420-01 | **Client Sample Name:** LB-2-0.5, LB-2-0.5, 11/7/2022 10:53:00AM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	DCN
Antimony	**1.2**	**mg/kg**	**5.0**	**0.33**	**EPA-6010B**	ND	**J**	1
Arsenic	**3.2**	**mg/kg**	**1.0**	**0.40**	**EPA-6010B**	ND		1
Barium	**57**	**mg/kg**	**0.50**	**0.18**	**EPA-6010B**	ND		1
Beryllium	**0.23**	**mg/kg**	**0.50**	**0.047**	**EPA-6010B**	ND	**J**	1
Cadmium	**0.31**	**mg/kg**	**0.50**	**0.052**	**EPA-6010B**	ND	**J**	1
Chromium	**13**	**mg/kg**	**0.50**	**0.050**	**EPA-6010B**	0.051		1
Cobalt	**6.2**	**mg/kg**	**2.5**	**0.098**	**EPA-6010B**	ND		1
Copper	**9.7**	**mg/kg**	**1.0**	**0.050**	**EPA-6010B**	ND		2
Lead	**11**	**mg/kg**	**2.5**	**0.41**	**EPA-6010B**	ND		1
Mercury	**0.033**	**mg/kg**	**0.16**	**0.016**	**EPA-7471A**	ND	**J**	3
Molybdenum	**0.98**	**mg/kg**	**2.5**	**0.050**	**EPA-6010B**	ND	**J**	1
Nickel	**9.0**	**mg/kg**	**0.50**	**0.15**	**EPA-6010B**	ND		1
Selenium	ND	mg/kg	1.0	0.98	EPA-6010B	ND		2
Silver	**0.23**	**mg/kg**	**0.50**	**0.067**	**EPA-6010B**	ND	**J**	1
Thallium	ND	mg/kg	5.0	0.64	EPA-6010B	ND		1
Vanadium	**30**	**mg/kg**	**0.50**	**0.11**	**EPA-6010B**	ND		1
Zinc	**51**	**mg/kg**	**2.5**	**0.087**	**EPA-6010B**	0.26		1

DCN	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-6010B	11/17/22 06:45	11/18/22 14:31	JCC	PE-OP3	0.990	B154080	EPA 3050B
2	EPA-6010B	11/17/22 06:45	11/23/22 11:40	DVS	PE-OP3	0.990	B154080	EPA 3050B
3	EPA-7471A	11/23/22 11:05	11/23/22 14:33	TMT	CETAC3	1.008	B154464	EPA 7471A

DCN = Data Continuation Number

Pace Analytical
ENVIRONMENTAL SCIENCES

Langan Engineering & Environmental Services
18575 Jamboree Road Suite 150
Irvine, CA 92612

Reported: 11/30/2022 15:54
Project: Cypress College Student Housing
Project Number: 700123501
Project Manager: Chris Funk

Volatile Organic Analysis (EPA Method 8260B/5035)

BCL Sample ID: 2227420-02 | **Client Sample Name:** LB-4-5, LB-4-5, 11/8/2022 8:39:00AM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	DCN
Benzene	ND	mg/kg	0.0041	0.00056	EPA-8260B	ND		1
Bromobenzene	ND	mg/kg	0.0041	0.00072	EPA-8260B	ND		1
Bromochloromethane	ND	mg/kg	0.0041	0.00067	EPA-8260B	ND		1
Bromodichloromethane	ND	mg/kg	0.0041	0.00065	EPA-8260B	ND		1
Bromoform	ND	mg/kg	0.0041	0.00058	EPA-8260B	ND		1
Bromomethane	ND	mg/kg	0.0041	0.0014	EPA-8260B	ND		1
n-Butylbenzene	ND	mg/kg	0.0041	0.00063	EPA-8260B	ND		1
sec-Butylbenzene	ND	mg/kg	0.0041	0.00059	EPA-8260B	ND		1
tert-Butylbenzene	ND	mg/kg	0.0041	0.00070	EPA-8260B	ND		1
Carbon tetrachloride	ND	mg/kg	0.0041	0.00065	EPA-8260B	ND		1
Chlorobenzene	ND	mg/kg	0.0041	0.00064	EPA-8260B	ND		1
Chloroethane	ND	mg/kg	0.0041	0.00091	EPA-8260B	ND		1
Chloroform	ND	mg/kg	0.0041	0.00075	EPA-8260B	ND		1
Chloromethane	ND	mg/kg	0.0041	0.00091	EPA-8260B	ND		1
2-Chlorotoluene	ND	mg/kg	0.0041	0.00072	EPA-8260B	ND		1
4-Chlorotoluene	ND	mg/kg	0.0041	0.00058	EPA-8260B	ND		1
Dibromochloromethane	ND	mg/kg	0.0041	0.00066	EPA-8260B	ND		1
1,2-Dibromo-3-chloropropane	ND	mg/kg	0.0041	0.00080	EPA-8260B	ND		1
1,2-Dibromoethane	ND	mg/kg	0.0041	0.00068	EPA-8260B	ND		1
Dibromomethane	ND	mg/kg	0.0041	0.0012	EPA-8260B	ND		1
1,2-Dichlorobenzene	ND	mg/kg	0.0041	0.00066	EPA-8260B	ND		1
1,3-Dichlorobenzene	ND	mg/kg	0.0041	0.00061	EPA-8260B	ND		1
1,4-Dichlorobenzene	ND	mg/kg	0.0041	0.00061	EPA-8260B	ND		1
Dichlorodifluoromethane	ND	mg/kg	0.0041	0.00066	EPA-8260B	ND		1
1,1-Dichloroethane	ND	mg/kg	0.0041	0.00053	EPA-8260B	ND		1
1,2-Dichloroethane	ND	mg/kg	0.0041	0.00061	EPA-8260B	ND		1
1,1-Dichloroethene	ND	mg/kg	0.0041	0.00091	EPA-8260B	ND		1
cis-1,2-Dichloroethene	ND	mg/kg	0.0041	0.00045	EPA-8260B	ND		1
trans-1,2-Dichloroethene	ND	mg/kg	0.0041	0.0031	EPA-8260B	ND		1
1,2-Dichloropropane	ND	mg/kg	0.0041	0.00066	EPA-8260B	ND		1
1,3-Dichloropropane	ND	mg/kg	0.0041	0.00056	EPA-8260B	ND		1
2,2-Dichloropropane	ND	mg/kg	0.0041	0.00056	EPA-8260B	ND		1
1,1-Dichloropropene	ND	mg/kg	0.0041	0.00056	EPA-8260B	ND		1

Pace Analytical
ENVIRONMENTAL SCIENCES

Langan Engineering & Environmental Services
18575 Jamboree Road Suite 150
Irvine, CA 92612

Reported: 11/30/2022 15:54
Project: Cypress College Student Housing
Project Number: 700123501
Project Manager: Chris Funk

Volatile Organic Analysis (EPA Method 8260B/5035)

BCL Sample ID: 2227420-02 | **Client Sample Name:** LB-4-5, LB-4-5, 11/8/2022 8:39:00AM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	DCN
cis-1,3-Dichloropropene	ND	mg/kg	0.0041	0.00048	EPA-8260B	ND		1
trans-1,3-Dichloropropene	ND	mg/kg	0.0041	0.00055	EPA-8260B	ND		1
Ethylbenzene	ND	mg/kg	0.0041	0.00057	EPA-8260B	ND		1
Hexachlorobutadiene	ND	mg/kg	0.0041	0.00056	EPA-8260B	ND		1
Isopropylbenzene	ND	mg/kg	0.0041	0.00066	EPA-8260B	ND		1
p-Isopropyltoluene	ND	mg/kg	0.0041	0.00049	EPA-8260B	ND		1
Methylene chloride	ND	mg/kg	0.0083	0.00091	EPA-8260B	ND		1
Methyl t-butyl ether	ND	mg/kg	0.0041	0.00046	EPA-8260B	ND		1
Naphthalene	ND	mg/kg	0.0041	0.00082	EPA-8260B	ND		1
n-Propylbenzene	ND	mg/kg	0.0041	0.00059	EPA-8260B	ND		1
Styrene	ND	mg/kg	0.0041	0.00051	EPA-8260B	ND		1
1,1,1,2-Tetrachloroethane	ND	mg/kg	0.0041	0.00079	EPA-8260B	ND		1
1,1,2,2-Tetrachloroethane	ND	mg/kg	0.0041	0.00070	EPA-8260B	ND		1
Tetrachloroethene	ND	mg/kg	0.0041	0.00080	EPA-8260B	ND		1
Toluene	ND	mg/kg	0.0041	0.00057	EPA-8260B	ND		1
1,2,3-Trichlorobenzene	ND	mg/kg	0.0041	0.0012	EPA-8260B	ND		1
1,2,4-Trichlorobenzene	ND	mg/kg	0.0041	0.0012	EPA-8260B	ND		1
1,1,1-Trichloroethane	ND	mg/kg	0.0041	0.00056	EPA-8260B	ND		1
1,1,2-Trichloroethane	ND	mg/kg	0.0041	0.00078	EPA-8260B	ND		1
Trichloroethene	ND	mg/kg	0.0041	0.00061	EPA-8260B	ND		1
Trichlorofluoromethane	ND	mg/kg	0.0041	0.0012	EPA-8260B	ND		1
1,2,3-Trichloropropane	ND	mg/kg	0.0041	0.0016	EPA-8260B	ND		1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	mg/kg	0.0041	0.00083	EPA-8260B	ND		1
1,2,4-Trimethylbenzene	ND	mg/kg	0.0041	0.00066	EPA-8260B	ND		1
1,3,5-Trimethylbenzene	ND	mg/kg	0.0041	0.00055	EPA-8260B	ND		1
Vinyl chloride	ND	mg/kg	0.0041	0.00049	EPA-8260B	ND		1
Total Xylenes	ND	mg/kg	0.0083	0.0021	EPA-8260B	ND		1
p- & m-Xylenes	ND	mg/kg	0.0041	0.0012	EPA-8260B	ND		1
o-Xylene	ND	mg/kg	0.0041	0.00077	EPA-8260B	ND		1
1,2-Dichloroethane-d4 (Surrogate)	138	%	70 - 121 (LCL - UCL)		EPA-8260B		S09	1
Toluene-d8 (Surrogate)	107	%	81 - 117 (LCL - UCL)		EPA-8260B			1
4-Bromofluorobenzene (Surrogate)	103	%	74 - 121 (LCL - UCL)		EPA-8260B			1

Pace Analytical
ENVIRONMENTAL SCIENCES

Langan Engineering & Environmental Services
18575 Jamboree Road Suite 150
Irvine, CA 92612

Reported: 11/30/2022 15:54
Project: Cypress College Student Housing
Project Number: 700123501
Project Manager: Chris Funk

Volatile Organic Analysis (EPA Method 8260B/5035)

BCL Sample ID: 2227420-02 | **Client Sample Name:** LB-4-5, LB-4-5, 11/8/2022 8:39:00AM

DCN	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	
1	EPA-8260B	11/17/22 15:31	11/18/22 03:12	BYM	MS-V18	0.829	B154135	EPA 5035 Soil MS

DCN = Data Continuation Number

Pace Analytical
ENVIRONMENTAL SCIENCES

Langan Engineering & Environmental Services
18575 Jamboree Road Suite 150
Irvine, CA 92612

Reported: 11/30/2022 15:54
Project: Cypress College Student Housing
Project Number: 700123501
Project Manager: Chris Funk

Purgeable Aromatics and Total Petroleum Hydrocarbons

BCL Sample ID: 2227420-02 | **Client Sample Name:** LB-4-5, LB-4-5, 11/8/2022 8:39:00AM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	DCN
Gasoline Range Organics (C4 - C12)	ND	mg/kg	1.0	0.20	EPA-8015B	ND		1
a,a,a-Trifluorotoluene (FID Surrogate)	70.0	%	70 - 130 (LCL - UCL)		EPA-8015B			1

DCN	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-8015B	11/19/22 11:11	11/20/22 15:12	SEM	GC-V8	1	B154246	EPA 5030 Soil GC

DCN = Data Continuation Number

Pace Analytical
ENVIRONMENTAL SCIENCES

Langan Engineering & Environmental Services
18575 Jamboree Road Suite 150
Irvine, CA 92612

Reported: 11/30/2022 15:54
Project: Cypress College Student Housing
Project Number: 700123501
Project Manager: Chris Funk

Total Petroleum Hydrocarbons

BCL Sample ID: 2227420-02 | **Client Sample Name:** LB-4-5, LB-4-5, 11/8/2022 8:39:00AM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	DCN
TPH - Diesel (FFP)	ND	mg/kg	10	2.2	EPA-8015B/FFP	ND		1
TPH - Motor Oil	ND	mg/kg	20	7.0	EPA-8015B/FFP	ND		1
Tetracosane (Surrogate)	83.9	%	40 - 130 (LCL - UCL)		EPA-8015B/FFP			1

DCN	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-8015B/FFP	11/16/22 21:00	11/17/22 21:17	BUP	GC-2	1.007	B154103	EPA 3550B

DCN = Data Continuation Number

Pace Analytical
ENVIRONMENTAL SCIENCES

Langan Engineering & Environmental Services
18575 Jamboree Road Suite 150
Irvine, CA 92612

Reported: 11/30/2022 15:54
Project: Cypress College Student Housing
Project Number: 700123501
Project Manager: Chris Funk

Total Concentrations (TTLC)

BCL Sample ID: 2227420-02 | **Client Sample Name:** LB-4-5, LB-4-5, 11/8/2022 8:39:00AM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	DCN
Antimony	**0.36**	**mg/kg**	**5.0**	**0.33**	**EPA-6010B**	ND	**J**	1
Arsenic	**1.7**	**mg/kg**	**1.0**	**0.40**	**EPA-6010B**	ND		1
Barium	**51**	**mg/kg**	**0.50**	**0.18**	**EPA-6010B**	ND		1
Beryllium	**0.21**	**mg/kg**	**0.50**	**0.047**	**EPA-6010B**	ND	**J**	1
Cadmium	**0.16**	**mg/kg**	**0.50**	**0.052**	**EPA-6010B**	ND	**J**	1
Chromium	**12**	**mg/kg**	**0.50**	**0.050**	**EPA-6010B**	ND		1
Cobalt	**6.1**	**mg/kg**	**2.5**	**0.098**	**EPA-6010B**	ND		1
Copper	**7.3**	**mg/kg**	**1.0**	**0.050**	**EPA-6010B**	ND		2
Lead	**1.8**	**mg/kg**	**2.5**	**0.41**	**EPA-6010B**	ND	**J**	1
Mercury	**0.035**	**mg/kg**	**0.16**	**0.016**	**EPA-7471A**	ND	**J**	3
Molybdenum	**0.69**	**mg/kg**	**2.5**	**0.050**	**EPA-6010B**	ND	**J**	1
Nickel	**8.0**	**mg/kg**	**0.50**	**0.15**	**EPA-6010B**	ND		1
Selenium	ND	mg/kg	1.0	0.98	EPA-6010B	ND		2
Silver	**0.12**	**mg/kg**	**0.50**	**0.067**	**EPA-6010B**	ND	**J**	1
Thallium	ND	mg/kg	5.0	0.64	EPA-6010B	ND		1
Vanadium	**29**	**mg/kg**	**0.50**	**0.11**	**EPA-6010B**	ND		1
Zinc	**37**	**mg/kg**	**2.5**	**0.087**	**EPA-6010B**	0.25		1

DCN	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-6010B	11/17/22 06:45	11/18/22 14:33	JCC	PE-OP3	0.943	B154080	EPA 3050B
2	EPA-6010B	11/17/22 06:45	11/23/22 11:42	DVS	PE-OP3	0.943	B154080	EPA 3050B
3	EPA-7471A	11/23/22 11:05	11/23/22 14:39	TMT	CETAC3	0.977	B154464	EPA 7471A

DCN = Data Continuation Number

Pace Analytical
ENVIRONMENTAL SCIENCES

Langan Engineering & Environmental Services
18575 Jamboree Road Suite 150
Irvine, CA 92612

Reported: 11/30/2022 15:54
Project: Cypress College Student Housing
Project Number: 700123501
Project Manager: Chris Funk

Volatile Organic Analysis (EPA Method 8260B/5035)

BCL Sample ID: 2227420-03 | **Client Sample Name:** LB-7-5, LB-7-5, 11/9/2022 7:35:00AM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	DCN
Benzene	ND	mg/kg	0.0041	0.00055	EPA-8260B	ND		1
Bromobenzene	ND	mg/kg	0.0041	0.00071	EPA-8260B	ND		1
Bromochloromethane	ND	mg/kg	0.0041	0.00066	EPA-8260B	ND		1
Bromodichloromethane	ND	mg/kg	0.0041	0.00064	EPA-8260B	ND		1
Bromoform	ND	mg/kg	0.0041	0.00057	EPA-8260B	ND		1
Bromomethane	ND	mg/kg	0.0041	0.0014	EPA-8260B	ND		1
n-Butylbenzene	ND	mg/kg	0.0041	0.00062	EPA-8260B	ND		1
sec-Butylbenzene	ND	mg/kg	0.0041	0.00058	EPA-8260B	ND		1
tert-Butylbenzene	ND	mg/kg	0.0041	0.00069	EPA-8260B	ND		1
Carbon tetrachloride	ND	mg/kg	0.0041	0.00064	EPA-8260B	ND		1
Chlorobenzene	ND	mg/kg	0.0041	0.00063	EPA-8260B	ND		1
Chloroethane	ND	mg/kg	0.0041	0.00090	EPA-8260B	ND		1
Chloroform	ND	mg/kg	0.0041	0.00073	EPA-8260B	ND		1
Chloromethane	ND	mg/kg	0.0041	0.00090	EPA-8260B	ND		1
2-Chlorotoluene	ND	mg/kg	0.0041	0.00071	EPA-8260B	ND		1
4-Chlorotoluene	ND	mg/kg	0.0041	0.00057	EPA-8260B	ND		1
Dibromochloromethane	ND	mg/kg	0.0041	0.00065	EPA-8260B	ND		1
1,2-Dibromo-3-chloropropane	ND	mg/kg	0.0041	0.00078	EPA-8260B	ND		1
1,2-Dibromoethane	ND	mg/kg	0.0041	0.00067	EPA-8260B	ND		1
Dibromomethane	ND	mg/kg	0.0041	0.0011	EPA-8260B	ND		1
1,2-Dichlorobenzene	ND	mg/kg	0.0041	0.00064	EPA-8260B	ND		1
1,3-Dichlorobenzene	ND	mg/kg	0.0041	0.00059	EPA-8260B	ND		1
1,4-Dichlorobenzene	ND	mg/kg	0.0041	0.00059	EPA-8260B	ND		1
Dichlorodifluoromethane	ND	mg/kg	0.0041	0.00064	EPA-8260B	ND		1
1,1-Dichloroethane	ND	mg/kg	0.0041	0.00052	EPA-8260B	ND		1
1,2-Dichloroethane	ND	mg/kg	0.0041	0.00059	EPA-8260B	ND		1
1,1-Dichloroethene	ND	mg/kg	0.0041	0.00090	EPA-8260B	ND		1
cis-1,2-Dichloroethene	ND	mg/kg	0.0041	0.00044	EPA-8260B	ND		1
trans-1,2-Dichloroethene	ND	mg/kg	0.0041	0.0030	EPA-8260B	ND		1
1,2-Dichloropropane	ND	mg/kg	0.0041	0.00065	EPA-8260B	ND		1
1,3-Dichloropropane	ND	mg/kg	0.0041	0.00055	EPA-8260B	ND		1
2,2-Dichloropropane	ND	mg/kg	0.0041	0.00055	EPA-8260B	ND		1
1,1-Dichloropropene	ND	mg/kg	0.0041	0.00055	EPA-8260B	ND		1

Pace Analytical
ENVIRONMENTAL SCIENCES

Langan Engineering & Environmental Services
18575 Jamboree Road Suite 150
Irvine, CA 92612

Reported: 11/30/2022 15:54
Project: Cypress College Student Housing
Project Number: 700123501
Project Manager: Chris Funk

Volatile Organic Analysis (EPA Method 8260B/5035)

BCL Sample ID: 2227420-03 | **Client Sample Name:** LB-7-5, LB-7-5, 11/9/2022 7:35:00AM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	DCN
cis-1,3-Dichloropropene	ND	mg/kg	0.0041	0.00047	EPA-8260B	ND		1
trans-1,3-Dichloropropene	ND	mg/kg	0.0041	0.00054	EPA-8260B	ND		1
Ethylbenzene	ND	mg/kg	0.0041	0.00056	EPA-8260B	ND		1
Hexachlorobutadiene	ND	mg/kg	0.0041	0.00055	EPA-8260B	ND		1
Isopropylbenzene	ND	mg/kg	0.0041	0.00065	EPA-8260B	ND		1
p-Isopropyltoluene	ND	mg/kg	0.0041	0.00048	EPA-8260B	ND		1
Methylene chloride	ND	mg/kg	0.0081	0.00090	EPA-8260B	ND		1
Methyl t-butyl ether	ND	mg/kg	0.0041	0.00046	EPA-8260B	ND		1
Naphthalene	ND	mg/kg	0.0041	0.00081	EPA-8260B	ND		1
n-Propylbenzene	ND	mg/kg	0.0041	0.00058	EPA-8260B	ND		1
Styrene	ND	mg/kg	0.0041	0.00050	EPA-8260B	ND		1
1,1,1,2-Tetrachloroethane	ND	mg/kg	0.0041	0.00077	EPA-8260B	ND		1
1,1,2,2-Tetrachloroethane	ND	mg/kg	0.0041	0.00068	EPA-8260B	ND		1
Tetrachloroethene	ND	mg/kg	0.0041	0.00079	EPA-8260B	ND		1
Toluene	ND	mg/kg	0.0041	0.00056	EPA-8260B	ND		1
1,2,3-Trichlorobenzene	ND	mg/kg	0.0041	0.0012	EPA-8260B	ND		1
1,2,4-Trichlorobenzene	ND	mg/kg	0.0041	0.0011	EPA-8260B	ND		1
1,1,1-Trichloroethane	ND	mg/kg	0.0041	0.00055	EPA-8260B	ND		1
1,1,2-Trichloroethane	ND	mg/kg	0.0041	0.00077	EPA-8260B	ND		1
Trichloroethene	ND	mg/kg	0.0041	0.00060	EPA-8260B	ND		1
Trichlorofluoromethane	ND	mg/kg	0.0041	0.0012	EPA-8260B	ND		1
1,2,3-Trichloropropane	ND	mg/kg	0.0041	0.0015	EPA-8260B	ND		1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	mg/kg	0.0041	0.00081	EPA-8260B	ND		1
1,2,4-Trimethylbenzene	ND	mg/kg	0.0041	0.00065	EPA-8260B	ND		1
1,3,5-Trimethylbenzene	ND	mg/kg	0.0041	0.00054	EPA-8260B	ND		1
Vinyl chloride	ND	mg/kg	0.0041	0.00048	EPA-8260B	ND		1
Total Xylenes	ND	mg/kg	0.0081	0.0020	EPA-8260B	ND		1
p- & m-Xylenes	ND	mg/kg	0.0041	0.0012	EPA-8260B	ND		1
o-Xylene	ND	mg/kg	0.0041	0.00076	EPA-8260B	ND		1
1,2-Dichloroethane-d4 (Surrogate)	128	%	70 - 121 (LCL - UCL)		EPA-8260B		S09	1
Toluene-d8 (Surrogate)	105	%	81 - 117 (LCL - UCL)		EPA-8260B			1
4-Bromofluorobenzene (Surrogate)	104	%	74 - 121 (LCL - UCL)		EPA-8260B			1

Pace Analytical
ENVIRONMENTAL SCIENCES

Langan Engineering & Environmental Services
18575 Jamboree Road Suite 150
Irvine, CA 92612

Reported: 11/30/2022 15:54
Project: Cypress College Student Housing
Project Number: 700123501
Project Manager: Chris Funk

Volatile Organic Analysis (EPA Method 8260B/5035)

BCL Sample ID: 2227420-03 | **Client Sample Name:** LB-7-5, LB-7-5, 11/9/2022 7:35:00AM

DCN	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	
1	EPA-8260B	11/17/22 15:31	11/18/22 03:34	BYM	MS-V18	0.814	B154135	EPA 5035 Soil MS

DCN = Data Continuation Number

Pace Analytical
ENVIRONMENTAL SCIENCES

Langan Engineering & Environmental Services
18575 Jamboree Road Suite 150
Irvine, CA 92612

Reported: 11/30/2022 15:54
Project: Cypress College Student Housing
Project Number: 700123501
Project Manager: Chris Funk

Purgeable Aromatics and Total Petroleum Hydrocarbons

BCL Sample ID: 2227420-03 | **Client Sample Name:** LB-7-5, LB-7-5, 11/9/2022 7:35:00AM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	DCN
Gasoline Range Organics (C4 - C12)	ND	mg/kg	1.0	0.20	EPA-8015B	ND		1
a,a,a-Trifluorotoluene (FID Surrogate)	70.0	%	70 - 130 (LCL - UCL)		EPA-8015B			1

DCN	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-8015B	11/19/22 11:11	11/20/22 15:37	SEM	GC-V8	1	B154246	EPA 5030 Soil GC

DCN = Data Continuation Number

Pace Analytical
ENVIRONMENTAL SCIENCES

Langan Engineering & Environmental Services
18575 Jamboree Road Suite 150
Irvine, CA 92612

Reported: 11/30/2022 15:54
Project: Cypress College Student Housing
Project Number: 700123501
Project Manager: Chris Funk

Total Petroleum Hydrocarbons

BCL Sample ID: 2227420-03 | **Client Sample Name:** LB-7-5, LB-7-5, 11/9/2022 7:35:00AM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	DCN
TPH - Diesel (FFP)	ND	mg/kg	20	4.4	EPA-8015B/FFP	ND	A10	1
TPH - Motor Oil	**39**	**mg/kg**	**40**	**14**	**EPA-8015B/FFP**	ND	**J,A10,A57**	1
Tetracosane (Surrogate)	95.5	%	40 - 130 (LCL - UCL)		EPA-8015B/FFP		A10	1

DCN	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-8015B/FFP	11/16/22 21:00	11/18/22 04:58	BUP	GC-2	2.034	B154103	EPA 3550B

DCN = Data Continuation Number

Pace Analytical
ENVIRONMENTAL SCIENCES

Langan Engineering & Environmental Services
18575 Jamboree Road Suite 150
Irvine, CA 92612

Reported: 11/30/2022 15:54
Project: Cypress College Student Housing
Project Number: 700123501
Project Manager: Chris Funk

Total Concentrations (TTLC)

BCL Sample ID: 2227420-03 | **Client Sample Name:** LB-7-5, LB-7-5, 11/9/2022 7:35:00AM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	DCN
Antimony	**1.4**	**mg/kg**	**5.0**	**0.33**	**EPA-6010B**	ND	**J**	1
Arsenic	**1.8**	**mg/kg**	**1.0**	**0.40**	**EPA-6010B**	ND		2
Barium	**45**	**mg/kg**	**0.50**	**0.18**	**EPA-6010B**	ND		2
Beryllium	**0.22**	**mg/kg**	**0.50**	**0.047**	**EPA-6010B**	ND	**J**	2
Cadmium	**0.16**	**mg/kg**	**0.50**	**0.052**	**EPA-6010B**	ND	**J**	2
Chromium	**10**	**mg/kg**	**0.50**	**0.050**	**EPA-6010B**	0.051		2
Cobalt	**5.4**	**mg/kg**	**2.5**	**0.098**	**EPA-6010B**	ND		2
Copper	**6.9**	**mg/kg**	**1.0**	**0.050**	**EPA-6010B**	ND		2
Lead	**1.4**	**mg/kg**	**2.5**	**0.41**	**EPA-6010B**	ND	**J**	2
Mercury	**0.023**	**mg/kg**	**0.16**	**0.016**	**EPA-7471A**	ND	**J**	3
Molybdenum	**0.93**	**mg/kg**	**2.5**	**0.050**	**EPA-6010B**	ND	**J**	2
Nickel	**7.1**	**mg/kg**	**0.50**	**0.15**	**EPA-6010B**	ND		2
Selenium	ND	mg/kg	1.0	0.98	EPA-6010B	ND		1
Silver	**0.11**	**mg/kg**	**0.50**	**0.067**	**EPA-6010B**	ND	**J**	2
Thallium	ND	mg/kg	5.0	0.64	EPA-6010B	ND		2
Vanadium	**27**	**mg/kg**	**0.50**	**0.11**	**EPA-6010B**	ND		2
Zinc	**32**	**mg/kg**	**2.5**	**0.087**	**EPA-6010B**	0.26		2

DCN	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-6010B	11/17/22 06:45	11/23/22 10:56	DVS	PE-OP3	1	B154080	EPA 3050B
2	EPA-6010B	11/17/22 06:45	11/18/22 13:26	JCC	PE-OP3	1	B154080	EPA 3050B
3	EPA-7471A	11/23/22 11:05	11/23/22 14:41	TMT	CETAC3	0.977	B154464	EPA 7471A

DCN = Data Continuation Number

Pace Analytical
ENVIRONMENTAL SCIENCES

Langan Engineering & Environmental Services
18575 Jamboree Road Suite 150
Irvine, CA 92612

Reported: 11/30/2022 15:54
Project: Cypress College Student Housing
Project Number: 700123501
Project Manager: Chris Funk

Volatile Organic Analysis (EPA Method 8260B/5035)

BCL Sample ID: 2227420-04 | **Client Sample Name:** LB-6-20, LB-6-20, 11/9/2022 9:35:00AM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	DCN
Benzene	ND	mg/kg	0.0040	0.00054	EPA-8260B	ND		1
Bromobenzene	ND	mg/kg	0.0040	0.00070	EPA-8260B	ND		1
Bromochloromethane	ND	mg/kg	0.0040	0.00065	EPA-8260B	ND		1
Bromodichloromethane	ND	mg/kg	0.0040	0.00063	EPA-8260B	ND		1
Bromoform	ND	mg/kg	0.0040	0.00056	EPA-8260B	ND		1
Bromomethane	ND	mg/kg	0.0040	0.0014	EPA-8260B	ND		1
n-Butylbenzene	ND	mg/kg	0.0040	0.00061	EPA-8260B	ND		1
sec-Butylbenzene	ND	mg/kg	0.0040	0.00057	EPA-8260B	ND		1
tert-Butylbenzene	ND	mg/kg	0.0040	0.00069	EPA-8260B	ND		1
Carbon tetrachloride	ND	mg/kg	0.0040	0.00063	EPA-8260B	ND		1
Chlorobenzene	ND	mg/kg	0.0040	0.00062	EPA-8260B	ND		1
Chloroethane	ND	mg/kg	0.0040	0.00089	EPA-8260B	ND		1
Chloroform	ND	mg/kg	0.0040	0.00073	EPA-8260B	ND		1
Chloromethane	ND	mg/kg	0.0040	0.00089	EPA-8260B	ND		1
2-Chlorotoluene	ND	mg/kg	0.0040	0.00070	EPA-8260B	ND		1
4-Chlorotoluene	ND	mg/kg	0.0040	0.00056	EPA-8260B	ND		1
Dibromochloromethane	ND	mg/kg	0.0040	0.00065	EPA-8260B	ND		1
1,2-Dibromo-3-chloropropane	ND	mg/kg	0.0040	0.00077	EPA-8260B	ND		1
1,2-Dibromoethane	ND	mg/kg	0.0040	0.00066	EPA-8260B	ND		1
Dibromomethane	ND	mg/kg	0.0040	0.0011	EPA-8260B	ND		1
1,2-Dichlorobenzene	ND	mg/kg	0.0040	0.00064	EPA-8260B	ND		1
1,3-Dichlorobenzene	ND	mg/kg	0.0040	0.00059	EPA-8260B	ND		1
1,4-Dichlorobenzene	ND	mg/kg	0.0040	0.00059	EPA-8260B	ND		1
Dichlorodifluoromethane	ND	mg/kg	0.0040	0.00064	EPA-8260B	ND		1
1,1-Dichloroethane	ND	mg/kg	0.0040	0.00052	EPA-8260B	ND		1
1,2-Dichloroethane	ND	mg/kg	0.0040	0.00059	EPA-8260B	ND		1
1,1-Dichloroethene	ND	mg/kg	0.0040	0.00089	EPA-8260B	ND		1
cis-1,2-Dichloroethene	ND	mg/kg	0.0040	0.00044	EPA-8260B	ND		1
trans-1,2-Dichloroethene	ND	mg/kg	0.0040	0.0030	EPA-8260B	ND		1
1,2-Dichloropropane	ND	mg/kg	0.0040	0.00065	EPA-8260B	ND		1
1,3-Dichloropropane	ND	mg/kg	0.0040	0.00054	EPA-8260B	ND		1
2,2-Dichloropropane	ND	mg/kg	0.0040	0.00054	EPA-8260B	ND		1
1,1-Dichloropropene	ND	mg/kg	0.0040	0.00054	EPA-8260B	ND		1

Pace Analytical
ENVIRONMENTAL SCIENCES

Langan Engineering & Environmental Services
18575 Jamboree Road Suite 150
Irvine, CA 92612

Reported: 11/30/2022 15:54
Project: Cypress College Student Housing
Project Number: 700123501
Project Manager: Chris Funk

Volatile Organic Analysis (EPA Method 8260B/5035)

BCL Sample ID: 2227420-04 | **Client Sample Name:** LB-6-20, LB-6-20, 11/9/2022 9:35:00AM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	DCN
cis-1,3-Dichloropropene	ND	mg/kg	0.0040	0.00047	EPA-8260B	ND		1
trans-1,3-Dichloropropene	ND	mg/kg	0.0040	0.00053	EPA-8260B	ND		1
Ethylbenzene	ND	mg/kg	0.0040	0.00056	EPA-8260B	ND		1
Hexachlorobutadiene	ND	mg/kg	0.0040	0.00054	EPA-8260B	ND		1
Isopropylbenzene	ND	mg/kg	0.0040	0.00065	EPA-8260B	ND		1
p-Isopropyltoluene	ND	mg/kg	0.0040	0.00048	EPA-8260B	ND		1
Methylene chloride	ND	mg/kg	0.0081	0.00089	EPA-8260B	ND		1
Methyl t-butyl ether	ND	mg/kg	0.0040	0.00045	EPA-8260B	ND		1
Naphthalene	ND	mg/kg	0.0040	0.00080	EPA-8260B	ND		1
n-Propylbenzene	ND	mg/kg	0.0040	0.00057	EPA-8260B	ND		1
Styrene	ND	mg/kg	0.0040	0.00050	EPA-8260B	ND		1
1,1,1,2-Tetrachloroethane	ND	mg/kg	0.0040	0.00077	EPA-8260B	ND		1
1,1,2,2-Tetrachloroethane	ND	mg/kg	0.0040	0.00068	EPA-8260B	ND		1
Tetrachloroethene	ND	mg/kg	0.0040	0.00078	EPA-8260B	ND		1
Toluene	ND	mg/kg	0.0040	0.00056	EPA-8260B	ND		1
1,2,3-Trichlorobenzene	ND	mg/kg	0.0040	0.0012	EPA-8260B	ND		1
1,2,4-Trichlorobenzene	ND	mg/kg	0.0040	0.0011	EPA-8260B	ND		1
1,1,1-Trichloroethane	ND	mg/kg	0.0040	0.00054	EPA-8260B	ND		1
1,1,2-Trichloroethane	ND	mg/kg	0.0040	0.00076	EPA-8260B	ND		1
Trichloroethene	ND	mg/kg	0.0040	0.00060	EPA-8260B	ND		1
Trichlorofluoromethane	ND	mg/kg	0.0040	0.0012	EPA-8260B	ND		1
1,2,3-Trichloropropane	ND	mg/kg	0.0040	0.0015	EPA-8260B	ND		1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	mg/kg	0.0040	0.00081	EPA-8260B	ND		1
1,2,4-Trimethylbenzene	ND	mg/kg	0.0040	0.00065	EPA-8260B	ND		1
1,3,5-Trimethylbenzene	ND	mg/kg	0.0040	0.00053	EPA-8260B	ND		1
Vinyl chloride	ND	mg/kg	0.0040	0.00048	EPA-8260B	ND		1
Total Xylenes	ND	mg/kg	0.0081	0.0020	EPA-8260B	ND		1
p- & m-Xylenes	ND	mg/kg	0.0040	0.0012	EPA-8260B	ND		1
o-Xylene	ND	mg/kg	0.0040	0.00075	EPA-8260B	ND		1
1,2-Dichloroethane-d4 (Surrogate)	119	%	70 - 121 (LCL - UCL)		EPA-8260B			1
Toluene-d8 (Surrogate)	103	%	81 - 117 (LCL - UCL)		EPA-8260B			1
4-Bromofluorobenzene (Surrogate)	101	%	74 - 121 (LCL - UCL)		EPA-8260B			1

Pace Analytical
ENVIRONMENTAL SCIENCES

Langan Engineering & Environmental Services
18575 Jamboree Road Suite 150
Irvine, CA 92612

Reported: 11/30/2022 15:54
Project: Cypress College Student Housing
Project Number: 700123501
Project Manager: Chris Funk

Volatile Organic Analysis (EPA Method 8260B/5035)

BCL Sample ID: 2227420-04 | **Client Sample Name:** LB-6-20, LB-6-20, 11/9/2022 9:35:00AM

DCN	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	
1	EPA-8260B	11/17/22 15:31	11/18/22 03:56	BYM	MS-V18	0.806	B154135	EPA 5035 Soil MS

DCN = Data Continuation Number

Pace Analytical
ENVIRONMENTAL SCIENCES

Langan Engineering & Environmental Services
18575 Jamboree Road Suite 150
Irvine, CA 92612

Reported: 11/30/2022 15:54
Project: Cypress College Student Housing
Project Number: 700123501
Project Manager: Chris Funk

Purgeable Aromatics and Total Petroleum Hydrocarbons

BCL Sample ID: 2227420-04 | **Client Sample Name:** LB-6-20, LB-6-20, 11/9/2022 9:35:00AM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	DCN
Gasoline Range Organics (C4 - C12)	ND	mg/kg	1.0	0.20	EPA-8015B	ND		1
a,a,a-Trifluorotoluene (FID Surrogate)	70.0	%	70 - 130 (LCL - UCL)		EPA-8015B			1

DCN	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-8015B	11/19/22 11:11	11/20/22 16:01	SEM	GC-V8	1	B154246	EPA 5030 Soil GC

DCN = Data Continuation Number

Pace Analytical
ENVIRONMENTAL SCIENCES

Langan Engineering & Environmental Services
18575 Jamboree Road Suite 150
Irvine, CA 92612

Reported: 11/30/2022 15:54
Project: Cypress College Student Housing
Project Number: 700123501
Project Manager: Chris Funk

Total Petroleum Hydrocarbons

BCL Sample ID: 2227420-04 | **Client Sample Name:** LB-6-20, LB-6-20, 11/9/2022 9:35:00AM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	DCN
TPH - Diesel (FFP)	ND	mg/kg	10	2.2	EPA-8015B/FFP	ND		1
TPH - Motor Oil	ND	mg/kg	20	7.0	EPA-8015B/FFP	ND		1
Tetracosane (Surrogate)	88.4	%	40 - 130 (LCL - UCL)		EPA-8015B/FFP			1

DCN	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-8015B/FFP	11/16/22 21:00	11/17/22 22:02	BUP	GC-2	1.007	B154103	EPA 3550B

DCN = Data Continuation Number

Pace Analytical
ENVIRONMENTAL SCIENCES

Langan Engineering & Environmental Services
18575 Jamboree Road Suite 150
Irvine, CA 92612

Reported: 11/30/2022 15:54
Project: Cypress College Student Housing
Project Number: 700123501
Project Manager: Chris Funk

Total Concentrations (TTLC)

BCL Sample ID: 2227420-04 | **Client Sample Name:** LB-6-20, LB-6-20, 11/9/2022 9:35:00AM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	DCN
Antimony	ND	mg/kg	5.0	0.33	EPA-6010B	ND		1
Arsenic	**3.3**	**mg/kg**	**1.0**	**0.40**	**EPA-6010B**	ND		1
Barium	**45**	**mg/kg**	**0.50**	**0.18**	**EPA-6010B**	ND		1
Beryllium	**0.19**	**mg/kg**	**0.50**	**0.047**	**EPA-6010B**	ND	**J**	1
Cadmium	**0.15**	**mg/kg**	**0.50**	**0.052**	**EPA-6010B**	ND	**J**	1
Chromium	**11**	**mg/kg**	**0.50**	**0.050**	**EPA-6010B**	ND		1
Cobalt	**4.9**	**mg/kg**	**2.5**	**0.098**	**EPA-6010B**	ND		1
Copper	**7.8**	**mg/kg**	**1.0**	**0.050**	**EPA-6010B**	ND		2
Lead	**1.3**	**mg/kg**	**2.5**	**0.41**	**EPA-6010B**	ND	**J**	1
Mercury	**0.016**	**mg/kg**	**0.16**	**0.016**	**EPA-7471A**	ND	**J**	3
Molybdenum	**0.73**	**mg/kg**	**2.5**	**0.050**	**EPA-6010B**	ND	**J**	1
Nickel	**7.3**	**mg/kg**	**0.50**	**0.15**	**EPA-6010B**	ND		1
Selenium	ND	mg/kg	1.0	0.98	EPA-6010B	ND		2
Silver	ND	mg/kg	0.50	0.067	EPA-6010B	ND		1
Thallium	ND	mg/kg	5.0	0.64	EPA-6010B	ND		1
Vanadium	**22**	**mg/kg**	**0.50**	**0.11**	**EPA-6010B**	ND		1
Zinc	**29**	**mg/kg**	**2.5**	**0.087**	**EPA-6010B**	0.25		1

DCN	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	Prep Method
1	EPA-6010B	11/17/22 06:45	11/18/22 14:35	JCC	PE-OP3	0.962	B154080	EPA 3050B
2	EPA-6010B	11/17/22 06:45	11/23/22 11:44	DVS	PE-OP3	0.962	B154080	EPA 3050B
3	EPA-7471A	11/23/22 11:05	11/23/22 14:43	TMT	CETAC3	0.992	B154464	EPA 7471A

DCN = Data Continuation Number

Langan Engineering & Environmental Services
18575 Jamboree Road Suite 150
Irvine, CA 92612

Reported: 11/30/2022 15:54
Project: Cypress College Student Housing
Project Number: 700123501
Project Manager: Chris Funk

Volatile Organic Analysis (EPA Method 8260B/5035)

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals	Run #
QC Batch ID: B154135							
Benzene	B154135-BLK1	ND	mg/kg	0.0050	0.00067		1
Bromobenzene	B154135-BLK1	ND	mg/kg	0.0050	0.00087		1
Bromochloromethane	B154135-BLK1	ND	mg/kg	0.0050	0.00081		1
Bromodichloromethane	B154135-BLK1	ND	mg/kg	0.0050	0.00078		1
Bromoform	B154135-BLK1	ND	mg/kg	0.0050	0.00070		1
Bromomethane	B154135-BLK1	ND	mg/kg	0.0050	0.0017		1
n-Butylbenzene	B154135-BLK1	ND	mg/kg	0.0050	0.00076		1
sec-Butylbenzene	B154135-BLK1	ND	mg/kg	0.0050	0.00071		1
tert-Butylbenzene	B154135-BLK1	ND	mg/kg	0.0050	0.00085		1
Carbon tetrachloride	B154135-BLK1	ND	mg/kg	0.0050	0.00078		1
Chlorobenzene	B154135-BLK1	ND	mg/kg	0.0050	0.00077		1
Chloroethane	B154135-BLK1	ND	mg/kg	0.0050	0.0011		1
Chloroform	B154135-BLK1	ND	mg/kg	0.0050	0.00090		1
Chloromethane	B154135-BLK1	ND	mg/kg	0.0050	0.0011		1
2-Chlorotoluene	B154135-BLK1	ND	mg/kg	0.0050	0.00087		1
4-Chlorotoluene	B154135-BLK1	ND	mg/kg	0.0050	0.00070		1
Dibromochloromethane	B154135-BLK1	ND	mg/kg	0.0050	0.00080		1
1,2-Dibromo-3-chloropropane	B154135-BLK1	ND	mg/kg	0.0050	0.00096		1
1,2-Dibromoethane	B154135-BLK1	ND	mg/kg	0.0050	0.00082		1
Dibromomethane	B154135-BLK1	ND	mg/kg	0.0050	0.0014		1
1,2-Dichlorobenzene	B154135-BLK1	ND	mg/kg	0.0050	0.00079		1
1,3-Dichlorobenzene	B154135-BLK1	ND	mg/kg	0.0050	0.00073		1
1,4-Dichlorobenzene	B154135-BLK1	ND	mg/kg	0.0050	0.00073		1
Dichlorodifluoromethane	B154135-BLK1	ND	mg/kg	0.0050	0.00079		1
1,1-Dichloroethane	B154135-BLK1	ND	mg/kg	0.0050	0.00064		1
1,2-Dichloroethane	B154135-BLK1	ND	mg/kg	0.0050	0.00073		1
1,1-Dichloroethene	B154135-BLK1	ND	mg/kg	0.0050	0.0011		1
cis-1,2-Dichloroethene	B154135-BLK1	ND	mg/kg	0.0050	0.00054		1
trans-1,2-Dichloroethene	B154135-BLK1	ND	mg/kg	0.0050	0.0037		1
1,2-Dichloropropane	B154135-BLK1	ND	mg/kg	0.0050	0.00080		1
1,3-Dichloropropane	B154135-BLK1	ND	mg/kg	0.0050	0.00067		1
2,2-Dichloropropane	B154135-BLK1	ND	mg/kg	0.0050	0.00067		1
1,1-Dichloropropene	B154135-BLK1	ND	mg/kg	0.0050	0.00067		1
cis-1,3-Dichloropropene	B154135-BLK1	ND	mg/kg	0.0050	0.00058		1

Pace Analytical
ENVIRONMENTAL SCIENCES

Langan Engineering & Environmental Services
18575 Jamboree Road Suite 150
Irvine, CA 92612

Reported: 11/30/2022 15:54
Project: Cypress College Student Housing
Project Number: 700123501
Project Manager: Chris Funk

Volatile Organic Analysis (EPA Method 8260B/5035)

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals	Run #
QC Batch ID: B154135							
trans-1,3-Dichloropropene	B154135-BLK1	ND	mg/kg	0.0050	0.00066		1
Ethylbenzene	B154135-BLK1	ND	mg/kg	0.0050	0.00069		1
Hexachlorobutadiene	B154135-BLK1	ND	mg/kg	0.0050	0.00067		1
Isopropylbenzene	B154135-BLK1	ND	mg/kg	0.0050	0.00080		1
p-Isopropyltoluene	B154135-BLK1	ND	mg/kg	0.0050	0.00059		1
Methylene chloride	B154135-BLK1	ND	mg/kg	0.010	0.0011		1
Methyl t-butyl ether	B154135-BLK1	ND	mg/kg	0.0050	0.00056		1
Naphthalene	B154135-BLK1	ND	mg/kg	0.0050	0.00099		1
n-Propylbenzene	B154135-BLK1	ND	mg/kg	0.0050	0.00071		1
Styrene	B154135-BLK1	ND	mg/kg	0.0050	0.00062		1
1,1,1,2-Tetrachloroethane	B154135-BLK1	ND	mg/kg	0.0050	0.00095		1
1,1,2,2-Tetrachloroethane	B154135-BLK1	ND	mg/kg	0.0050	0.00084		1
Tetrachloroethene	B154135-BLK1	ND	mg/kg	0.0050	0.00097		1
Toluene	B154135-BLK1	ND	mg/kg	0.0050	0.00069		1
1,2,3-Trichlorobenzene	B154135-BLK1	ND	mg/kg	0.0050	0.0015		1
1,2,4-Trichlorobenzene	B154135-BLK1	ND	mg/kg	0.0050	0.0014		1
1,1,1-Trichloroethane	B154135-BLK1	ND	mg/kg	0.0050	0.00067		1
1,1,2-Trichloroethane	B154135-BLK1	ND	mg/kg	0.0050	0.00094		1
Trichloroethene	B154135-BLK1	ND	mg/kg	0.0050	0.00074		1
Trichlorofluoromethane	B154135-BLK1	ND	mg/kg	0.0050	0.0015		1
1,2,3-Trichloropropane	B154135-BLK1	ND	mg/kg	0.0050	0.0019		1
1,1,2-Trichloro-1,2,2-trifluoroethane	B154135-BLK1	ND	mg/kg	0.0050	0.0010		1
1,2,4-Trimethylbenzene	B154135-BLK1	ND	mg/kg	0.0050	0.00080		1
1,3,5-Trimethylbenzene	B154135-BLK1	ND	mg/kg	0.0050	0.00066		1
Vinyl chloride	B154135-BLK1	ND	mg/kg	0.0050	0.00059		1
Total Xylenes	B154135-BLK1	ND	mg/kg	0.010	0.0025		1
p- & m-Xylenes	B154135-BLK1	ND	mg/kg	0.0050	0.0015		1
o-Xylene	B154135-BLK1	ND	mg/kg	0.0050	0.00093		1
1,2-Dichloroethane-d4 (Surrogate)	**B154135-BLK1**	**114**	%	**70 - 121 (LCL - UCL)**			1
Toluene-d8 (Surrogate)	**B154135-BLK1**	**106**	%	**81 - 117 (LCL - UCL)**			1
4-Bromofluorobenzene (Surrogate)	**B154135-BLK1**	**101**	%	**74 - 121 (LCL - UCL)**			1

Run #	QC Sample ID	QC Type	Method	Prep Date	Run Date Time	Analyst	Instrument	Dilution
1	B154135-BLK1	PB	EPA-8260B	11/17/22	11/18/22 00:37	BYM	MS-V18	1

Pace Analytical
ENVIRONMENTAL SCIENCES

Langan Engineering & Environmental Services
18575 Jamboree Road Suite 150
Irvine, CA 92612

Reported: 11/30/2022 15:54
Project: Cypress College Student Housing
Project Number: 700123501
Project Manager: Chris Funk

Volatile Organic Analysis (EPA Method 8260B/5035)

Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits Percent Recovery	Control Limits RPD	Lab Quals	Run #
QC Batch ID: B154135											
Benzene	B154135-BS1	LCS	0.13137	0.12500	mg/kg	105		70 - 130			1
Bromodichloromethane	B154135-BS1	LCS	0.12446	0.12500	mg/kg	99.6		70 - 130			1
Chlorobenzene	B154135-BS1	LCS	0.11663	0.12500	mg/kg	93.3		70 - 130			1
Chloroethane	B154135-BS1	LCS	0.12756	0.12500	mg/kg	102		70 - 130			1
1,4-Dichlorobenzene	B154135-BS1	LCS	0.11231	0.12500	mg/kg	89.8		70 - 130			1
1,1-Dichloroethane	B154135-BS1	LCS	0.12871	0.12500	mg/kg	103		70 - 130			1
1,1-Dichloroethene	B154135-BS1	LCS	0.13624	0.12500	mg/kg	109		70 - 130			1
Toluene	B154135-BS1	LCS	0.12615	0.12500	mg/kg	101		70 - 130			1
Trichloroethene	B154135-BS1	LCS	0.12150	0.12500	mg/kg	97.2		70 - 130			1
1,2-Dichloroethane-d4 (Surrogate)	B154135-BS1	LCS	0.056140	0.050000	mg/kg	112		70 - 121			1
Toluene-d8 (Surrogate)	B154135-BS1	LCS	0.051150	0.050000	mg/kg	102		81 - 117			1
4-Bromofluorobenzene (Surrogate)	B154135-BS1	LCS	0.051840	0.050000	mg/kg	104		74 - 121			1

Run #	QC Sample ID	QC Type	Method	Prep Date	Run Date Time	Analyst	Instrument	Dilution
1	B154135-BS1	LCS	EPA-8260B	11/17/22	11/17/22 23:09	BYM	MS-V18	1

Pace Analytical
ENVIRONMENTAL SCIENCES

Langan Engineering & Environmental Services
18575 Jamboree Road Suite 150
Irvine, CA 92612

Reported: 11/30/2022 15:54
Project: Cypress College Student Housing
Project Number: 700123501
Project Manager: Chris Funk

Volatile Organic Analysis (EPA Method 8260B/5035)

Quality Control Report - Precision & Accuracy

Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	Control Limits RPD	Control Limits Percent Recovery	Lab Quals	R#
QC Batch ID: B154135	Used client sample: N											
Benzene	MS	2226013-48	ND	0.12204	0.12500	mg/kg		97.6		70 - 130		1
	MSD	2226013-48	ND	0.12167	0.12500	mg/kg	0.3	97.3	20	70 - 130		2
Bromodichloromethane	MS	2226013-48	ND	0.11915	0.12500	mg/kg		95.3		70 - 130		1
	MSD	2226013-48	ND	0.11752	0.12500	mg/kg	1.4	94.0	20	70 - 130		2
Chlorobenzene	MS	2226013-48	ND	0.12014	0.12500	mg/kg		96.1		70 - 130		1
	MSD	2226013-48	ND	0.11857	0.12500	mg/kg	1.3	94.9	20	70 - 130		2
Chloroethane	MS	2226013-48	ND	0.12367	0.12500	mg/kg		98.9		70 - 130		1
	MSD	2226013-48	ND	0.12340	0.12500	mg/kg	0.2	98.7	20	70 - 130		2
1,4-Dichlorobenzene	MS	2226013-48	ND	0.11715	0.12500	mg/kg		93.7		70 - 130		1
	MSD	2226013-48	ND	0.11589	0.12500	mg/kg	1.1	92.7	20	70 - 130		2
1,1-Dichloroethane	MS	2226013-48	ND	0.11837	0.12500	mg/kg		94.7		70 - 130		1
	MSD	2226013-48	ND	0.11766	0.12500	mg/kg	0.6	94.1	20	70 - 130		2
1,1-Dichloroethene	MS	2226013-48	ND	0.12367	0.12500	mg/kg		98.9		70 - 130		1
	MSD	2226013-48	ND	0.12355	0.12500	mg/kg	0.1	98.8	20	70 - 130		2
Toluene	MS	2226013-48	ND	0.12020	0.12500	mg/kg		96.2		70 - 130		1
	MSD	2226013-48	ND	0.11930	0.12500	mg/kg	0.8	95.4	20	70 - 130		2
Trichloroethene	MS	2226013-48	ND	0.11328	0.12500	mg/kg		90.6		70 - 130		1
	MSD	2226013-48	ND	0.11257	0.12500	mg/kg	0.6	90.1	20	70 - 130		2
1,2-Dichloroethane-d4 (Surrogate)	MS	2226013-48	ND	0.055240	0.050000	mg/kg		110		70 - 121		1
	MSD	2226013-48	ND	0.055550	0.050000	mg/kg	0.6	111		70 - 121		2
Toluene-d8 (Surrogate)	MS	2226013-48	ND	0.050890	0.050000	mg/kg		102		81 - 117		1
	MSD	2226013-48	ND	0.050630	0.050000	mg/kg	0.5	101		81 - 117		2
4-Bromofluorobenzene (Surrogate)	MS	2226013-48	ND	0.049410	0.050000	mg/kg		98.8		74 - 121		1
	MSD	2226013-48	ND	0.049890	0.050000	mg/kg	1.0	99.8		74 - 121		2

Run #	QC Sample ID	QC Type	Method	Prep Date	Run Date Time	Analyst	Instrument	Dilution
1	B154135-MS1	MS	EPA-8260B	11/17/22	11/17/22 23:31	BYM	MS-V18	1
2	B154135-MSD1	MSD	EPA-8260B	11/17/22	11/17/22 23:53	BYM	MS-V18	1

Pace Analytical
ENVIRONMENTAL SCIENCES

Langan Engineering & Environmental Services
18575 Jamboree Road Suite 150
Irvine, CA 92612

Reported: 11/30/2022 15:54
Project: Cypress College Student Housing
Project Number: 700123501
Project Manager: Chris Funk

Purgeable Aromatics and Total Petroleum Hydrocarbons

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals	Run #
QC Batch ID: B154246							
Gasoline Range Organics (C4 - C12)	B154246-BLK1	ND	mg/kg	1.0	0.20		1
a,a,a-Trifluorotoluene (FID Surrogate)	**B154246-BLK1**	**75.0**	%	**70 - 130 (LCL - UCL)**			1

Run #	QC Sample ID	QC Type	Method	Prep Date	Run Date Time	Analyst	Instrument	Dilution
1	B154246-BLK1	PB	EPA-8015B	11/19/22	11/19/22 22:59	SEM	GC-V8	1

Pace Analytical
ENVIRONMENTAL SCIENCES

Langan Engineering & Environmental Services
18575 Jamboree Road Suite 150
Irvine, CA 92612

Reported: 11/30/2022 15:54
Project: Cypress College Student Housing
Project Number: 700123501
Project Manager: Chris Funk

Purgeable Aromatics and Total Petroleum Hydrocarbons

Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits Percent Recovery	Control Limits RPD	Lab Quals	Run #
QC Batch ID: B154246											
Gasoline Range Organics (C4 - C12)	B154246-BS1	LCS	4.3290	5.0000	mg/kg	86.6		85 - 115			1
	B154246-BSD1	LCSD	4.3430	5.0000	mg/kg	86.9	0.3	85 - 115	20		2
a,a,a-Trifluorotoluene (FID Surrogate)	B154246-BS1	LCS	0.036000	0.040000	mg/kg	90.0		70 - 130			1
	B154246-BSD1	LCSD	0.038000	0.040000	mg/kg	95.0	5.4	70 - 130			2

Run #	QC Sample ID	QC Type	Method	Prep Date	Run Date Time	Analyst	Instrument	Dilution
1	B154246-BS1	LCS	EPA-8015B	11/19/22	11/20/22 01:26	SEM	GC-V8	1
2	B154246-BSD1	LCSD	EPA-8015B	11/19/22	11/20/22 01:51	SEM	GC-V8	1

Pace Analytical
ENVIRONMENTAL SCIENCES

Langan Engineering & Environmental Services
18575 Jamboree Road Suite 150
Irvine, CA 92612

Reported: 11/30/2022 15:54
Project: Cypress College Student Housing
Project Number: 700123501
Project Manager: Chris Funk

Purgeable Aromatics and Total Petroleum Hydrocarbons

Quality Control Report - Precision & Accuracy

Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	Control Limits RPD	Control Limits Percent Recovery	Lab Quals	R#
QC Batch ID: B154246	Used client sample: N											
Gasoline Range Organics (C4 - C12)	MS	2226013-24	ND	4.3640	5.0000	mg/kg		87.3		70 - 130		1
	MSD	2226013-24	ND	4.3920	5.0000	mg/kg	0.6	87.8	20	70 - 130		2
a,a,a-Trifluorotoluene (FID Surrogate)	MS	2226013-24	ND	0.036000	0.040000	mg/kg		90.0		70 - 130		1
	MSD	2226013-24	ND	0.035000	0.040000	mg/kg	2.8	87.5		70 - 130		2

Run #	QC Sample ID	QC Type	Method	Prep Date	Run Date Time	Analyst	Instrument	Dilution
1	B154246-MS1	MS	EPA-8015B	11/19/22	11/20/22 02:15	SEM	GC-V8	1
2	B154246-MSD1	MSD	EPA-8015B	11/19/22	11/20/22 02:39	SEM	GC-V8	1

Pace Analytical
ENVIRONMENTAL SCIENCES

Langan Engineering & Environmental Services
18575 Jamboree Road Suite 150
Irvine, CA 92612

Reported: 11/30/2022 15:54
Project: Cypress College Student Housing
Project Number: 700123501
Project Manager: Chris Funk

Total Petroleum Hydrocarbons

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals	Run #
QC Batch ID: B154103							
TPH - Diesel (FFP)	B154103-BLK1	ND	mg/kg	10	2.2		1
TPH - Motor Oil	B154103-BLK1	ND	mg/kg	20	7.0		1
Tetracosane (Surrogate)	**B154103-BLK1**	**106**	%	**40 - 130 (LCL - UCL)**			1

Run #	QC Sample ID	QC Type	Method	Prep Date	Run Date Time	Analyst	Instrument	Dilution
1	B154103-BLK1	PB	EPA-8015B/FFP	11/16/22	11/17/22 06:19	BUP	GC-19	1.014

Langan Engineering & Environmental Services
18575 Jamboree Road Suite 150
Irvine, CA 92612

Reported: 11/30/2022 15:54
Project: Cypress College Student Housing
Project Number: 700123501
Project Manager: Chris Funk

Total Petroleum Hydrocarbons

Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits Percent Recovery	Control Limits RPD	Lab Quals	Run #
QC Batch ID: B154103											
TPH - Diesel (FFP)	B154103-BS1	LCS	66.023	83.333	mg/kg	79.2		64 - 124			1
Tetracosane (Surrogate)	B154103-BS1	LCS	3.5863	3.3333	mg/kg	108		40 - 130			1

Run #	QC Sample ID	QC Type	Method	Prep Date	Run Date Time	Analyst	Instrument	Dilution
1	B154103-BS1	LCS	EPA-8015B/FFP	11/16/22	11/17/22 06:46	BUP	GC-19	1

Pace Analytical
ENVIRONMENTAL SCIENCES

Langan Engineering & Environmental Services
18575 Jamboree Road Suite 150
Irvine, CA 92612

Reported: 11/30/2022 15:54
Project: Cypress College Student Housing
Project Number: 700123501
Project Manager: Chris Funk

Total Petroleum Hydrocarbons

Quality Control Report - Precision & Accuracy

Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	Control Limits RPD	Control Limits Percent Recovery	Lab Quals	R#
QC Batch ID: B154103	Used client sample: N											
TPH - Diesel (FFP)	MS	2227409-31	ND	71.771	82.508	mg/kg		87.0		52 - 131		1
	MSD	2227409-31	ND	73.409	84.459	mg/kg	2.3	86.9	30	52 - 131		2
Tetracosane (Surrogate)	MS	2227409-31	ND	4.0408	3.3003	mg/kg		122		40 - 130		1
	MSD	2227409-31	ND	4.1851	3.3784	mg/kg	3.5	124		40 - 130		2

Run #	QC Sample ID	QC Type	Method	Prep Date	Run Date Time	Analyst	Instrument	Dilution
1	B154103-MS1	MS	EPA-8015B/FFP	11/16/22	11/17/22 07:40	BUP	GC-19	0.990
2	B154103-MSD1	MSD	EPA-8015B/FFP	11/16/22	11/17/22 08:07	BUP	GC-19	1.014

Langan Engineering & Environmental Services
18575 Jamboree Road Suite 150
Irvine, CA 92612

Reported: 11/30/2022 15:54
Project: Cypress College Student Housing
Project Number: 700123501
Project Manager: Chris Funk

Total Concentrations (TTLC)

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals	Run #
QC Batch ID: B154080							
Antimony	B154080-BLK2	ND	mg/kg	5.0	0.33		1
Arsenic	B154080-BLK1	ND	mg/kg	1.0	0.40		2
Barium	B154080-BLK1	ND	mg/kg	0.50	0.18		2
Beryllium	B154080-BLK1	ND	mg/kg	0.50	0.047		2
Cadmium	B154080-BLK1	ND	mg/kg	0.50	0.052		2
Chromium	**B154080-BLK1**	**0.051065**	**mg/kg**	**0.50**	**0.050**	**J**	2
Cobalt	B154080-BLK1	ND	mg/kg	2.5	0.098		2
Copper	B154080-BLK1	ND	mg/kg	1.0	0.050		2
Lead	B154080-BLK1	ND	mg/kg	2.5	0.41		2
Molybdenum	B154080-BLK1	ND	mg/kg	2.5	0.050		2
Nickel	B154080-BLK1	ND	mg/kg	0.50	0.15		2
Selenium	B154080-BLK2	ND	mg/kg	1.0	0.98		1
Silver	B154080-BLK1	ND	mg/kg	0.50	0.067		2
Thallium	B154080-BLK1	ND	mg/kg	5.0	0.64		2
Vanadium	B154080-BLK1	ND	mg/kg	0.50	0.11		2
Zinc	**B154080-BLK1**	**0.26208**	**mg/kg**	**2.5**	**0.087**	**J**	2
QC Batch ID: B154464							
Mercury	B154464-BLK1	ND	mg/kg	0.16	0.016		3

Run #	QC Sample ID	QC Type	Method	Prep Date	Run Date Time	Analyst	Instrument	Dilution
1	B154080-BLK2	PB	EPA-6010B	11/17/22	11/23/22 10:52	DVS	PE-OP3	1
2	B154080-BLK1	PB	EPA-6010B	11/17/22	11/18/22 12:02	JCC	PE-OP3	1
3	B154464-BLK1	PB	EPA-7471A	11/23/22	11/23/22 14:12	TMT	CETAC3	1

Pace Analytical
ENVIRONMENTAL SCIENCES

Langan Engineering & Environmental Services
18575 Jamboree Road Suite 150
Irvine, CA 92612

Reported: 11/30/2022 15:54
Project: Cypress College Student Housing
Project Number: 700123501
Project Manager: Chris Funk

Total Concentrations (TTLC)

Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits Percent Recovery	Control Limits RPD	Lab Quals	Run #
QC Batch ID: B154080											
Antimony	B154080-BS2	LCS	112.76	100.00	mg/kg	113		75 - 125			1
Arsenic	B154080-BS1	LCS	18.752	20.000	mg/kg	93.8		75 - 125			2
Barium	B154080-BS1	LCS	116.68	100.00	mg/kg	117		75 - 125			2
Beryllium	B154080-BS1	LCS	10.223	10.000	mg/kg	102		75 - 125			2
Cadmium	B154080-BS1	LCS	10.487	10.000	mg/kg	105		75 - 125			2
Chromium	B154080-BS1	LCS	104.80	100.00	mg/kg	105		75 - 125			2
Cobalt	B154080-BS1	LCS	104.62	100.00	mg/kg	105		75 - 125			2
Copper	B154080-BS1	LCS	103.39	100.00	mg/kg	103		75 - 125			2
Lead	B154080-BS1	LCS	110.81	100.00	mg/kg	111		75 - 125			2
Molybdenum	B154080-BS1	LCS	106.16	100.00	mg/kg	106		75 - 125			2
Nickel	B154080-BS1	LCS	110.32	100.00	mg/kg	110		75 - 125			2
Selenium	B154080-BS2	LCS	18.365	20.000	mg/kg	91.8		75 - 125			1
Silver	B154080-BS1	LCS	10.045	10.000	mg/kg	100		75 - 125			2
Thallium	B154080-BS1	LCS	120.82	100.00	mg/kg	121		75 - 125			2
Vanadium	B154080-BS1	LCS	103.32	100.00	mg/kg	103		75 - 125			2
Zinc	B154080-BS1	LCS	103.54	100.00	mg/kg	104		75 - 125			2
QC Batch ID: B154464											
Mercury	B154464-BS1	LCS	0.75680	0.80000	mg/kg	94.6		80 - 120			3

Run #	QC Sample ID	QC Type	Method	Prep Date	Run Date Time	Analyst	Instrument	Dilution
1	B154080-BS2	LCS	EPA-6010B	11/17/22	11/23/22 10:54	DVS	PE-OP3	1
2	B154080-BS1	LCS	EPA-6010B	11/17/22	11/18/22 13:25	JCC	PE-OP3	1
3	B154464-BS1	LCS	EPA-7471A	11/23/22	11/23/22 14:14	TMT	CETAC3	1

Langan Engineering & Environmental Services
18575 Jamboree Road Suite 150
Irvine, CA 92612

Reported: 11/30/2022 15:54
Project: Cypress College Student Housing
Project Number: 700123501
Project Manager: Chris Funk

Total Concentrations (TTLC)

Quality Control Report - Precision & Accuracy

Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	Control Limits RPD	Control Limits Percent Recovery	Lab Quals	R#
QC Batch ID: B154080	Used client sample: Y - Description: LB-7-5, 11/09/2022 07:35											
Antimony	DUP	2227420-03	1.3752	1.2964		mg/kg	5.9		20		J	1
	MS	2227420-03	1.3752	34.120	100.00	mg/kg		32.7		16 - 119		2
	MSD	2227420-03	1.3752	28.989	100.00	mg/kg	16.3	27.6	20	16 - 119		3
Arsenic	DUP	**2227420-03**	**1.7558**	**2.2178**		**mg/kg**	**23.3**		**20**		**A02**	4
	MS	**2227420-03**	**1.7558**	**18.644**	**20.000**	**mg/kg**		**84.4**		**75 - 125**		5
	MSD	**2227420-03**	**1.7558**	**19.526**	**20.000**	**mg/kg**	**4.6**	**88.8**	**20**	**75 - 125**		6
Barium	DUP	2227420-03	44.962	46.996		mg/kg	4.4		20			4
	MS	2227420-03	44.962	135.89	100.00	mg/kg		90.9		75 - 125		5
	MSD	2227420-03	44.962	140.30	100.00	mg/kg	3.2	95.3	20	75 - 125		6
Beryllium	DUP	2227420-03	0.21616	0.18960		mg/kg	13.1		20		J	4
	MS	2227420-03	0.21616	9.5553	10.000	mg/kg		93.4		75 - 125		5
	MSD	2227420-03	0.21616	9.5706	10.000	mg/kg	0.2	93.5	20	75 - 125		6
Cadmium	DUP	2227420-03	0.15599	0.16919		mg/kg	8.1		20		J	4
	MS	2227420-03	0.15599	9.8414	10.000	mg/kg		96.9		75 - 125		5
	MSD	2227420-03	0.15599	9.8180	10.000	mg/kg	0.2	96.6	20	75 - 125		6
Chromium	DUP	2227420-03	10.445	9.6164		mg/kg	8.3		20			4
	MS	2227420-03	10.445	103.48	100.00	mg/kg		93.0		75 - 125		5
	MSD	2227420-03	10.445	103.17	100.00	mg/kg	0.3	92.7	20	75 - 125		6
Cobalt	DUP	2227420-03	5.4050	4.9173		mg/kg	9.4		20			4
	MS	2227420-03	5.4050	96.271	100.00	mg/kg		90.9		75 - 125		5
	MSD	2227420-03	5.4050	99.646	100.00	mg/kg	3.4	94.2	20	75 - 125		6
Copper	DUP	2227420-03	6.9437	5.9178		mg/kg	16.0		20			4
	MS	2227420-03	6.9437	103.51	100.00	mg/kg		96.6		75 - 125		5
	MSD	2227420-03	6.9437	104.70	100.00	mg/kg	1.1	97.8	20	75 - 125		6
Lead	DUP	**2227420-03**	**1.4471**	**1.1612**		**mg/kg**	**21.9**		**20**		**J,A02**	4
	MS	**2227420-03**	**1.4471**	**97.247**	**100.00**	**mg/kg**		**95.8**		**75 - 125**		5
	MSD	**2227420-03**	**1.4471**	**94.561**	**100.00**	**mg/kg**	**2.8**	**93.1**	**20**	**75 - 125**		6
Molybdenum	DUP	2227420-03	0.92726	0.86587		mg/kg	6.8		20		J	4
	MS	2227420-03	0.92726	91.676	100.00	mg/kg		90.7		75 - 125		5
	MSD	2227420-03	0.92726	92.842	100.00	mg/kg	1.3	91.9	20	75 - 125		6
Nickel	DUP	2227420-03	7.0574	6.4616		mg/kg	8.8		20			4
	MS	2227420-03	7.0574	101.38	100.00	mg/kg		94.3		75 - 125		5
	MSD	2227420-03	7.0574	101.44	100.00	mg/kg	0.1	94.4	20	75 - 125		6
Selenium	DUP	2227420-03	ND	ND		mg/kg			20			1
	MS	2227420-03	ND	17.249	20.000	mg/kg		86.2		75 - 125		2
	MSD	2227420-03	ND	16.935	20.000	mg/kg	1.8	84.7	20	75 - 125		3
Silver	DUP	2227420-03	0.10826	0.11475		mg/kg	5.8		20		J	4
	MS	2227420-03	0.10826	9.3866	10.000	mg/kg		92.8		75 - 125		5
	MSD	2227420-03	0.10826	9.3983	10.000	mg/kg	0.1	92.9	20	75 - 125		6

Pace Analytical
ENVIRONMENTAL SCIENCES

Langan Engineering & Environmental Services
18575 Jamboree Road Suite 150
Irvine, CA 92612

Reported: 11/30/2022 15:54
Project: Cypress College Student Housing
Project Number: 700123501
Project Manager: Chris Funk

Total Concentrations (TTLC)

Quality Control Report - Precision & Accuracy

Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	Control Limits RPD	Control Limits Percent Recovery	Lab Quals	R#
QC Batch ID: B154080	Used client sample: Y - Description: LB-7-5, 11/09/2022 07:35											
Thallium	DUP	2227420-03	ND	ND		mg/kg			20			4
	MS	2227420-03	ND	93.560	100.00	mg/kg		93.6		75 - 125		5
	MSD	2227420-03	ND	93.410	100.00	mg/kg	0.2	93.4	20	75 - 125		6
Vanadium	DUP	2227420-03	26.806	24.544		mg/kg	8.8		20			4
	MS	2227420-03	26.806	119.73	100.00	mg/kg		92.9		75 - 125		5
	MSD	2227420-03	26.806	121.21	100.00	mg/kg	1.2	94.4	20	75 - 125		6
Zinc	DUP	2227420-03	32.320	29.472		mg/kg	9.2		20			4
	MS	2227420-03	32.320	121.09	100.00	mg/kg		88.8		75 - 125		5
	MSD	2227420-03	32.320	126.84	100.00	mg/kg	4.6	94.5	20	75 - 125		6
QC Batch ID: B154464	Used client sample: N											
Mercury	DUP	2227190-20	ND	ND		mg/kg			20			7
	MS	2227190-20	ND	0.78710	0.80645	mg/kg		97.6		80 - 120		8
	MSD	2227190-20	ND	0.73548	0.80645	mg/kg	6.8	91.2	20	80 - 120		9

Run #	QC Sample ID	QC Type	Method	Prep Date	Run Date Time	Analyst	Instrument	Dilution
1	B154080-DUP2	DUP	EPA-6010B	11/17/22	11/23/22 10:58	DVS	PE-OP3	1
2	B154080-MS2	MS	EPA-6010B	11/17/22	11/23/22 11:02	DVS	PE-OP3	1
3	B154080-MSD2	MSD	EPA-6010B	11/17/22	11/23/22 11:04	DVS	PE-OP3	1
4	B154080-DUP1	DUP	EPA-6010B	11/17/22	11/18/22 13:28	JCC	PE-OP3	1
5	B154080-MS1	MS	EPA-6010B	11/17/22	11/18/22 13:32	JCC	PE-OP3	1
6	B154080-MSD1	MSD	EPA-6010B	11/17/22	11/18/22 13:34	JCC	PE-OP3	1
7	B154464-DUP1	DUP	EPA-7471A	11/23/22	11/23/22 14:18	TMT	CETAC3	1.008
8	B154464-MS1	MS	EPA-7471A	11/23/22	11/23/22 14:24	TMT	CETAC3	1.008
9	B154464-MSD1	MSD	EPA-7471A	11/23/22	11/23/22 14:26	TMT	CETAC3	1.008

Langan Engineering & Environmental Services
18575 Jamboree Road Suite 150
Irvine, CA 92612

Reported: 11/30/2022 15:54
Project: Cypress College Student Housing
Project Number: 700123501
Project Manager: Chris Funk

Notes And Definitions

J	Estimated Value (CLP Flag)
MDL	Method Detection Limit
ND	Analyte Not Detected
PQL	Practical Quantitation Limit
A02	The difference between duplicate readings is less than the quantitation limit.
A10	Detection and quantitation limits were raised due to matrix interference.
A57	Chromatogram not typical of motor oil.
S09	The surrogate recovery for this compound was not within the control limits.