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# Appendix G-2

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Phase II Environmental Site Assessment

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**PHASE II ENVIRONMENTAL SITE ASSESSMENT**  
**600 South 1st Street**  
**San Jose, California**

*Prepared For:*

**KT Urban**  
**Cupertino, California 95014**

*Prepared By:*

**Langan Engineering and Environmental Services, Inc.**  
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**Chelsea Bixel**  
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**Peter J. Cusack**  
**Senior Associate/VP**

**29 August 2017**  
**770641901**

**LANGAN**

29 August 2017

Ms. Jennifer Jodoin  
KT Urban  
21710 Stevens Creek Boulevard, Suite 200  
Cupertino, CA 95014

**Subject: Phase II Environmental Site Assessment  
600 South 1st Street  
San Jose, California  
Langan Project: 770641901**

Dear Ms. Jodoin:

Langan Engineering and Environmental Services, Inc. (Langan) is pleased to submit this Phase II Environmental Site Assessment (ESA), for the 600 South 1st Street, 618 South 1st Street, and 8 East Reed Street properties located in San Jose, California.

In performing this Phase II ESA, we have endeavored to observe that degree of care and skill generally exercised by other consultants undertaking similar studies at the same time, under similar circumstances and conditions, and in the same geographical area.

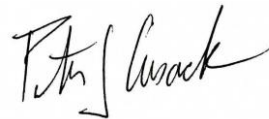
We appreciate the opportunity to assist you with this project. If you have any questions or need any information clarified, please call Mr. Peter J. Cusack at (408) 283-3615.

Sincerely yours,

**Langan Engineering and Environmental Services, Inc.**



Chelsea Bixel  
Staff Scientist



Peter J. Cusack  
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**PHASE II ENVIRONMENTAL SITE ASSESSMENT**  
**600 South 1st Street**  
**San Jose, California**

**1.0 INTRODUCTION**

On behalf of KT Urban (Client), Langan Engineering and Environmental Services, Inc. (Langan) has prepared this Phase II Environmental Site Assessment (Phase II ESA) for the 600 South 1st Street, 618 South 1st Street, and 8 East Reed Street properties, herein referenced to as 600 South 1st Street and the "Site", located in San Jose, California (Figure 1). As shown on Figure 2, the Site is located southeast of the intersection of South 1st Street and East Reed Street. The Site is directly bound by East Reed Street to the north, an un-named alley to the east, a two-story building (630 South 1st Street) to the south, and South 1st Street to the west. The Site is rectangular in shape, and approximately 0.42 acres in size, with plan dimensions of 145 feet by 125 feet. Currently, the Site is occupied by an at-grade asphalt-paved parking lot (600 South 1st Street); a single-story brick building and associated at-grade asphalt-paved parking lot (618 South 1st Street); and a two-story wood framed residential building (8 East Reed Street).

**2.0 RECENT PHASE I ENVIRONMENTAL SITE ASSESSMENT**

Langan recently performed a Phase I Environmental Site Assessment (ESA) for the Site and the results are included in the following report:

- Langan Engineering and Environmental Services, Inc., *Phase I Environmental Site Assessment, 600 South 1st Street, San Jose, California* dated 21 August 2017.

Information from the Phase I ESA has been included in the preparation of this report, as appropriate. The Phase I ESA identified the following recognized environmental conditions (RECs) associated with the Site:

During our Phase I ESA's Site reconnaissance and interview with the Site Owner, there was mention of a former underground storage tank (UST), formerly located within the 618 South 1st Street Site property. No record of this reported former UST was identified in any of the databases searched by Environmental Data Resources, Inc. (EDR), or online databases searched by Langan. However, during our file review conducted at the SJFD, a one-page letter dated 16 August 1994 stated that UST closure at the 618 South 1st Street property occurred on 17 June 1994, and had been completed per SJFD's requirements. No further documents or

files were located to corroborate the presence of a former UST on-Site. Based on the closure letter, this represents a historic REC (HREC) for the Site.

Because soil and groundwater at properties adjacent and upgradient (598 South 1<sup>st</sup> Street and 561-599 South Market Street and 60 Reed Street) of the Site have previously been identified containing elevated concentrations of petroleum hydrocarbons and petroleum hydrocarbon-related contaminants, soil and groundwater contamination is likely migrating from and off-Site source onto the Site. Our Phase I ESA did not reveal any indication of previous subsurface work, including soil and groundwater sampling, performed at the Site. Based on Langan's findings, we recommended that a Phase II ESA be performed at the Site which would include soil and groundwater sampling, to assess current Site subsurface conditions and to determine if off-Site contamination has migrated on to the Site.

### **3.0 PROJECT DESCRIPTION AND SCOPE OF WORK**

Based on current development plans, the existing Site structures will be demolished and the proposed development will include the construction of a 19-story mixed-use structure over four levels of below grade parking. The ground floor of the structure will include a lobby and commercial retail space; Levels two and three will be used for additional parking; Level four will include residential apartments and various amenities, including a pool and terrace; and Levels five through 19 will consist of residential apartments.

This Phase II ESA was conducted to assess the Site's current subsurface conditions, based on current development plans and to determine if off-Site contamination has migrated onto the Site from off-Site sources. The objective of the subsurface investigation was to identify and delineate the presence of contamination, if any, by sampling and analyzing Site soil and groundwater samples. The proposed development, which includes four levels of below-grade parking, is expected to have an excavation to extend to an approximate depth of 50 feet below current grade surface (bgs).

### **4.0 FIELD INVESTIGATION**

Prior to drilling, Underground Service Alert (USA) was notified at least 48 hours prior to drilling activities, and Precision Locating Services, a private utility locating company from Brentwood, California was subcontracted to clear the proposed boring locations for underground utilities.



On 17 June 2017, Gregg Drilling and Testing (Gregg) of Martinez, California drilled a total of six environmental exploratory borings (E-1 through E-6) to a maximum depth of 44 feet bgs. The exploratory borings were advanced using hydraulically-driven, direct push technology, under the supervision of Langan field representatives. Soil samples were collected using a macro-core sampler, lined with clean acetylene liners driven 48 inches into the soil. This subsurface investigation was performed concurrently with our geotechnical investigation. All approximate sampling locations, specifically the environmental boring locations, are shown on Figure 2.

Based on the depth of the proposed Site excavation and in an effort to adequately characterize the soil to be off-hauled during construction, soil samples were collected at the following approximate depths: 1.5, 3.0, 5.0, 7.5, 10.0, 15.0, 20.0, 25.0, 30.0, 35.0, 40.0, and 44.0 feet bgs. Sample ends were covered with Teflon, sealed with plastic end caps, labeled, and stored on ice until delivery to the analytical laboratory. Grab-groundwater samples were collected from two of the environmental borings (E-2-GW and E-6-GW). Following sample collection, each boring was properly abandoned via tremie grouting. The surface of each boring was completed with neat cement to match the existing surface.

All samples were delivered under chain-of-custody control to McCampbell Analytical, Inc. (McCampbell), a California Department of Public Health certified analytical laboratory in Pittsburg, California. Boring logs from this investigation are presented in Appendix A as Figures A-1 through A-6. The material encountered was classified according to the soil classification system described on Figure A-7.

## **5.0 SUBSURFACE CONDITIONS**

Based on both Langan's environmental and geotechnical subsurface investigations, the Site is underlain by alluvial deposits consisting of interbedded layers of clay, silt, sand, and gravel. More specifically, the Site is blanketed by up to 9 feet of medium stiff clay and sandy clay. The clay is underlain by a layer of very loose to loose clayey sand and silty sand which varies in thickness and extends to a maximum depth of 18 feet bgs. The loose sand is underlain by very soft to stiff clay with varying amounts of sand and silt extending to a depth of 51 to 56 feet bgs. The clay is underlain by a medium dense to very dense sand layer with varying amounts of clay and gravel. The sand layer varies in thickness from 10 to 28 feet.

Groundwater was encountered at approximately 13.26 feet bgs in boring E-2 (E-2-GW) and at approximately 14 feet bgs in boring E-6 (E-6-GW). However, seasonal fluctuations in rainfall influence groundwater levels and may cause several feet of variation.

Additionally, moderate to strong hydrocarbon odors were observed and noted in environmental borings E-1 through E-4, beginning in the vadose zone, just above the saturated zone, at an approximate depth of 13 feet bgs and extending to the maximum depth explored, approximately 44 feet bgs.

## **6.0 SAMPLE SELECTION AND ANALYTICAL RESULTS**

The objective of the soil sampling was to assess the presence of hazardous materials and petroleum hydrocarbons in the soil beneath the Site, if any, that may be disturbed during the proposed construction activities. Select soil samples were submitted to McCampbell for some or all of the following analyses listed below:

- TPHg, TPHd, and TPHmo by EPA Method 8021B/8015B;
- Volatile organic compounds (VOCs) by EPA Method 8260B;
- Semi-volatile organic compounds (SVOCs) by EPA Method 8270C;
- Organochlorine pesticides (OCPs) EPA Method 8081A/8082;
- Poly-chlorinated biphenyls (PCBs) by EPA Method 8081A/8082;
- California assessment manual (CAM) 17 metals by EPA Method 6020; and
- Leaking underground fuel tank (LUFT) 5 metals by EPA Method 6020.

Analytical results for metal concentrations in soil were compared to the total threshold limit concentration (TTLC). Samples with concentrations of any metal greater than ten times the soluble threshold limit concentration (STLC) were also analyzed for soluble metals using the California waste extraction test (WET) method and the Federal toxicity characteristic leaching potential (TCLP). These analyses were run to assess if metal concentrations in soil exceed the State and/or Federal hazardous waste levels.

Grab groundwater samples were submitted to McCampbell for some or all of the following analyses listed below:

- TPHg, TPHd, and TPHmo by EPA Method 8021B/8015B;
- VOCs by EPA Method 8260B;

- SVOCs by EPA Method 8270C;
- PCBs by EPA Method 8081A/8082; and
- CAM 17 metals by EPA Method 6020.

The laboratory analytical results are summarized in Tables 1 through 4. Copies of the certified laboratory analytical reports are presented in Appendix B.

## 6.1 Soil Analytical Results

Soil analytical results for parameters other than metals are summarized in Table 1 and were compared to the San Francisco Bay Area Regional Water Quality Control Board (RWQCB) Tier 1 environmental screening levels (ESLs) summary table (RWQCB, February 2016 [Rev. 3]), and both the residential and commercial/industrial ESLs, associated with direct exposure human health risk levels in shallow soils (Table S-1, RWQCB, February 2016 [Rev. 3]).

TPHg was detected at or above the laboratory reporting limit (1.0 milligram per kilogram (mg/kg)) in 10 of the 29 samples analyzed, at concentrations ranging from 1.4 mg/kg to 2,000 mg/kg; five of which (E-2-15.0, E-3-15.0, E-3-26.0, E-3-36.0, and E-4-15.0) exceeded the Tier 1 ESL for TPHg of 100 mg/kg. TPHd was detected at or above the laboratory reporting limit (1.0 mg/kg) in 15 of the 29 samples analyzed, at concentrations ranging from 1.2 mg/kg to 120 mg/kg. None of the detected concentrations of TPHd exceeded the Tier 1 ESL of 230 mg/kg. TPHmo was detected at or above the reporting limit (5.0 mg/kg) in 14 of the 29 samples analyzed at concentrations ranging from 7.8 mg/kg to 530 mg/kg. None of the detected concentrations of TPHmo exceeded the Tier 1 ESL of 5,100 mg/kg.

Various VOC compounds were detected above laboratory reporting limits in three of the 11 samples analyzed. Most of the VOCs were detected at trace concentrations. However, two soil samples collected from boring E-3 at depths of 26 feet bgs (E-3-26.0) and 36 feet bgs (E-3-36.0), detected up to nine VOC compounds above laboratory detection limits, five of which exceeded established ESLs. Benzene, toluene, ethylbenzene, and xylenes (BTEX) and naphthalene were detected in sample E-3-26.0 at concentrations of 1.4 mg/kg, 9.7 mg/kg, 6.2 mg/kg, 17 mg/kg, and 1.9 mg/kg, respectively. These five detections exceed their respective Tier 1 ESLs of 0.044 mg/kg, 2.9 mg/kg, 1.4 mg/kg, 2.3 mg/kg, and 0.033 mg/kg, respectively. Additionally, the detected concentration of benzene (1.4 mg/kg) exceeds the residential and commercial/industrial ESLs of 0.23 mg/kg, and 1.0 mg/kg, respectively. The detected concentration of ethylbenzene (6.2 mg/kg) exceeds the residential ESL of 5.1 mg/kg. The

detected concentration of benzene (1.4 mg/kg) exceeds both residential and commercial/industrial ESLs of 0.23 mg/kg and 1.0 mg/kg, respectively. Naphthalene was detected in sample E-3-36.0 at a concentration of 0.11 mg/kg, which exceeds the Tier 1 ESL of 0.033 mg/kg.

Phenol, a SVOC, was detected above laboratory detection limits in one of the six samples analyzed. Sample E-3-36.0 detected phenol at a concentration of 5.9 mg/kg, which exceeds the Tier 1 ESL, 0.10 mg/kg. No other SVOCs were detected at or above laboratory reporting limits in the soil samples analyzed.

Trace concentrations of three OCPs were detected in one of six soil samples analyzed (E-3-1.5), but do not exceed established ESLs. Additionally, no PCBs were detected above reporting limits in any of the samples analyzed.

Soil analytical results for metal parameters are summarized in Table 2 and were compared to the California total threshold limit concentration (TTLC), the State of California hazardous waste criterion (STLC), and the Federal hazardous waste criterion (TCLP).

Total lead was detected in each of the 30 of the samples analyzed at concentrations ranging from 5.1 mg/kg to 140 mg/kg. Total lead was detected at concentrations at or above 50 mg/kg but below 1,000 mg/kg (TTLC) in six soil samples, which were subsequently submitted for STLC analysis and TCLP analysis (if necessary) to determine soluble lead levels. STLC lead was detected at or above the laboratory reporting limit (0.10 milligrams per liter (mg/L)) in five of the six soil samples analyzed at concentrations ranging from 0.67 mg/L to 12 mg/L. STLC lead was detected above the California hazardous waste concentration of 5.0 mg/L in a single soil sample (E-3-1.5) at a concentration of 12 mg/L. TCLP lead was not detected at or above the laboratory reporting limit (0.10 mg/L) in the two samples analyzed.

Total chromium was detected in each of the 29 of the soil samples analyzed at concentrations ranging from 34 mg/kg to 82 mg/kg. Total chromium was detected at concentrations at or above 50 mg/kg but below 2,500 mg/kg (TTLC) in 20 soil samples, which were subsequently submitted for STLC analysis to determine soluble chromium levels. STLC chromium was detected at or above the laboratory reporting limit (0.10 mg/L) in 17 of the 20 soil samples analyzed, with concentrations ranging from 0.10 mg/L to 0.37 mg/L, none of which exceed the California hazardous waste classification of 5.0 mg/L.

All other metal concentrations were within normal<sup>1</sup> background ranges found in the western United States, specifically the San Francisco Bay Area.

## 6.2 Groundwater Analytical Results

Grab groundwater analytical results are summarized in Tables 3 and 4. All detections were compared to the Groundwater Tier 1 ESLs summary table (RWQCB, February 2016 [Rev. 3]). Due to the limited volume of groundwater generated from the temporary well installed at boring location E-2, an additional grab groundwater sample was collected from boring E-6 (E-6-GW). Sample E-2-GW was analyzed for non-metals only; while sample E-6-GW was analyzed for both metals and non-metals.

Groundwater analytical results for parameters other than metals are summarized in Table 3 and summarized below:

Sample E-2-GW was analyzed for TPHg, TPHd, TPHmo, and VOCs. TPHg was detected at a concentration of 12,000 µg/L, which exceeds the Tier 1 ESL of 100 µg/L. TPHd was detected at a concentration of 13,000 µg/L, which exceeds the Tier 1 ESL of 100 µg/L. TPHmo was detected at a concentration of 3,200, which does not exceed the Tier 1 ESL of 5,100 µg/L. Nine VOCs were detected above laboratory reporting limits in Sample E-2-GW. The following five VOCs were detected at concentrations which exceed established Tier 1 ESLs: benzene was detected at a concentration of 84 µg/L; ethylbenzene was detected at a concentration of 730 µg/L; naphthalene was detected at a concentration of 130 µg/L; toluene was detected at a concentration 440 µg/L; and xylenes were detected at a concentration of 450 µg/L.

Sample E-6-GW detected TPHd and TPHmo at concentrations of 56 µg/L and 360 µg/L, respectively, which do not exceed their respective Tier 1 ESLs of 100 µg/L and 5,100 µg/L. TPHg, VOCs, SVOCs, and PCBs were not detected in sample E-6-GW at or above laboratory reporting limits.

Groundwater analytical results for metals are summarized in Table 4. Selenium was detected in sample E-6-GW at a concentration of 5.6, which exceeds the Tier 1 ESL of 5.0 µg/L. The remaining metals that were detected above laboratory reporting limits do not exceed Tier 1 ESLs.

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<sup>1</sup> Environmental Resources Management. *Feasibility Study, Hookston Station, Pleasant Hill, California*. Appendix A, Table A-2, "Comparison of Background Concentrations of Metals in Bay Area Soils," July 2006.

## 7.0 CONCLUSIONS

The Site is rectangular in shape, and approximately 0.42 acres in size. Currently, the Site is occupied by an at-grade asphalt-paved parking lot (600 South 1st Street); a single-story brick building and associated at-grade asphalt-paved parking lot (618 South 1st Street); and a two-story wood framed residential building (8 East Reed Street). The Site has historically been occupied by multi-use structures, including but not limited to, commercial storefronts, private residences, a paint shop, an auto body works, and a fire department building.

The results of our recent Phase I ESA identified RECs directly associated to the Site, specifically related to previously documented petroleum hydrocarbon contamination at adjacent and upgradient properties. There is no record of any subsurface work being conducted at the Site. This Phase II ESA was conducted to assess the Site's current subsurface conditions, and to identify and delineate any on-Site petroleum hydrocarbon contamination that likely migrated on-Site from off-Site sources, previously identified in our Phase I ESA.

Based on both Langan's environmental and geotechnical subsurface investigations, the Site is underlain by a layer of very loose to loose clayey sand and silty sand which varies in thickness and extends to a maximum depth of 18 feet bgs. The loose sand is underlain by very soft to stiff clay with varying amounts of sand and silt extending to a depth of 51 to 56 feet bgs. The clay is underlain by a medium dense to very dense sand layer with varying amounts of clay and gravel. The sand layer varies in thickness from 10 to 28 feet. Groundwater was encountered at approximately 13.26 feet bgs in boring E-2 (E-2-GW) and at approximately 14 feet bgs in boring E-6 (E-6-GW). Additionally, moderate to strong hydrocarbon odors were observed and noted in environmental borings E-1 through E-4, beginning in the vadose zone, just above the saturated zone, at an approximate depth of 13 feet bgs and extending to the maximum depth explored, approximately 44 feet bgs.

The proposed development is expected to have an excavation to extend to an approximate depth of 50 feet bgs. Based on the analytical results, one soil sample, from boring E-3 at a depth of 1.5 feet bgs (E-3-1.5) detected a concentration of soluble lead (12 mg/L), which exceeded the State of California Class I hazardous waste criteria for lead, 5 mg/L. The area of material exceeding the State of California waste criteria is shown on Figure 3. The material surrounding E-3 to a depth of approximately 3 feet bgs will likely be disposed as State of California hazardous waste. Additionally, elevated levels of TPHg were detected in soil borings E-2, E-3, and E-4; at depths ranging from approximately 15 to 44-feet bgs. Elevated levels of VOCs and SVOCs were detected in one boring, E-3, between approximately 26.0 feet and 36.0

feet bgs. The material in these areas will likely be disposed of as Class II non-hazardous waste. . Based on the analytical results, all remaining material would likely be excavated and disposed of as unrestricted waste.

Elevated levels of petroleum hydrocarbons (TPHg, TPHd, and TPHmo) and VOC compounds were detected in grab groundwater sample E-2-GW. However, only low levels of TPHd and TPHmo were detected in grab-groundwater sample E-6-GW and no TPHg, VOCs, SVOCs, or PCBs were detected at or above the laboratory detection limits in grab groundwater sample E-6-GW.

Because hazardous materials and petroleum hydrocarbon contamination were detected at the Site, a Soil and Groundwater Management Plan (SGMP) and a health and safety plan (HASP), prepared by others, will be required prior to construction. The SGMP will provide recommended measures to mitigate the long-term environmental or health and safety risks caused by the presence of hazardous materials and contaminants at the Site. The SMP will also contain contingency plans to be implemented during soil excavation if unanticipated hazardous materials are encountered; including former USTs. Langan recommends the implementation of a SGMP which will mitigate potential risks associated with the handling of impacted soil and groundwater, which may be encountered during construction activities. The HASP will outline proper soil and groundwater handling procedures and health and safety requirements to minimize worker and public exposure to hazardous materials during construction.

## **8.0 LIMITATIONS**

Descriptions of specific field activities and historical events are based on our observations and on information provided by others. The opinions and information presented in this report apply to Site conditions and the information that was available at the time the work was performed and do not apply to changes of which we are not aware or have not had the opportunity to evaluate. Langan makes no guarantees or warranties with respect to the accuracy or completeness of this information.

## **TABLES**



**Table 1**  
**Soil Analytical Results for Non-Metals**  
**600 South 1st Street**  
**San Jose, California**

Sample ID	Sample Date	Sample Depth (feet)	TPHg	TPHd	TPHmo	VOCs									All Other VOCs	SVOC	All other SVOCs	OCPs			All Other OCPs	PCBs
						Benzene	n-Butyl benzene	Ethylbenzene	Naphthalene	n-Propyl benzene	Toluene	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	Xylenes		Phenol		p,p-DDD	p,p-DDE	p,p-DDT		
E-1-1.5	6/17/2017	1.5	< 1.0	1.2	25	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	ND	< 0.25	ND	< 0.010	< 0.010	< 0.010	ND	ND
E-1-5.0	6/17/2017	5	< 1.0	< 1.0	7.8	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	ND	< 0.25	ND	--	--	--	--	--
E-1-15.0	6/17/2017	15	< 1.0	< 1.0	< 5.0	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	ND	--	--	--	--	--	--	--
E-2-1.5	6/17/2017	1.5	< 1.0	8.4	180	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	ND	--	--	< 0.020	< 0.020	< 0.020	ND	ND
E-2-3.0	6/17/2017	3	< 1.0	1.5	44	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
E-2-10.0	6/17/2017	10	< 1.0	7.4	160	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	ND	--	--	--	--	--	--	--
E-2-15.0	6/17/2017	15	<b>240</b>	8.6	< 5.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
E-2-24.0	6/17/2017	24	< 1.0	< 1.0	< 5.0	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	ND	--	--	--	--	--	--	--
E-2-30.0	6/17/2017	30	12	< 1.0	< 5.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
E-3-1.5	6/17/2017	1.5	< 1.0	5.9	140	--	--	--	--	--	--	--	--	--	--	--	--	0.033	0.11	0.40	ND	ND
E-3-7.5	6/17/2017	7.5	< 1.0	< 1.0	< 5.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
E-3-15.0	6/17/2017	15	<b>140</b>	3.4	< 5.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
E-3-26.0	6/17/2017	26	<b>940</b>	120	25	<b>1.4</b>	1.6	<b>6.2</b>	<b>1.9</b>	2.8	<b>9.7</b>	14	4.0	<b>17</b>	ND	--	--	--	--	--	--	--
E-3-36.0	6/17/2017	36	<b>820</b>	5.4	< 5.0	0.031	0.059	0.12	<b>0.11</b>	0.057	0.24	0.34	0.10	0.35	ND	<b>5.9</b>	ND	--	--	--	--	--
E-4-1.5	6/17/2017	1.5	< 1.0	< 1.0	< 5.0	--	--	--	--	--	--	--	--	--	--	--	--	< 0.001	< 0.001	< 0.001	ND	ND
E-4-3.0	6/17/2017	3	< 1.0	6.6	150	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
E-4-5.0	6/17/2017	5	< 1.0	< 1.0	< 5.0	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	ND	< 0.25	ND	--	--	--	--	--
E-4-15.0	6/17/2017	15	<b>2,000</b>	38	14	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
E-4-35.0	6/17/2017	35	1.4	< 1.0	< 5.0	< 0.005	0.0051	0.017	0.0053	0.0072	0.024	0.041	0.012	0.053	ND	< 0.25	ND	--	--	--	--	--
E-4-44.0	6/17/2017	44	61	22	< 5.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
E-5-1.5	6/17/2017	1.5	< 1.0	5.9	93	--	--	--	--	--	--	--	--	--	--	--	--	< 0.020	< 0.020	< 0.020	ND	ND
E-5-5.0	6/17/2017	5	< 1.0	1.2	20	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
E-5-20.0	6/17/2017	20	2.7	< 1.0	< 5.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
E-5-30.0	6/17/2017	30	< 1.0	< 1.0	< 5.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
E-5-45.0	6/17/2017	45	< 1.0	< 1.0	< 5.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
E-6-1.5	6/17/2017	1.5	1.6	32	530	--	--	--	--	--	--	--	--	--	--	--	--	< 0.10	< 0.10	< 0.10	ND	ND
E-6-3.0	6/17/2017	3	< 1.0	< 2.0	47	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
E-6-10.0	6/17/2017	10	< 1.0	< 1.0	15	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	ND	< 0.25	ND	--	--	--	--	--
E-6-30.0	6/17/2017	30	< 1.0	< 1.0	< 5.0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tier 1 ESLs			100	230	5,100	0.044	NE	1.4	0.033	NE	2.9	NE	NE	2.3	Various	0.10	Various	2.7	1.9	1.9	Various	Various
Residential ESLs			740	230	11,000	0.23	NE	5.1	3.3	NE	970	NE	NE	560	Various	23,462	Various	2.7	1.9	1.9	Various	Various
Commerical/Industrial ESLs			3,900	1,100	140,000	1.0	NE	22	14	NE	4,600	NE	NE	2,400	Various	350,297	Various	12	8.5	8.5	Various	Various

**Notes:**

mg/kg - milligrams per kilograms  
 TPHg - Total Petroleum Hydrocarbons as Gasoline, EPA Method 8015M  
 TPHd - Total Petroleum Hydrocarbons as Diesel Range, EPA Method 8015M  
 TPHmo - Total Petroleum Hydrocarbons as Diesel Range, EPA Method 8015M  
 VOCs - Volatile Organic Compounds, EPA Method SW8260B  
 SVOCs - Semivolatile Organic Compounds, EPA Method SW8270C  
 OCPs - Organochlorine Pesticides, EPA Method 8081  
 PCBs - Polychlorinated Biphenyls, EPA Method 8082  
 p,p-DDD - Dichlorodiphenyldichloroethane  
 p,p-DDE - Dichlorodiphenyldichloroethene  
 p,p-DDT - Dichlorodiphenyltrichloroethane

ND - Not detected at or above the laboratory reporting limit  
 -- Not analyzed or criteria not established  
**Bold** - Detection exceeds at least one established ESL

Tier 1 ESLs - RWQCB Environmental Soil Screening Levels based on a generic conceptual site model designed for use at most sites. The Tier 1 ESL summary table is generally derived from the most conservative ESL for each compound (February 2016 [Rev.3])  
 Residential ESLs - RWQCB Environmental Screening Levels, direct exposure human health risk levels (Table S-1), residential: shallow soil exposure (February 2016 [Rev. 3])  
 Commercial/Industrial ESLs - RWQCB Environmental Screening Levels, direct exposure human health risk levels (Table S-1), commercial/industrial: shallow soil exposure (February 2016 [Rev. 3])

**Table 2**  
**Soil Analytical Results for Metals**  
**600 South 1st Street**  
**San Jose, California**

Sample ID	Sample Date	Sample Depth (feet)	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	STLC Chromium	Cobalt	Copper	Lead	STLC Lead	TCLP Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
			(mg/kg)						(mg/L)	(mg/kg)			(mg/L)			(mg/kg)						
E-1-1.5	6/17/2017	1.5	0.71	7.3	170	< 0.50	< 0.25	56	0.21	12	30	35	--	--	0.21	0.53	100	< 0.50	< 0.50	< 0.50	38	66
E-1-5.0	6/17/2017	5	0.74	8.2	190	< 0.50	< 0.25	55	< 0.10	13	30	9.3	--	--	0.073	< 0.50	100	< 0.50	< 0.50	< 0.50	39	62
E-1-15.0	6/17/2017	15	--	--	--	--	0.56	55	< 0.10	--	--	89	< 0.10	--	--	--	87	--	--	--	--	300
E-2-1.5	6/17/2017	1.5	0.84	7.5	220	< 0.50	0.57	62	0.25	11	32	80	4.0	--	0.29	0.74	98	< 0.50	< 0.50	< 0.50	40	290
E-2-3.0	6/17/2017	3	--	--	--	--	< 0.25	55	0.15	--	--	7.7	--	--	--	--	92	--	--	--	--	53
E-2-10.0	6/17/2017	10	0.57	6.4	130	< 0.50	< 0.25	48	--	9.8	25	8.7	--	--	0.060	< 0.50	81	< 0.50	< 0.50	< 0.50	34	51
E-2-15.0	6/17/2017	15	--	--	--	--	< 0.25	54	0.28	--	--	12	--	--	--	--	91	--	--	--	--	66
E-2-24.0	6/17/2017	24	--	--	--	--	< 0.25	79	0.28	--	--	11	--	--	--	--	130	--	--	--	--	85
E-2-30.0	6/17/2017	30	--	--	--	--	< 0.25	49	--	--	--	9.5	--	--	--	--	82	--	--	--	--	62
E-3-1.5	6/17/2017	1.5	1.5	9.2	200	< 0.50	0.50	63	0.28	13	42	140	<b>12</b>	< 0.10	1.3	0.58	110	< 0.50	< 0.50	< 0.50	43	180
E-3-3.0	6/17/2017	3	--	--	--	--	--	--	--	--	--	19	--	--	--	--	--	--	--	--	--	--
E-3-7.5	6/17/2017	7.5	--	--	--	--	< 0.25	45	--	--	--	8.0	--	--	--	--	83	--	--	--	--	54
E-3-15.0	6/17/2017	15	0.64	9.6	120	< 0.50	< 0.25	45	--	10	25	7.2	--	--	< 0.05	0.92	90	1.5	< 0.50	< 0.50	38	49
E-3-26.0	6/17/2017	26	0.97	9.5	200	< 0.50	< 0.25	60	0.18	14	36	53	0.67	--	0.18	0.78	100	0.67	< 0.50	< 0.50	41	92
E-3-36.0	6/17/2017	36	--	--	--	--	< 0.25	82	0.37	--	--	21	--	--	--	--	110	--	--	--	--	82
E-4-1.5	6/17/2017	1.5	0.78	6.5	150	< 0.50	< 0.25	53	0.23	11	29	93	4.8	--	0.44	0.51	89	< 0.50	< 0.50	< 0.50	35	79
E-4-3.0	6/17/2017	3	1.2	7.0	180	< 0.50	< 0.25	63	0.15	12	32	100	1.0	< 0.10	0.28	0.57	100	< 0.50	< 0.50	< 0.50	40	100
E-4-5.0	6/17/2017	5	0.62	6.3	130	< 0.50	< 0.25	45	--	10	26	8.5	--	--	< 0.05	< 0.50	82	< 0.50	< 0.50	< 0.50	32	52
E-4-15.0	6/17/2017	15	--	--	--	--	< 0.25	44	--	--	--	11	--	--	--	--	83	--	--	--	--	49
E-4-35.0	6/17/2017	35	0.79	5.2	130	< 0.50	< 0.25	41	--	15	33	8.4	--	--	< 0.05	1.1	76	< 0.50	< 0.50	< 0.50	41	55
E-4-44.0	6/17/2017	44	--	--	--	--	< 0.25	57	0.12	--	--	10	--	--	--	--	91	--	--	--	--	72
E-5-1.5	6/17/2017	1.5	1.0	12	200	0.72	< 0.25	76	0.10	18	52	19	--	--	0.087	1.8	120	< 0.50	< 0.50	< 0.50	57	98
E-5-5.0	6/17/2017	5	--	--	--	--	< 0.25	67	0.13	--	--	16	--	--	--	--	110	--	--	--	--	86
E-5-20.0	6/17/2017	20	0.90	7.6	210	0.51	< 0.25	64	0.29	16	41	11	--	--	0.073	0.65	110	< 0.50	< 0.50	< 0.50	43	81
E-5-30.0	6/17/2017	30	--	--	--	--	< 0.25	55	< 0.10	--	--	10	--	--	--	--	93	--	--	--	--	81
E-5-45.0	6/17/2017	45	--	--	--	--	0.46	77	0.53	--	--	11	--	--	--	--	140	--	--	--	--	90
E-6-1.5	6/17/2017	1.5	--	--	--	--	< 0.25	57	0.28	--	--	44	--	--	--	--	94	--	--	--	--	160
E-6-3.0	6/17/2017	3	0.59	6.8	150	< 0.50	< 0.25	59	0.15	11	27	7.4	--	--	0.060	< 0.50	90	< 0.50	< 0.50	< 0.50	37	59
E-6-10.0	6/17/2017	10	< 0.50	8.2	200	< 0.50	< 0.25	47	--	13	30	8.1	--	--	0.066	0.55	90	< 0.50	< 0.50	< 0.50	34	62
E-6-30.0	6/17/2017	30	0.51	3.4	74	< 0.50	< 0.25	34	--	6.6	20	5.1	--	--	0.052	0.65	56	< 0.50	< 0.50	< 0.50	26	35
*Background [Metal] in Bay Area Soils			1.5-7.1	1.2-31	41-411	0.29-1.1	0.27-3.3	10-142	--	6.5-25.5	5.4-100	4.8-65	--	--	0.07-0.6	0.33-11.4	16-144	< 0.25-7	0.2-2.2	< 0.25-42.5	22-90	33-282
Hazardous Waste Criteria																						
TTLc	(mg/kg)	500	500	10,000	75	100	2,500	--	8,000	2,500	1,000	--	--	20	3,500	2,000	100	500	700	2,400	5,000	
STLC	(mg/L)	15	5	100	0.75	1	--	5	80	25	--	5	--	0.2	350	20	1	5	7	24	250	
TCLP	(mg/L)	--	5	100	--	1	5	--	--	--	--	--	5	0.2	--	--	1	5	--	--	--	

Notes:  
 mg/kg - milligrams per kilograms  
 mg/L - milligrams per liter  
 < 0.50 Analyte was not detected above the laboratory reporting limit (0.50 mg/kg)  
 -- Not analyzed or criteria not established  
 TTLc - California Total Threshold Limit Concentration - State hazardous  
 STLC - California Soluble Threshold Limit Concentration  
 TCLP - Federal Toxicity Characteristic Leaching Procedure  
**Bold** - Detection exceeds State of California (non-RCRA) hazardous waste criteria  
 \*Background concentration ranges of metals in Bay Area soils, Appendix A, Table A-2 from Environmental Resources Management. *Feasibility Study, Hookston Station, Pleasant Hill, California.* July 2006



**Table 3**  
**Groundwater Analytical Results for Non-Metals**  
**600 South 1st Street**  
**San Jose, California**

Sample ID	Date Sampled	TPHg	TPHd	TPHmo	VOCs									All Other VOCs	SVOCs	PCBs
					Benzene	n-Butyl Benzene	Ethyl-benzene	Isopropyl-benzene	Naphthalene	n-Propyl Benzene	Toluene	1,2,4-Trimethyl-benzene	Xylenes			
(µg/L)																
E-2-GW	06/17/17	<b>12,000</b>	<b>13,000</b>	3,200	<b>84</b>	25	<b>730</b>	69	<b>130</b>	180	<b>440</b>	330	<b>450</b>	ND	--	--
E-6-GW	06/17/17	< 50	56	360	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	ND	ND	< 0.50
Tier 1 ESL		100	100	5,100	1.0	--	13	--	0.17	--	40	--	20	Various	Various	Various

Notes:

µg/L - Micrograms per liter

TPHg - Total Petroleum Hydrocarbons as Gasoline, EPA Method 8015B

TPHd - Total Petroleum Hydrocarbons as Diesel Range, EPA Method 8015B

TPHmo - Total Petroleum Hydrocarbons as Motor Oil, EPA Method 8015B

VOCs - Volatile Organics Compounds, EPA Method 8260B

SVOCs - Semivolatile Organic Compounds, EPA Method SW8270C

PCBs - Polychlorinated Biphenyls, EPA Method 8082

ND - Not detected at or above the laboratory reporting limit(s)

< 0.50 Analyte was not detected above the laboratory reporting limit (0.50 µg/L)

-- Not analyzed or criteria not established

Various - ESLs, where established, vary for each of the multiple compounds analyzed

**Bold** - Detection exceeds Tier 1 ESL

Tier 1 ESLs - San Francisco Bay Regional Water Quality Control Board's Environmental Screening Levels - *Tier 1 Groundwater*. February 2016 [Rev. 3]

**Table 4**  
**Groundwater Analytical Results for Metals**  
**600 South 1st Street**  
**San Jose, California**

Sample ID	Date Sampled	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
		(µg/L)																
E-6-GW	06/17/17	1.1	5.8	290	< 0.50	< 0.25	< 0.50	2.1	2.1	< 0.50	< 0.050	27	3.6	<b>5.6</b>	< 0.19	< 0.50	5.1	< 15
Tier 1 ESL		6.0	10	1,000	2.7	0.25	50	3.0	3.1	2.5	0.051	100	8.2	5.0	0.19	2.0	19	81

Notes:

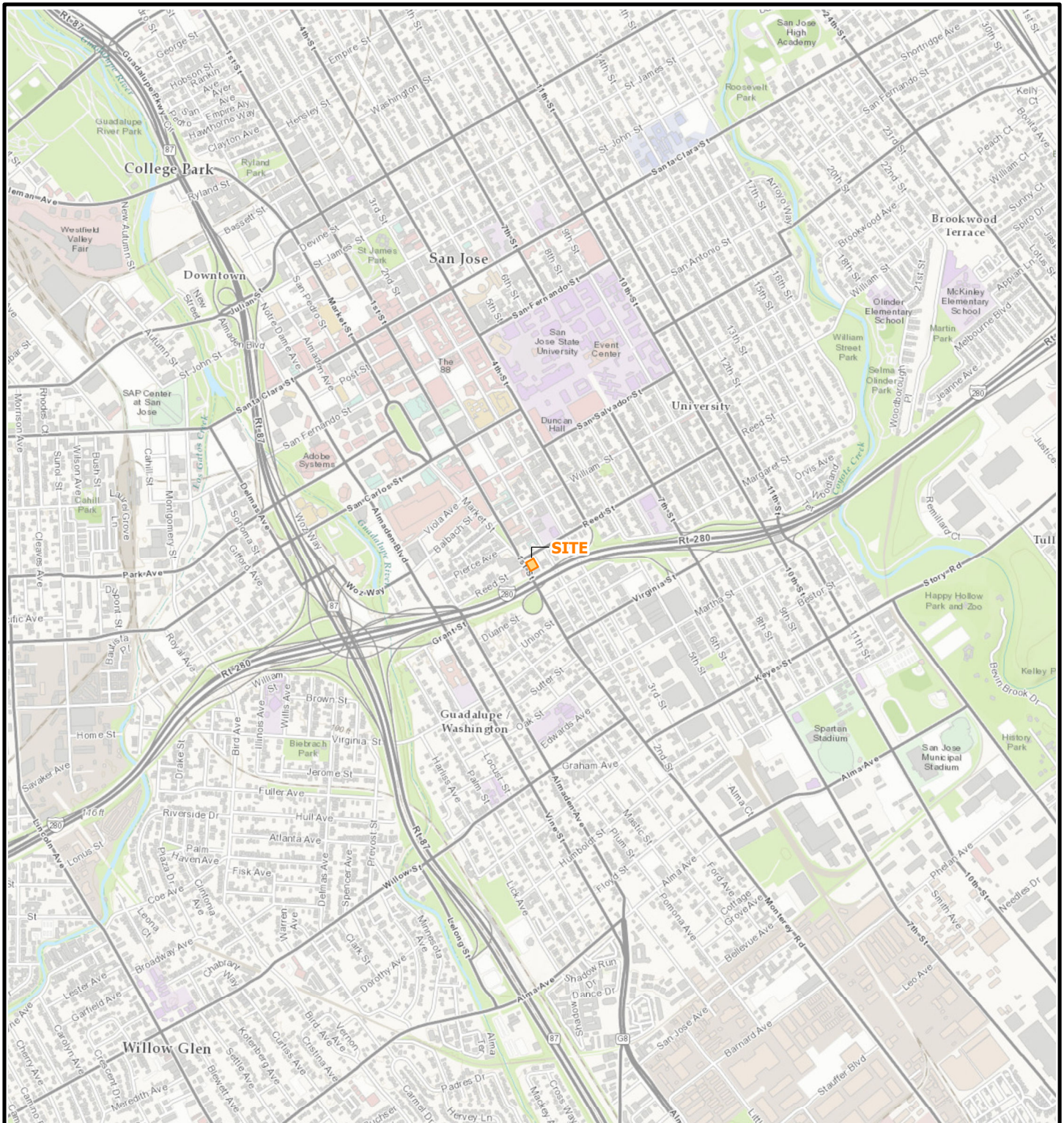
µg/L - Micrograms per liter

< 0.50 Analyte was not detected above the laboratory reporting limit (0.50 µg/L)

**Bold** - Detection exceeds Tier 1 ESL

Tier 1 ESLs - San Francisco Bay Regional Water Quality Control Board's Environmental Screening Levels - *Tier 1 Groundwater*. February 2016 [Rev. 3]

## FIGURES

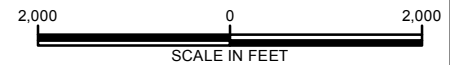



**Legend**

 Site Boundary



**Notes:**  
 1. Site boundary provided by Santa Clara County GIS parcel dataset, 2016.  
 2. Topographic basemap is provided through Langan's Esri ArcGIS software licensing and ArcGIS online © 2011 National Geographic Society, i-cubed.



 1 Almaden Boulevard, Suite 590 San Jose, CA 95113 T: 408.283.3600 F: 408.283.3601 www.langan.com  Langan Engineering & Environmental Services, Inc. Langan Engineering, Environmental, Surveying and Landscape Architecture, D.P.C. Langan International LLC Collectively known as Langan	Project  <b>600 SOUTH 1st STREET</b>  SAN JOSE  SANTA CLARA COUNTY CALIFORNIA	Drawing Title  <b>SITE LOCATION MAP</b>	Project No. 770641901 Date 7/26/2017 Scale 1" = 2,000' Drawn By BJS	Figure  <b>1</b>
	Path: \\langan.com\data\SJ\data\91770641901\ArcGIS\ArcMap_Documents\Environmental_Figures\Site Location Map.mxd			



**Legend**

 Site Boundary




Notes:  
 1. Site boundary provided by Santa Clara County GIS parcel dataset, 2016.  
 2. Aerial imagery provided by Near Map, 3/12/2017.



 1 Almaden Boulevard, Suite 590 San Jose, CA 95113 T: 408.283.3600 F: 408.283.3601 www.langan.com Langan Engineering & Environmental Services, Inc. Langan Engineering, Environmental, Surveying and Landscape Architecture, D.P.C. Langan International LLC Collectively known as Langan	Project <b>600 SOUTH          1st STREET</b> SAN JOSE SANTA CLARA COUNTY CALIFORNIA	Drawing Title <b>SITE PLAN</b>	Project No. 770641901 Date 7/26/2017 Scale 1" = 40' Drawn By BJS	Figure <b>2</b>



**Legend**

-  Approximate Location of Environmental Boring
-  Approximate Location of Hazardous Waste
-  Site Boundary

Notes:  
 1. Site boundary provided by Santa Clara County GIS parcel dataset, 2016.  
 2. Aerial imagery provided by Near Map, 3/12/2017.



<p><b>LANGAN</b>          1 Almaden Boulevard, Suite 590          San Jose, CA 95113          T: 408.283.3600 F: 408.283.3601 www.langan.com</p> <p>Langan Engineering &amp; Environmental Services, Inc.          Langan Engineering, Environmental, Surveying and          Landscape Architecture, D.P.C.          Langan International LLC          Collectively known as Langan</p>	<p>Project</p> <p><b>600 SOUTH 1st STREET</b></p> <p>SAN JOSE</p> <p>SANTA CLARA COUNTY CALIFORNIA</p>	<p>Drawing Title</p> <p><b>SITE PLAN WITH BORING LOCATIONS</b></p>	<p>Project No. 770641901</p> <p>Date 8/2/2017</p> <p>Scale 1" = 40'</p> <p>Drawn By BJS</p>	<p>Figure</p> <p><b>3</b></p>



**APPENDIX A**  
**EXPLORATORY BORING LOGS**

PROJECT: **600 SOUTH 1ST STREET**  
San Jose, California

# Log of Boring E-1

Boring location: See Site Plan, Figure 2

Logged by: K. Staehlin

Date started: 6/17/17

Date finished: 6/17/17

Drilling method: Direct Push

Hammer weight/drop: NA

Hammer type: NA

Sampler: Continuous

TEST ENVIRONMENTAL INCHES 770641901 ENV 2001 FORTUNE DR.GPJ T&R.GDT 7/24/17

DEPTH (feet)	SAMPLES				PID (ppm)	LITHOLOGY	MATERIAL DESCRIPTION
	Sample ID	Sample	Blow Count	Recovery (inches)			
1	E-1-1.5	•					3 inches asphalt concrete (AC)
2				34/48		ML	SANDY SILT (ML) brown, soft to medium stiff, dry to moist, trace gravel and brick debris, no odor
3	E-1-3.0	•					
4							
5	E-1-5.0	•					
6				36/48			
7	E-1-7.5	•					
8							
9						SP	SAND (SP) brown, loose to medium dense, moist, no odor
10	E-1-10.0	•		36/48			
11							
12						ML	SILT with SAND (ML) brown, soft, moist, no odor increasing clay content at 11.5 feet dark gray, strong hydrocarbon odor from 11.5 to 13.5 feet
13							
14				48/48			
15	E-1-15.0	•				SM	SAND with SILT (SM) brown, medium dense, moist to wet, weak hydrocarbon odor
16							
17						ML	SILT with CLAY and SAND (ML) dark gray, soft, moist to wet, trace organics, moderate to strong hydrocarbon odor
18				42/48			
19						SM	SILTY SAND (SM) brown with gray mottling, loose to medium dense, wet to saturated, weak hydrocarbon odor
20	E-1-20.0	•					
21							
22				40/48		CL	SILTY CLAY (CL) dark gray, stiff, moist, weak to moderate hydrocarbon odor
23							
24							
25	E-1-25.0	•					
26				48/48			
27						ML	SILT with SAND (ML) gray-brown, soft, wet, weak to moderate hydrocarbon odor
28							
29				22/48		CL	CLAY (CL) gray, stiff to very stiff, moist, weak hydrocarbon odor
30							

**LANGAN**

Project No.: 770641901

Figure: A-1a

PROJECT:

**600 SOUTH 1ST STREET**  
San Jose, California

**Log of Boring E-1**

PAGE 2 OF 2

DEPTH (feet)	SAMPLES				PID (ppm)	LITHOLOGY	MATERIAL DESCRIPTION
	Sample ID	Sample	Blow Count	Recovery (Inches)			
31	E-1-30.5	●				CL	CLAY (CL) (continued)
32						ML	SILT with SAND and CLAY (ML) gray, soft to medium stiff, wet to saturated, weak hydrocarbon odor no recovery
33				0/48			
34							
35							
36							
37							
38							
39							
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60							

TEST ENVIRONMENTAL INCHES 770641901 ENV 2001 FORTUNE DR.GPJ T&R.GDT 7/24/17

Boring terminated at a depth of 36 feet below ground surface.  
Boring backfilled with cement grout.



Project No.:  
770641901

Figure:  
A-1b

PROJECT: **600 SOUTH 1ST STREET**  
San Jose, California

# Log of Boring E-2

PAGE 1 OF 2

Boring location: See Site Plan, Figure 2

Logged by: K. Staehlin

Date started: 6/17/17

Date finished: 6/17/17

Drilling method: Direct Push

Hammer weight/drop: NA

Hammer type: NA

Sampler: Continuous

DEPTH (feet)	SAMPLES				PID (ppm)	LITHOLOGY	MATERIAL DESCRIPTION
	Sample ID	Sample	Blow Count	Recovery (inches)			
1	E-2-1.5	•				SP	2 inches asphalt concrete (AC) SAND with CLAY and SILT (SP) dark brown, loose to medium dense, dry, trace gravel and brick debris, no odor moist
2			36/48				
3	E-2-3.0	•					
4						SM	SILTY SAND (SM) brown, medium dense, moist, no odor
5	E-2-5.0	•					
6			40/48				
7	E-2-7.5	•				ML	SILT (ML) dark brown to gray-brown, soft to medium stiff, wet, trace organics, no odor (06/17/17) saturated strong hydrocarbon odor
8							
9	E-2-10.0	•					
10			32/48			CL	CLAY (CL) dark gray, soft, wet to saturated, moderate to strong hydrocarbon odor medium stiff, wet
11							
12							
13						ML	increasing clay content, moderate to strong hydrocarbon odor
14	E-2-15.0	•					
15			48/48				
16						CL	CLAY (CL) dark gray, soft, wet to saturated, moderate to strong hydrocarbon odor medium stiff, wet
17							
18	E-2-20.0	•					
19			48/48			ML	increasing clay content, moderate to strong hydrocarbon odor
20							
21	E-2-24.0	•					
22			48/48			CL	CLAY (CL) dark gray, soft, wet to saturated, moderate to strong hydrocarbon odor medium stiff, wet
23							
24	E-2-24.0	•					
25						ML	increasing clay content, moderate to strong hydrocarbon odor
26			32/48				
27							
28						CL	CLAY (CL) dark gray, soft, wet to saturated, moderate to strong hydrocarbon odor medium stiff, wet
29	E-2-30.0	•					
30			32/48				

TEST ENVIRONMENTAL INCHES 770641901 ENV 2001 FORTUNE DR.GPJ T&R.GDT 7/24/17

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Project No.: 770641901

Figure: A-2a

PROJECT:

**600 SOUTH 1ST STREET**  
San Jose, California

**Log of Boring E-2**

PAGE 2 OF 2

DEPTH (feet)	SAMPLES				PID (ppm)	LITHOLOGY	MATERIAL DESCRIPTION
	Sample ID	Sample	Blow Count	Recovery (Inches)			
31							CLAY (CL) (continued)
32							
33							
34				0/48			
35					CL		
36							
37							
38				30/48			
39							
40	E-2-40.0	•					increasing sand content
41							no recovery
42				0/48			
43							
44							
45							
46							
47							
48							
49							
50							
51							
52							
53							
54							
55							
56							
57							
58							
59							
60							

TEST ENVIRONMENTAL INCHES 770641901 ENV 2001 FORTUNE DR.GPJ T&R.GDT 7/24/17

Boring terminated at a depth of 44 feet below ground surface.  
Boring backfilled with cement grout.  
Groundwater encountered at 14.2 feet below ground surface during drilling.



Project No.:  
770641901

Figure:  
A-2b

PROJECT: **600 SOUTH 1ST STREET**  
San Jose, California

# Log of Boring E-3

PAGE 1 OF 2

Boring location: See Site Plan, Figure 2

Logged by: K. Staehlin

Date started: 6/17/17

Date finished: 6/17/17

Drilling method: Direct Push

Hammer weight/drop: NA

Hammer type: NA

Sampler: Continuous

DEPTH (feet)	SAMPLES				PID (ppm)	LITHOLOGY	MATERIAL DESCRIPTION
	Sample ID	Sample	Blow Count	Recovery (inches)			
1	E-3-1.5	•					3 inches asphalt concrete (AC)
2				24/48		SM	SILTY SAND (SM) dark brown, loose to medium dense, dry to moist, trace gravel and brick debris, no odor
3	E-3-3.0	•					moist
4							
5							SANDY SILT (ML) brown, soft to medium stiff, moist, no odor
6				26/48			
7	E-3-7.5	•					
8						ML	
9							
10	E-3-10.0	•		40/48			increasing fines and moisture
11							
12							
13							
14				48/48			SILT (ML) gray-brown, soft, wet to saturated, weak to moderate hydrocarbon odor
15	E-3-15.0	•					strong hydrocarbon odor
16						ML	
17							
18				48/48			increasing clay content, trace organics
19							
20	E-3-20.0	•					
21							CLAY (CL) dark gray, medium stiff to stiff, moist, no odor
22				48/48		CL	
23							
24							
25							
26	E-3-26.0	•		36/48		CL	SILTY CLAY (CL) gray-brown, soft, wet to saturated, moderate to strong hydrocarbon odor
27							
28						CL	CLAY (CL) gray with brown mottling, stiff, moist, weak hydrocarbon odor
29				36/48			
30	E-3-30.0	•					

TEST ENVIRONMENTAL INCHES 770641901 ENV 2001 FORTUNE DR.GPJ T&R.GDT 7/24/17

**LANGAN**

Project No.: 770641901

Figure: A-3a

PROJECT:

**600 SOUTH 1ST STREET**  
San Jose, California

**Log of Boring E-3**

PAGE 2 OF 2

DEPTH (feet)	SAMPLES				PID (ppm)	LITHOLOGY	MATERIAL DESCRIPTION
	Sample ID	Sample	Blow Count	Recovery (inches)			
31							CLAY (CL) (continued)
32							
33						CL	
34				12/48			
35							
36	E-3-36.0	•					no recovery
37							
38				0/48			
39							
40							
41							
42							
43							
44							
45							
46							
47							
48							
49							
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52							
53							
54							
55							
56							
57							
58							
59							
60							

TEST ENVIRONMENTAL INCHES 770641901 ENV 2001 FORTUNE DR.GPJ T&R.GDT 7/24/17

Boring terminated at a depth of 40 feet below ground surface.  
Boring backfilled with cement grout.



Project No.:  
770641901

Figure:  
A-3b

PROJECT: **600 SOUTH 1ST STREET**  
San Jose, California

# Log of Boring E-4

PAGE 1 OF 2

Boring location: See Site Plan, Figure 2

Logged by: K. Staehlin

Date started: 6/17/17

Date finished: 6/17/17

Drilling method: Direct Push

Hammer weight/drop: NA

Hammer type: NA

Sampler: Continuous

TEST ENVIRONMENTAL INCHES 770641901 ENV 2001 FORTUNE DR.GPJ T&R.GDT 7/24/17

DEPTH (feet)	SAMPLES				PID (ppm)	LITHOLOGY	MATERIAL DESCRIPTION
	Sample ID	Sample	Blow Count	Recovery (inches)			
1	E-4-1.5	•					3 inches asphalt concrete (AC)
2				30/48			SILT with SAND (ML) brown, medium stiff, dry, no odor
3	E-4-3.0	•					
4							moist
5	E-4-5.0	•				ML	
6				36/48			
7	E-4-7.5	•					increasing sand content
8							
9							
10	E-4-10.0	•		42/48			
11						SM	SILTY SAND (SM) brown, medium dense, moist, no odor wet
12							
13							
14				48/48			
15	E-4-15.0	•					SILT (ML) dark gray, soft, wet to saturated, trace organics, strong hydrocarbon odor
16							
17						ML	
18				48/48			
19							
20	E-4-20.0	•					
21							
22				42/48			CLAY (CL) dark gray, stiff, moist, strong hydrocarbon odor
23						CL	
24	E-4-24.0	•					
25							
26				6/48			CLAY/SILT (CL-ML) dark brown to dark gray, soft to medium stiff, wet to saturated, weak to moderate hydrocarbon odor
27						CL-ML	
28							
29				14/48			
30							

**LANGAN**

Project No.: 770641901

Figure: A-4a



PROJECT:

**600 SOUTH 1ST STREET**  
San Jose, California

**Log of Boring E-4**

PAGE 2 OF 2

DEPTH (feet)	SAMPLES				PID (ppm)	LITHOLOGY	MATERIAL DESCRIPTION
	Sample ID	Sample	Blow Count	Recovery (inches)			
31	E-4-31.0	•				CL-ML	CLAY/SILT (CL-ML) (continued)
32							
33							
34				48/48			
35	E-4-35.0	•					
36							
37							
38				48/48			increasing sand content
39							
40	E-4-40.0	•					
41							
42				42/48			
43							
44	E-4-44.0	•					
45							
46							
47							
48							
49							
50							
51							
52							
53							
54							
55							
56							
57							
58							
59							
60							

TEST ENVIRONMENTAL INCHES 770641901 ENV 2001 FORTUNE DR.GPJ T&R.GDT 7/24/17

Boring terminated at a depth of 44 feet below ground surface.  
Boring backfilled with cement grout.



Project No.:  
770641901

Figure:  
A-4b

PROJECT: **600 SOUTH 1ST STREET**  
San Jose, California

# Log of Boring E-5

PAGE 1 OF 2

Boring location: See Site Plan, Figure 2

Logged by: W. Kwong

Date started: 6/17/17

Date finished: 6/17/17

Drilling method: Direct Push

Hammer weight/drop: NA

Hammer type: NA

Sampler: Continuous

TEST ENVIRONMENTAL INCHES 770641901 ENV 2001 FORTUNE DR.GPJ T&R.GDT 7/24/17

DEPTH (feet)	SAMPLES				PID (ppm)	LITHOLOGY	MATERIAL DESCRIPTION
	Sample ID	Sample	Blow Count	Recovery (inches)			
1	E-5-1.5	•				ML	5 inches asphalt concrete (AC) and aggregate base (AB) SILT with GRAVEL (ML) brown, dry, no odor
2				48/48			
3	E-5-3.0	•					
4						ML	CLAYEY SILT (ML) brown with black streaks, soft to medium stiff, moist, no odor
5	E-5-5.0	•					
6				48/48			
7	E-5-7.5	•				SP	SAND with GRAVEL and SILT (SP) brown, medium dense, moist, subangular gravel, brick fragments, trace organics, no odor
8							
9	E-5-10.0	•		24/48			
10						ML	SILT with CLAY (ML) brown to gray-brown, soft to medium stiff, moist, no odor
11							
12							
13						ML	weak hydrocarbon odor, trace gravel, increasing clay
14	E-5-15.0	•		24/48			
15							
16						CL	SILTY CLAY (CL) gray, soft, moist to wet, brick and gravel debris, weak to moderate hydrocarbon odor
17							
18				48/48			
19	E-5-20.0	•				ML	SILT with CLAY (ML) gray-brown with tan mottling, moist to wet, trace gravel debris and increasing sand content
20							
21				0/48			
22						ML	
23							
24	E-5-25.0	•					
25						ML	
26				48/48			
27							
28						ML	
29				48/48			
30	E-5-30.0	•					

**LANGAN**

Project No.: 770641901

Figure: A-5a

PROJECT:

**600 SOUTH 1ST STREET**  
San Jose, California

**Log of Boring E-5**

PAGE 2 OF 2

DEPTH (feet)	SAMPLES				PID (ppm)	LITHOLOGY	MATERIAL DESCRIPTION
	Sample ID	Sample	Blow Count	Recovery (inches)			
31						ML	SILT with CLAY (ML) (continued)
32							
33							
34				48/48			
35	E-5-35.0	•					
36							
37							
38				42/48			
39							
40	E-5-40.0	•					
41							
42				36/48			
43							
44	E-5-44.0	•					
45							
46							
47							
48							
49							
50							
51							
52							
53							
54							
55							
56							
57							
58							
59							
60							

TEST ENVIRONMENTAL INCHES 770641901 ENV 2001 FORTUNE DR.GPJ T&R.GDT 7/24/17

Boring terminated at a depth of 44 feet below ground surface.  
Boring backfilled with cement grout.



Project No.:  
770641901

Figure:  
A-5b

PROJECT: **600 SOUTH 1ST STREET**  
San Jose, California

# Log of Boring E-6

Boring location: See Site Plan, Figure 2

Logged by: W. Kwong

Date started: 6/17/17

Date finished: 6/17/17

Drilling method: Direct Push

Hammer weight/drop: NA

Hammer type: NA

Sampler: Continuous

TEST ENVIRONMENTAL INCHES 770641901 ENV 2001 FORTUNE DR.GPJ T&R.GDT 7/24/17

DEPTH (feet)	SAMPLES				PID (ppm)	LITHOLOGY	MATERIAL DESCRIPTION
	Sample ID	Sample	Blow Count	Recovery (inches)			
1	E-6-1.5	•				ML	1 inches asphalt concrete (AC) 2 inches aggregate base (AB) 7 inches concrete
2				48/48			2 inches asphalt concrete (AC)
3	E-6-3.0	•					SILT (ML) brown, soft, dry, no odor
4							SANDY SILT (ML) light brown to brown, dry to moist, trace organics and subangular gravel, no odor
5	E-6-5.0	•				ML	increasing sand content from 6 to 7 feet
6				48/48			
7	E-6-7.5	•					
8							
9						SP	SAND (SP) brown, medium dense, moist, trace organic matter, no odor
10	E-6-10.0	•		36/48			
11						ML	SANDY SILT (ML) brown, moist to wet, trace organics, increasing silt at 11 feet, no odor
12							
13						SP	SAND (SP) brown, loose to medium dense, wet, no odor (06/17/17) increasing fines
14				36/48			
15	E-6-15.0	•					SILT (ML) brown, soft, moist, increasing sand, no odor
16						ML	
17							
18				36/48			
19							SILT with SAND (ML) gray brown to dark gray, soft to medium stiff, moist, no odor increasing sand
20	E-6-20.0	•					
21							
22				48/48			
23							
24						ML	
25	E-6-25.0	•					
26				48/48			
27							
28							
29				36/48			
30	E-6-30.0	•					

**LANGAN**

Project No.: 770641901

Figure: A-6a

PROJECT:

**600 SOUTH 1ST STREET**  
San Jose, California

**Log of Boring E-6**

PAGE 2 OF 2

DEPTH (feet)	SAMPLES				PID (ppm)	LITHOLOGY	MATERIAL DESCRIPTION
	Sample ID	Sample	Blow Count	Recovery (Inches)			
31							SILT with SAND (ML) (continued)
32							
33							
34				48/48			
35	E-6-35.0	•				ML	
36							
37							
38				36/48			
39						SP	
40	E-6-40.0	•					
41							
42				36/48			
43						SAND (SP) gray, wet, medium dense, no odor	
44	E-6-44.0	•					
45							
46							
47							
48							
49							
50							
51							
52							
53							
54							
55							
56							
57							
58							
59							
60							

TEST ENVIRONMENTAL INCHES 770641901 ENV 2001 FORTUNE DR.GPJ T&R.GDT 7/24/17

Boring terminated at a depth of 44 feet below ground surface.  
Boring backfilled with cement grout.  
Groundwater encountered at 13.26 feet below ground surface during drilling.













## UNIFIED SOIL CLASSIFICATION SYSTEM

Major Divisions	Symbols	Typical Names
<b>Coarse-Grained Soils</b> <small>(more than half of soil &gt; no. 200 sieve size)</small>	<b>Gravels</b> <small>(More than half of coarse fraction &gt; no. 4 sieve size)</small>	<b>GW</b> Well-graded gravels or gravel-sand mixtures, little or no fines
		<b>GP</b> Poorly-graded gravels or gravel-sand mixtures, little or no fines
		<b>GM</b> Silty gravels, gravel-sand-silt mixtures
		<b>GC</b> Clayey gravels, gravel-sand-clay mixtures
	<b>Sands</b> <small>(More than half of coarse fraction &lt; no. 4 sieve size)</small>	<b>SW</b> Well-graded sands or gravelly sands, little or no fines
		<b>SP</b> Poorly-graded sands or gravelly sands, little or no fines
		<b>SM</b> Silty sands, sand-silt mixtures
<b>Fine -Grained Soils</b> <small>(more than half of soil &lt; no. 200 sieve size)</small>	<b>Silts and Clays</b> <small>LL = &lt; 50</small>	<b>ML</b> Inorganic silts and clayey silts of low plasticity, sandy silts, gravelly silts
		<b>CL</b> Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, lean clays
		<b>OL</b> Organic silts and organic silt-clays of low plasticity
	<b>Silts and Clays</b> <small>LL = &gt; 50</small>	<b>MH</b> Inorganic silts of high plasticity
		<b>CH</b> Inorganic clays of high plasticity, fat clays
		<b>OH</b> Organic silts and clays of high plasticity
<b>Highly Organic Soils</b>	<b>PT</b> Peat and other highly organic soils	

### SAMPLE DESIGNATIONS/SYMBOLS

GRAIN SIZE CHART		
Classification	Range of Grain Sizes	
	U.S. Standard Sieve Size	Grain Size in Millimeters
Boulders	Above 12"	Above 305
Cobbles	12" to 3"	305 to 76.2
Gravel coarse fine	3" to No. 4	76.2 to 4.76
	3" to 3/4" 3/4" to No. 4	76.2 to 19.1 19.1 to 4.76
Sand coarse medium fine	No. 4 to No. 200	4.76 to 0.075
	No. 4 to No. 10	4.76 to 2.00
	No. 10 to No. 40 No. 40 to No. 200	2.00 to 0.420 0.420 to 0.075
Silt and Clay	Below No. 200	Below 0.075

-  Sample taken with Sprague & Henwood split-barrel sampler with a 3.0-inch outside diameter and a 2.43-inch inside diameter. Darkened area indicates soil recovered
-  Classification sample taken with Standard Penetration Test sampler
-  Undisturbed sample taken with thin-walled tube
-  Disturbed sample
-  Sampling attempted with no recovery
-  Core sample
-  Analytical laboratory sample
-  Sample taken with Direct Push or Drive sampler

-  Unstabilized groundwater level
-  Stabilized groundwater level

### SAMPLER TYPE

- |   |  |
|---|--|
| <ul style="list-style-type: none"> <li><b>C</b> Core barrel</li> <li><b>CA</b> California split-barrel sampler with 2.5-inch outside diameter and a 1.93-inch inside diameter</li> <li><b>D&amp;M</b> Dames &amp; Moore piston sampler using 2.5-inch outside diameter, thin-walled tube</li> <li><b>O</b> Osterberg piston sampler using 3.0-inch outside diameter, thin-walled Shelby tube</li> </ul> | <ul style="list-style-type: none"> <li><b>PT</b> Pitcher tube sampler using 3.0-inch outside diameter, thin-walled Shelby tube</li> <li><b>S&amp;H</b> Sprague &amp; Henwood split-barrel sampler with a 3.0-inch outside diameter and a 2.43-inch inside diameter</li> <li><b>SPT</b> Standard Penetration Test (SPT) split-barrel sampler with a 2.0-inch outside diameter and a 1.5-inch inside diameter</li> <li><b>ST</b> Shelby Tube (3.0-inch outside diameter, thin-walled tube) advanced with hydraulic pressure</li> </ul> |
|---|--|

**600 SOUTH 1ST STREET**  
San Jose, California

**LANGAN**

## CLASSIFICATION CHART

Date 06/23/17	Project No. 770641901	Figure A-7
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**APPENDIX B**

**CERTIFIED ANALYTICAL RESULTS AND  
CHAIN-OF-CUSTODY RECORDS**



# McC Campbell Analytical, Inc.

"When Quality Counts"

## Analytical Report

**WorkOrder:** 1706947

**Report Created for:** Langan

555 Montgomery St., Suite 1300  
San Francisco, CA 94111

**Project Contact:** Peter Cusack

**Project P.O.:**

**Project Name:** 770641901; 600 South 1st Street

**Project Received:** 06/20/2017

Analytical Report reviewed & approved for release on 06/28/2017 by:

Angela Rydelius,  
Laboratory Manager

*The report shall not be reproduced except in full, without the written approval of the laboratory. The analytical results relate only to the items tested. Results reported conform to the most current NELAP standards, where applicable, unless otherwise stated in the case narrative.*







## Glossary of Terms & Qualifier Definitions

**Client:** Langan  
**Project:** 770641901; 600 South 1st Street  
**WorkOrder:** 1706947

### Glossary Abbreviation

%D	Serial Dilution Percent Difference
95% Interval	95% Confident Interval
DF	Dilution Factor
DI WET	(DISTLC) Waste Extraction Test using DI water
DISS	Dissolved (direct analysis of 0.45 µm filtered and acidified water sample)
DLT	Dilution Test (Serial Dilution)
DUP	Duplicate
EDL	Estimated Detection Limit
ERS	External reference sample. Second source calibration verification.
ITEF	International Toxicity Equivalence Factor
LCS	Laboratory Control Sample
MB	Method Blank
MB % Rec	% Recovery of Surrogate in Method Blank, if applicable
MDL	Method Detection Limit
ML	Minimum Level of Quantitation
MS	Matrix Spike
MSD	Matrix Spike Duplicate
N/A	Not Applicable
ND	Not detected at or above the indicated MDL or RL
NR	Data Not Reported due to matrix interference or insufficient sample amount.
PDS	Post Digestion Spike
PDSD	Post Digestion Spike Duplicate
PF	Prep Factor
RD	Relative Difference
RL	Reporting Limit (The RL is the lowest calibration standard in a multipoint calibration.)
RPD	Relative Percent Deviation
RRT	Relative Retention Time
SPK Val	Spike Value
SPKRef Val	Spike Reference Value
SPLP	Synthetic Precipitation Leachate Procedure
ST	Sorbent Tube
TCLP	Toxicity Characteristic Leachate Procedure
TEQ	Toxicity Equivalents
WET (STLC)	Waste Extraction Test (Soluble Threshold Limit Concentration)



## Glossary of Terms & Qualifier Definitions

**Client:** Langan  
**Project:** 770641901; 600 South 1st Street  
**WorkOrder:** 1706947

### Analytical Qualifiers

S	Surrogate spike recovery outside accepted recovery limits
a3	Sample diluted due to high organic content.
a4	Reporting limits raised due to the sample's matrix prohibiting a full volume extraction.
c1	Surrogate recovery outside of the control limits due to the dilution of the sample.
c4	Surrogate recovery outside of the control limits due to coelution with another peak(s) / cluttered chromatogram.
c7	Surrogate value diluted out of range
c11	The surrogate recovery is above the upper control limit. The target analyte(s) were Not Detected (ND); therefore, the data has been reported.
d1	Weakly modified or unmodified gasoline is significant
d7	Strongly aged gasoline or diesel range compounds are significant in the TPH(g) chromatogram
d9	No recognizable pattern
e1	Unmodified or weakly modified diesel is significant
e2	Diesel range compounds are significant; no recognizable pattern
e4	Gasoline range compounds are significant.
e7	Oil range compounds are significant

### Quality Control Qualifiers

F1	MS/MSD recovery and/or RPD is out of acceptance criteria; LCS validates the prep batch.
F2	LCS/LCSD recovery and/or RPD is out of acceptance criteria.
F10	MS/MSD outside control limits. Physical or chemical interferences exist due to sample matrix.
F13	Indigenous sample results too high for a representative matrix spike analysis.



## Analytical Report

**Client:** Langan  
**Date Received:** 6/20/17 12:30  
**Date Prepared:** 6/20/17  
**Project:** 770641901; 600 South 1st Street

**WorkOrder:** 1706947  
**Extraction Method:** SW3550B  
**Analytical Method:** SW8081A/8082  
**Unit:** mg/kg

### Organochlorine Pesticides + PCBs

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-1-1.5	1706947-001A	Soil	06/17/2017 11:27	GC23	140763

Analytes	Result	RL	DF	Date Analyzed
Aldrin	ND	0.010	10	06/24/2017 01:38
a-BHC	ND	0.010	10	06/24/2017 01:38
b-BHC	ND	0.010	10	06/24/2017 01:38
d-BHC	ND	0.010	10	06/24/2017 01:38
g-BHC	ND	0.010	10	06/24/2017 01:38
Chlordane (Technical)	ND	0.25	10	06/24/2017 01:38
a-Chlordane	ND	0.010	10	06/24/2017 01:38
g-Chlordane	ND	0.010	10	06/24/2017 01:38
p,p-DDD	ND	0.010	10	06/24/2017 01:38
p,p-DDE	ND	0.010	10	06/24/2017 01:38
p,p-DDT	ND	0.010	10	06/24/2017 01:38
Dieldrin	ND	0.010	10	06/24/2017 01:38
Endosulfan I	ND	0.010	10	06/24/2017 01:38
Endosulfan II	ND	0.010	10	06/24/2017 01:38
Endosulfan sulfate	ND	0.010	10	06/24/2017 01:38
Endrin	ND	0.010	10	06/24/2017 01:38
Endrin aldehyde	ND	0.010	10	06/24/2017 01:38
Endrin ketone	ND	0.010	10	06/24/2017 01:38
Heptachlor	ND	0.010	10	06/24/2017 01:38
Heptachlor epoxide	ND	0.010	10	06/24/2017 01:38
Hexachlorobenzene	ND	0.10	10	06/24/2017 01:38
Hexachlorocyclopentadiene	ND	0.20	10	06/24/2017 01:38
Methoxychlor	ND	0.010	10	06/24/2017 01:38
Toxaphene	ND	0.50	10	06/24/2017 01:38
Aroclor1016	ND	0.50	10	06/24/2017 01:38
Aroclor1221	ND	0.50	10	06/24/2017 01:38
Aroclor1232	ND	0.50	10	06/24/2017 01:38
Aroclor1242	ND	0.50	10	06/24/2017 01:38
Aroclor1248	ND	0.50	10	06/24/2017 01:38
Aroclor1254	ND	0.50	10	06/24/2017 01:38
Aroclor1260	ND	0.50	10	06/24/2017 01:38
PCBs, total	ND	0.50	10	06/24/2017 01:38

Surrogates	REC (%)	Limits	Date Analyzed
Decachlorobiphenyl	97	70-130	06/24/2017 01:38

Analyst(s): SS

Analytical Comments: a3

(Cont.)

NELAP 4033ORELAP

 Angela Rydelius, Lab Manager



## Analytical Report

**Client:** Langan  
**Date Received:** 6/20/17 12:30  
**Date Prepared:** 6/20/17  
**Project:** 770641901; 600 South 1st Street

**WorkOrder:** 1706947  
**Extraction Method:** SW3550B  
**Analytical Method:** SW8081A/8082  
**Unit:** mg/kg

### Organochlorine Pesticides + PCBs

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-2-1.5	1706947-010A	Soil	06/17/2017 07:46	GC23	140763

Analytes	Result	RL	DF	Date Analyzed
Aldrin	ND	0.020	20	06/24/2017 02:18
a-BHC	ND	0.020	20	06/24/2017 02:18
b-BHC	ND	0.020	20	06/24/2017 02:18
d-BHC	ND	0.020	20	06/24/2017 02:18
g-BHC	ND	0.020	20	06/24/2017 02:18
Chlordane (Technical)	ND	0.50	20	06/24/2017 02:18
a-Chlordane	ND	0.020	20	06/24/2017 02:18
g-Chlordane	ND	0.020	20	06/24/2017 02:18
p,p-DDD	ND	0.020	20	06/24/2017 02:18
p,p-DDE	ND	0.020	20	06/24/2017 02:18
p,p-DDT	ND	0.020	20	06/24/2017 02:18
Dieldrin	ND	0.020	20	06/24/2017 02:18
Endosulfan I	ND	0.020	20	06/24/2017 02:18
Endosulfan II	ND	0.020	20	06/24/2017 02:18
Endosulfan sulfate	ND	0.020	20	06/24/2017 02:18
Endrin	ND	0.020	20	06/24/2017 02:18
Endrin aldehyde	ND	0.020	20	06/24/2017 02:18
Endrin ketone	ND	0.020	20	06/24/2017 02:18
Heptachlor	ND	0.020	20	06/24/2017 02:18
Heptachlor epoxide	ND	0.020	20	06/24/2017 02:18
Hexachlorobenzene	ND	0.20	20	06/24/2017 02:18
Hexachlorocyclopentadiene	ND	0.40	20	06/24/2017 02:18
Methoxychlor	ND	0.020	20	06/24/2017 02:18
Toxaphene	ND	1.0	20	06/24/2017 02:18
Aroclor1016	ND	1.0	20	06/24/2017 02:18
Aroclor1221	ND	1.0	20	06/24/2017 02:18
Aroclor1232	ND	1.0	20	06/24/2017 02:18
Aroclor1242	ND	1.0	20	06/24/2017 02:18
Aroclor1248	ND	1.0	20	06/24/2017 02:18
Aroclor1254	ND	1.0	20	06/24/2017 02:18
Aroclor1260	ND	1.0	20	06/24/2017 02:18
PCBs, total	ND	1.0	20	06/24/2017 02:18

Surrogates	REC (%)	Limits	Date Analyzed
Decachlorobiphenyl	98	70-130	06/24/2017 02:18

Analyst(s): SS

(Cont.)

NELAP 4033ORELAP

 Angela Rydelius, Lab Manager



## Analytical Report

**Client:** Langan  
**Date Received:** 6/20/17 12:30  
**Date Prepared:** 6/20/17  
**Project:** 770641901; 600 South 1st Street

**WorkOrder:** 1706947  
**Extraction Method:** SW3550B  
**Analytical Method:** SW8081A/8082  
**Unit:** mg/kg

### Organochlorine Pesticides + PCBs

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-3-1.5	1706947-019A	Soil	06/17/2017 10:02	GC23	140763

Analytes	Result	RL	DF	Date Analyzed
Aldrin	ND	0.010	10	06/28/2017 03:21
a-BHC	ND	0.010	10	06/28/2017 03:21
b-BHC	ND	0.010	10	06/28/2017 03:21
d-BHC	ND	0.010	10	06/28/2017 03:21
g-BHC	ND	0.010	10	06/28/2017 03:21
Chlordane (Technical)	ND	0.25	10	06/28/2017 03:21
a-Chlordane	ND	0.010	10	06/28/2017 03:21
g-Chlordane	ND	0.010	10	06/28/2017 03:21
p,p-DDD	<b>0.033</b>	0.010	10	06/28/2017 03:21
p,p-DDE	<b>0.11</b>	0.010	10	06/28/2017 03:21
p,p-DDT	<b>0.40</b>	0.010	10	06/28/2017 03:21
Dieldrin	ND	0.010	10	06/28/2017 03:21
Endosulfan I	ND	0.010	10	06/28/2017 03:21
Endosulfan II	ND	0.010	10	06/28/2017 03:21
Endosulfan sulfate	ND	0.010	10	06/28/2017 03:21
Endrin	ND	0.010	10	06/28/2017 03:21
Endrin aldehyde	ND	0.010	10	06/28/2017 03:21
Endrin ketone	ND	0.010	10	06/28/2017 03:21
Heptachlor	ND	0.010	10	06/28/2017 03:21
Heptachlor epoxide	ND	0.010	10	06/28/2017 03:21
Hexachlorobenzene	ND	0.10	10	06/28/2017 03:21
Hexachlorocyclopentadiene	ND	0.20	10	06/28/2017 03:21
Methoxychlor	ND	0.010	10	06/28/2017 03:21
Toxaphene	ND	0.50	10	06/28/2017 03:21
Aroclor1016	ND	0.50	10	06/28/2017 03:21
Aroclor1221	ND	0.50	10	06/28/2017 03:21
Aroclor1232	ND	0.50	10	06/28/2017 03:21
Aroclor1242	ND	0.50	10	06/28/2017 03:21
Aroclor1248	ND	0.50	10	06/28/2017 03:21
Aroclor1254	ND	0.50	10	06/28/2017 03:21
Aroclor1260	ND	0.50	10	06/28/2017 03:21
PCBs, total	ND	0.50	10	06/28/2017 03:21

Surrogates	REC (%)	Qualifiers	Limits	Date Analyzed
Decachlorobiphenyl	157	S	70-130	06/28/2017 03:21

Analyst(s): SS

Analytical Comments: c1

(Cont.)



# Analytical Report

**Client:** Langan  
**Date Received:** 6/20/17 12:30  
**Date Prepared:** 6/20/17  
**Project:** 770641901; 600 South 1st Street

**WorkOrder:** 1706947  
**Extraction Method:** SW3550B  
**Analytical Method:** SW8081A/8082  
**Unit:** mg/kg

## Organochlorine Pesticides + PCBs

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-4-1.5	1706947-028A	Soil	06/17/2017 13:32	GC23	140763

Analytes	Result	RL	DF	Date Analyzed
Aldrin	ND	0.0010	1	06/23/2017 23:51
a-BHC	ND	0.0010	1	06/23/2017 23:51
b-BHC	ND	0.0010	1	06/23/2017 23:51
d-BHC	ND	0.0010	1	06/23/2017 23:51
g-BHC	ND	0.0010	1	06/23/2017 23:51
Chlordane (Technical)	ND	0.025	1	06/23/2017 23:51
a-Chlordane	ND	0.0010	1	06/23/2017 23:51
g-Chlordane	ND	0.0010	1	06/23/2017 23:51
p,p-DDD	ND	0.0010	1	06/23/2017 23:51
o,p-DDE	ND	0.0010	1	06/23/2017 23:51
o,p-DDT	ND	0.0010	1	06/23/2017 23:51
Dieldrin	ND	0.0010	1	06/23/2017 23:51
Endosulfan I	ND	0.0010	1	06/23/2017 23:51
Endosulfan II	ND	0.0010	1	06/23/2017 23:51
Endosulfan sulfate	ND	0.0010	1	06/23/2017 23:51
Endrin	ND	0.0010	1	06/23/2017 23:51
Endrin aldehyde	ND	0.0010	1	06/23/2017 23:51
Endrin ketone	ND	0.0010	1	06/23/2017 23:51
Heptachlor	ND	0.0010	1	06/23/2017 23:51
Heptachlor epoxide	ND	0.0010	1	06/23/2017 23:51
Hexachlorobenzene	ND	0.010	1	06/23/2017 23:51
Hexachlorocyclopentadiene	ND	0.020	1	06/23/2017 23:51
Methoxychlor	ND	0.0010	1	06/23/2017 23:51
Toxaphene	ND	0.050	1	06/23/2017 23:51
Aroclor1016	ND	0.050	1	06/23/2017 23:51
Aroclor1221	ND	0.050	1	06/23/2017 23:51
Aroclor1232	ND	0.050	1	06/23/2017 23:51
Aroclor1242	ND	0.050	1	06/23/2017 23:51
Aroclor1248	ND	0.050	1	06/23/2017 23:51
Aroclor1254	ND	0.050	1	06/23/2017 23:51
Aroclor1260	ND	0.050	1	06/23/2017 23:51
PCBs, total	ND	0.050	1	06/23/2017 23:51

Surrogates	REC (%)	Limits	Date Analyzed
Decachlorobiphenyl	96	70-130	06/23/2017 23:51

Analyst(s): SS

(Cont.)

NELAP 4033ORELAP

 Angela Rydelius, Lab Manager



## Analytical Report

**Client:** Langan  
**Date Received:** 6/20/17 12:30  
**Date Prepared:** 6/20/17  
**Project:** 770641901; 600 South 1st Street

**WorkOrder:** 1706947  
**Extraction Method:** SW3550B  
**Analytical Method:** SW8081A/8082  
**Unit:** mg/kg

### Organochlorine Pesticides + PCBs

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-5-1.5	1706947-040A	Soil	06/17/2017 11:43	GC23	140763

Analytes	Result	RL	DF	Date Analyzed
Aldrin	ND	0.020	20	06/24/2017 02:05
a-BHC	ND	0.020	20	06/24/2017 02:05
b-BHC	ND	0.020	20	06/24/2017 02:05
d-BHC	ND	0.020	20	06/24/2017 02:05
g-BHC	ND	0.020	20	06/24/2017 02:05
Chlordane (Technical)	ND	0.50	20	06/24/2017 02:05
a-Chlordane	ND	0.020	20	06/24/2017 02:05
g-Chlordane	ND	0.020	20	06/24/2017 02:05
p,p-DDD	ND	0.020	20	06/24/2017 02:05
p,p-DDE	ND	0.020	20	06/24/2017 02:05
p,p-DDT	ND	0.020	20	06/24/2017 02:05
Dieldrin	ND	0.020	20	06/24/2017 02:05
Endosulfan I	ND	0.020	20	06/24/2017 02:05
Endosulfan II	ND	0.020	20	06/24/2017 02:05
Endosulfan sulfate	ND	0.020	20	06/24/2017 02:05
Endrin	ND	0.020	20	06/24/2017 02:05
Endrin aldehyde	ND	0.020	20	06/24/2017 02:05
Endrin ketone	ND	0.020	20	06/24/2017 02:05
Heptachlor	ND	0.020	20	06/24/2017 02:05
Heptachlor epoxide	ND	0.020	20	06/24/2017 02:05
Hexachlorobenzene	ND	0.20	20	06/24/2017 02:05
Hexachlorocyclopentadiene	ND	0.40	20	06/24/2017 02:05
Methoxychlor	ND	0.020	20	06/24/2017 02:05
Toxaphene	ND	1.0	20	06/24/2017 02:05
Aroclor1016	ND	1.0	20	06/24/2017 02:05
Aroclor1221	ND	1.0	20	06/24/2017 02:05
Aroclor1232	ND	1.0	20	06/24/2017 02:05
Aroclor1242	ND	1.0	20	06/24/2017 02:05
Aroclor1248	ND	1.0	20	06/24/2017 02:05
Aroclor1254	ND	1.0	20	06/24/2017 02:05
Aroclor1260	ND	1.0	20	06/24/2017 02:05
PCBs, total	ND	1.0	20	06/24/2017 02:05

Surrogates	REC (%)	Limits	Date Analyzed
Decachlorobiphenyl	96	70-130	06/24/2017 02:05

Analyst(s): SS

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NELAP 4033ORELAP

 Angela Rydelius, Lab Manager



## Analytical Report

**Client:** Langan  
**Date Received:** 6/20/17 12:30  
**Date Prepared:** 6/20/17  
**Project:** 770641901; 600 South 1st Street

**WorkOrder:** 1706947  
**Extraction Method:** SW3550B  
**Analytical Method:** SW8081A/8082  
**Unit:** mg/kg

### Organochlorine Pesticides + PCBs

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-6-1.5	1706947-052A	Soil	06/17/2017 08:48	GC23	140763

Analytes	Result	RL	DF	Date Analyzed
Aldrin	ND	0.10	100	06/24/2017 01:11
a-BHC	ND	0.10	100	06/24/2017 01:11
b-BHC	ND	0.10	100	06/24/2017 01:11
d-BHC	ND	0.10	100	06/24/2017 01:11
g-BHC	ND	0.10	100	06/24/2017 01:11
Chlordane (Technical)	ND	2.5	100	06/24/2017 01:11
a-Chlordane	ND	0.10	100	06/24/2017 01:11
g-Chlordane	ND	0.10	100	06/24/2017 01:11
p,p-DDD	ND	0.10	100	06/24/2017 01:11
p,p-DDE	ND	0.10	100	06/24/2017 01:11
p,p-DDT	ND	0.10	100	06/24/2017 01:11
Dieldrin	ND	0.10	100	06/24/2017 01:11
Endosulfan I	ND	0.10	100	06/24/2017 01:11
Endosulfan II	ND	0.10	100	06/24/2017 01:11
Endosulfan sulfate	ND	0.10	100	06/24/2017 01:11
Endrin	ND	0.10	100	06/24/2017 01:11
Endrin aldehyde	ND	0.10	100	06/24/2017 01:11
Endrin ketone	ND	0.10	100	06/24/2017 01:11
Heptachlor	ND	0.10	100	06/24/2017 01:11
Heptachlor epoxide	ND	0.10	100	06/24/2017 01:11
Hexachlorobenzene	ND	1.0	100	06/24/2017 01:11
Hexachlorocyclopentadiene	ND	2.0	100	06/24/2017 01:11
Methoxychlor	ND	0.10	100	06/24/2017 01:11
Toxaphene	ND	5.0	100	06/24/2017 01:11
Aroclor1016	ND	5.0	100	06/24/2017 01:11
Aroclor1221	ND	5.0	100	06/24/2017 01:11
Aroclor1232	ND	5.0	100	06/24/2017 01:11
Aroclor1242	ND	5.0	100	06/24/2017 01:11
Aroclor1248	ND	5.0	100	06/24/2017 01:11
Aroclor1254	ND	5.0	100	06/24/2017 01:11
Aroclor1260	ND	5.0	100	06/24/2017 01:11
PCBs, total	ND	5.0	100	06/24/2017 01:11

Surrogates	REC (%)	Limits	Date Analyzed
Decachlorobiphenyl	97	70-130	06/24/2017 01:11

Analyst(s): SS

Analytical Comments: a3,c1





# Analytical Report

**Client:** Langan  
**Date Received:** 6/20/17 12:30  
**Date Prepared:** 6/20/17  
**Project:** 770641901; 600 South 1st Street

**WorkOrder:** 1706947  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** mg/kg

## Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-1-1.5	1706947-001A	Soil	06/17/2017 11:27	GC10	140735

Analytes	Result	RL	DF	Date Analyzed
Acetone	ND	0.10	1	06/21/2017 14:11
tert-Amyl methyl ether (TAME)	ND	0.0050	1	06/21/2017 14:11
Benzene	ND	0.0050	1	06/21/2017 14:11
Bromobenzene	ND	0.0050	1	06/21/2017 14:11
Bromochloromethane	ND	0.0050	1	06/21/2017 14:11
Bromodichloromethane	ND	0.0050	1	06/21/2017 14:11
Bromoform	ND	0.0050	1	06/21/2017 14:11
Bromomethane	ND	0.0050	1	06/21/2017 14:11
2-Butanone (MEK)	ND	0.020	1	06/21/2017 14:11
t-Butyl alcohol (TBA)	ND	0.050	1	06/21/2017 14:11
n-Butyl benzene	ND	0.0050	1	06/21/2017 14:11
sec-Butyl benzene	ND	0.0050	1	06/21/2017 14:11
tert-Butyl benzene	ND	0.0050	1	06/21/2017 14:11
Carbon Disulfide	ND	0.0050	1	06/21/2017 14:11
Carbon Tetrachloride	ND	0.0050	1	06/21/2017 14:11
Chlorobenzene	ND	0.0050	1	06/21/2017 14:11
Chloroethane	ND	0.0050	1	06/21/2017 14:11
Chloroform	ND	0.0050	1	06/21/2017 14:11
Chloromethane	ND	0.0050	1	06/21/2017 14:11
2-Chlorotoluene	ND	0.0050	1	06/21/2017 14:11
4-Chlorotoluene	ND	0.0050	1	06/21/2017 14:11
Dibromochloromethane	ND	0.0050	1	06/21/2017 14:11
1,2-Dibromo-3-chloropropane	ND	0.0040	1	06/21/2017 14:11
1,2-Dibromoethane (EDB)	ND	0.0040	1	06/21/2017 14:11
Dibromomethane	ND	0.0050	1	06/21/2017 14:11
1,2-Dichlorobenzene	ND	0.0050	1	06/21/2017 14:11
1,3-Dichlorobenzene	ND	0.0050	1	06/21/2017 14:11
1,4-Dichlorobenzene	ND	0.0050	1	06/21/2017 14:11
Dichlorodifluoromethane	ND	0.0050	1	06/21/2017 14:11
1,1-Dichloroethane	ND	0.0050	1	06/21/2017 14:11
1,2-Dichloroethane (1,2-DCA)	ND	0.0040	1	06/21/2017 14:11
1,1-Dichloroethene	ND	0.0050	1	06/21/2017 14:11
cis-1,2-Dichloroethene	ND	0.0050	1	06/21/2017 14:11
trans-1,2-Dichloroethene	ND	0.0050	1	06/21/2017 14:11
1,2-Dichloropropane	ND	0.0050	1	06/21/2017 14:11
1,3-Dichloropropane	ND	0.0050	1	06/21/2017 14:11
2,2-Dichloropropane	ND	0.0050	1	06/21/2017 14:11

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## Analytical Report

**Client:** Langan  
**Date Received:** 6/20/17 12:30  
**Date Prepared:** 6/20/17  
**Project:** 770641901; 600 South 1st Street

**WorkOrder:** 1706947  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** mg/kg

### Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-1-1.5	1706947-001A	Soil	06/17/2017 11:27	GC10	140735

Analytes	Result	RL	DF	Date Analyzed
1,1-Dichloropropene	ND	0.0050	1	06/21/2017 14:11
cis-1,3-Dichloropropene	ND	0.0050	1	06/21/2017 14:11
trans-1,3-Dichloropropene	ND	0.0050	1	06/21/2017 14:11
Diisopropyl ether (DIPE)	ND	0.0050	1	06/21/2017 14:11
Ethylbenzene	ND	0.0050	1	06/21/2017 14:11
Ethyl tert-butyl ether (ETBE)	ND	0.0050	1	06/21/2017 14:11
Freon 113	ND	0.0050	1	06/21/2017 14:11
Hexachlorobutadiene	ND	0.0050	1	06/21/2017 14:11
Hexachloroethane	ND	0.0050	1	06/21/2017 14:11
2-Hexanone	ND	0.0050	1	06/21/2017 14:11
Isopropylbenzene	ND	0.0050	1	06/21/2017 14:11
4-Isopropyl toluene	ND	0.0050	1	06/21/2017 14:11
Methyl-t-butyl ether (MTBE)	ND	0.0050	1	06/21/2017 14:11
Methylene chloride	ND	0.0050	1	06/21/2017 14:11
4-Methyl-2-pentanone (MIBK)	ND	0.0050	1	06/21/2017 14:11
Naphthalene	ND	0.0050	1	06/21/2017 14:11
n-Propyl benzene	ND	0.0050	1	06/21/2017 14:11
Styrene	ND	0.0050	1	06/21/2017 14:11
1,1,1,2-Tetrachloroethane	ND	0.0050	1	06/21/2017 14:11
1,1,2,2-Tetrachloroethane	ND	0.0050	1	06/21/2017 14:11
Tetrachloroethene	ND	0.0050	1	06/21/2017 14:11
Toluene	ND	0.0050	1	06/21/2017 14:11
1,2,3-Trichlorobenzene	ND	0.0050	1	06/21/2017 14:11
1,2,4-Trichlorobenzene	ND	0.0050	1	06/21/2017 14:11
1,1,1-Trichloroethane	ND	0.0050	1	06/21/2017 14:11
1,1,2-Trichloroethane	ND	0.0050	1	06/21/2017 14:11
Trichloroethene	ND	0.0050	1	06/21/2017 14:11
Trichlorofluoromethane	ND	0.0050	1	06/21/2017 14:11
1,2,3-Trichloropropane	ND	0.0050	1	06/21/2017 14:11
1,2,4-Trimethylbenzene	ND	0.0050	1	06/21/2017 14:11
1,3,5-Trimethylbenzene	ND	0.0050	1	06/21/2017 14:11
Vinyl Chloride	ND	0.0050	1	06/21/2017 14:11
Xylenes, Total	ND	0.0050	1	06/21/2017 14:11

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# Analytical Report

**Client:** Langan  
**Date Received:** 6/20/17 12:30  
**Date Prepared:** 6/20/17  
**Project:** 770641901; 600 South 1st Street

**WorkOrder:** 1706947  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** mg/kg

## Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-1-1.5	1706947-001A	Soil	06/17/2017 11:27	GC10	140735

Analytes	Result	RL	DF	Date Analyzed
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>	
Dibromofluoromethane	108		70-130	06/21/2017 14:11
Toluene-d8	115		70-130	06/21/2017 14:11
4-BFB	91		70-130	06/21/2017 14:11
Benzene-d6	95		60-140	06/21/2017 14:11
Ethylbenzene-d10	109		60-140	06/21/2017 14:11
1,2-DCB-d4	77		60-140	06/21/2017 14:11

Analyst(s): JEM



# Analytical Report

**Client:** Langan  
**Date Received:** 6/20/17 12:30  
**Date Prepared:** 6/20/17  
**Project:** 770641901; 600 South 1st Street

**WorkOrder:** 1706947  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** mg/kg

## Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-1-5.0	1706947-003A	Soil	06/17/2017 11:33	GC10	140735

Analytes	Result	RL	DF	Date Analyzed
Acetone	ND	0.10	1	06/21/2017 13:30
tert-Amyl methyl ether (TAME)	ND	0.0050	1	06/21/2017 13:30
Benzene	ND	0.0050	1	06/21/2017 13:30
Bromobenzene	ND	0.0050	1	06/21/2017 13:30
Bromochloromethane	ND	0.0050	1	06/21/2017 13:30
Bromodichloromethane	ND	0.0050	1	06/21/2017 13:30
Bromoform	ND	0.0050	1	06/21/2017 13:30
Bromomethane	ND	0.0050	1	06/21/2017 13:30
2-Butanone (MEK)	ND	0.020	1	06/21/2017 13:30
t-Butyl alcohol (TBA)	ND	0.050	1	06/21/2017 13:30
n-Butyl benzene	ND	0.0050	1	06/21/2017 13:30
sec-Butyl benzene	ND	0.0050	1	06/21/2017 13:30
tert-Butyl benzene	ND	0.0050	1	06/21/2017 13:30
Carbon Disulfide	ND	0.0050	1	06/21/2017 13:30
Carbon Tetrachloride	ND	0.0050	1	06/21/2017 13:30
Chlorobenzene	ND	0.0050	1	06/21/2017 13:30
Chloroethane	ND	0.0050	1	06/21/2017 13:30
Chloroform	ND	0.0050	1	06/21/2017 13:30
Chloromethane	ND	0.0050	1	06/21/2017 13:30
2-Chlorotoluene	ND	0.0050	1	06/21/2017 13:30
4-Chlorotoluene	ND	0.0050	1	06/21/2017 13:30
Dibromochloromethane	ND	0.0050	1	06/21/2017 13:30
1,2-Dibromo-3-chloropropane	ND	0.0040	1	06/21/2017 13:30
1,2-Dibromoethane (EDB)	ND	0.0040	1	06/21/2017 13:30
Dibromomethane	ND	0.0050	1	06/21/2017 13:30
1,2-Dichlorobenzene	ND	0.0050	1	06/21/2017 13:30
1,3-Dichlorobenzene	ND	0.0050	1	06/21/2017 13:30
1,4-Dichlorobenzene	ND	0.0050	1	06/21/2017 13:30
Dichlorodifluoromethane	ND	0.0050	1	06/21/2017 13:30
1,1-Dichloroethane	ND	0.0050	1	06/21/2017 13:30
1,2-Dichloroethane (1,2-DCA)	ND	0.0040	1	06/21/2017 13:30
1,1-Dichloroethene	ND	0.0050	1	06/21/2017 13:30
cis-1,2-Dichloroethene	ND	0.0050	1	06/21/2017 13:30
trans-1,2-Dichloroethene	ND	0.0050	1	06/21/2017 13:30
1,2-Dichloropropane	ND	0.0050	1	06/21/2017 13:30
1,3-Dichloropropane	ND	0.0050	1	06/21/2017 13:30
2,2-Dichloropropane	ND	0.0050	1	06/21/2017 13:30

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# Analytical Report

**Client:** Langan  
**Date Received:** 6/20/17 12:30  
**Date Prepared:** 6/20/17  
**Project:** 770641901; 600 South 1st Street

**WorkOrder:** 1706947  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** mg/kg

## Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-1-5.0	1706947-003A	Soil	06/17/2017 11:33	GC10	140735

Analytes	Result	RL	DF	Date Analyzed
1,1-Dichloropropene	ND	0.0050	1	06/21/2017 13:30
cis-1,3-Dichloropropene	ND	0.0050	1	06/21/2017 13:30
trans-1,3-Dichloropropene	ND	0.0050	1	06/21/2017 13:30
Diisopropyl ether (DIPE)	ND	0.0050	1	06/21/2017 13:30
Ethylbenzene	ND	0.0050	1	06/21/2017 13:30
Ethyl tert-butyl ether (ETBE)	ND	0.0050	1	06/21/2017 13:30
Freon 113	ND	0.0050	1	06/21/2017 13:30
Hexachlorobutadiene	ND	0.0050	1	06/21/2017 13:30
Hexachloroethane	ND	0.0050	1	06/21/2017 13:30
2-Hexanone	ND	0.0050	1	06/21/2017 13:30
Isopropylbenzene	ND	0.0050	1	06/21/2017 13:30
4-Isopropyl toluene	ND	0.0050	1	06/21/2017 13:30
Methyl-t-butyl ether (MTBE)	ND	0.0050	1	06/21/2017 13:30
Methylene chloride	ND	0.0050	1	06/21/2017 13:30
4-Methyl-2-pentanone (MIBK)	ND	0.0050	1	06/21/2017 13:30
Naphthalene	ND	0.0050	1	06/21/2017 13:30
n-Propyl benzene	ND	0.0050	1	06/21/2017 13:30
Styrene	ND	0.0050	1	06/21/2017 13:30
1,1,1,2-Tetrachloroethane	ND	0.0050	1	06/21/2017 13:30
1,1,2,2-Tetrachloroethane	ND	0.0050	1	06/21/2017 13:30
Tetrachloroethene	ND	0.0050	1	06/21/2017 13:30
Toluene	ND	0.0050	1	06/21/2017 13:30
1,2,3-Trichlorobenzene	ND	0.0050	1	06/21/2017 13:30
1,2,4-Trichlorobenzene	ND	0.0050	1	06/21/2017 13:30
1,1,1-Trichloroethane	ND	0.0050	1	06/21/2017 13:30
1,1,2-Trichloroethane	ND	0.0050	1	06/21/2017 13:30
Trichloroethene	ND	0.0050	1	06/21/2017 13:30
Trichlorofluoromethane	ND	0.0050	1	06/21/2017 13:30
1,2,3-Trichloropropane	ND	0.0050	1	06/21/2017 13:30
1,2,4-Trimethylbenzene	ND	0.0050	1	06/21/2017 13:30
1,3,5-Trimethylbenzene	ND	0.0050	1	06/21/2017 13:30
Vinyl Chloride	ND	0.0050	1	06/21/2017 13:30
Xylenes, Total	ND	0.0050	1	06/21/2017 13:30

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# Analytical Report

**Client:** Langan  
**Date Received:** 6/20/17 12:30  
**Date Prepared:** 6/20/17  
**Project:** 770641901; 600 South 1st Street

**WorkOrder:** 1706947  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** mg/kg

## Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-1-5.0	1706947-003A	Soil	06/17/2017 11:33	GC10	140735

Analytes	Result	RL	DF	Date Analyzed
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>	
Dibromofluoromethane	119		70-130	06/21/2017 13:30
Toluene-d8	128		70-130	06/21/2017 13:30
4-BFB	102		70-130	06/21/2017 13:30
Benzene-d6	94		60-140	06/21/2017 13:30
Ethylbenzene-d10	106		60-140	06/21/2017 13:30
1,2-DCB-d4	76		60-140	06/21/2017 13:30

Analyst(s): JEM



# Analytical Report

**Client:** Langan  
**Date Received:** 6/20/17 12:30  
**Date Prepared:** 6/20/17  
**Project:** 770641901; 600 South 1st Street

**WorkOrder:** 1706947  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** mg/kg

## Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-1-15.0	1706947-006A	Soil	06/17/2017 11:42	GC10	140735

Analytes	Result	RL	DF	Date Analyzed
Acetone	ND	0.10	1	06/21/2017 14:52
tert-Amyl methyl ether (TAME)	ND	0.0050	1	06/21/2017 14:52
Benzene	ND	0.0050	1	06/21/2017 14:52
Bromobenzene	ND	0.0050	1	06/21/2017 14:52
Bromochloromethane	ND	0.0050	1	06/21/2017 14:52
Bromodichloromethane	ND	0.0050	1	06/21/2017 14:52
Bromoform	ND	0.0050	1	06/21/2017 14:52
Bromomethane	ND	0.0050	1	06/21/2017 14:52
2-Butanone (MEK)	ND	0.020	1	06/21/2017 14:52
t-Butyl alcohol (TBA)	ND	0.050	1	06/21/2017 14:52
n-Butyl benzene	ND	0.0050	1	06/21/2017 14:52
sec-Butyl benzene	ND	0.0050	1	06/21/2017 14:52
tert-Butyl benzene	ND	0.0050	1	06/21/2017 14:52
Carbon Disulfide	ND	0.0050	1	06/21/2017 14:52
Carbon Tetrachloride	ND	0.0050	1	06/21/2017 14:52
Chlorobenzene	ND	0.0050	1	06/21/2017 14:52
Chloroethane	ND	0.0050	1	06/21/2017 14:52
Chloroform	ND	0.0050	1	06/21/2017 14:52
Chloromethane	ND	0.0050	1	06/21/2017 14:52
2-Chlorotoluene	ND	0.0050	1	06/21/2017 14:52
4-Chlorotoluene	ND	0.0050	1	06/21/2017 14:52
Dibromochloromethane	ND	0.0050	1	06/21/2017 14:52
1,2-Dibromo-3-chloropropane	ND	0.0040	1	06/21/2017 14:52
1,2-Dibromoethane (EDB)	ND	0.0040	1	06/21/2017 14:52
Dibromomethane	ND	0.0050	1	06/21/2017 14:52
1,2-Dichlorobenzene	ND	0.0050	1	06/21/2017 14:52
1,3-Dichlorobenzene	ND	0.0050	1	06/21/2017 14:52
1,4-Dichlorobenzene	ND	0.0050	1	06/21/2017 14:52
Dichlorodifluoromethane	ND	0.0050	1	06/21/2017 14:52
1,1-Dichloroethane	ND	0.0050	1	06/21/2017 14:52
1,2-Dichloroethane (1,2-DCA)	ND	0.0040	1	06/21/2017 14:52
1,1-Dichloroethene	ND	0.0050	1	06/21/2017 14:52
cis-1,2-Dichloroethene	ND	0.0050	1	06/21/2017 14:52
trans-1,2-Dichloroethene	ND	0.0050	1	06/21/2017 14:52
1,2-Dichloropropane	ND	0.0050	1	06/21/2017 14:52
1,3-Dichloropropane	ND	0.0050	1	06/21/2017 14:52
2,2-Dichloropropane	ND	0.0050	1	06/21/2017 14:52

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# Analytical Report

**Client:** Langan  
**Date Received:** 6/20/17 12:30  
**Date Prepared:** 6/20/17  
**Project:** 770641901; 600 South 1st Street

**WorkOrder:** 1706947  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** mg/kg

## Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-1-15.0	1706947-006A	Soil	06/17/2017 11:42	GC10	140735

Analytes	Result	RL	DF	Date Analyzed
1,1-Dichloropropene	ND	0.0050	1	06/21/2017 14:52
cis-1,3-Dichloropropene	ND	0.0050	1	06/21/2017 14:52
trans-1,3-Dichloropropene	ND	0.0050	1	06/21/2017 14:52
Diisopropyl ether (DIPE)	ND	0.0050	1	06/21/2017 14:52
Ethylbenzene	ND	0.0050	1	06/21/2017 14:52
Ethyl tert-butyl ether (ETBE)	ND	0.0050	1	06/21/2017 14:52
Freon 113	ND	0.0050	1	06/21/2017 14:52
Hexachlorobutadiene	ND	0.0050	1	06/21/2017 14:52
Hexachloroethane	ND	0.0050	1	06/21/2017 14:52
2-Hexanone	ND	0.0050	1	06/21/2017 14:52
Isopropylbenzene	ND	0.0050	1	06/21/2017 14:52
4-Isopropyl toluene	ND	0.0050	1	06/21/2017 14:52
Methyl-t-butyl ether (MTBE)	ND	0.0050	1	06/21/2017 14:52
Methylene chloride	ND	0.0050	1	06/21/2017 14:52
4-Methyl-2-pentanone (MIBK)	ND	0.0050	1	06/21/2017 14:52
Naphthalene	ND	0.0050	1	06/21/2017 14:52
n-Propyl benzene	ND	0.0050	1	06/21/2017 14:52
Styrene	ND	0.0050	1	06/21/2017 14:52
1,1,1,2-Tetrachloroethane	ND	0.0050	1	06/21/2017 14:52
1,1,2,2-Tetrachloroethane	ND	0.0050	1	06/21/2017 14:52
Tetrachloroethene	ND	0.0050	1	06/21/2017 14:52
Toluene	ND	0.0050	1	06/21/2017 14:52
1,2,3-Trichlorobenzene	ND	0.0050	1	06/21/2017 14:52
1,2,4-Trichlorobenzene	ND	0.0050	1	06/21/2017 14:52
1,1,1-Trichloroethane	ND	0.0050	1	06/21/2017 14:52
1,1,2-Trichloroethane	ND	0.0050	1	06/21/2017 14:52
Trichloroethene	ND	0.0050	1	06/21/2017 14:52
Trichlorofluoromethane	ND	0.0050	1	06/21/2017 14:52
1,2,3-Trichloropropane	ND	0.0050	1	06/21/2017 14:52
1,2,4-Trimethylbenzene	ND	0.0050	1	06/21/2017 14:52
1,3,5-Trimethylbenzene	ND	0.0050	1	06/21/2017 14:52
Vinyl Chloride	ND	0.0050	1	06/21/2017 14:52
Xylenes, Total	ND	0.0050	1	06/21/2017 14:52

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# Analytical Report

**Client:** Langan  
**Date Received:** 6/20/17 12:30  
**Date Prepared:** 6/20/17  
**Project:** 770641901; 600 South 1st Street

**WorkOrder:** 1706947  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** mg/kg

## Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-1-15.0	1706947-006A	Soil	06/17/2017 11:42	GC10	140735

Analytes	Result	RL	DF	Date Analyzed
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>	
Dibromofluoromethane	117		70-130	06/21/2017 14:52
Toluene-d8	125		70-130	06/21/2017 14:52
4-BFB	100		70-130	06/21/2017 14:52
Benzene-d6	91		60-140	06/21/2017 14:52
Ethylbenzene-d10	103		60-140	06/21/2017 14:52
1,2-DCB-d4	74		60-140	06/21/2017 14:52

Analyst(s): JEM



# Analytical Report

**Client:** Langan  
**Date Received:** 6/20/17 12:30  
**Date Prepared:** 6/20/17  
**Project:** 770641901; 600 South 1st Street

**WorkOrder:** 1706947  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** mg/kg

## Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-2-1.5	1706947-010A	Soil	06/17/2017 07:46	GC10	140735

Analytes	Result	RL	DF	Date Analyzed
Acetone	ND	0.10	1	06/21/2017 16:54
tert-Amyl methyl ether (TAME)	ND	0.0050	1	06/21/2017 16:54
Benzene	ND	0.0050	1	06/21/2017 16:54
Bromobenzene	ND	0.0050	1	06/21/2017 16:54
Bromochloromethane	ND	0.0050	1	06/21/2017 16:54
Bromodichloromethane	ND	0.0050	1	06/21/2017 16:54
Bromoform	ND	0.0050	1	06/21/2017 16:54
Bromomethane	ND	0.0050	1	06/21/2017 16:54
2-Butanone (MEK)	ND	0.020	1	06/21/2017 16:54
t-Butyl alcohol (TBA)	ND	0.050	1	06/21/2017 16:54
n-Butyl benzene	ND	0.0050	1	06/21/2017 16:54
sec-Butyl benzene	ND	0.0050	1	06/21/2017 16:54
tert-Butyl benzene	ND	0.0050	1	06/21/2017 16:54
Carbon Disulfide	ND	0.0050	1	06/21/2017 16:54
Carbon Tetrachloride	ND	0.0050	1	06/21/2017 16:54
Chlorobenzene	ND	0.0050	1	06/21/2017 16:54
Chloroethane	ND	0.0050	1	06/21/2017 16:54
Chloroform	ND	0.0050	1	06/21/2017 16:54
Chloromethane	ND	0.0050	1	06/21/2017 16:54
2-Chlorotoluene	ND	0.0050	1	06/21/2017 16:54
4-Chlorotoluene	ND	0.0050	1	06/21/2017 16:54
Dibromochloromethane	ND	0.0050	1	06/21/2017 16:54
1,2-Dibromo-3-chloropropane	ND	0.0040	1	06/21/2017 16:54
1,2-Dibromoethane (EDB)	ND	0.0040	1	06/21/2017 16:54
Dibromomethane	ND	0.0050	1	06/21/2017 16:54
1,2-Dichlorobenzene	ND	0.0050	1	06/21/2017 16:54
1,3-Dichlorobenzene	ND	0.0050	1	06/21/2017 16:54
1,4-Dichlorobenzene	ND	0.0050	1	06/21/2017 16:54
Dichlorodifluoromethane	ND	0.0050	1	06/21/2017 16:54
1,1-Dichloroethane	ND	0.0050	1	06/21/2017 16:54
1,2-Dichloroethane (1,2-DCA)	ND	0.0040	1	06/21/2017 16:54
1,1-Dichloroethene	ND	0.0050	1	06/21/2017 16:54
cis-1,2-Dichloroethene	ND	0.0050	1	06/21/2017 16:54
trans-1,2-Dichloroethene	ND	0.0050	1	06/21/2017 16:54
1,2-Dichloropropane	ND	0.0050	1	06/21/2017 16:54
1,3-Dichloropropane	ND	0.0050	1	06/21/2017 16:54
2,2-Dichloropropane	ND	0.0050	1	06/21/2017 16:54

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# Analytical Report

**Client:** Langan  
**Date Received:** 6/20/17 12:30  
**Date Prepared:** 6/20/17  
**Project:** 770641901; 600 South 1st Street

**WorkOrder:** 1706947  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** mg/kg

## Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-2-1.5	1706947-010A	Soil	06/17/2017 07:46	GC10	140735

Analytes	Result	RL	DF	Date Analyzed
1,1-Dichloropropene	ND	0.0050	1	06/21/2017 16:54
cis-1,3-Dichloropropene	ND	0.0050	1	06/21/2017 16:54
trans-1,3-Dichloropropene	ND	0.0050	1	06/21/2017 16:54
Diisopropyl ether (DIPE)	ND	0.0050	1	06/21/2017 16:54
Ethylbenzene	ND	0.0050	1	06/21/2017 16:54
Ethyl tert-butyl ether (ETBE)	ND	0.0050	1	06/21/2017 16:54
Freon 113	ND	0.0050	1	06/21/2017 16:54
Hexachlorobutadiene	ND	0.0050	1	06/21/2017 16:54
Hexachloroethane	ND	0.0050	1	06/21/2017 16:54
2-Hexanone	ND	0.0050	1	06/21/2017 16:54
Isopropylbenzene	ND	0.0050	1	06/21/2017 16:54
4-Isopropyl toluene	ND	0.0050	1	06/21/2017 16:54
Methyl-t-butyl ether (MTBE)	ND	0.0050	1	06/21/2017 16:54
Methylene chloride	ND	0.0050	1	06/21/2017 16:54
4-Methyl-2-pentanone (MIBK)	ND	0.0050	1	06/21/2017 16:54
Naphthalene	ND	0.0050	1	06/21/2017 16:54
n-Propyl benzene	ND	0.0050	1	06/21/2017 16:54
Styrene	ND	0.0050	1	06/21/2017 16:54
1,1,1,2-Tetrachloroethane	ND	0.0050	1	06/21/2017 16:54
1,1,2,2-Tetrachloroethane	ND	0.0050	1	06/21/2017 16:54
Tetrachloroethene	ND	0.0050	1	06/21/2017 16:54
Toluene	ND	0.0050	1	06/21/2017 16:54
1,2,3-Trichlorobenzene	ND	0.0050	1	06/21/2017 16:54
1,2,4-Trichlorobenzene	ND	0.0050	1	06/21/2017 16:54
1,1,1-Trichloroethane	ND	0.0050	1	06/21/2017 16:54
1,1,2-Trichloroethane	ND	0.0050	1	06/21/2017 16:54
Trichloroethene	ND	0.0050	1	06/21/2017 16:54
Trichlorofluoromethane	ND	0.0050	1	06/21/2017 16:54
1,2,3-Trichloropropane	ND	0.0050	1	06/21/2017 16:54
1,2,4-Trimethylbenzene	ND	0.0050	1	06/21/2017 16:54
1,3,5-Trimethylbenzene	ND	0.0050	1	06/21/2017 16:54
Vinyl Chloride	ND	0.0050	1	06/21/2017 16:54
Xylenes, Total	ND	0.0050	1	06/21/2017 16:54

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## Analytical Report

**Client:** Langan  
**Date Received:** 6/20/17 12:30  
**Date Prepared:** 6/20/17  
**Project:** 770641901; 600 South 1st Street

**WorkOrder:** 1706947  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** mg/kg

### Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-2-1.5	1706947-010A	Soil	06/17/2017 07:46	GC10	140735

Analytes	Result	RL	DF	Date Analyzed
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>	
Dibromofluoromethane	120		70-130	06/21/2017 16:54
Toluene-d8	129		70-130	06/21/2017 16:54
4-BFB	104		70-130	06/21/2017 16:54
Benzene-d6	92		60-140	06/21/2017 16:54
Ethylbenzene-d10	104		60-140	06/21/2017 16:54
1,2-DCB-d4	75		60-140	06/21/2017 16:54

**Analyst(s):** JEM



# Analytical Report

**Client:** Langan  
**Date Received:** 6/20/17 12:30  
**Date Prepared:** 6/20/17  
**Project:** 770641901; 600 South 1st Street

**WorkOrder:** 1706947  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** mg/kg

## Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-2-10.0	1706947-014A	Soil	06/17/2017 08:04	GC10	140735

Analytes	Result	RL	DF	Date Analyzed
Acetone	ND	0.10	1	06/21/2017 17:35
tert-Amyl methyl ether (TAME)	ND	0.0050	1	06/21/2017 17:35
Benzene	ND	0.0050	1	06/21/2017 17:35
Bromobenzene	ND	0.0050	1	06/21/2017 17:35
Bromochloromethane	ND	0.0050	1	06/21/2017 17:35
Bromodichloromethane	ND	0.0050	1	06/21/2017 17:35
Bromoform	ND	0.0050	1	06/21/2017 17:35
Bromomethane	ND	0.0050	1	06/21/2017 17:35
2-Butanone (MEK)	ND	0.020	1	06/21/2017 17:35
t-Butyl alcohol (TBA)	ND	0.050	1	06/21/2017 17:35
n-Butyl benzene	ND	0.0050	1	06/21/2017 17:35
sec-Butyl benzene	ND	0.0050	1	06/21/2017 17:35
tert-Butyl benzene	ND	0.0050	1	06/21/2017 17:35
Carbon Disulfide	ND	0.0050	1	06/21/2017 17:35
Carbon Tetrachloride	ND	0.0050	1	06/21/2017 17:35
Chlorobenzene	ND	0.0050	1	06/21/2017 17:35
Chloroethane	ND	0.0050	1	06/21/2017 17:35
Chloroform	ND	0.0050	1	06/21/2017 17:35
Chloromethane	ND	0.0050	1	06/21/2017 17:35
2-Chlorotoluene	ND	0.0050	1	06/21/2017 17:35
4-Chlorotoluene	ND	0.0050	1	06/21/2017 17:35
Dibromochloromethane	ND	0.0050	1	06/21/2017 17:35
1,2-Dibromo-3-chloropropane	ND	0.0040	1	06/21/2017 17:35
1,2-Dibromoethane (EDB)	ND	0.0040	1	06/21/2017 17:35
Dibromomethane	ND	0.0050	1	06/21/2017 17:35
1,2-Dichlorobenzene	ND	0.0050	1	06/21/2017 17:35
1,3-Dichlorobenzene	ND	0.0050	1	06/21/2017 17:35
1,4-Dichlorobenzene	ND	0.0050	1	06/21/2017 17:35
Dichlorodifluoromethane	ND	0.0050	1	06/21/2017 17:35
1,1-Dichloroethane	ND	0.0050	1	06/21/2017 17:35
1,2-Dichloroethane (1,2-DCA)	ND	0.0040	1	06/21/2017 17:35
1,1-Dichloroethene	ND	0.0050	1	06/21/2017 17:35
cis-1,2-Dichloroethene	ND	0.0050	1	06/21/2017 17:35
trans-1,2-Dichloroethene	ND	0.0050	1	06/21/2017 17:35
1,2-Dichloropropane	ND	0.0050	1	06/21/2017 17:35
1,3-Dichloropropane	ND	0.0050	1	06/21/2017 17:35
2,2-Dichloropropane	ND	0.0050	1	06/21/2017 17:35

(Cont.)



# Analytical Report

**Client:** Langan  
**Date Received:** 6/20/17 12:30  
**Date Prepared:** 6/20/17  
**Project:** 770641901; 600 South 1st Street

**WorkOrder:** 1706947  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** mg/kg

## Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-2-10.0	1706947-014A	Soil	06/17/2017 08:04	GC10	140735

Analytes	Result	RL	DF	Date Analyzed
1,1-Dichloropropene	ND	0.0050	1	06/21/2017 17:35
cis-1,3-Dichloropropene	ND	0.0050	1	06/21/2017 17:35
trans-1,3-Dichloropropene	ND	0.0050	1	06/21/2017 17:35
Diisopropyl ether (DIPE)	ND	0.0050	1	06/21/2017 17:35
Ethylbenzene	ND	0.0050	1	06/21/2017 17:35
Ethyl tert-butyl ether (ETBE)	ND	0.0050	1	06/21/2017 17:35
Freon 113	ND	0.0050	1	06/21/2017 17:35
Hexachlorobutadiene	ND	0.0050	1	06/21/2017 17:35
Hexachloroethane	ND	0.0050	1	06/21/2017 17:35
2-Hexanone	ND	0.0050	1	06/21/2017 17:35
Isopropylbenzene	ND	0.0050	1	06/21/2017 17:35
4-Isopropyl toluene	ND	0.0050	1	06/21/2017 17:35
Methyl-t-butyl ether (MTBE)	ND	0.0050	1	06/21/2017 17:35
Methylene chloride	ND	0.0050	1	06/21/2017 17:35
4-Methyl-2-pentanone (MIBK)	ND	0.0050	1	06/21/2017 17:35
Naphthalene	ND	0.0050	1	06/21/2017 17:35
n-Propyl benzene	ND	0.0050	1	06/21/2017 17:35
Styrene	ND	0.0050	1	06/21/2017 17:35
1,1,1,2-Tetrachloroethane	ND	0.0050	1	06/21/2017 17:35
1,1,2,2-Tetrachloroethane	ND	0.0050	1	06/21/2017 17:35
Tetrachloroethene	ND	0.0050	1	06/21/2017 17:35
Toluene	ND	0.0050	1	06/21/2017 17:35
1,2,3-Trichlorobenzene	ND	0.0050	1	06/21/2017 17:35
1,2,4-Trichlorobenzene	ND	0.0050	1	06/21/2017 17:35
1,1,1-Trichloroethane	ND	0.0050	1	06/21/2017 17:35
1,1,2-Trichloroethane	ND	0.0050	1	06/21/2017 17:35
Trichloroethene	ND	0.0050	1	06/21/2017 17:35
Trichlorofluoromethane	ND	0.0050	1	06/21/2017 17:35
1,2,3-Trichloropropane	ND	0.0050	1	06/21/2017 17:35
1,2,4-Trimethylbenzene	ND	0.0050	1	06/21/2017 17:35
1,3,5-Trimethylbenzene	ND	0.0050	1	06/21/2017 17:35
Vinyl Chloride	ND	0.0050	1	06/21/2017 17:35
Xylenes, Total	ND	0.0050	1	06/21/2017 17:35

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# Analytical Report

**Client:** Langan  
**Date Received:** 6/20/17 12:30  
**Date Prepared:** 6/20/17  
**Project:** 770641901; 600 South 1st Street

**WorkOrder:** 1706947  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** mg/kg

## Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-2-10.0	1706947-014A	Soil	06/17/2017 08:04	GC10	140735

Analytes	Result	RL	DF	Date Analyzed
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>	
Dibromofluoromethane	120	70-130		06/21/2017 17:35
Toluene-d8	127	70-130		06/21/2017 17:35
4-BFB	103	70-130		06/21/2017 17:35
Benzene-d6	88	60-140		06/21/2017 17:35
Ethylbenzene-d10	99	60-140		06/21/2017 17:35
1,2-DCB-d4	73	60-140		06/21/2017 17:35

Analyst(s): JEM



# Analytical Report

**Client:** Langan  
**Date Received:** 6/20/17 12:30  
**Date Prepared:** 6/20/17  
**Project:** 770641901; 600 South 1st Street

**WorkOrder:** 1706947  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** mg/kg

## Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-2-24.0	1706947-017A	Soil	06/17/2017 09:04	GC10	140735

Analytes	Result	RL	DF	Date Analyzed
Acetone	ND	0.10	1	06/21/2017 18:15
tert-Amyl methyl ether (TAME)	ND	0.0050	1	06/21/2017 18:15
Benzene	ND	0.0050	1	06/21/2017 18:15
Bromobenzene	ND	0.0050	1	06/21/2017 18:15
Bromochloromethane	ND	0.0050	1	06/21/2017 18:15
Bromodichloromethane	ND	0.0050	1	06/21/2017 18:15
Bromoform	ND	0.0050	1	06/21/2017 18:15
Bromomethane	ND	0.0050	1	06/21/2017 18:15
2-Butanone (MEK)	ND	0.020	1	06/21/2017 18:15
t-Butyl alcohol (TBA)	ND	0.050	1	06/21/2017 18:15
n-Butyl benzene	ND	0.0050	1	06/21/2017 18:15
sec-Butyl benzene	ND	0.0050	1	06/21/2017 18:15
tert-Butyl benzene	ND	0.0050	1	06/21/2017 18:15
Carbon Disulfide	ND	0.0050	1	06/21/2017 18:15
Carbon Tetrachloride	ND	0.0050	1	06/21/2017 18:15
Chlorobenzene	ND	0.0050	1	06/21/2017 18:15
Chloroethane	ND	0.0050	1	06/21/2017 18:15
Chloroform	ND	0.0050	1	06/21/2017 18:15
Chloromethane	ND	0.0050	1	06/21/2017 18:15
2-Chlorotoluene	ND	0.0050	1	06/21/2017 18:15
4-Chlorotoluene	ND	0.0050	1	06/21/2017 18:15
Dibromochloromethane	ND	0.0050	1	06/21/2017 18:15
1,2-Dibromo-3-chloropropane	ND	0.0040	1	06/21/2017 18:15
1,2-Dibromoethane (EDB)	ND	0.0040	1	06/21/2017 18:15
Dibromomethane	ND	0.0050	1	06/21/2017 18:15
1,2-Dichlorobenzene	ND	0.0050	1	06/21/2017 18:15
1,3-Dichlorobenzene	ND	0.0050	1	06/21/2017 18:15
1,4-Dichlorobenzene	ND	0.0050	1	06/21/2017 18:15
Dichlorodifluoromethane	ND	0.0050	1	06/21/2017 18:15
1,1-Dichloroethane	ND	0.0050	1	06/21/2017 18:15
1,2-Dichloroethane (1,2-DCA)	ND	0.0040	1	06/21/2017 18:15
1,1-Dichloroethene	ND	0.0050	1	06/21/2017 18:15
cis-1,2-Dichloroethene	ND	0.0050	1	06/21/2017 18:15
trans-1,2-Dichloroethene	ND	0.0050	1	06/21/2017 18:15
1,2-Dichloropropane	ND	0.0050	1	06/21/2017 18:15
1,3-Dichloropropane	ND	0.0050	1	06/21/2017 18:15
2,2-Dichloropropane	ND	0.0050	1	06/21/2017 18:15

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## Analytical Report

**Client:** Langan  
**Date Received:** 6/20/17 12:30  
**Date Prepared:** 6/20/17  
**Project:** 770641901; 600 South 1st Street

**WorkOrder:** 1706947  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** mg/kg

### Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-2-24.0	1706947-017A	Soil	06/17/2017 09:04	GC10	140735

Analytes	Result	RL	DF	Date Analyzed
1,1-Dichloropropene	ND	0.0050	1	06/21/2017 18:15
cis-1,3-Dichloropropene	ND	0.0050	1	06/21/2017 18:15
trans-1,3-Dichloropropene	ND	0.0050	1	06/21/2017 18:15
Diisopropyl ether (DIPE)	ND	0.0050	1	06/21/2017 18:15
Ethylbenzene	ND	0.0050	1	06/21/2017 18:15
Ethyl tert-butyl ether (ETBE)	ND	0.0050	1	06/21/2017 18:15
Freon 113	ND	0.0050	1	06/21/2017 18:15
Hexachlorobutadiene	ND	0.0050	1	06/21/2017 18:15
Hexachloroethane	ND	0.0050	1	06/21/2017 18:15
2-Hexanone	ND	0.0050	1	06/21/2017 18:15
Isopropylbenzene	ND	0.0050	1	06/21/2017 18:15
4-Isopropyl toluene	ND	0.0050	1	06/21/2017 18:15
Methyl-t-butyl ether (MTBE)	ND	0.0050	1	06/21/2017 18:15
Methylene chloride	ND	0.0050	1	06/21/2017 18:15
4-Methyl-2-pentanone (MIBK)	ND	0.0050	1	06/21/2017 18:15
Naphthalene	ND	0.0050	1	06/21/2017 18:15
n-Propyl benzene	ND	0.0050	1	06/21/2017 18:15
Styrene	ND	0.0050	1	06/21/2017 18:15
1,1,1,2-Tetrachloroethane	ND	0.0050	1	06/21/2017 18:15
1,1,2,2-Tetrachloroethane	ND	0.0050	1	06/21/2017 18:15
Tetrachloroethene	ND	0.0050	1	06/21/2017 18:15
Toluene	ND	0.0050	1	06/21/2017 18:15
1,2,3-Trichlorobenzene	ND	0.0050	1	06/21/2017 18:15
1,2,4-Trichlorobenzene	ND	0.0050	1	06/21/2017 18:15
1,1,1-Trichloroethane	ND	0.0050	1	06/21/2017 18:15
1,1,2-Trichloroethane	ND	0.0050	1	06/21/2017 18:15
Trichloroethene	ND	0.0050	1	06/21/2017 18:15
Trichlorofluoromethane	ND	0.0050	1	06/21/2017 18:15
1,2,3-Trichloropropane	ND	0.0050	1	06/21/2017 18:15
1,2,4-Trimethylbenzene	ND	0.0050	1	06/21/2017 18:15
1,3,5-Trimethylbenzene	ND	0.0050	1	06/21/2017 18:15
Vinyl Chloride	ND	0.0050	1	06/21/2017 18:15
Xylenes, Total	ND	0.0050	1	06/21/2017 18:15

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# Analytical Report

**Client:** Langan  
**Date Received:** 6/20/17 12:30  
**Date Prepared:** 6/20/17  
**Project:** 770641901; 600 South 1st Street

**WorkOrder:** 1706947  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** mg/kg

## Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-2-24.0	1706947-017A	Soil	06/17/2017 09:04	GC10	140735

Analytes	Result	RL	DF	Date Analyzed
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>	
Dibromofluoromethane	120		70-130	06/21/2017 18:15
Toluene-d8	127		70-130	06/21/2017 18:15
4-BFB	103		70-130	06/21/2017 18:15
Benzene-d6	99		60-140	06/21/2017 18:15
Ethylbenzene-d10	113		60-140	06/21/2017 18:15
1,2-DCB-d4	82		60-140	06/21/2017 18:15

Analyst(s): JEM



# Analytical Report

**Client:** Langan  
**Date Received:** 6/20/17 12:30  
**Date Prepared:** 6/20/17  
**Project:** 770641901; 600 South 1st Street

**WorkOrder:** 1706947  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** mg/kg

## Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-3-26.0	1706947-025A	Soil	06/17/2017 10:27	GC10	140735

Analytes	Result	RL	DF	Date Analyzed
Acetone	ND	20	200	06/21/2017 15:33
tert-Amyl methyl ether (TAME)	ND	1.0	200	06/21/2017 15:33
Benzene	1.4	1.0	200	06/21/2017 15:33
Bromobenzene	ND	1.0	200	06/21/2017 15:33
Bromochloromethane	ND	1.0	200	06/21/2017 15:33
Bromodichloromethane	ND	1.0	200	06/21/2017 15:33
Bromoform	ND	1.0	200	06/21/2017 15:33
Bromomethane	ND	1.0	200	06/21/2017 15:33
2-Butanone (MEK)	ND	4.0	200	06/21/2017 15:33
t-Butyl alcohol (TBA)	ND	10	200	06/21/2017 15:33
n-Butyl benzene	1.6	1.0	200	06/21/2017 15:33
sec-Butyl benzene	ND	1.0	200	06/21/2017 15:33
tert-Butyl benzene	ND	1.0	200	06/21/2017 15:33
Carbon Disulfide	ND	1.0	200	06/21/2017 15:33
Carbon Tetrachloride	ND	1.0	200	06/21/2017 15:33
Chlorobenzene	ND	1.0	200	06/21/2017 15:33
Chloroethane	ND	1.0	200	06/21/2017 15:33
Chloroform	ND	1.0	200	06/21/2017 15:33
Chloromethane	ND	1.0	200	06/21/2017 15:33
2-Chlorotoluene	ND	1.0	200	06/21/2017 15:33
4-Chlorotoluene	ND	1.0	200	06/21/2017 15:33
Dibromochloromethane	ND	1.0	200	06/21/2017 15:33
1,2-Dibromo-3-chloropropane	ND	0.80	200	06/21/2017 15:33
1,2-Dibromoethane (EDB)	ND	0.80	200	06/21/2017 15:33
Dibromomethane	ND	1.0	200	06/21/2017 15:33
1,2-Dichlorobenzene	ND	1.0	200	06/21/2017 15:33
1,3-Dichlorobenzene	ND	1.0	200	06/21/2017 15:33
1,4-Dichlorobenzene	ND	1.0	200	06/21/2017 15:33
Dichlorodifluoromethane	ND	1.0	200	06/21/2017 15:33
1,1-Dichloroethane	ND	1.0	200	06/21/2017 15:33
1,2-Dichloroethane (1,2-DCA)	ND	0.80	200	06/21/2017 15:33
1,1-Dichloroethene	ND	1.0	200	06/21/2017 15:33
cis-1,2-Dichloroethene	ND	1.0	200	06/21/2017 15:33
trans-1,2-Dichloroethene	ND	1.0	200	06/21/2017 15:33
1,2-Dichloropropane	ND	1.0	200	06/21/2017 15:33
1,3-Dichloropropane	ND	1.0	200	06/21/2017 15:33
2,2-Dichloropropane	ND	1.0	200	06/21/2017 15:33

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# Analytical Report

**Client:** Langan  
**Date Received:** 6/20/17 12:30  
**Date Prepared:** 6/20/17  
**Project:** 770641901; 600 South 1st Street

**WorkOrder:** 1706947  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** mg/kg

## Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-3-26.0	1706947-025A	Soil	06/17/2017 10:27	GC10	140735

Analytes	Result	RL	DF	Date Analyzed
1,1-Dichloropropene	ND	1.0	200	06/21/2017 15:33
cis-1,3-Dichloropropene	ND	1.0	200	06/21/2017 15:33
trans-1,3-Dichloropropene	ND	1.0	200	06/21/2017 15:33
Diisopropyl ether (DIPE)	ND	1.0	200	06/21/2017 15:33
Ethylbenzene	6.2	1.0	200	06/21/2017 15:33
Ethyl tert-butyl ether (ETBE)	ND	1.0	200	06/21/2017 15:33
Freon 113	ND	1.0	200	06/21/2017 15:33
Hexachlorobutadiene	ND	1.0	200	06/21/2017 15:33
Hexachloroethane	ND	1.0	200	06/21/2017 15:33
2-Hexanone	ND	1.0	200	06/21/2017 15:33
Isopropylbenzene	ND	1.0	200	06/21/2017 15:33
4-Isopropyl toluene	ND	1.0	200	06/21/2017 15:33
Methyl-t-butyl ether (MTBE)	ND	1.0	200	06/21/2017 15:33
Methylene chloride	ND	1.0	200	06/21/2017 15:33
4-Methyl-2-pentanone (MIBK)	ND	1.0	200	06/21/2017 15:33
Naphthalene	1.9	1.0	200	06/21/2017 15:33
n-Propyl benzene	2.8	1.0	200	06/21/2017 15:33
Styrene	ND	1.0	200	06/21/2017 15:33
1,1,1,2-Tetrachloroethane	ND	1.0	200	06/21/2017 15:33
1,1,2,2-Tetrachloroethane	ND	1.0	200	06/21/2017 15:33
Tetrachloroethene	ND	1.0	200	06/21/2017 15:33
Toluene	9.7	1.0	200	06/21/2017 15:33
1,2,3-Trichlorobenzene	ND	1.0	200	06/21/2017 15:33
1,2,4-Trichlorobenzene	ND	1.0	200	06/21/2017 15:33
1,1,1-Trichloroethane	ND	1.0	200	06/21/2017 15:33
1,1,2-Trichloroethane	ND	1.0	200	06/21/2017 15:33
Trichloroethene	ND	1.0	200	06/21/2017 15:33
Trichlorofluoromethane	ND	1.0	200	06/21/2017 15:33
1,2,3-Trichloropropane	ND	1.0	200	06/21/2017 15:33
1,2,4-Trimethylbenzene	14	1.0	200	06/21/2017 15:33
1,3,5-Trimethylbenzene	4.0	1.0	200	06/21/2017 15:33
Vinyl Chloride	ND	1.0	200	06/21/2017 15:33
Xylenes, Total	17	1.0	200	06/21/2017 15:33

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## Analytical Report

**Client:** Langan  
**Date Received:** 6/20/17 12:30  
**Date Prepared:** 6/20/17  
**Project:** 770641901; 600 South 1st Street

**WorkOrder:** 1706947  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** mg/kg

### Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-3-26.0	1706947-025A	Soil	06/17/2017 10:27	GC10	140735

Analytes	Result		RL	DF	Date Analyzed
<u>Surrogates</u>	<u>REC (%)</u>	<u>Qualifiers</u>	<u>Limits</u>		
Dibromofluoromethane	120		70-130		06/21/2017 15:33
Toluene-d8	115		70-130		06/21/2017 15:33
4-BFB	110		70-130		06/21/2017 15:33
Benzene-d6	80		60-140		06/21/2017 15:33
Ethylbenzene-d10	0	S	60-140		06/21/2017 15:33
1,2-DCB-d4	271	S	60-140		06/21/2017 15:33

**Analyst(s):** JEM

**Analytical Comments:** c7



# Analytical Report

**Client:** Langan  
**Date Received:** 6/20/17 12:30  
**Date Prepared:** 6/20/17  
**Project:** 770641901; 600 South 1st Street

**WorkOrder:** 1706947  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** mg/kg

## Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-4-5.0	1706947-030A	Soil	06/17/2017 13:37	GC10	140735

Analytes	Result	RL	DF	Date Analyzed
Acetone	ND	0.10	1	06/23/2017 02:51
tert-Amyl methyl ether (TAME)	ND	0.0050	1	06/23/2017 02:51
Benzene	ND	0.0050	1	06/23/2017 02:51
Bromobenzene	ND	0.0050	1	06/23/2017 02:51
Bromochloromethane	ND	0.0050	1	06/23/2017 02:51
Bromodichloromethane	ND	0.0050	1	06/23/2017 02:51
Bromoform	ND	0.0050	1	06/23/2017 02:51
Bromomethane	ND	0.0050	1	06/23/2017 02:51
2-Butanone (MEK)	ND	0.020	1	06/23/2017 02:51
t-Butyl alcohol (TBA)	ND	0.050	1	06/23/2017 02:51
n-Butyl benzene	ND	0.0050	1	06/23/2017 02:51
sec-Butyl benzene	ND	0.0050	1	06/23/2017 02:51
tert-Butyl benzene	ND	0.0050	1	06/23/2017 02:51
Carbon Disulfide	ND	0.0050	1	06/23/2017 02:51
Carbon Tetrachloride	ND	0.0050	1	06/23/2017 02:51
Chlorobenzene	ND	0.0050	1	06/23/2017 02:51
Chloroethane	ND	0.0050	1	06/23/2017 02:51
Chloroform	ND	0.0050	1	06/23/2017 02:51
Chloromethane	ND	0.0050	1	06/23/2017 02:51
2-Chlorotoluene	ND	0.0050	1	06/23/2017 02:51
4-Chlorotoluene	ND	0.0050	1	06/23/2017 02:51
Dibromochloromethane	ND	0.0050	1	06/23/2017 02:51
1,2-Dibromo-3-chloropropane	ND	0.0040	1	06/23/2017 02:51
1,2-Dibromoethane (EDB)	ND	0.0040	1	06/23/2017 02:51
Dibromomethane	ND	0.0050	1	06/23/2017 02:51
1,2-Dichlorobenzene	ND	0.0050	1	06/23/2017 02:51
1,3-Dichlorobenzene	ND	0.0050	1	06/23/2017 02:51
1,4-Dichlorobenzene	ND	0.0050	1	06/23/2017 02:51
Dichlorodifluoromethane	ND	0.0050	1	06/23/2017 02:51
1,1-Dichloroethane	ND	0.0050	1	06/23/2017 02:51
1,2-Dichloroethane (1,2-DCA)	ND	0.0040	1	06/23/2017 02:51
1,1-Dichloroethene	ND	0.0050	1	06/23/2017 02:51
cis-1,2-Dichloroethene	ND	0.0050	1	06/23/2017 02:51
trans-1,2-Dichloroethene	ND	0.0050	1	06/23/2017 02:51
1,2-Dichloropropane	ND	0.0050	1	06/23/2017 02:51
1,3-Dichloropropane	ND	0.0050	1	06/23/2017 02:51
2,2-Dichloropropane	ND	0.0050	1	06/23/2017 02:51

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## Analytical Report

**Client:** Langan  
**Date Received:** 6/20/17 12:30  
**Date Prepared:** 6/20/17  
**Project:** 770641901; 600 South 1st Street

**WorkOrder:** 1706947  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** mg/kg

### Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-4-5.0	1706947-030A	Soil	06/17/2017 13:37	GC10	140735

Analytes	Result	RL	DF	Date Analyzed
1,1-Dichloropropene	ND	0.0050	1	06/23/2017 02:51
cis-1,3-Dichloropropene	ND	0.0050	1	06/23/2017 02:51
trans-1,3-Dichloropropene	ND	0.0050	1	06/23/2017 02:51
Diisopropyl ether (DIPE)	ND	0.0050	1	06/23/2017 02:51
Ethylbenzene	ND	0.0050	1	06/23/2017 02:51
Ethyl tert-butyl ether (ETBE)	ND	0.0050	1	06/23/2017 02:51
Freon 113	ND	0.0050	1	06/23/2017 02:51
Hexachlorobutadiene	ND	0.0050	1	06/23/2017 02:51
Hexachloroethane	ND	0.0050	1	06/23/2017 02:51
2-Hexanone	ND	0.0050	1	06/23/2017 02:51
Isopropylbenzene	ND	0.0050	1	06/23/2017 02:51
4-Isopropyl toluene	ND	0.0050	1	06/23/2017 02:51
Methyl-t-butyl ether (MTBE)	ND	0.0050	1	06/23/2017 02:51
Methylene chloride	ND	0.0050	1	06/23/2017 02:51
4-Methyl-2-pentanone (MIBK)	ND	0.0050	1	06/23/2017 02:51
Naphthalene	ND	0.0050	1	06/23/2017 02:51
n-Propyl benzene	ND	0.0050	1	06/23/2017 02:51
Styrene	ND	0.0050	1	06/23/2017 02:51
1,1,1,2-Tetrachloroethane	ND	0.0050	1	06/23/2017 02:51
1,1,2,2-Tetrachloroethane	ND	0.0050	1	06/23/2017 02:51
Tetrachloroethene	ND	0.0050	1	06/23/2017 02:51
Toluene	ND	0.0050	1	06/23/2017 02:51
1,2,3-Trichlorobenzene	ND	0.0050	1	06/23/2017 02:51
1,2,4-Trichlorobenzene	ND	0.0050	1	06/23/2017 02:51
1,1,1-Trichloroethane	ND	0.0050	1	06/23/2017 02:51
1,1,2-Trichloroethane	ND	0.0050	1	06/23/2017 02:51
Trichloroethene	ND	0.0050	1	06/23/2017 02:51
Trichlorofluoromethane	ND	0.0050	1	06/23/2017 02:51
1,2,3-Trichloropropane	ND	0.0050	1	06/23/2017 02:51
1,2,4-Trimethylbenzene	ND	0.0050	1	06/23/2017 02:51
1,3,5-Trimethylbenzene	ND	0.0050	1	06/23/2017 02:51
Vinyl Chloride	ND	0.0050	1	06/23/2017 02:51
Xylenes, Total	ND	0.0050	1	06/23/2017 02:51

(Cont.)



# Analytical Report

**Client:** Langan  
**Date Received:** 6/20/17 12:30  
**Date Prepared:** 6/20/17  
**Project:** 770641901; 600 South 1st Street

**WorkOrder:** 1706947  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** mg/kg

## Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-4-5.0	1706947-030A	Soil	06/17/2017 13:37	GC10	140735

Analytes	Result	RL	DF	Date Analyzed
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>	
Dibromofluoromethane	115		70-130	06/23/2017 02:51
Toluene-d8	129		70-130	06/23/2017 02:51
4-BFB	100		70-130	06/23/2017 02:51
Benzene-d6	94		60-140	06/23/2017 02:51
Ethylbenzene-d10	110		60-140	06/23/2017 02:51
1,2-DCB-d4	77		60-140	06/23/2017 02:51

Analyst(s): KF





# Analytical Report

**Client:** Langan  
**Date Received:** 6/20/17 12:30  
**Date Prepared:** 6/20/17  
**Project:** 770641901; 600 South 1st Street

**WorkOrder:** 1706947  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** mg/kg

## Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-4-35.0	1706947-037A	Soil	06/17/2017 14:15	GC10	140735

Analytes	Result	RL	DF	Date Analyzed
Acetone	ND	0.10	1	06/21/2017 16:13
tert-Amyl methyl ether (TAME)	ND	0.0050	1	06/21/2017 16:13
Benzene	ND	0.0050	1	06/21/2017 16:13
Bromobenzene	ND	0.0050	1	06/21/2017 16:13
Bromochloromethane	ND	0.0050	1	06/21/2017 16:13
Bromodichloromethane	ND	0.0050	1	06/21/2017 16:13
Bromoform	ND	0.0050	1	06/21/2017 16:13
Bromomethane	ND	0.0050	1	06/21/2017 16:13
2-Butanone (MEK)	ND	0.020	1	06/21/2017 16:13
t-Butyl alcohol (TBA)	ND	0.050	1	06/21/2017 16:13
n-Butyl benzene	0.0051	0.0050	1	06/21/2017 16:13
sec-Butyl benzene	ND	0.0050	1	06/21/2017 16:13
tert-Butyl benzene	ND	0.0050	1	06/21/2017 16:13
Carbon Disulfide	ND	0.0050	1	06/21/2017 16:13
Carbon Tetrachloride	ND	0.0050	1	06/21/2017 16:13
Chlorobenzene	ND	0.0050	1	06/21/2017 16:13
Chloroethane	ND	0.0050	1	06/21/2017 16:13
Chloroform	ND	0.0050	1	06/21/2017 16:13
Chloromethane	ND	0.0050	1	06/21/2017 16:13
2-Chlorotoluene	ND	0.0050	1	06/21/2017 16:13
4-Chlorotoluene	ND	0.0050	1	06/21/2017 16:13
Dibromochloromethane	ND	0.0050	1	06/21/2017 16:13
1,2-Dibromo-3-chloropropane	ND	0.0040	1	06/21/2017 16:13
1,2-Dibromoethane (EDB)	ND	0.0040	1	06/21/2017 16:13
Dibromomethane	ND	0.0050	1	06/21/2017 16:13
1,2-Dichlorobenzene	ND	0.0050	1	06/21/2017 16:13
1,3-Dichlorobenzene	ND	0.0050	1	06/21/2017 16:13
1,4-Dichlorobenzene	ND	0.0050	1	06/21/2017 16:13
Dichlorodifluoromethane	ND	0.0050	1	06/21/2017 16:13
1,1-Dichloroethane	ND	0.0050	1	06/21/2017 16:13
1,2-Dichloroethane (1,2-DCA)	ND	0.0040	1	06/21/2017 16:13
1,1-Dichloroethene	ND	0.0050	1	06/21/2017 16:13
cis-1,2-Dichloroethene	ND	0.0050	1	06/21/2017 16:13
trans-1,2-Dichloroethene	ND	0.0050	1	06/21/2017 16:13
1,2-Dichloropropane	ND	0.0050	1	06/21/2017 16:13
1,3-Dichloropropane	ND	0.0050	1	06/21/2017 16:13
2,2-Dichloropropane	ND	0.0050	1	06/21/2017 16:13

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# Analytical Report

**Client:** Langan  
**Date Received:** 6/20/17 12:30  
**Date Prepared:** 6/20/17  
**Project:** 770641901; 600 South 1st Street

**WorkOrder:** 1706947  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** mg/kg

## Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-4-35.0	1706947-037A	Soil	06/17/2017 14:15	GC10	140735

Analytes	Result	RL	DF	Date Analyzed
1,1-Dichloropropene	ND	0.0050	1	06/21/2017 16:13
cis-1,3-Dichloropropene	ND	0.0050	1	06/21/2017 16:13
trans-1,3-Dichloropropene	ND	0.0050	1	06/21/2017 16:13
Diisopropyl ether (DIPE)	ND	0.0050	1	06/21/2017 16:13
Ethylbenzene	<b>0.017</b>	0.0050	1	06/21/2017 16:13
Ethyl tert-butyl ether (ETBE)	ND	0.0050	1	06/21/2017 16:13
Freon 113	ND	0.0050	1	06/21/2017 16:13
Hexachlorobutadiene	ND	0.0050	1	06/21/2017 16:13
Hexachloroethane	ND	0.0050	1	06/21/2017 16:13
2-Hexanone	ND	0.0050	1	06/21/2017 16:13
Isopropylbenzene	ND	0.0050	1	06/21/2017 16:13
4-Isopropyl toluene	ND	0.0050	1	06/21/2017 16:13
Methyl-t-butyl ether (MTBE)	ND	0.0050	1	06/21/2017 16:13
Methylene chloride	ND	0.0050	1	06/21/2017 16:13
4-Methyl-2-pentanone (MIBK)	ND	0.0050	1	06/21/2017 16:13
Naphthalene	<b>0.0053</b>	0.0050	1	06/21/2017 16:13
n-Propyl benzene	<b>0.0072</b>	0.0050	1	06/21/2017 16:13
Styrene	ND	0.0050	1	06/21/2017 16:13
1,1,1,2-Tetrachloroethane	ND	0.0050	1	06/21/2017 16:13
1,1,2,2-Tetrachloroethane	ND	0.0050	1	06/21/2017 16:13
Tetrachloroethene	ND	0.0050	1	06/21/2017 16:13
Toluene	<b>0.024</b>	0.0050	1	06/21/2017 16:13
1,2,3-Trichlorobenzene	ND	0.0050	1	06/21/2017 16:13
1,2,4-Trichlorobenzene	ND	0.0050	1	06/21/2017 16:13
1,1,1-Trichloroethane	ND	0.0050	1	06/21/2017 16:13
1,1,2-Trichloroethane	ND	0.0050	1	06/21/2017 16:13
Trichloroethene	ND	0.0050	1	06/21/2017 16:13
Trichlorofluoromethane	ND	0.0050	1	06/21/2017 16:13
1,2,3-Trichloropropane	ND	0.0050	1	06/21/2017 16:13
1,2,4-Trimethylbenzene	<b>0.041</b>	0.0050	1	06/21/2017 16:13
1,3,5-Trimethylbenzene	<b>0.012</b>	0.0050	1	06/21/2017 16:13
Vinyl Chloride	ND	0.0050	1	06/21/2017 16:13
Xylenes, Total	<b>0.053</b>	0.0050	1	06/21/2017 16:13

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# Analytical Report

**Client:** Langan  
**Date Received:** 6/20/17 12:30  
**Date Prepared:** 6/20/17  
**Project:** 770641901; 600 South 1st Street

**WorkOrder:** 1706947  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** mg/kg

## Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-4-35.0	1706947-037A	Soil	06/17/2017 14:15	GC10	140735

Analytes	Result	RL	DF	Date Analyzed
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>	
Dibromofluoromethane	120		70-130	06/21/2017 16:13
Toluene-d8	124		70-130	06/21/2017 16:13
4-BFB	106		70-130	06/21/2017 16:13
Benzene-d6	84		60-140	06/21/2017 16:13
Ethylbenzene-d10	92		60-140	06/21/2017 16:13
1,2-DCB-d4	71		60-140	06/21/2017 16:13

Analyst(s): JEM



# Analytical Report

**Client:** Langan  
**Date Received:** 6/20/17 12:30  
**Date Prepared:** 6/20/17  
**Project:** 770641901; 600 South 1st Street

**WorkOrder:** 1706947  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** mg/kg

## Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-6-10.0	1706947-056A	Soil	06/17/2017 09:18	GC10	140735

Analytes	Result	RL	DF	Date Analyzed
Acetone	ND	0.10	1	06/23/2017 03:30
tert-Amyl methyl ether (TAME)	ND	0.0050	1	06/23/2017 03:30
Benzene	ND	0.0050	1	06/23/2017 03:30
Bromobenzene	ND	0.0050	1	06/23/2017 03:30
Bromochloromethane	ND	0.0050	1	06/23/2017 03:30
Bromodichloromethane	ND	0.0050	1	06/23/2017 03:30
Bromoform	ND	0.0050	1	06/23/2017 03:30
Bromomethane	ND	0.0050	1	06/23/2017 03:30
2-Butanone (MEK)	ND	0.020	1	06/23/2017 03:30
t-Butyl alcohol (TBA)	ND	0.050	1	06/23/2017 03:30
n-Butyl benzene	ND	0.0050	1	06/23/2017 03:30
sec-Butyl benzene	ND	0.0050	1	06/23/2017 03:30
tert-Butyl benzene	ND	0.0050	1	06/23/2017 03:30
Carbon Disulfide	ND	0.0050	1	06/23/2017 03:30
Carbon Tetrachloride	ND	0.0050	1	06/23/2017 03:30
Chlorobenzene	ND	0.0050	1	06/23/2017 03:30
Chloroethane	ND	0.0050	1	06/23/2017 03:30
Chloroform	ND	0.0050	1	06/23/2017 03:30
Chloromethane	ND	0.0050	1	06/23/2017 03:30
2-Chlorotoluene	ND	0.0050	1	06/23/2017 03:30
4-Chlorotoluene	ND	0.0050	1	06/23/2017 03:30
Dibromochloromethane	ND	0.0050	1	06/23/2017 03:30
1,2-Dibromo-3-chloropropane	ND	0.0040	1	06/23/2017 03:30
1,2-Dibromoethane (EDB)	ND	0.0040	1	06/23/2017 03:30
Dibromomethane	ND	0.0050	1	06/23/2017 03:30
1,2-Dichlorobenzene	ND	0.0050	1	06/23/2017 03:30
1,3-Dichlorobenzene	ND	0.0050	1	06/23/2017 03:30
1,4-Dichlorobenzene	ND	0.0050	1	06/23/2017 03:30
Dichlorodifluoromethane	ND	0.0050	1	06/23/2017 03:30
1,1-Dichloroethane	ND	0.0050	1	06/23/2017 03:30
1,2-Dichloroethane (1,2-DCA)	ND	0.0040	1	06/23/2017 03:30
1,1-Dichloroethene	ND	0.0050	1	06/23/2017 03:30
cis-1,2-Dichloroethene	ND	0.0050	1	06/23/2017 03:30
trans-1,2-Dichloroethene	ND	0.0050	1	06/23/2017 03:30
1,2-Dichloropropane	ND	0.0050	1	06/23/2017 03:30
1,3-Dichloropropane	ND	0.0050	1	06/23/2017 03:30
2,2-Dichloropropane	ND	0.0050	1	06/23/2017 03:30

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# Analytical Report

**Client:** Langan  
**Date Received:** 6/20/17 12:30  
**Date Prepared:** 6/20/17  
**Project:** 770641901; 600 South 1st Street

**WorkOrder:** 1706947  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** mg/kg

## Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-6-10.0	1706947-056A	Soil	06/17/2017 09:18	GC10	140735

Analytes	Result	RL	DF	Date Analyzed
1,1-Dichloropropene	ND	0.0050	1	06/23/2017 03:30
cis-1,3-Dichloropropene	ND	0.0050	1	06/23/2017 03:30
trans-1,3-Dichloropropene	ND	0.0050	1	06/23/2017 03:30
Diisopropyl ether (DIPE)	ND	0.0050	1	06/23/2017 03:30
Ethylbenzene	ND	0.0050	1	06/23/2017 03:30
Ethyl tert-butyl ether (ETBE)	ND	0.0050	1	06/23/2017 03:30
Freon 113	ND	0.0050	1	06/23/2017 03:30
Hexachlorobutadiene	ND	0.0050	1	06/23/2017 03:30
Hexachloroethane	ND	0.0050	1	06/23/2017 03:30
2-Hexanone	ND	0.0050	1	06/23/2017 03:30
Isopropylbenzene	ND	0.0050	1	06/23/2017 03:30
4-Isopropyl toluene	ND	0.0050	1	06/23/2017 03:30
Methyl-t-butyl ether (MTBE)	ND	0.0050	1	06/23/2017 03:30
Methylene chloride	ND	0.0050	1	06/23/2017 03:30
4-Methyl-2-pentanone (MIBK)	ND	0.0050	1	06/23/2017 03:30
Naphthalene	ND	0.0050	1	06/23/2017 03:30
n-Propyl benzene	ND	0.0050	1	06/23/2017 03:30
Styrene	ND	0.0050	1	06/23/2017 03:30
1,1,1,2-Tetrachloroethane	ND	0.0050	1	06/23/2017 03:30
1,1,2,2-Tetrachloroethane	ND	0.0050	1	06/23/2017 03:30
Tetrachloroethene	ND	0.0050	1	06/23/2017 03:30
Toluene	ND	0.0050	1	06/23/2017 03:30
1,2,3-Trichlorobenzene	ND	0.0050	1	06/23/2017 03:30
1,2,4-Trichlorobenzene	ND	0.0050	1	06/23/2017 03:30
1,1,1-Trichloroethane	ND	0.0050	1	06/23/2017 03:30
1,1,2-Trichloroethane	ND	0.0050	1	06/23/2017 03:30
Trichloroethene	ND	0.0050	1	06/23/2017 03:30
Trichlorofluoromethane	ND	0.0050	1	06/23/2017 03:30
1,2,3-Trichloropropane	ND	0.0050	1	06/23/2017 03:30
1,2,4-Trimethylbenzene	ND	0.0050	1	06/23/2017 03:30
1,3,5-Trimethylbenzene	ND	0.0050	1	06/23/2017 03:30
Vinyl Chloride	ND	0.0050	1	06/23/2017 03:30
Xylenes, Total	ND	0.0050	1	06/23/2017 03:30

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# Analytical Report

**Client:** Langan  
**Date Received:** 6/20/17 12:30  
**Date Prepared:** 6/20/17  
**Project:** 770641901; 600 South 1st Street

**WorkOrder:** 1706947  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** mg/kg

## Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-6-10.0	1706947-056A	Soil	06/17/2017 09:18	GC10	140735

Analytes	Result	RL	DF	Date Analyzed
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>	
Dibromofluoromethane	116	70-130		06/23/2017 03:30
Toluene-d8	128	70-130		06/23/2017 03:30
4-BFB	96	70-130		06/23/2017 03:30
Benzene-d6	86	60-140		06/23/2017 03:30
Ethylbenzene-d10	97	60-140		06/23/2017 03:30
1,2-DCB-d4	72	60-140		06/23/2017 03:30

Analyst(s): KF



# Analytical Report

**Client:** Langan  
**Date Received:** 6/20/17 12:30  
**Date Prepared:** 6/22/17  
**Project:** 770641901; 600 South 1st Street

**WorkOrder:** 1706947  
**Extraction Method:** SW3550B  
**Analytical Method:** SW8270C  
**Unit:** mg/Kg

## Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-1-1.5	1706947-001A	Soil	06/17/2017 11:27	GC21	140851

Analytes	Result	RL	DF	Date Analyzed
Acenaphthene	ND	0.50	2	06/22/2017 13:41
Acenaphthylene	ND	0.50	2	06/22/2017 13:41
Acetochlor	ND	0.50	2	06/22/2017 13:41
Anthracene	ND	0.50	2	06/22/2017 13:41
Benzidine	ND	2.6	2	06/22/2017 13:41
Benzo (a) anthracene	ND	0.50	2	06/22/2017 13:41
Benzo (a) pyrene	ND	0.50	2	06/22/2017 13:41
Benzo (b) fluoranthene	ND	0.50	2	06/22/2017 13:41
Benzo (g,h,i) perylene	ND	0.50	2	06/22/2017 13:41
Benzo (k) fluoranthene	ND	0.50	2	06/22/2017 13:41
Benzyl Alcohol	ND	2.6	2	06/22/2017 13:41
1,1-Biphenyl	ND	0.50	2	06/22/2017 13:41
Bis (2-chloroethoxy) Methane	ND	0.50	2	06/22/2017 13:41
Bis (2-chloroethyl) Ether	ND	0.50	2	06/22/2017 13:41
Bis (2-chloroisopropyl) Ether	ND	0.50	2	06/22/2017 13:41
Bis (2-ethylhexyl) Adipate	ND	0.50	2	06/22/2017 13:41
Bis (2-ethylhexyl) Phthalate	ND	0.50	2	06/22/2017 13:41
4-Bromophenyl Phenyl Ether	ND	0.50	2	06/22/2017 13:41
Butylbenzyl Phthalate	ND	0.50	2	06/22/2017 13:41
4-Chloroaniline	ND	1.0	2	06/22/2017 13:41
4-Chloro-3-methylphenol	ND	0.50	2	06/22/2017 13:41
2-Chloronaphthalene	ND	0.50	2	06/22/2017 13:41
2-Chlorophenol	ND	0.50	2	06/22/2017 13:41
4-Chlorophenyl Phenyl Ether	ND	0.50	2	06/22/2017 13:41
Chrysene	ND	0.50	2	06/22/2017 13:41
Dibenzo (a,h) anthracene	ND	0.50	2	06/22/2017 13:41
Dibenzofuran	ND	0.50	2	06/22/2017 13:41
Di-n-butyl Phthalate	ND	0.50	2	06/22/2017 13:41
1,2-Dichlorobenzene	ND	0.50	2	06/22/2017 13:41
1,3-Dichlorobenzene	ND	0.50	2	06/22/2017 13:41
1,4-Dichlorobenzene	ND	0.50	2	06/22/2017 13:41
3,3-Dichlorobenzidine	ND	1.0	2	06/22/2017 13:41
2,4-Dichlorophenol	ND	0.50	2	06/22/2017 13:41
Diethyl Phthalate	ND	0.50	2	06/22/2017 13:41
2,4-Dimethylphenol	ND	0.50	2	06/22/2017 13:41
Dimethyl Phthalate	ND	0.50	2	06/22/2017 13:41
4,6-Dinitro-2-methylphenol	ND	2.6	2	06/22/2017 13:41

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# Analytical Report

**Client:** Langan  
**Date Received:** 6/20/17 12:30  
**Date Prepared:** 6/22/17  
**Project:** 770641901; 600 South 1st Street

**WorkOrder:** 1706947  
**Extraction Method:** SW3550B  
**Analytical Method:** SW8270C  
**Unit:** mg/Kg

## Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-1-1.5	1706947-001A	Soil	06/17/2017 11:27	GC21	140851

Analytes	Result	RL	DF	Date Analyzed
2,4-Dinitrophenol	ND	13	2	06/22/2017 13:41
2,4-Dinitrotoluene	ND	0.50	2	06/22/2017 13:41
2,6-Dinitrotoluene	ND	0.50	2	06/22/2017 13:41
Di-n-octyl Phthalate	ND	1.0	2	06/22/2017 13:41
1,2-Diphenylhydrazine	ND	0.50	2	06/22/2017 13:41
Fluoranthene	ND	0.50	2	06/22/2017 13:41
Fluorene	ND	0.50	2	06/22/2017 13:41
Hexachlorobenzene	ND	0.50	2	06/22/2017 13:41
Hexachlorobutadiene	ND	0.50	2	06/22/2017 13:41
Hexachlorocyclopentadiene	ND	2.6	2	06/22/2017 13:41
Hexachloroethane	ND	0.50	2	06/22/2017 13:41
Indeno (1,2,3-cd) pyrene	ND	0.50	2	06/22/2017 13:41
Isophorone	ND	0.50	2	06/22/2017 13:41
2-Methylnaphthalene	ND	0.50	2	06/22/2017 13:41
2-Methylphenol (o-Cresol)	ND	0.50	2	06/22/2017 13:41
3 & 4-Methylphenol (m,p-Cresol)	ND	0.50	2	06/22/2017 13:41
Naphthalene	ND	0.50	2	06/22/2017 13:41
2-Nitroaniline	ND	2.6	2	06/22/2017 13:41
3-Nitroaniline	ND	2.6	2	06/22/2017 13:41
4-Nitroaniline	ND	2.6	2	06/22/2017 13:41
Nitrobenzene	ND	0.50	2	06/22/2017 13:41
2-Nitrophenol	ND	2.6	2	06/22/2017 13:41
4-Nitrophenol	ND	2.6	2	06/22/2017 13:41
N-Nitrosodiphenylamine	ND	0.50	2	06/22/2017 13:41
N-Nitrosodi-n-propylamine	ND	0.50	2	06/22/2017 13:41
Pentachlorophenol	ND	2.6	2	06/22/2017 13:41
Phenanthrene	ND	0.50	2	06/22/2017 13:41
Phenol	ND	0.50	2	06/22/2017 13:41
Pyrene	ND	0.50	2	06/22/2017 13:41
Pyridine	ND	0.50	2	06/22/2017 13:41
1,2,4-Trichlorobenzene	ND	0.50	2	06/22/2017 13:41
2,4,5-Trichlorophenol	ND	0.50	2	06/22/2017 13:41
2,4,6-Trichlorophenol	ND	0.50	2	06/22/2017 13:41

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NELAP 4033ORELAP

 Angela Rydelius, Lab Manager





# Analytical Report

**Client:** Langan  
**Date Received:** 6/20/17 12:30  
**Date Prepared:** 6/22/17  
**Project:** 770641901; 600 South 1st Street

**WorkOrder:** 1706947  
**Extraction Method:** SW3550B  
**Analytical Method:** SW8270C  
**Unit:** mg/Kg

## Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-1-1.5	1706947-001A	Soil	06/17/2017 11:27	GC21	140851

Analytes	Result	RL	DF	Date Analyzed
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>	
2-Fluorophenol	106		30-130	06/22/2017 13:41
Phenol-d5	101		30-130	06/22/2017 13:41
Nitrobenzene-d5	89		30-130	06/22/2017 13:41
2-Fluorobiphenyl	86		30-130	06/22/2017 13:41
2,4,6-Tribromophenol	72		16-130	06/22/2017 13:41
4-Terphenyl-d14	90		30-130	06/22/2017 13:41

Analyst(s): REB

Analytical Comments: a3



# Analytical Report

**Client:** Langan  
**Date Received:** 6/20/17 12:30  
**Date Prepared:** 6/22/17  
**Project:** 770641901; 600 South 1st Street

**WorkOrder:** 1706947  
**Extraction Method:** SW3550B  
**Analytical Method:** SW8270C  
**Unit:** mg/Kg

## Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-1-5.0	1706947-003A	Soil	06/17/2017 11:33	GC21	140851

Analytes	Result	RL	DF	Date Analyzed
Acenaphthene	ND	0.25	1	06/22/2017 14:10
Acenaphthylene	ND	0.25	1	06/22/2017 14:10
Acetochlor	ND	0.25	1	06/22/2017 14:10
Anthracene	ND	0.25	1	06/22/2017 14:10
Benzidine	ND	1.3	1	06/22/2017 14:10
Benzo (a) anthracene	ND	0.25	1	06/22/2017 14:10
Benzo (a) pyrene	ND	0.25	1	06/22/2017 14:10
Benzo (b) fluoranthene	ND	0.25	1	06/22/2017 14:10
Benzo (g,h,i) perylene	ND	0.25	1	06/22/2017 14:10
Benzo (k) fluoranthene	ND	0.25	1	06/22/2017 14:10
Benzyl Alcohol	ND	1.3	1	06/22/2017 14:10
1,1-Biphenyl	ND	0.25	1	06/22/2017 14:10
Bis (2-chloroethoxy) Methane	ND	0.25	1	06/22/2017 14:10
Bis (2-chloroethyl) Ether	ND	0.25	1	06/22/2017 14:10
Bis (2-chloroisopropyl) Ether	ND	0.25	1	06/22/2017 14:10
Bis (2-ethylhexyl) Adipate	ND	0.25	1	06/22/2017 14:10
Bis (2-ethylhexyl) Phthalate	ND	0.25	1	06/22/2017 14:10
4-Bromophenyl Phenyl Ether	ND	0.25	1	06/22/2017 14:10
Butylbenzyl Phthalate	ND	0.25	1	06/22/2017 14:10
4-Chloroaniline	ND	0.50	1	06/22/2017 14:10
4-Chloro-3-methylphenol	ND	0.25	1	06/22/2017 14:10
2-Chloronaphthalene	ND	0.25	1	06/22/2017 14:10
2-Chlorophenol	ND	0.25	1	06/22/2017 14:10
4-Chlorophenyl Phenyl Ether	ND	0.25	1	06/22/2017 14:10
Chrysene	ND	0.25	1	06/22/2017 14:10
Dibenzo (a,h) anthracene	ND	0.25	1	06/22/2017 14:10
Dibenzofuran	ND	0.25	1	06/22/2017 14:10
Di-n-butyl Phthalate	ND	0.25	1	06/22/2017 14:10
1,2-Dichlorobenzene	ND	0.25	1	06/22/2017 14:10
1,3-Dichlorobenzene	ND	0.25	1	06/22/2017 14:10
1,4-Dichlorobenzene	ND	0.25	1	06/22/2017 14:10
3,3-Dichlorobenzidine	ND	0.50	1	06/22/2017 14:10
2,4-Dichlorophenol	ND	0.25	1	06/22/2017 14:10
Diethyl Phthalate	ND	0.25	1	06/22/2017 14:10
2,4-Dimethylphenol	ND	0.25	1	06/22/2017 14:10
Dimethyl Phthalate	ND	0.25	1	06/22/2017 14:10
4,6-Dinitro-2-methylphenol	ND	1.3	1	06/22/2017 14:10

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NELAP 4033ORELAP

 Angela Rydelius, Lab Manager



# Analytical Report

**Client:** Langan  
**Date Received:** 6/20/17 12:30  
**Date Prepared:** 6/22/17  
**Project:** 770641901; 600 South 1st Street

**WorkOrder:** 1706947  
**Extraction Method:** SW3550B  
**Analytical Method:** SW8270C  
**Unit:** mg/Kg

## Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-1-5.0	1706947-003A	Soil	06/17/2017 11:33	GC21	140851

Analytes	Result	RL	DF	Date Analyzed
2,4-Dinitrophenol	ND	6.3	1	06/22/2017 14:10
2,4-Dinitrotoluene	ND	0.25	1	06/22/2017 14:10
2,6-Dinitrotoluene	ND	0.25	1	06/22/2017 14:10
Di-n-octyl Phthalate	ND	0.50	1	06/22/2017 14:10
1,2-Diphenylhydrazine	ND	0.25	1	06/22/2017 14:10
Fluoranthene	ND	0.25	1	06/22/2017 14:10
Fluorene	ND	0.25	1	06/22/2017 14:10
Hexachlorobenzene	ND	0.25	1	06/22/2017 14:10
Hexachlorobutadiene	ND	0.25	1	06/22/2017 14:10
Hexachlorocyclopentadiene	ND	1.3	1	06/22/2017 14:10
Hexachloroethane	ND	0.25	1	06/22/2017 14:10
Indeno (1,2,3-cd) pyrene	ND	0.25	1	06/22/2017 14:10
Isophorone	ND	0.25	1	06/22/2017 14:10
2-Methylnaphthalene	ND	0.25	1	06/22/2017 14:10
2-Methylphenol (o-Cresol)	ND	0.25	1	06/22/2017 14:10
3 & 4-Methylphenol (m,p-Cresol)	ND	0.25	1	06/22/2017 14:10
Naphthalene	ND	0.25	1	06/22/2017 14:10
2-Nitroaniline	ND	1.3	1	06/22/2017 14:10
3-Nitroaniline	ND	1.3	1	06/22/2017 14:10
4-Nitroaniline	ND	1.3	1	06/22/2017 14:10
Nitrobenzene	ND	0.25	1	06/22/2017 14:10
2-Nitrophenol	ND	1.3	1	06/22/2017 14:10
4-Nitrophenol	ND	1.3	1	06/22/2017 14:10
N-Nitrosodiphenylamine	ND	0.25	1	06/22/2017 14:10
N-Nitrosodi-n-propylamine	ND	0.25	1	06/22/2017 14:10
Pentachlorophenol	ND	1.3	1	06/22/2017 14:10
Phenanthrene	ND	0.25	1	06/22/2017 14:10
Phenol	ND	0.25	1	06/22/2017 14:10
Pyrene	ND	0.25	1	06/22/2017 14:10
Pyridine	ND	0.25	1	06/22/2017 14:10
1,2,4-Trichlorobenzene	ND	0.25	1	06/22/2017 14:10
2,4,5-Trichlorophenol	ND	0.25	1	06/22/2017 14:10
2,4,6-Trichlorophenol	ND	0.25	1	06/22/2017 14:10

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# Analytical Report

**Client:** Langan  
**Date Received:** 6/20/17 12:30  
**Date Prepared:** 6/22/17  
**Project:** 770641901; 600 South 1st Street

**WorkOrder:** 1706947  
**Extraction Method:** SW3550B  
**Analytical Method:** SW8270C  
**Unit:** mg/Kg

## Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-1-5.0	1706947-003A	Soil	06/17/2017 11:33	GC21	140851

Analytes	Result	Qualifiers	RL	DF	Date Analyzed
<u>Surrogates</u>	<u>REC (%)</u>	<u>Qualifiers</u>	<u>Limits</u>		
2-Fluorophenol	134	S	30-130		06/22/2017 14:10
Phenol-d5	128		30-130		06/22/2017 14:10
Nitrobenzene-d5	110		30-130		06/22/2017 14:10
2-Fluorobiphenyl	104		30-130		06/22/2017 14:10
2,4,6-Tribromophenol	73		16-130		06/22/2017 14:10
4-Terphenyl-d14	112		30-130		06/22/2017 14:10

Analyst(s): REB

Analytical Comments: c11



# Analytical Report

**Client:** Langan  
**Date Received:** 6/20/17 12:30  
**Date Prepared:** 6/22/17  
**Project:** 770641901; 600 South 1st Street

**WorkOrder:** 1706947  
**Extraction Method:** SW3550B  
**Analytical Method:** SW8270C  
**Unit:** mg/Kg

## Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-4-5.0	1706947-030A	Soil	06/17/2017 13:37	GC21	140851

Analytes	Result	RL	DF	Date Analyzed
Acenaphthene	ND	0.25	1	06/22/2017 14:39
Acenaphthylene	ND	0.25	1	06/22/2017 14:39
Acetochlor	ND	0.25	1	06/22/2017 14:39
Anthracene	ND	0.25	1	06/22/2017 14:39
Benzidine	ND	1.3	1	06/22/2017 14:39
Benzo (a) anthracene	ND	0.25	1	06/22/2017 14:39
Benzo (a) pyrene	ND	0.25	1	06/22/2017 14:39
Benzo (b) fluoranthene	ND	0.25	1	06/22/2017 14:39
Benzo (g,h,i) perylene	ND	0.25	1	06/22/2017 14:39
Benzo (k) fluoranthene	ND	0.25	1	06/22/2017 14:39
Benzyl Alcohol	ND	1.3	1	06/22/2017 14:39
1,1-Biphenyl	ND	0.25	1	06/22/2017 14:39
Bis (2-chloroethoxy) Methane	ND	0.25	1	06/22/2017 14:39
Bis (2-chloroethyl) Ether	ND	0.25	1	06/22/2017 14:39
Bis (2-chloroisopropyl) Ether	ND	0.25	1	06/22/2017 14:39
Bis (2-ethylhexyl) Adipate	ND	0.25	1	06/22/2017 14:39
Bis (2-ethylhexyl) Phthalate	ND	0.25	1	06/22/2017 14:39
4-Bromophenyl Phenyl Ether	ND	0.25	1	06/22/2017 14:39
Butylbenzyl Phthalate	ND	0.25	1	06/22/2017 14:39
4-Chloroaniline	ND	0.50	1	06/22/2017 14:39
4-Chloro-3-methylphenol	ND	0.25	1	06/22/2017 14:39
2-Chloronaphthalene	ND	0.25	1	06/22/2017 14:39
2-Chlorophenol	ND	0.25	1	06/22/2017 14:39
4-Chlorophenyl Phenyl Ether	ND	0.25	1	06/22/2017 14:39
Chrysene	ND	0.25	1	06/22/2017 14:39
Dibenzo (a,h) anthracene	ND	0.25	1	06/22/2017 14:39
Dibenzofuran	ND	0.25	1	06/22/2017 14:39
Di-n-butyl Phthalate	ND	0.25	1	06/22/2017 14:39
1,2-Dichlorobenzene	ND	0.25	1	06/22/2017 14:39
1,3-Dichlorobenzene	ND	0.25	1	06/22/2017 14:39
1,4-Dichlorobenzene	ND	0.25	1	06/22/2017 14:39
3,3-Dichlorobenzidine	ND	0.50	1	06/22/2017 14:39
2,4-Dichlorophenol	ND	0.25	1	06/22/2017 14:39
Diethyl Phthalate	ND	0.25	1	06/22/2017 14:39
2,4-Dimethylphenol	ND	0.25	1	06/22/2017 14:39
Dimethyl Phthalate	ND	0.25	1	06/22/2017 14:39
4,6-Dinitro-2-methylphenol	ND	1.3	1	06/22/2017 14:39

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NELAP 4033ORELAP

 Angela Rydelius, Lab Manager



# Analytical Report

**Client:** Langan  
**Date Received:** 6/20/17 12:30  
**Date Prepared:** 6/22/17  
**Project:** 770641901; 600 South 1st Street

**WorkOrder:** 1706947  
**Extraction Method:** SW3550B  
**Analytical Method:** SW8270C  
**Unit:** mg/Kg

## Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-4-5.0	1706947-030A	Soil	06/17/2017 13:37	GC21	140851

Analytes	Result	RL	DF	Date Analyzed
2,4-Dinitrophenol	ND	6.3	1	06/22/2017 14:39
2,4-Dinitrotoluene	ND	0.25	1	06/22/2017 14:39
2,6-Dinitrotoluene	ND	0.25	1	06/22/2017 14:39
Di-n-octyl Phthalate	ND	0.50	1	06/22/2017 14:39
1,2-Diphenylhydrazine	ND	0.25	1	06/22/2017 14:39
Fluoranthene	ND	0.25	1	06/22/2017 14:39
Fluorene	ND	0.25	1	06/22/2017 14:39
Hexachlorobenzene	ND	0.25	1	06/22/2017 14:39
Hexachlorobutadiene	ND	0.25	1	06/22/2017 14:39
Hexachlorocyclopentadiene	ND	1.3	1	06/22/2017 14:39
Hexachloroethane	ND	0.25	1	06/22/2017 14:39
Indeno (1,2,3-cd) pyrene	ND	0.25	1	06/22/2017 14:39
Isophorone	ND	0.25	1	06/22/2017 14:39
2-Methylnaphthalene	ND	0.25	1	06/22/2017 14:39
2-Methylphenol (o-Cresol)	ND	0.25	1	06/22/2017 14:39
3 & 4-Methylphenol (m,p-Cresol)	ND	0.25	1	06/22/2017 14:39
Naphthalene	ND	0.25	1	06/22/2017 14:39
2-Nitroaniline	ND	1.3	1	06/22/2017 14:39
3-Nitroaniline	ND	1.3	1	06/22/2017 14:39
4-Nitroaniline	ND	1.3	1	06/22/2017 14:39
Nitrobenzene	ND	0.25	1	06/22/2017 14:39
2-Nitrophenol	ND	1.3	1	06/22/2017 14:39
4-Nitrophenol	ND	1.3	1	06/22/2017 14:39
N-Nitrosodiphenylamine	ND	0.25	1	06/22/2017 14:39
N-Nitrosodi-n-propylamine	ND	0.25	1	06/22/2017 14:39
Pentachlorophenol	ND	1.3	1	06/22/2017 14:39
Phenanthrene	ND	0.25	1	06/22/2017 14:39
Phenol	ND	0.25	1	06/22/2017 14:39
Pyrene	ND	0.25	1	06/22/2017 14:39
Pyridine	ND	0.25	1	06/22/2017 14:39
1,2,4-Trichlorobenzene	ND	0.25	1	06/22/2017 14:39
2,4,5-Trichlorophenol	ND	0.25	1	06/22/2017 14:39
2,4,6-Trichlorophenol	ND	0.25	1	06/22/2017 14:39

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# Analytical Report

**Client:** Langan  
**Date Received:** 6/20/17 12:30  
**Date Prepared:** 6/22/17  
**Project:** 770641901; 600 South 1st Street

**WorkOrder:** 1706947  
**Extraction Method:** SW3550B  
**Analytical Method:** SW8270C  
**Unit:** mg/Kg

## Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-4-5.0	1706947-030A	Soil	06/17/2017 13:37	GC21	140851

Analytes	Result	RL	DF	Date Analyzed
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>	
2-Fluorophenol	109		30-130	06/22/2017 14:39
Phenol-d5	105		30-130	06/22/2017 14:39
Nitrobenzene-d5	92		30-130	06/22/2017 14:39
2-Fluorobiphenyl	85		30-130	06/22/2017 14:39
2,4,6-Tribromophenol	64		16-130	06/22/2017 14:39
4-Terphenyl-d14	88		30-130	06/22/2017 14:39

Analyst(s): REB



# Analytical Report

**Client:** Langan  
**Date Received:** 6/20/17 12:30  
**Date Prepared:** 6/22/17  
**Project:** 770641901; 600 South 1st Street

**WorkOrder:** 1706947  
**Extraction Method:** SW3550B  
**Analytical Method:** SW8270C  
**Unit:** mg/Kg

## Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-4-35.0	1706947-037A	Soil	06/17/2017 14:15	GC21	140851

Analytes	Result	RL	DF	Date Analyzed
Acenaphthene	ND	0.25	1	06/22/2017 15:09
Acenaphthylene	ND	0.25	1	06/22/2017 15:09
Acetochlor	ND	0.25	1	06/22/2017 15:09
Anthracene	ND	0.25	1	06/22/2017 15:09
Benzidine	ND	1.3	1	06/22/2017 15:09
Benzo (a) anthracene	ND	0.25	1	06/22/2017 15:09
Benzo (a) pyrene	ND	0.25	1	06/22/2017 15:09
Benzo (b) fluoranthene	ND	0.25	1	06/22/2017 15:09
Benzo (g,h,i) perylene	ND	0.25	1	06/22/2017 15:09
Benzo (k) fluoranthene	ND	0.25	1	06/22/2017 15:09
Benzyl Alcohol	ND	1.3	1	06/22/2017 15:09
1,1-Biphenyl	ND	0.25	1	06/22/2017 15:09
Bis (2-chloroethoxy) Methane	ND	0.25	1	06/22/2017 15:09
Bis (2-chloroethyl) Ether	ND	0.25	1	06/22/2017 15:09
Bis (2-chloroisopropyl) Ether	ND	0.25	1	06/22/2017 15:09
Bis (2-ethylhexyl) Adipate	ND	0.25	1	06/22/2017 15:09
Bis (2-ethylhexyl) Phthalate	ND	0.25	1	06/22/2017 15:09
4-Bromophenyl Phenyl Ether	ND	0.25	1	06/22/2017 15:09
Butylbenzyl Phthalate	ND	0.25	1	06/22/2017 15:09
4-Chloroaniline	ND	0.50	1	06/22/2017 15:09
4-Chloro-3-methylphenol	ND	0.25	1	06/22/2017 15:09
2-Chloronaphthalene	ND	0.25	1	06/22/2017 15:09
2-Chlorophenol	ND	0.25	1	06/22/2017 15:09
4-Chlorophenyl Phenyl Ether	ND	0.25	1	06/22/2017 15:09
Chrysene	ND	0.25	1	06/22/2017 15:09
Dibenzo (a,h) anthracene	ND	0.25	1	06/22/2017 15:09
Dibenzofuran	ND	0.25	1	06/22/2017 15:09
Di-n-butyl Phthalate	ND	0.25	1	06/22/2017 15:09
1,2-Dichlorobenzene	ND	0.25	1	06/22/2017 15:09
1,3-Dichlorobenzene	ND	0.25	1	06/22/2017 15:09
1,4-Dichlorobenzene	ND	0.25	1	06/22/2017 15:09
3,3-Dichlorobenzidine	ND	0.50	1	06/22/2017 15:09
2,4-Dichlorophenol	ND	0.25	1	06/22/2017 15:09
Diethyl Phthalate	ND	0.25	1	06/22/2017 15:09
2,4-Dimethylphenol	ND	0.25	1	06/22/2017 15:09
Dimethyl Phthalate	ND	0.25	1	06/22/2017 15:09
4,6-Dinitro-2-methylphenol	ND	1.3	1	06/22/2017 15:09

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NELAP 4033ORELAP

 Angela Rydelius, Lab Manager





## Analytical Report

**Client:** Langan  
**Date Received:** 6/20/17 12:30  
**Date Prepared:** 6/22/17  
**Project:** 770641901; 600 South 1st Street

**WorkOrder:** 1706947  
**Extraction Method:** SW3550B  
**Analytical Method:** SW8270C  
**Unit:** mg/Kg

### Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-4-35.0	1706947-037A	Soil	06/17/2017 14:15	GC21	140851
Analytes	Result	RL	DF	Date Analyzed	
2,4-Dinitrophenol	ND	6.3	1	06/22/2017 15:09	
2,4-Dinitrotoluene	ND	0.25	1	06/22/2017 15:09	
2,6-Dinitrotoluene	ND	0.25	1	06/22/2017 15:09	
Di-n-octyl Phthalate	ND	0.50	1	06/22/2017 15:09	
1,2-Diphenylhydrazine	ND	0.25	1	06/22/2017 15:09	
Fluoranthene	ND	0.25	1	06/22/2017 15:09	
Fluorene	ND	0.25	1	06/22/2017 15:09	
Hexachlorobenzene	ND	0.25	1	06/22/2017 15:09	
Hexachlorobutadiene	ND	0.25	1	06/22/2017 15:09	
Hexachlorocyclopentadiene	ND	1.3	1	06/22/2017 15:09	
Hexachloroethane	ND	0.25	1	06/22/2017 15:09	
Indeno (1,2,3-cd) pyrene	ND	0.25	1	06/22/2017 15:09	
Isophorone	ND	0.25	1	06/22/2017 15:09	
2-Methylnaphthalene	ND	0.25	1	06/22/2017 15:09	
2-Methylphenol (o-Cresol)	ND	0.25	1	06/22/2017 15:09	
3 & 4-Methylphenol (m,p-Cresol)	ND	0.25	1	06/22/2017 15:09	
Naphthalene	ND	0.25	1	06/22/2017 15:09	
2-Nitroaniline	ND	1.3	1	06/22/2017 15:09	
3-Nitroaniline	ND	1.3	1	06/22/2017 15:09	
4-Nitroaniline	ND	1.3	1	06/22/2017 15:09	
Nitrobenzene	ND	0.25	1	06/22/2017 15:09	
2-Nitrophenol	ND	1.3	1	06/22/2017 15:09	
4-Nitrophenol	ND	1.3	1	06/22/2017 15:09	
N-Nitrosodiphenylamine	ND	0.25	1	06/22/2017 15:09	
N-Nitrosodi-n-propylamine	ND	0.25	1	06/22/2017 15:09	
Pentachlorophenol	ND	1.3	1	06/22/2017 15:09	
Phenanthrene	ND	0.25	1	06/22/2017 15:09	
Phenol	ND	0.25	1	06/22/2017 15:09	
Pyrene	ND	0.25	1	06/22/2017 15:09	
Pyridine	ND	0.25	1	06/22/2017 15:09	
1,2,4-Trichlorobenzene	ND	0.25	1	06/22/2017 15:09	
2,4,5-Trichlorophenol	ND	0.25	1	06/22/2017 15:09	
2,4,6-Trichlorophenol	ND	0.25	1	06/22/2017 15:09	

(Cont.)

NELAP 4033ORELAP

 Angela Rydelius, Lab Manager



# Analytical Report

**Client:** Langan  
**Date Received:** 6/20/17 12:30  
**Date Prepared:** 6/22/17  
**Project:** 770641901; 600 South 1st Street

**WorkOrder:** 1706947  
**Extraction Method:** SW3550B  
**Analytical Method:** SW8270C  
**Unit:** mg/Kg

## Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-4-35.0	1706947-037A	Soil	06/17/2017 14:15	GC21	140851

Analytes	Result	RL	DF	Date Analyzed
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>	
2-Fluorophenol	110		30-130	06/22/2017 15:09
Phenol-d5	107		30-130	06/22/2017 15:09
Nitrobenzene-d5	91		30-130	06/22/2017 15:09
2-Fluorobiphenyl	85		30-130	06/22/2017 15:09
2,4,6-Tribromophenol	52		16-130	06/22/2017 15:09
4-Terphenyl-d14	89		30-130	06/22/2017 15:09

Analyst(s): REB



# Analytical Report

**Client:** Langan  
**Date Received:** 6/20/17 12:30  
**Date Prepared:** 6/22/17  
**Project:** 770641901; 600 South 1st Street

**WorkOrder:** 1706947  
**Extraction Method:** SW3550B  
**Analytical Method:** SW8270C  
**Unit:** mg/Kg

## Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-6-10.0	1706947-056A	Soil	06/17/2017 09:18	GC21	140851

Analytes	Result	RL	DF	Date Analyzed
Acenaphthene	ND	2.0	1	06/22/2017 22:24
Acenaphthylene	ND	2.0	1	06/22/2017 22:24
Acetochlor	ND	2.0	1	06/22/2017 22:24
Anthracene	ND	2.0	1	06/22/2017 22:24
Benzidine	ND	10	1	06/22/2017 22:24
Benzo (a) anthracene	ND	2.0	1	06/22/2017 22:24
Benzo (a) pyrene	ND	2.0	1	06/22/2017 22:24
Benzo (b) fluoranthene	ND	2.0	1	06/22/2017 22:24
Benzo (g,h,i) perylene	ND	2.0	1	06/22/2017 22:24
Benzo (k) fluoranthene	ND	2.0	1	06/22/2017 22:24
Benzyl Alcohol	ND	10	1	06/22/2017 22:24
1,1-Biphenyl	ND	2.0	1	06/22/2017 22:24
Bis (2-chloroethoxy) Methane	ND	2.0	1	06/22/2017 22:24
Bis (2-chloroethyl) Ether	ND	2.0	1	06/22/2017 22:24
Bis (2-chloroisopropyl) Ether	ND	2.0	1	06/22/2017 22:24
Bis (2-ethylhexyl) Adipate	ND	2.0	1	06/22/2017 22:24
Bis (2-ethylhexyl) Phthalate	ND	2.0	1	06/22/2017 22:24
4-Bromophenyl Phenyl Ether	ND	2.0	1	06/22/2017 22:24
Butylbenzyl Phthalate	ND	2.0	1	06/22/2017 22:24
4-Chloroaniline	ND	4.0	1	06/22/2017 22:24
4-Chloro-3-methylphenol	ND	2.0	1	06/22/2017 22:24
2-Chloronaphthalene	ND	2.0	1	06/22/2017 22:24
2-Chlorophenol	ND	2.0	1	06/22/2017 22:24
4-Chlorophenyl Phenyl Ether	ND	2.0	1	06/22/2017 22:24
Chrysene	ND	2.0	1	06/22/2017 22:24
Dibenzo (a,h) anthracene	ND	2.0	1	06/22/2017 22:24
Dibenzofuran	ND	2.0	1	06/22/2017 22:24
Di-n-butyl Phthalate	ND	2.0	1	06/22/2017 22:24
1,2-Dichlorobenzene	ND	2.0	1	06/22/2017 22:24
1,3-Dichlorobenzene	ND	2.0	1	06/22/2017 22:24
1,4-Dichlorobenzene	ND	2.0	1	06/22/2017 22:24
3,3-Dichlorobenzidine	ND	4.0	1	06/22/2017 22:24
2,4-Dichlorophenol	ND	2.0	1	06/22/2017 22:24
Diethyl Phthalate	ND	2.0	1	06/22/2017 22:24
2,4-Dimethylphenol	ND	2.0	1	06/22/2017 22:24
Dimethyl Phthalate	ND	2.0	1	06/22/2017 22:24
4,6-Dinitro-2-methylphenol	ND	10	1	06/22/2017 22:24

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# Analytical Report

**Client:** Langan  
**Date Received:** 6/20/17 12:30  
**Date Prepared:** 6/22/17  
**Project:** 770641901; 600 South 1st Street

**WorkOrder:** 1706947  
**Extraction Method:** SW3550B  
**Analytical Method:** SW8270C  
**Unit:** mg/Kg

## Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-6-10.0	1706947-056A	Soil	06/17/2017 09:18	GC21	140851

Analytes	Result	RL	DF	Date Analyzed
2,4-Dinitrophenol	ND	50	1	06/22/2017 22:24
2,4-Dinitrotoluene	ND	2.0	1	06/22/2017 22:24
2,6-Dinitrotoluene	ND	2.0	1	06/22/2017 22:24
Di-n-octyl Phthalate	ND	4.0	1	06/22/2017 22:24
1,2-Diphenylhydrazine	ND	2.0	1	06/22/2017 22:24
Fluoranthene	ND	2.0	1	06/22/2017 22:24
Fluorene	ND	2.0	1	06/22/2017 22:24
Hexachlorobenzene	ND	2.0	1	06/22/2017 22:24
Hexachlorobutadiene	ND	2.0	1	06/22/2017 22:24
Hexachlorocyclopentadiene	ND	10	1	06/22/2017 22:24
Hexachloroethane	ND	2.0	1	06/22/2017 22:24
Indeno (1,2,3-cd) pyrene	ND	2.0	1	06/22/2017 22:24
Isophorone	ND	2.0	1	06/22/2017 22:24
2-Methylnaphthalene	ND	2.0	1	06/22/2017 22:24
2-Methylphenol (o-Cresol)	ND	2.0	1	06/22/2017 22:24
3 & 4-Methylphenol (m,p-Cresol)	ND	2.0	1	06/22/2017 22:24
Naphthalene	ND	2.0	1	06/22/2017 22:24
2-Nitroaniline	ND	10	1	06/22/2017 22:24
3-Nitroaniline	ND	10	1	06/22/2017 22:24
4-Nitroaniline	ND	10	1	06/22/2017 22:24
Nitrobenzene	ND	2.0	1	06/22/2017 22:24
2-Nitrophenol	ND	10	1	06/22/2017 22:24
4-Nitrophenol	ND	10	1	06/22/2017 22:24
N-Nitrosodiphenylamine	ND	2.0	1	06/22/2017 22:24
N-Nitrosodi-n-propylamine	ND	2.0	1	06/22/2017 22:24
Pentachlorophenol	ND	10	1	06/22/2017 22:24
Phenanthrene	ND	2.0	1	06/22/2017 22:24
Phenol	ND	2.0	1	06/22/2017 22:24
Pyrene	ND	2.0	1	06/22/2017 22:24
Pyridine	ND	2.0	1	06/22/2017 22:24
1,2,4-Trichlorobenzene	ND	2.0	1	06/22/2017 22:24
2,4,5-Trichlorophenol	ND	2.0	1	06/22/2017 22:24
2,4,6-Trichlorophenol	ND	2.0	1	06/22/2017 22:24

(Cont.)

NELAP 4033ORELAP

 Angela Rydelius, Lab Manager



# Analytical Report

**Client:** Langan  
**Date Received:** 6/20/17 12:30  
**Date Prepared:** 6/22/17  
**Project:** 770641901; 600 South 1st Street

**WorkOrder:** 1706947  
**Extraction Method:** SW3550B  
**Analytical Method:** SW8270C  
**Unit:** mg/Kg

## Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-6-10.0	1706947-056A	Soil	06/17/2017 09:18	GC21	140851

Analytes	Result	RL	DF	Date Analyzed
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>	
2-Fluorophenol	102	30-130		06/22/2017 22:24
Phenol-d5	91	30-130		06/22/2017 22:24
Nitrobenzene-d5	80	30-130		06/22/2017 22:24
2-Fluorobiphenyl	78	30-130		06/22/2017 22:24
2,4,6-Tribromophenol	27	16-130		06/22/2017 22:24
4-Terphenyl-d14	86	30-130		06/22/2017 22:24

Analyst(s): REB

Analytical Comments: a4



## Analytical Report

**Client:** Langan  
**Date Received:** 6/20/17 12:30  
**Date Prepared:** 6/20/17  
**Project:** 770641901; 600 South 1st Street

**WorkOrder:** 1706947  
**Extraction Method:** SW3050B  
**Analytical Method:** SW6020  
**Unit:** mg/Kg

### CAM / CCR 17 Metals

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-1-1.5	1706947-001A	Soil	06/17/2017 11:27	ICP-MS1	140693

Analytes	Result	RL	DF	Date Analyzed
Antimony	0.71	0.50	1	06/21/2017 17:00
Arsenic	7.3	0.50	1	06/21/2017 17:00
Barium	170	5.0	1	06/21/2017 17:00
Beryllium	ND	0.50	1	06/21/2017 17:00
Cadmium	ND	0.25	1	06/21/2017 17:00
Chromium	56	0.50	1	06/21/2017 17:00
Cobalt	12	0.50	1	06/21/2017 17:00
Copper	30	0.50	1	06/21/2017 17:00
Lead	35	0.50	1	06/21/2017 17:00
Mercury	0.21	0.050	1	06/21/2017 17:00
Molybdenum	0.53	0.50	1	06/21/2017 17:00
Nickel	100	0.50	1	06/21/2017 17:00
Selenium	ND	0.50	1	06/21/2017 17:00
Silver	ND	0.50	1	06/21/2017 17:00
Thallium	ND	0.50	1	06/21/2017 17:00
Vanadium	38	0.50	1	06/21/2017 17:00
Zinc	66	5.0	1	06/21/2017 17:00

Surrogates	REC (%)	Limits	Date Analyzed
Terbium	95	70-130	06/21/2017 17:00

**Analyst(s):** ND



# Analytical Report

**Client:** Langan  
**Date Received:** 6/20/17 12:30  
**Date Prepared:** 6/20/17  
**Project:** 770641901; 600 South 1st Street

**WorkOrder:** 1706947  
**Extraction Method:** SW3050B  
**Analytical Method:** SW6020  
**Unit:** mg/Kg

## CAM / CCR 17 Metals

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-1-5.0	1706947-003A	Soil	06/17/2017 11:33	ICP-MS1	140693

Analytes	Result	RL	DF	Date Analyzed
Antimony	0.74	0.50	1	06/21/2017 15:46
Arsenic	8.2	0.50	1	06/21/2017 15:46
Barium	190	5.0	1	06/21/2017 15:46
Beryllium	ND	0.50	1	06/21/2017 15:46
Cadmium	ND	0.25	1	06/21/2017 15:46
Chromium	55	0.50	1	06/21/2017 15:46
Cobalt	13	0.50	1	06/21/2017 15:46
Copper	30	0.50	1	06/21/2017 15:46
Lead	9.3	0.50	1	06/21/2017 15:46
Mercury	0.073	0.050	1	06/21/2017 15:46
Molybdenum	ND	0.50	1	06/21/2017 15:46
Nickel	100	0.50	1	06/21/2017 15:46
Selenium	ND	0.50	1	06/21/2017 15:46
Silver	ND	0.50	1	06/21/2017 15:46
Thallium	ND	0.50	1	06/21/2017 15:46
Vanadium	39	0.50	1	06/21/2017 15:46
Zinc	62	5.0	1	06/21/2017 15:46

Surrogates	REC (%)	Limits	Date Analyzed
Terbium	109	70-130	06/21/2017 15:46

Analyst(s): ND



## Analytical Report

**Client:** Langan  
**Date Received:** 6/20/17 12:30  
**Date Prepared:** 6/20/17  
**Project:** 770641901; 600 South 1st Street

**WorkOrder:** 1706947  
**Extraction Method:** SW3050B  
**Analytical Method:** SW6020  
**Unit:** mg/Kg

### CAM / CCR 17 Metals

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-2-1.5	1706947-010A	Soil	06/17/2017 07:46	ICP-MS1	140693

Analytes	Result	RL	DF	Date Analyzed
Antimony	0.84	0.50	1	06/21/2017 15:52
Arsenic	7.5	0.50	1	06/21/2017 15:52
Barium	220	5.0	1	06/21/2017 15:52
Beryllium	ND	0.50	1	06/21/2017 15:52
Cadmium	0.57	0.25	1	06/21/2017 15:52
Chromium	62	0.50	1	06/21/2017 15:52
Cobalt	11	0.50	1	06/21/2017 15:52
Copper	32	0.50	1	06/21/2017 15:52
Lead	80	0.50	1	06/21/2017 15:52
Mercury	0.29	0.050	1	06/21/2017 15:52
Molybdenum	0.74	0.50	1	06/21/2017 15:52
Nickel	98	0.50	1	06/21/2017 15:52
Selenium	ND	0.50	1	06/21/2017 15:52
Silver	ND	0.50	1	06/21/2017 15:52
Thallium	ND	0.50	1	06/21/2017 15:52
Vanadium	40	0.50	1	06/21/2017 15:52
Zinc	290	5.0	1	06/21/2017 15:52

Surrogates	REC (%)	Limits	Date Analyzed
Terbium	100	70-130	06/21/2017 15:52

**Analyst(s):** ND





## Analytical Report

**Client:** Langan  
**Date Received:** 6/20/17 12:30  
**Date Prepared:** 6/20/17  
**Project:** 770641901; 600 South 1st Street

**WorkOrder:** 1706947  
**Extraction Method:** SW3050B  
**Analytical Method:** SW6020  
**Unit:** mg/Kg

### CAM / CCR 17 Metals

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-2-10.0	1706947-014A	Soil	06/17/2017 08:04	ICP-MS1	140693

Analytes	Result	RL	DF	Date Analyzed
Antimony	0.57	0.50	1	06/21/2017 16:29
Arsenic	6.4	0.50	1	06/21/2017 16:29
Barium	130	5.0	1	06/21/2017 16:29
Beryllium	ND	0.50	1	06/21/2017 16:29
Cadmium	ND	0.25	1	06/21/2017 16:29
Chromium	48	0.50	1	06/21/2017 16:29
Cobalt	9.8	0.50	1	06/21/2017 16:29
Copper	25	0.50	1	06/21/2017 16:29
Lead	8.7	0.50	1	06/21/2017 16:29
Mercury	0.060	0.050	1	06/21/2017 16:29
Molybdenum	ND	0.50	1	06/21/2017 16:29
Nickel	81	0.50	1	06/21/2017 16:29
Selenium	ND	0.50	1	06/21/2017 16:29
Silver	ND	0.50	1	06/21/2017 16:29
Thallium	ND	0.50	1	06/21/2017 16:29
Vanadium	34	0.50	1	06/21/2017 16:29
Zinc	51	5.0	1	06/21/2017 16:29

Surrogates	REC (%)	Limits	Date Analyzed
Terbium	102	70-130	06/21/2017 16:29

**Analyst(s):** ND



## Analytical Report

**Client:** Langan  
**Date Received:** 6/20/17 12:30  
**Date Prepared:** 6/20/17  
**Project:** 770641901; 600 South 1st Street

**WorkOrder:** 1706947  
**Extraction Method:** SW3050B  
**Analytical Method:** SW6020  
**Unit:** mg/Kg

### CAM / CCR 17 Metals

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-3-1.5	1706947-019A	Soil	06/17/2017 10:02	ICP-MS2	140760

Analytes	Result	RL	DF	Date Analyzed
Antimony	1.5	0.50	1	06/21/2017 14:08
Arsenic	9.2	0.50	1	06/21/2017 14:08
Barium	200	5.0	1	06/21/2017 14:08
Beryllium	ND	0.50	1	06/21/2017 14:08
Cadmium	0.50	0.25	1	06/21/2017 14:08
Chromium	63	0.50	1	06/21/2017 14:08
Cobalt	13	0.50	1	06/21/2017 14:08
Copper	42	0.50	1	06/21/2017 14:08
Lead	140	0.50	1	06/21/2017 14:08
Mercury	1.3	0.050	1	06/21/2017 14:08
Molybdenum	0.58	0.50	1	06/21/2017 14:08
Nickel	110	0.50	1	06/21/2017 14:08
Selenium	ND	0.50	1	06/21/2017 14:08
Silver	ND	0.50	1	06/21/2017 14:08
Thallium	ND	0.50	1	06/21/2017 14:08
Vanadium	43	0.50	1	06/21/2017 14:08
Zinc	180	5.0	1	06/21/2017 14:08

Surrogates	REC (%)	Limits	
Terbium	109	70-130	06/21/2017 14:08

**Analyst(s):** MIG



## Analytical Report

**Client:** Langan  
**Date Received:** 6/20/17 12:30  
**Date Prepared:** 6/20/17  
**Project:** 770641901; 600 South 1st Street

**WorkOrder:** 1706947  
**Extraction Method:** SW3050B  
**Analytical Method:** SW6020  
**Unit:** mg/Kg

### CAM / CCR 17 Metals

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-3-15.0	1706947-023A	Soil	06/17/2017 10:13	ICP-MS1	140760

Analytes	Result	RL	DF	Date Analyzed
Antimony	0.64	0.50	1	06/21/2017 16:35
Arsenic	9.6	0.50	1	06/21/2017 16:35
Barium	120	5.0	1	06/21/2017 16:35
Beryllium	ND	0.50	1	06/21/2017 16:35
Cadmium	ND	0.25	1	06/21/2017 16:35
Chromium	45	0.50	1	06/21/2017 16:35
Cobalt	10	0.50	1	06/21/2017 16:35
Copper	25	0.50	1	06/21/2017 16:35
Lead	7.2	0.50	1	06/21/2017 16:35
Mercury	ND	0.050	1	06/21/2017 16:35
Molybdenum	0.92	0.50	1	06/21/2017 16:35
Nickel	90	0.50	1	06/21/2017 16:35
Selenium	1.5	0.50	1	06/21/2017 16:35
Silver	ND	0.50	1	06/21/2017 16:35
Thallium	ND	0.50	1	06/21/2017 16:35
Vanadium	38	0.50	1	06/21/2017 16:35
Zinc	49	5.0	1	06/21/2017 16:35

Surrogates	REC (%)	Limits	Date Analyzed
Terbium	106	70-130	06/21/2017 16:35

**Analyst(s):** ND



# Analytical Report

**Client:** Langan  
**Date Received:** 6/20/17 12:30  
**Date Prepared:** 6/20/17  
**Project:** 770641901; 600 South 1st Street

**WorkOrder:** 1706947  
**Extraction Method:** SW3050B  
**Analytical Method:** SW6020  
**Unit:** mg/Kg

## CAM / CCR 17 Metals

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-3-26.0	1706947-025A	Soil	06/17/2017 10:27	ICP-MS1	140760

Analytes	Result	RL	DF	Date Analyzed
Antimony	0.97	0.50	1	06/21/2017 16:53
Arsenic	9.5	0.50	1	06/21/2017 16:53
Barium	200	5.0	1	06/21/2017 16:53
Beryllium	ND	0.50	1	06/21/2017 16:53
Cadmium	ND	0.25	1	06/21/2017 16:53
Chromium	60	0.50	1	06/21/2017 16:53
Cobalt	14	0.50	1	06/21/2017 16:53
Copper	36	0.50	1	06/21/2017 16:53
Lead	53	0.50	1	06/21/2017 16:53
Mercury	0.18	0.050	1	06/21/2017 16:53
Molybdenum	0.78	0.50	1	06/21/2017 16:53
Nickel	100	0.50	1	06/21/2017 16:53
Selenium	0.67	0.50	1	06/21/2017 16:53
Silver	ND	0.50	1	06/21/2017 16:53
Thallium	ND	0.50	1	06/21/2017 16:53
Vanadium	41	0.50	1	06/21/2017 16:53
Zinc	92	5.0	1	06/21/2017 16:53

Surrogates	REC (%)	Limits	
Terbium	105	70-130	06/21/2017 16:53

Analyst(s): ND



## Analytical Report

**Client:** Langan  
**Date Received:** 6/20/17 12:30  
**Date Prepared:** 6/20/17  
**Project:** 770641901; 600 South 1st Street

**WorkOrder:** 1706947  
**Extraction Method:** SW3050B  
**Analytical Method:** SW6020  
**Unit:** mg/Kg

### CAM / CCR 17 Metals

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-4-1.5	1706947-028A	Soil	06/17/2017 13:32	ICP-MS1	140760

Analytes	Result	RL	DF	Date Analyzed
Antimony	0.78	0.50	1	06/21/2017 16:47
Arsenic	6.5	0.50	1	06/21/2017 16:47
Barium	150	5.0	1	06/21/2017 16:47
Beryllium	ND	0.50	1	06/21/2017 16:47
Cadmium	ND	0.25	1	06/21/2017 16:47
Chromium	53	0.50	1	06/21/2017 16:47
Cobalt	11	0.50	1	06/21/2017 16:47
Copper	29	0.50	1	06/21/2017 16:47
Lead	93	0.50	1	06/21/2017 16:47
Mercury	0.44	0.050	1	06/21/2017 16:47
Molybdenum	0.51	0.50	1	06/21/2017 16:47
Nickel	89	0.50	1	06/21/2017 16:47
Selenium	ND	0.50	1	06/21/2017 16:47
Silver	ND	0.50	1	06/21/2017 16:47
Thallium	ND	0.50	1	06/21/2017 16:47
Vanadium	35	0.50	1	06/21/2017 16:47
Zinc	79	5.0	1	06/21/2017 16:47

Surrogates	REC (%)	Limits	
Terbium	104	70-130	06/21/2017 16:47

**Analyst(s):** ND



## Analytical Report

**Client:** Langan  
**Date Received:** 6/20/17 12:30  
**Date Prepared:** 6/20/17  
**Project:** 770641901; 600 South 1st Street

**WorkOrder:** 1706947  
**Extraction Method:** SW3050B  
**Analytical Method:** SW6020  
**Unit:** mg/Kg

### CAM / CCR 17 Metals

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-4-3.0	1706947-029A	Soil	06/17/2017 13:35	ICP-MS1	140760

Analytes	Result	RL	DF	Date Analyzed
Antimony	1.2	0.50	1	06/21/2017 16:41
Arsenic	7.0	0.50	1	06/21/2017 16:41
Barium	180	5.0	1	06/21/2017 16:41
Beryllium	ND	0.50	1	06/21/2017 16:41
Cadmium	ND	0.25	1	06/21/2017 16:41
Chromium	63	0.50	1	06/21/2017 16:41
Cobalt	12	0.50	1	06/21/2017 16:41
Copper	32	0.50	1	06/21/2017 16:41
Lead	100	0.50	1	06/21/2017 16:41
Mercury	0.28	0.050	1	06/21/2017 16:41
Molybdenum	0.57	0.50	1	06/21/2017 16:41
Nickel	100	0.50	1	06/21/2017 16:41
Selenium	ND	0.50	1	06/21/2017 16:41
Silver	ND	0.50	1	06/21/2017 16:41
Thallium	ND	0.50	1	06/21/2017 16:41
Vanadium	40	0.50	1	06/21/2017 16:41
Zinc	100	5.0	1	06/21/2017 16:41

Surrogates	REC (%)	Limits	Date Analyzed
Terbium	108	70-130	06/21/2017 16:41

**Analyst(s):** ND



## Analytical Report

**Client:** Langan  
**Date Received:** 6/20/17 12:30  
**Date Prepared:** 6/20/17  
**Project:** 770641901; 600 South 1st Street

**WorkOrder:** 1706947  
**Extraction Method:** SW3050B  
**Analytical Method:** SW6020  
**Unit:** mg/Kg

### CAM / CCR 17 Metals

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-4-5.0	1706947-030A	Soil	06/17/2017 13:37	ICP-MS1	140760

Analytes	Result	RL	DF	Date Analyzed
Antimony	0.62	0.50	1	06/21/2017 17:12
Arsenic	6.3	0.50	1	06/21/2017 17:12
Barium	130	5.0	1	06/21/2017 17:12
Beryllium	ND	0.50	1	06/21/2017 17:12
Cadmium	ND	0.25	1	06/21/2017 17:12
Chromium	45	0.50	1	06/21/2017 17:12
Cobalt	10	0.50	1	06/21/2017 17:12
Copper	26	0.50	1	06/21/2017 17:12
Lead	8.5	0.50	1	06/21/2017 17:12
Mercury	ND	0.050	1	06/21/2017 17:12
Molybdenum	ND	0.50	1	06/21/2017 17:12
Nickel	82	0.50	1	06/21/2017 17:12
Selenium	ND	0.50	1	06/21/2017 17:12
Silver	ND	0.50	1	06/21/2017 17:12
Thallium	ND	0.50	1	06/21/2017 17:12
Vanadium	32	0.50	1	06/21/2017 17:12
Zinc	52	5.0	1	06/21/2017 17:12

Surrogates	REC (%)	Limits	Date Analyzed
Terbium	96	70-130	06/21/2017 17:12

**Analyst(s):** ND



# Analytical Report

**Client:** Langan  
**Date Received:** 6/20/17 12:30  
**Date Prepared:** 6/20/17  
**Project:** 770641901; 600 South 1st Street

**WorkOrder:** 1706947  
**Extraction Method:** SW3050B  
**Analytical Method:** SW6020  
**Unit:** mg/Kg

## CAM / CCR 17 Metals

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-4-35.0	1706947-037A	Soil	06/17/2017 14:15	ICP-MS1	140760

Analytes	Result	RL	DF	Date Analyzed
Antimony	0.79	0.50	1	06/21/2017 15:58
Arsenic	5.2	0.50	1	06/21/2017 15:58
Barium	130	5.0	1	06/21/2017 15:58
Beryllium	ND	0.50	1	06/21/2017 15:58
Cadmium	ND	0.25	1	06/21/2017 15:58
Chromium	41	0.50	1	06/21/2017 15:58
Cobalt	15	0.50	1	06/21/2017 15:58
Copper	33	0.50	1	06/21/2017 15:58
Lead	8.4	0.50	1	06/21/2017 15:58
Mercury	ND	0.050	1	06/21/2017 15:58
Molybdenum	1.1	0.50	1	06/21/2017 15:58
Nickel	76	0.50	1	06/21/2017 15:58
Selenium	ND	0.50	1	06/21/2017 15:58
Silver	ND	0.50	1	06/21/2017 15:58
Thallium	ND	0.50	1	06/21/2017 15:58
Vanadium	41	0.50	1	06/21/2017 15:58
Zinc	55	5.0	1	06/21/2017 15:58

Surrogates	REC (%)	Limits	Date Analyzed
Terbium	109	70-130	06/21/2017 15:58

Analyst(s): ND





# Analytical Report

**Client:** Langan  
**Date Received:** 6/20/17 12:30  
**Date Prepared:** 6/20/17  
**Project:** 770641901; 600 South 1st Street

**WorkOrder:** 1706947  
**Extraction Method:** SW3050B  
**Analytical Method:** SW6020  
**Unit:** mg/Kg

## CAM / CCR 17 Metals

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-5-1.5	1706947-040A	Soil	06/17/2017 11:43	ICP-MS1	140760

Analytes	Result	RL	DF	Date Analyzed
Antimony	1.0	0.50	1	06/21/2017 16:05
Arsenic	12	0.50	1	06/21/2017 16:05
Barium	200	5.0	1	06/21/2017 16:05
Beryllium	0.72	0.50	1	06/21/2017 16:05
Cadmium	ND	0.25	1	06/21/2017 16:05
Chromium	76	0.50	1	06/21/2017 16:05
Cobalt	18	0.50	1	06/21/2017 16:05
Copper	52	0.50	1	06/21/2017 16:05
Lead	19	0.50	1	06/21/2017 16:05
Mercury	0.087	0.050	1	06/21/2017 16:05
Molybdenum	1.8	0.50	1	06/21/2017 16:05
Nickel	120	0.50	1	06/21/2017 16:05
Selenium	ND	0.50	1	06/21/2017 16:05
Silver	ND	0.50	1	06/21/2017 16:05
Thallium	ND	0.50	1	06/21/2017 16:05
Vanadium	57	0.50	1	06/21/2017 16:05
Zinc	98	5.0	1	06/21/2017 16:05

Surrogates	REC (%)	Limits	
Terbium	109	70-130	06/21/2017 16:05

Analyst(s): ND



## Analytical Report

**Client:** Langan  
**Date Received:** 6/20/17 12:30  
**Date Prepared:** 6/20/17  
**Project:** 770641901; 600 South 1st Street

**WorkOrder:** 1706947  
**Extraction Method:** SW3050B  
**Analytical Method:** SW6020  
**Unit:** mg/Kg

### CAM / CCR 17 Metals

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-5-20.0	1706947-046A	Soil	06/17/2017 12:28	ICP-MS1	140760

Analytes	Result	RL	DF	Date Analyzed
Antimony	0.90	0.50	1	06/21/2017 15:40
Arsenic	7.6	0.50	1	06/21/2017 15:40
Barium	210	5.0	1	06/21/2017 15:40
Beryllium	0.51	0.50	1	06/21/2017 15:40
Cadmium	ND	0.25	1	06/21/2017 15:40
Chromium	64	0.50	1	06/21/2017 15:40
Cobalt	16	0.50	1	06/21/2017 15:40
Copper	41	0.50	1	06/21/2017 15:40
Lead	11	0.50	1	06/21/2017 15:40
Mercury	0.073	0.050	1	06/21/2017 15:40
Molybdenum	0.65	0.50	1	06/21/2017 15:40
Nickel	110	0.50	1	06/21/2017 15:40
Selenium	ND	0.50	1	06/21/2017 15:40
Silver	ND	0.50	1	06/21/2017 15:40
Thallium	ND	0.50	1	06/21/2017 15:40
Vanadium	43	0.50	1	06/21/2017 15:40
Zinc	81	5.0	1	06/21/2017 15:40

Surrogates	REC (%)	Limits	Date Analyzed
Terbium	110	70-130	06/21/2017 15:40

Analyst(s): ND



## Analytical Report

**Client:** Langan  
**Date Received:** 6/20/17 12:30  
**Date Prepared:** 6/20/17  
**Project:** 770641901; 600 South 1st Street

**WorkOrder:** 1706947  
**Extraction Method:** SW3050B  
**Analytical Method:** SW6020  
**Unit:** mg/Kg

### CAM / CCR 17 Metals

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-6-3.0	1706947-053A	Soil	06/17/2017 08:55	ICP-MS2	140760

Analytes	Result	RL	DF	Date Analyzed
Antimony	0.59	0.50	1	06/21/2017 14:14
Arsenic	6.8	0.50	1	06/21/2017 14:14
Barium	150	5.0	1	06/21/2017 14:14
Beryllium	ND	0.50	1	06/21/2017 14:14
Cadmium	ND	0.25	1	06/21/2017 14:14
Chromium	59	0.50	1	06/21/2017 14:14
Cobalt	11	0.50	1	06/21/2017 14:14
Copper	27	0.50	1	06/21/2017 14:14
Lead	7.4	0.50	1	06/21/2017 14:14
Mercury	0.060	0.050	1	06/21/2017 14:14
Molybdenum	ND	0.50	1	06/21/2017 14:14
Nickel	90	0.50	1	06/21/2017 14:14
Selenium	ND	0.50	1	06/21/2017 14:14
Silver	ND	0.50	1	06/21/2017 14:14
Thallium	ND	0.50	1	06/21/2017 14:14
Vanadium	37	0.50	1	06/21/2017 14:14
Zinc	59	5.0	1	06/21/2017 14:14

Surrogates	REC (%)	Limits	Date Analyzed
Terbium	109	70-130	06/21/2017 14:14

**Analyst(s):** MIG



## Analytical Report

**Client:** Langan  
**Date Received:** 6/20/17 12:30  
**Date Prepared:** 6/20/17  
**Project:** 770641901; 600 South 1st Street

**WorkOrder:** 1706947  
**Extraction Method:** SW3050B  
**Analytical Method:** SW6020  
**Unit:** mg/Kg

### CAM / CCR 17 Metals

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-6-10.0	1706947-056A	Soil	06/17/2017 09:18	ICP-MS2	140760

Analytes	Result	RL	DF	Date Analyzed
Antimony	ND	0.50	1	06/22/2017 16:58
Arsenic	<b>8.2</b>	0.50	1	06/22/2017 16:58
Barium	<b>200</b>	5.0	1	06/22/2017 16:58
Beryllium	ND	0.50	1	06/22/2017 16:58
Cadmium	ND	0.25	1	06/22/2017 16:58
Chromium	<b>47</b>	0.50	1	06/22/2017 16:58
Cobalt	<b>13</b>	0.50	1	06/22/2017 16:58
Copper	<b>30</b>	0.50	1	06/22/2017 16:58
Lead	<b>8.1</b>	0.50	1	06/22/2017 16:58
Mercury	<b>0.066</b>	0.050	1	06/22/2017 16:58
Molybdenum	<b>0.55</b>	0.50	1	06/22/2017 16:58
Nickel	<b>90</b>	0.50	1	06/22/2017 16:58
Selenium	ND	0.50	1	06/22/2017 16:58
Silver	ND	0.50	1	06/22/2017 16:58
Thallium	ND	0.50	1	06/22/2017 16:58
Vanadium	<b>34</b>	0.50	1	06/22/2017 16:58
Zinc	<b>62</b>	5.0	1	06/22/2017 16:58

Surrogates	REC (%)	Limits	Date Analyzed
Terbium	105	70-130	06/22/2017 16:58

**Analyst(s):** MIG



## Analytical Report

**Client:** Langan  
**Date Received:** 6/20/17 12:30  
**Date Prepared:** 6/20/17  
**Project:** 770641901; 600 South 1st Street

**WorkOrder:** 1706947  
**Extraction Method:** SW3050B  
**Analytical Method:** SW6020  
**Unit:** mg/Kg

### CAM / CCR 17 Metals

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-6-30.0	1706947-060A	Soil	06/17/2017 10:23	ICP-MS1	140761

Analytes	Result	RL	DF	Date Analyzed
Antimony	0.51	0.50	1	06/21/2017 12:31
Arsenic	3.4	0.50	1	06/21/2017 12:31
Barium	74	5.0	1	06/21/2017 12:31
Beryllium	ND	0.50	1	06/21/2017 12:31
Cadmium	ND	0.25	1	06/21/2017 12:31
Chromium	34	0.50	1	06/21/2017 12:31
Cobalt	6.6	0.50	1	06/21/2017 12:31
Copper	20	0.50	1	06/21/2017 12:31
Lead	5.1	0.50	1	06/21/2017 12:31
Mercury	0.052	0.050	1	06/21/2017 12:31
Molybdenum	0.65	0.50	1	06/21/2017 12:31
Nickel	56	0.50	1	06/21/2017 12:31
Selenium	ND	0.50	1	06/21/2017 12:31
Silver	ND	0.50	1	06/21/2017 12:31
Thallium	ND	0.50	1	06/21/2017 12:31
Vanadium	26	0.50	1	06/21/2017 12:31
Zinc	35	5.0	1	06/21/2017 12:31

Surrogates	REC (%)	Limits	Date Analyzed
Terbium	104	70-130	06/21/2017 12:31

Analyst(s): JC



## Analytical Report

**Client:** Langan  
**Date Received:** 6/20/17 12:30  
**Date Prepared:** 6/20/17-6/27/17  
**Project:** 770641901; 600 South 1st Street

**WorkOrder:** 1706947  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8021B/8015Bm  
**Unit:** mg/Kg

### Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-1-1.5	1706947-001A	Soil	06/17/2017 11:27	GC7	140758

Analytes	Result	RL	DF	Date Analyzed
TPH(g) (C6-C12)	ND	1.0	1	06/21/2017 18:21
MTBE	---	0.050	1	06/21/2017 18:21
Benzene	---	0.0050	1	06/21/2017 18:21
Toluene	---	0.0050	1	06/21/2017 18:21
Ethylbenzene	---	0.0050	1	06/21/2017 18:21
Xylenes	---	0.015	1	06/21/2017 18:21

Surrogates	REC (%)	Limits	Date Analyzed
2-Fluorotoluene	84	62-126	06/21/2017 18:21

Analyst(s): HD

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-1-5.0	1706947-003A	Soil	06/17/2017 11:33	GC7	140758

Analytes	Result	RL	DF	Date Analyzed
TPH(g) (C6-C12)	ND	1.0	1	06/21/2017 19:28
MTBE	---	0.050	1	06/21/2017 19:28
Benzene	---	0.0050	1	06/21/2017 19:28
Toluene	---	0.0050	1	06/21/2017 19:28
Ethylbenzene	---	0.0050	1	06/21/2017 19:28
Xylenes	---	0.015	1	06/21/2017 19:28

Surrogates	REC (%)	Limits	Date Analyzed
2-Fluorotoluene	78	62-126	06/21/2017 19:28

Analyst(s): HD



## Analytical Report

**Client:** Langan  
**Date Received:** 6/20/17 12:30  
**Date Prepared:** 6/20/17-6/27/17  
**Project:** 770641901; 600 South 1st Street

**WorkOrder:** 1706947  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8021B/8015Bm  
**Unit:** mg/Kg

### Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-1-15.0	1706947-006A	Soil	06/17/2017 11:42	GC7	140758

Analytes	Result	RL	DF	Date Analyzed
TPH(g) (C6-C12)	ND	1.0	1	06/21/2017 22:45
MTBE	---	0.050	1	06/21/2017 22:45
Benzene	---	0.0050	1	06/21/2017 22:45
Toluene	---	0.0050	1	06/21/2017 22:45
Ethylbenzene	---	0.0050	1	06/21/2017 22:45
Xylenes	---	0.015	1	06/21/2017 22:45

Surrogates	REC (%)	Limits	Date Analyzed
2-Fluorotoluene	76	62-126	06/21/2017 22:45

Analyst(s): HD

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-2-1.5	1706947-010A	Soil	06/17/2017 07:46	GC7	140758

Analytes	Result	RL	DF	Date Analyzed
TPH(g) (C6-C12)	ND	1.0	1	06/23/2017 22:59
MTBE	---	0.050	1	06/23/2017 22:59
Benzene	---	0.0050	1	06/23/2017 22:59
Toluene	---	0.0050	1	06/23/2017 22:59
Ethylbenzene	---	0.0050	1	06/23/2017 22:59
Xylenes	---	0.015	1	06/23/2017 22:59

Surrogates	REC (%)	Limits	Date Analyzed
2-Fluorotoluene	89	62-126	06/23/2017 22:59

Analyst(s): HD



## Analytical Report

**Client:** Langan  
**Date Received:** 6/20/17 12:30  
**Date Prepared:** 6/20/17-6/27/17  
**Project:** 770641901; 600 South 1st Street

**WorkOrder:** 1706947  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8021B/8015Bm  
**Unit:** mg/Kg

### Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-2-3.0	1706947-011A	Soil	06/17/2017 07:49	GC7	140758

Analytes	Result	RL	DF	Date Analyzed
TPH(g) (C6-C12)	ND	1.0	1	06/21/2017 23:17
MTBE	---	0.050	1	06/21/2017 23:17
Benzene	---	0.0050	1	06/21/2017 23:17
Toluene	---	0.0050	1	06/21/2017 23:17
Ethylbenzene	---	0.0050	1	06/21/2017 23:17
Xylenes	---	0.015	1	06/21/2017 23:17
Surrogates	REC (%)	Limits		
2-Fluorotoluene	84	62-126		06/21/2017 23:17

Analyst(s): HD

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-2-10.0	1706947-014A	Soil	06/17/2017 08:04	GC7	140758

Analytes	Result	RL	DF	Date Analyzed
TPH(g) (C6-C12)	ND	1.0	1	06/23/2017 23:29
MTBE	---	0.050	1	06/23/2017 23:29
Benzene	---	0.0050	1	06/23/2017 23:29
Toluene	---	0.0050	1	06/23/2017 23:29
Ethylbenzene	---	0.0050	1	06/23/2017 23:29
Xylenes	---	0.015	1	06/23/2017 23:29
Surrogates	REC (%)	Limits		
2-Fluorotoluene	88	62-126		06/23/2017 23:29

Analyst(s): HD

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NELAP 4033ORELAP

 Angela Rydelius, Lab Manager





## Analytical Report

<b>Client:</b> Langan	<b>WorkOrder:</b> 1706947
<b>Date Received:</b> 6/20/17 12:30	<b>Extraction Method:</b> SW5030B
<b>Date Prepared:</b> 6/20/17-6/27/17	<b>Analytical Method:</b> SW8021B/8015Bm
<b>Project:</b> 770641901; 600 South 1st Street	<b>Unit:</b> mg/Kg

### Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-2-15.0	1706947-015A	Soil	06/17/2017 08:08	GC19	140758
<b>Analytes</b>					
	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
TPH(g) (C6-C12)	240		50	50	06/22/2017 12:47
MTBE	---		2.5	50	06/22/2017 12:47
Benzene	---		0.25	50	06/22/2017 12:47
Toluene	---		0.25	50	06/22/2017 12:47
Ethylbenzene	---		0.25	50	06/22/2017 12:47
Xylenes	---		0.75	50	06/22/2017 12:47
<b>Surrogates</b>					
	<u>REC (%)</u>	<u>Qualifiers</u>	<u>Limits</u>		
2-Fluorotoluene	160	S	62-126		06/22/2017 12:47
<b>Analyst(s):</b> HD			<b>Analytical Comments:</b> d7,d9,c4		

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-2-24.0	1706947-017A	Soil	06/17/2017 09:04	GC7	141151
<b>Analytes</b>					
	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
TPH(g) (C6-C12)	ND		1.0	1	06/28/2017 05:13
MTBE	---		0.050	1	06/28/2017 05:13
Benzene	---		0.0050	1	06/28/2017 05:13
Toluene	---		0.0050	1	06/28/2017 05:13
Ethylbenzene	---		0.0050	1	06/28/2017 05:13
Xylenes	---		0.015	1	06/28/2017 05:13
<b>Surrogates</b>					
	<u>REC (%)</u>		<u>Limits</u>		
2-Fluorotoluene	80		62-126		06/28/2017 05:13
<b>Analyst(s):</b> HD					

(Cont.)



## Analytical Report

<b>Client:</b> Langan	<b>WorkOrder:</b> 1706947
<b>Date Received:</b> 6/20/17 12:30	<b>Extraction Method:</b> SW5030B
<b>Date Prepared:</b> 6/20/17-6/27/17	<b>Analytical Method:</b> SW8021B/8015Bm
<b>Project:</b> 770641901; 600 South 1st Street	<b>Unit:</b> mg/Kg

### Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-2-30.0	1706947-018A	Soil	06/17/2017 09:13	GC7	140758

Analytes	Result	RL	DF	Date Analyzed
TPH(g) (C6-C12)	12	1.0	1	06/24/2017 01:57
MTBE	---	0.050	1	06/24/2017 01:57
Benzene	---	0.0050	1	06/24/2017 01:57
Toluene	---	0.0050	1	06/24/2017 01:57
Ethylbenzene	---	0.0050	1	06/24/2017 01:57
Xylenes	---	0.015	1	06/24/2017 01:57

Surrogates	REC (%)	Limits	Date Analyzed
2-Fluorotoluene	87	62-126	06/24/2017 01:57

Analyst(s): HD Analytical Comments: d1,d9

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-3-1.5	1706947-019A	Soil	06/17/2017 10:02	GC7	140758

Analytes	Result	RL	DF	Date Analyzed
TPH(g) (C6-C12)	ND	1.0	1	06/24/2017 02:27
MTBE	---	0.050	1	06/24/2017 02:27
Benzene	---	0.0050	1	06/24/2017 02:27
Toluene	---	0.0050	1	06/24/2017 02:27
Ethylbenzene	---	0.0050	1	06/24/2017 02:27
Xylenes	---	0.015	1	06/24/2017 02:27

Surrogates	REC (%)	Limits	Date Analyzed
2-Fluorotoluene	88	62-126	06/24/2017 02:27

Analyst(s): HD



## Analytical Report

**Client:** Langan  
**Date Received:** 6/20/17 12:30  
**Date Prepared:** 6/20/17-6/27/17  
**Project:** 770641901; 600 South 1st Street

**WorkOrder:** 1706947  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8021B/8015Bm  
**Unit:** mg/Kg

### Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-3-7.5	1706947-021A	Soil	06/17/2017 10:07	GC7	140758

Analytes	Result	RL	DF	Date Analyzed
TPH(g) (C6-C12)	ND	1.0	1	06/24/2017 02:57
MTBE	---	0.050	1	06/24/2017 02:57
Benzene	---	0.0050	1	06/24/2017 02:57
Toluene	---	0.0050	1	06/24/2017 02:57
Ethylbenzene	---	0.0050	1	06/24/2017 02:57
Xylenes	---	0.015	1	06/24/2017 02:57

Surrogates	REC (%)	Limits
2-Fluorotoluene	86	62-126

Analyst(s): HD

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-3-15.0	1706947-023A	Soil	06/17/2017 10:13	GC7	140758

Analytes	Result	RL	DF	Date Analyzed
TPH(g) (C6-C12)	140	20	20	06/26/2017 22:02
MTBE	---	1.0	20	06/26/2017 22:02
Benzene	---	0.10	20	06/26/2017 22:02
Toluene	---	0.10	20	06/26/2017 22:02
Ethylbenzene	---	0.10	20	06/26/2017 22:02
Xylenes	---	0.30	20	06/26/2017 22:02

Surrogates	REC (%)	Limits
2-Fluorotoluene	72	62-126

Analyst(s): HD

Analytical Comments: d1,d7



## Analytical Report

**Client:** Langan  
**Date Received:** 6/20/17 12:30  
**Date Prepared:** 6/20/17-6/27/17  
**Project:** 770641901; 600 South 1st Street

**WorkOrder:** 1706947  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8021B/8015Bm  
**Unit:** mg/Kg

### Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-3-26.0	1706947-025A	Soil	06/17/2017 10:27	GC19	140758

Analytes	Result	RL	DF	Date Analyzed
TPH(g) (C6-C12)	940	200	200	06/21/2017 02:08
MTBE	---	10	200	06/21/2017 02:08
Benzene	---	1.0	200	06/21/2017 02:08
Toluene	---	1.0	200	06/21/2017 02:08
Ethylbenzene	---	1.0	200	06/21/2017 02:08
Xylenes	---	3.0	200	06/21/2017 02:08

Surrogates	REC (%)	Limits	Date Analyzed
2-Fluorotoluene	104	62-126	06/21/2017 02:08

Analyst(s): HD

Analytical Comments: d1

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-3-36.0	1706947-027A	Soil	06/17/2017 11:18	GC7	140758

Analytes	Result	RL	DF	Date Analyzed
TPH(g) (C6-C12)	820	200	200	06/22/2017 06:34
MTBE	---	10	200	06/22/2017 06:34
Benzene	---	1.0	200	06/22/2017 06:34
Toluene	---	1.0	200	06/22/2017 06:34
Ethylbenzene	---	1.0	200	06/22/2017 06:34
Xylenes	---	3.0	200	06/22/2017 06:34

Surrogates	REC (%)	Qualifiers	Limits	Date Analyzed
2-Fluorotoluene	213	S	62-126	06/22/2017 06:34

Analyst(s): HD

Analytical Comments: d1,c4



## Analytical Report

**Client:** Langan  
**Date Received:** 6/20/17 12:30  
**Date Prepared:** 6/20/17-6/27/17  
**Project:** 770641901; 600 South 1st Street

**WorkOrder:** 1706947  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8021B/8015Bm  
**Unit:** mg/Kg

### Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-4-1.5	1706947-028A	Soil	06/17/2017 13:32	GC7	140758

Analytes	Result	RL	DF	Date Analyzed
TPH(g) (C6-C12)	ND	1.0	1	06/24/2017 03:56
MTBE	---	0.050	1	06/24/2017 03:56
Benzene	---	0.0050	1	06/24/2017 03:56
Toluene	---	0.0050	1	06/24/2017 03:56
Ethylbenzene	---	0.0050	1	06/24/2017 03:56
Xylenes	---	0.015	1	06/24/2017 03:56

Surrogates	REC (%)	Limits
2-Fluorotoluene	91	62-126

Analyst(s): HD

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-4-3.0	1706947-029A	Soil	06/17/2017 13:35	GC7	140758

Analytes	Result	RL	DF	Date Analyzed
TPH(g) (C6-C12)	ND	1.0	1	06/24/2017 04:25
MTBE	---	0.050	1	06/24/2017 04:25
Benzene	---	0.0050	1	06/24/2017 04:25
Toluene	---	0.0050	1	06/24/2017 04:25
Ethylbenzene	---	0.0050	1	06/24/2017 04:25
Xylenes	---	0.015	1	06/24/2017 04:25

Surrogates	REC (%)	Limits
2-Fluorotoluene	92	62-126

Analyst(s): HD



## Analytical Report

<b>Client:</b> Langan	<b>WorkOrder:</b> 1706947
<b>Date Received:</b> 6/20/17 12:30	<b>Extraction Method:</b> SW5030B
<b>Date Prepared:</b> 6/20/17-6/27/17	<b>Analytical Method:</b> SW8021B/8015Bm
<b>Project:</b> 770641901; 600 South 1st Street	<b>Unit:</b> mg/Kg

### Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-4-5.0	1706947-030A	Soil	06/17/2017 13:37	GC7	140758
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
TPH(g) (C6-C12)	ND		1.0	1	06/24/2017 22:32
MTBE	---		0.050	1	06/24/2017 22:32
Benzene	---		0.0050	1	06/24/2017 22:32
Toluene	---		0.0050	1	06/24/2017 22:32
Ethylbenzene	---		0.0050	1	06/24/2017 22:32
Xylenes	---		0.015	1	06/24/2017 22:32
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>		
2-Fluorotoluene	84		62-126		06/24/2017 22:32
<u>Analyst(s):</u> HD					

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-4-15.0	1706947-033A	Soil	06/17/2017 13:48	GC7	140758
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
TPH(g) (C6-C12)	<b>2000</b>		100	100	06/24/2017 04:55
MTBE	---		5.0	100	06/24/2017 04:55
Benzene	---		0.50	100	06/24/2017 04:55
Toluene	---		0.50	100	06/24/2017 04:55
Ethylbenzene	---		0.50	100	06/24/2017 04:55
Xylenes	---		1.5	100	06/24/2017 04:55
<u>Surrogates</u>	<u>REC (%)</u>	<u>Qualifiers</u>	<u>Limits</u>		
2-Fluorotoluene	285	S	62-126		06/24/2017 04:55
<u>Analyst(s):</u> HD					
<u>Analytical Comments:</u> d1,c4					

(Cont.)



## Analytical Report

<b>Client:</b> Langan	<b>WorkOrder:</b> 1706947
<b>Date Received:</b> 6/20/17 12:30	<b>Extraction Method:</b> SW5030B
<b>Date Prepared:</b> 6/20/17-6/27/17	<b>Analytical Method:</b> SW8021B/8015Bm
<b>Project:</b> 770641901; 600 South 1st Street	<b>Unit:</b> mg/Kg

### Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-4-35.0	1706947-037A	Soil	06/17/2017 14:15	GC19	140758

Analytes	Result	RL	DF	Date Analyzed
TPH(g) (C6-C12)	1.4	1.0	1	06/23/2017 23:20
MTBE	---	0.050	1	06/23/2017 23:20
Benzene	---	0.0050	1	06/23/2017 23:20
Toluene	---	0.0050	1	06/23/2017 23:20
Ethylbenzene	---	0.0050	1	06/23/2017 23:20
Xylenes	---	0.015	1	06/23/2017 23:20

Surrogates	REC (%)	Limits	Date Analyzed
2-Fluorotoluene	87	62-126	06/23/2017 23:20

Analyst(s): HD Analytical Comments: d1

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-4-44.0	1706947-039A	Soil	06/17/2017 14:35	GC19	140758

Analytes	Result	RL	DF	Date Analyzed
TPH(g) (C6-C12)	61	20	20	06/21/2017 21:44
MTBE	---	1.0	20	06/21/2017 21:44
Benzene	---	0.10	20	06/21/2017 21:44
Toluene	---	0.10	20	06/21/2017 21:44
Ethylbenzene	---	0.10	20	06/21/2017 21:44
Xylenes	---	0.30	20	06/21/2017 21:44

Surrogates	REC (%)	Limits	Date Analyzed
2-Fluorotoluene	96	62-126	06/21/2017 21:44

Analyst(s): HD Analytical Comments: d1



## Analytical Report

<b>Client:</b> Langan	<b>WorkOrder:</b> 1706947
<b>Date Received:</b> 6/20/17 12:30	<b>Extraction Method:</b> SW5030B
<b>Date Prepared:</b> 6/20/17-6/27/17	<b>Analytical Method:</b> SW8021B/8015Bm
<b>Project:</b> 770641901; 600 South 1st Street	<b>Unit:</b> mg/Kg

### Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-5-1.5	1706947-040A	Soil	06/17/2017 11:43	GC7	140759

Analytes	Result	RL	DF	Date Analyzed
TPH(g) (C6-C12)	ND	1.0	1	06/22/2017 13:40
MTBE	---	0.050	1	06/22/2017 13:40
Benzene	---	0.0050	1	06/22/2017 13:40
Toluene	---	0.0050	1	06/22/2017 13:40
Ethylbenzene	---	0.0050	1	06/22/2017 13:40
Xylenes	---	0.015	1	06/22/2017 13:40

Surrogates	REC (%)	Limits
2-Fluorotoluene	81	62-126

Analyst(s): LT

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-5-5.0	1706947-042A	Soil	06/17/2017 11:52	GC19	140759

Analytes	Result	RL	DF	Date Analyzed
TPH(g) (C6-C12)	ND	1.0	1	06/23/2017 23:51
MTBE	---	0.050	1	06/23/2017 23:51
Benzene	---	0.0050	1	06/23/2017 23:51
Toluene	---	0.0050	1	06/23/2017 23:51
Ethylbenzene	---	0.0050	1	06/23/2017 23:51
Xylenes	---	0.015	1	06/23/2017 23:51

Surrogates	REC (%)	Limits
2-Fluorotoluene	80	62-126

Analyst(s): HD





## Analytical Report

**Client:** Langan  
**Date Received:** 6/20/17 12:30  
**Date Prepared:** 6/20/17-6/27/17  
**Project:** 770641901; 600 South 1st Street

**WorkOrder:** 1706947  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8021B/8015Bm  
**Unit:** mg/Kg

### Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-5-20.0	1706947-046A	Soil	06/17/2017 12:28	GC19	140759

Analytes	Result	RL	DF	Date Analyzed
TPH(g) (C6-C12)	2.7	1.0	1	06/24/2017 00:22
MTBE	---	0.050	1	06/24/2017 00:22
Benzene	---	0.0050	1	06/24/2017 00:22
Toluene	---	0.0050	1	06/24/2017 00:22
Ethylbenzene	---	0.0050	1	06/24/2017 00:22
Xylenes	---	0.015	1	06/24/2017 00:22

Surrogates	REC (%)	Limits
2-Fluorotoluene	85	62-126

**Analyst(s):** HD **Analytical Comments:** d1

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-5-30.0	1706947-048A	Soil	06/17/2017 12:48	GC19	140759

Analytes	Result	RL	DF	Date Analyzed
TPH(g) (C6-C12)	ND	1.0	1	06/24/2017 00:53
MTBE	---	0.050	1	06/24/2017 00:53
Benzene	---	0.0050	1	06/24/2017 00:53
Toluene	---	0.0050	1	06/24/2017 00:53
Ethylbenzene	---	0.0050	1	06/24/2017 00:53
Xylenes	---	0.015	1	06/24/2017 00:53

Surrogates	REC (%)	Limits
2-Fluorotoluene	80	62-126

**Analyst(s):** HD



## Analytical Report

**Client:** Langan  
**Date Received:** 6/20/17 12:30  
**Date Prepared:** 6/20/17-6/27/17  
**Project:** 770641901; 600 South 1st Street

**WorkOrder:** 1706947  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8021B/8015Bm  
**Unit:** mg/Kg

### Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-5-45.0	1706947-051A	Soil	06/17/2017 13:27	GC19	140759

Analytes	Result	RL	DF	Date Analyzed
TPH(g) (C6-C12)	ND	1.0	1	06/24/2017 01:54
MTBE	---	0.050	1	06/24/2017 01:54
Benzene	---	0.0050	1	06/24/2017 01:54
Toluene	---	0.0050	1	06/24/2017 01:54
Ethylbenzene	---	0.0050	1	06/24/2017 01:54
Xylenes	---	0.015	1	06/24/2017 01:54

Surrogates	REC (%)	Limits
2-Fluorotoluene	77	62-126

Analyst(s): HD

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-6-1.5	1706947-052A	Soil	06/17/2017 08:48	GC19	140759

Analytes	Result	RL	DF	Date Analyzed
TPH(g) (C6-C12)	1.6	1.0	1	06/25/2017 01:48
MTBE	---	0.050	1	06/25/2017 01:48
Benzene	---	0.0050	1	06/25/2017 01:48
Toluene	---	0.0050	1	06/25/2017 01:48
Ethylbenzene	---	0.0050	1	06/25/2017 01:48
Xylenes	---	0.015	1	06/25/2017 01:48

Surrogates	REC (%)	Limits
2-Fluorotoluene	91	62-126

Analyst(s): HD

Analytical Comments: d1



## Analytical Report

**Client:** Langan  
**Date Received:** 6/20/17 12:30  
**Date Prepared:** 6/20/17-6/27/17  
**Project:** 770641901; 600 South 1st Street

**WorkOrder:** 1706947  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8021B/8015Bm  
**Unit:** mg/Kg

### Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-6-3.0	1706947-053A	Soil	06/17/2017 08:55	GC7	140759

Analytes	Result	RL	DF	Date Analyzed
TPH(g) (C6-C12)	ND	1.0	1	06/21/2017 23:50
MTBE	---	0.050	1	06/21/2017 23:50
Benzene	---	0.0050	1	06/21/2017 23:50
Toluene	---	0.0050	1	06/21/2017 23:50
Ethylbenzene	---	0.0050	1	06/21/2017 23:50
Xylenes	---	0.015	1	06/21/2017 23:50

Surrogates	REC (%)	Limits
2-Fluorotoluene	84	62-126

Analyst(s): HD

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-6-10.0	1706947-056A	Soil	06/17/2017 09:18	GC7	140759

Analytes	Result	RL	DF	Date Analyzed
TPH(g) (C6-C12)	ND	1.0	1	06/22/2017 00:21
MTBE	---	0.050	1	06/22/2017 00:21
Benzene	---	0.0050	1	06/22/2017 00:21
Toluene	---	0.0050	1	06/22/2017 00:21
Ethylbenzene	---	0.0050	1	06/22/2017 00:21
Xylenes	---	0.015	1	06/22/2017 00:21

Surrogates	REC (%)	Limits
2-Fluorotoluene	80	62-126

Analyst(s): HD



## Analytical Report

**Client:** Langan  
**Date Received:** 6/20/17 12:30  
**Date Prepared:** 6/20/17-6/27/17  
**Project:** 770641901; 600 South 1st Street

**WorkOrder:** 1706947  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8021B/8015Bm  
**Unit:** mg/Kg

### Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-6-30.0	1706947-060A	Soil	06/17/2017 10:23	GC7	140759

Analytes	Result	RL	DF	Date Analyzed
TPH(g) (C6-C12)	ND	1.0	1	06/22/2017 00:53
MTBE	---	0.050	1	06/22/2017 00:53
Benzene	---	0.0050	1	06/22/2017 00:53
Toluene	---	0.0050	1	06/22/2017 00:53
Ethylbenzene	---	0.0050	1	06/22/2017 00:53
Xylenes	---	0.015	1	06/22/2017 00:53

Surrogates	REC (%)	Limits	Date Analyzed
2-Fluorotoluene	81	62-126	06/22/2017 00:53

Analyst(s): HD



## Analytical Report

**Client:** Langan  
**Date Received:** 6/20/17 12:30  
**Date Prepared:** 6/20/17-6/23/17  
**Project:** 770641901; 600 South 1st Street

**WorkOrder:** 1706947  
**Extraction Method:** SW3050B  
**Analytical Method:** SW6020  
**Unit:** mg/Kg

### LUFT 5 Metals

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-1-15.0	1706947-006A	Soil	06/17/2017 11:42	ICP-MS3	140693

Analytes	Result	RL	DF	Date Analyzed
Cadmium	0.56	0.25	1	06/21/2017 14:26
Chromium	55	0.50	1	06/21/2017 14:26
Lead	89	0.50	1	06/21/2017 14:26
Nickel	87	0.50	1	06/21/2017 14:26
Zinc	300	5.0	1	06/21/2017 14:26

Surrogates	REC (%)	Limits	Date Analyzed
Terbium	96	70-130	06/21/2017 14:26

Analyst(s): JC

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-2-3.0	1706947-011A	Soil	06/17/2017 07:49	ICP-MS2	140693

Analytes	Result	RL	DF	Date Analyzed
Cadmium	ND	0.25	1	06/21/2017 15:40
Chromium	55	0.50	1	06/21/2017 15:40
Lead	7.7	0.50	1	06/21/2017 15:40
Nickel	92	0.50	1	06/21/2017 15:40
Zinc	53	5.0	1	06/21/2017 15:40

Surrogates	REC (%)	Limits	Date Analyzed
Terbium	103	70-130	06/21/2017 15:40

Analyst(s): ND

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-2-15.0	1706947-015A	Soil	06/17/2017 08:08	ICP-MS2	140693

Analytes	Result	RL	DF	Date Analyzed
Cadmium	ND	0.25	1	06/21/2017 14:02
Chromium	54	0.50	1	06/21/2017 14:02
Lead	12	0.50	1	06/21/2017 14:02
Nickel	91	0.50	1	06/21/2017 14:02
Zinc	66	5.0	1	06/21/2017 14:02

Surrogates	REC (%)	Limits	Date Analyzed
Terbium	110	70-130	06/21/2017 14:02

Analyst(s): MIG

(Cont.)



## Analytical Report

**Client:** Langan  
**Date Received:** 6/20/17 12:30  
**Date Prepared:** 6/20/17-6/23/17  
**Project:** 770641901; 600 South 1st Street

**WorkOrder:** 1706947  
**Extraction Method:** SW3050B  
**Analytical Method:** SW6020  
**Unit:** mg/Kg

### LUFT 5 Metals

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-2-24.0	1706947-017A	Soil	06/17/2017 09:04	ICP-MS3	140939

Analytes	Result	RL	DF	Date Analyzed
Cadmium	ND	0.25	1	06/24/2017 04:15
Chromium	79	0.50	1	06/24/2017 04:15
Lead	11	0.50	1	06/24/2017 04:15
Nickel	130	0.50	1	06/24/2017 04:15
Zinc	85	5.0	1	06/24/2017 04:15

Surrogates	REC (%)	Limits
Terbium	100	70-130

Analyst(s): ND

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-2-30.0	1706947-018A	Soil	06/17/2017 09:13	ICP-MS1	140760

Analytes	Result	RL	DF	Date Analyzed
Cadmium	ND	0.25	1	06/21/2017 14:02
Chromium	49	0.50	1	06/21/2017 14:02
Lead	9.5	0.50	1	06/21/2017 14:02
Nickel	82	0.50	1	06/21/2017 14:02
Zinc	62	5.0	1	06/21/2017 14:02

Surrogates	REC (%)	Limits
Terbium	107	70-130

Analyst(s): ND

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-3-7.5	1706947-021A	Soil	06/17/2017 10:07	ICP-MS3	140760

Analytes	Result	RL	DF	Date Analyzed
Cadmium	ND	0.25	1	06/21/2017 14:57
Chromium	45	0.50	1	06/21/2017 14:57
Lead	8.0	0.50	1	06/21/2017 14:57
Nickel	83	0.50	1	06/21/2017 14:57
Zinc	54	5.0	1	06/21/2017 14:57

Surrogates	REC (%)	Limits
Terbium	101	70-130

Analyst(s): JC

(Cont.)



## Analytical Report

**Client:** Langan  
**Date Received:** 6/20/17 12:30  
**Date Prepared:** 6/20/17-6/23/17  
**Project:** 770641901; 600 South 1st Street

**WorkOrder:** 1706947  
**Extraction Method:** SW3050B  
**Analytical Method:** SW6020  
**Unit:** mg/Kg

### LUFT 5 Metals

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-3-36.0	1706947-027A	Soil	06/17/2017 11:18	ICP-MS3	140760

Analytes	Result	RL	DF	Date Analyzed
Cadmium	ND	0.25	1	06/21/2017 14:20
Chromium	82	0.50	1	06/21/2017 14:20
Lead	21	0.50	1	06/21/2017 14:20
Nickel	110	0.50	1	06/21/2017 14:20
Zinc	82	5.0	1	06/21/2017 14:20

Surrogates	REC (%)	Limits
Terbium	98	70-130

Analyst(s): JC

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-4-15.0	1706947-033A	Soil	06/17/2017 13:48	ICP-MS3	140760

Analytes	Result	RL	DF	Date Analyzed
Cadmium	ND	0.25	1	06/21/2017 16:36
Chromium	44	0.50	1	06/21/2017 16:36
Lead	11	0.50	1	06/21/2017 16:36
Nickel	83	0.50	1	06/21/2017 16:36
Zinc	49	5.0	1	06/21/2017 16:36

Surrogates	REC (%)	Limits
Terbium	104	70-130

Analyst(s): DB

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-4-44.0	1706947-039A	Soil	06/17/2017 14:35	ICP-MS3	140760

Analytes	Result	RL	DF	Date Analyzed
Cadmium	ND	0.25	1	06/21/2017 14:50
Chromium	57	0.50	1	06/21/2017 14:50
Lead	10	0.50	1	06/21/2017 14:50
Nickel	91	0.50	1	06/21/2017 14:50
Zinc	72	5.0	1	06/21/2017 14:50

Surrogates	REC (%)	Limits
Terbium	105	70-130

Analyst(s): JC

(Cont.)



## Analytical Report

**Client:** Langan  
**Date Received:** 6/20/17 12:30  
**Date Prepared:** 6/20/17-6/23/17  
**Project:** 770641901; 600 South 1st Street

**WorkOrder:** 1706947  
**Extraction Method:** SW3050B  
**Analytical Method:** SW6020  
**Unit:** mg/Kg

### LUFT 5 Metals

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-5-5.0	1706947-042A	Soil	06/17/2017 11:52	ICP-MS3	140760

Analytes	Result	RL	DF	Date Analyzed
Cadmium	ND	0.25	1	06/21/2017 14:38
Chromium	67	0.50	1	06/21/2017 14:38
Lead	16	0.50	1	06/21/2017 14:38
Nickel	110	0.50	1	06/21/2017 14:38
Zinc	86	5.0	1	06/21/2017 14:38

Surrogates	REC (%)	Limits
Terbium	106	70-130

Analyst(s): JC

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-5-30.0	1706947-048A	Soil	06/17/2017 12:48	ICP-MS3	140760

Analytes	Result	RL	DF	Date Analyzed
Cadmium	ND	0.25	1	06/21/2017 14:32
Chromium	55	0.50	1	06/21/2017 14:32
Lead	10	0.50	1	06/21/2017 14:32
Nickel	93	0.50	1	06/21/2017 14:32
Zinc	81	5.0	1	06/21/2017 14:32

Surrogates	REC (%)	Limits
Terbium	105	70-130

Analyst(s): JC

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-5-45.0	1706947-051A	Soil	06/17/2017 13:27	ICP-MS3	140760

Analytes	Result	RL	DF	Date Analyzed
Cadmium	0.46	0.25	1	06/21/2017 14:44
Chromium	77	0.50	1	06/21/2017 14:44
Lead	11	0.50	1	06/21/2017 14:44
Nickel	140	0.50	1	06/21/2017 14:44
Zinc	90	5.0	1	06/21/2017 14:44

Surrogates	REC (%)	Limits
Terbium	104	70-130

Analyst(s): JC

(Cont.)





# Analytical Report

**Client:** Langan  
**Date Received:** 6/20/17 12:30  
**Date Prepared:** 6/20/17-6/23/17  
**Project:** 770641901; 600 South 1st Street

**WorkOrder:** 1706947  
**Extraction Method:** SW3050B  
**Analytical Method:** SW6020  
**Unit:** mg/Kg

## LUFT 5 Metals

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-6-1.5	1706947-052A	Soil	06/17/2017 08:48	ICP-MS3	140760

Analytes	Result	RL	DF	Date Analyzed
Cadmium	ND	0.25	1	06/21/2017 16:43
Chromium	57	0.50	1	06/21/2017 16:43
Lead	44	0.50	1	06/21/2017 16:43
Nickel	94	0.50	1	06/21/2017 16:43
Zinc	160	5.0	1	06/21/2017 16:43

Surrogates	REC (%)	Limits	Date Analyzed
Terbium	104	70-130	06/21/2017 16:43

Analyst(s): DB



# Analytical Report

**Client:** Langan  
**Date Received:** 6/20/17 12:30  
**Date Prepared:** 6/20/17  
**Project:** 770641901; 600 South 1st Street

**WorkOrder:** 1706947  
**Extraction Method:** SW3550B  
**Analytical Method:** SW8015B  
**Unit:** mg/Kg

## Total Extractable Petroleum Hydrocarbons w/out SG Clean-Up

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-1-1.5	1706947-001A	Soil	06/17/2017 11:27	GC6B	140692

Analytes	Result	RL	DF	Date Analyzed
TPH-Diesel (C10-C23)	1.2	1.0	1	06/21/2017 04:04
TPH-Motor Oil (C18-C36)	25	5.0	1	06/21/2017 04:04

Surrogates	REC (%)	Limits	Date Analyzed
C9	99	78-109	06/21/2017 04:04

**Analyst(s):** TK **Analytical Comments:** e7,e2

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-1-5.0	1706947-003A	Soil	06/17/2017 11:33	GC6B	140692

Analytes	Result	RL	DF	Date Analyzed
TPH-Diesel (C10-C23)	ND	1.0	1	06/21/2017 02:46
TPH-Motor Oil (C18-C36)	7.8	5.0	1	06/21/2017 02:46

Surrogates	REC (%)	Limits	Date Analyzed
C9	100	78-109	06/21/2017 02:46

**Analyst(s):** TK **Analytical Comments:** e7

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-1-15.0	1706947-006A	Soil	06/17/2017 11:42	GC6B	140692

Analytes	Result	RL	DF	Date Analyzed
TPH-Diesel (C10-C23)	ND	1.0	1	06/21/2017 10:00
TPH-Motor Oil (C18-C36)	ND	5.0	1	06/21/2017 10:00

Surrogates	REC (%)	Limits	Date Analyzed
C9	102	78-109	06/21/2017 10:00

**Analyst(s):** TK



# Analytical Report

**Client:** Langan  
**Date Received:** 6/20/17 12:30  
**Date Prepared:** 6/20/17  
**Project:** 770641901; 600 South 1st Street

**WorkOrder:** 1706947  
**Extraction Method:** SW3550B  
**Analytical Method:** SW8015B  
**Unit:** mg/Kg

## Total Extractable Petroleum Hydrocarbons w/out SG Clean-Up

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-2-1.5	1706947-010A	Soil	06/17/2017 07:46	GC6B	140692

Analytes	Result	RL	DF	Date Analyzed
TPH-Diesel (C10-C23)	8.4	5.0	5	06/23/2017 12:59
TPH-Motor Oil (C18-C36)	180	25	5	06/23/2017 12:59

Surrogates	REC (%)	Limits	Date Analyzed
C9	95	78-109	06/23/2017 12:59

**Analyst(s):** TK **Analytical Comments:** e7,e2

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-2-3.0	1706947-011A	Soil	06/17/2017 07:49	GC11A	140692

Analytes	Result	RL	DF	Date Analyzed
TPH-Diesel (C10-C23)	1.5	1.0	1	06/22/2017 07:45
TPH-Motor Oil (C18-C36)	44	5.0	1	06/22/2017 07:45

Surrogates	REC (%)	Limits	Date Analyzed
C9	97	78-109	06/22/2017 07:45

**Analyst(s):** TK **Analytical Comments:** e7,e2

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-2-10.0	1706947-014A	Soil	06/17/2017 08:04	GC39A	140692

Analytes	Result	RL	DF	Date Analyzed
TPH-Diesel (C10-C23)	7.4	5.0	5	06/21/2017 08:43
TPH-Motor Oil (C18-C36)	160	25	5	06/21/2017 08:43

Surrogates	REC (%)	Limits	Date Analyzed
C9	95	78-109	06/21/2017 08:43

**Analyst(s):** TK **Analytical Comments:** e7,e2



# Analytical Report

**Client:** Langan  
**Date Received:** 6/20/17 12:30  
**Date Prepared:** 6/20/17  
**Project:** 770641901; 600 South 1st Street

**WorkOrder:** 1706947  
**Extraction Method:** SW3550B  
**Analytical Method:** SW8015B  
**Unit:** mg/Kg

## Total Extractable Petroleum Hydrocarbons w/out SG Clean-Up

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-2-15.0	1706947-015A	Soil	06/17/2017 08:08	GC39A	140692

Analytes	Result	RL	DF	Date Analyzed
TPH-Diesel (C10-C23)	8.6	1.0	1	06/21/2017 07:25
TPH-Motor Oil (C18-C36)	ND	5.0	1	06/21/2017 07:25
Surrogates	REC (%)	Limits		
C9	99	78-109		06/21/2017 07:25

**Analyst(s):** TK      **Analytical Comments:** e4

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-2-24.0	1706947-017A	Soil	06/17/2017 09:04	GC6A	140692

Analytes	Result	RL	DF	Date Analyzed
TPH-Diesel (C10-C23)	ND	1.0	1	06/21/2017 13:17
TPH-Motor Oil (C18-C36)	ND	5.0	1	06/21/2017 13:17
Surrogates	REC (%)	Limits		
C9	89	78-109		06/21/2017 13:17

**Analyst(s):** TK

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-2-30.0	1706947-018A	Soil	06/17/2017 09:13	GC6B	140692

Analytes	Result	RL	DF	Date Analyzed
TPH-Diesel (C10-C23)	ND	1.0	1	06/21/2017 09:14
TPH-Motor Oil (C18-C36)	ND	5.0	1	06/21/2017 09:14
Surrogates	REC (%)	Limits		
C9	97	78-109		06/21/2017 09:14

**Analyst(s):** TK



# Analytical Report

**Client:** Langan  
**Date Received:** 6/20/17 12:30  
**Date Prepared:** 6/20/17  
**Project:** 770641901; 600 South 1st Street

**WorkOrder:** 1706947  
**Extraction Method:** SW3550B  
**Analytical Method:** SW8015B  
**Unit:** mg/Kg

## Total Extractable Petroleum Hydrocarbons w/out SG Clean-Up

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-3-1.5	1706947-019A	Soil	06/17/2017 10:02	GC11B	140692

Analytes	Result	RL	DF	Date Analyzed
TPH-Diesel (C10-C23)	5.9	5.0	5	06/21/2017 18:13
TPH-Motor Oil (C18-C36)	140	25	5	06/21/2017 18:13

Surrogates	REC (%)	Limits	Date Analyzed
C9	101	78-109	06/21/2017 18:13

**Analyst(s):** TK **Analytical Comments:** e7,e2

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-3-7.5	1706947-021A	Soil	06/17/2017 10:07	GC6A	140692

Analytes	Result	RL	DF	Date Analyzed
TPH-Diesel (C10-C23)	ND	1.0	1	06/21/2017 09:14
TPH-Motor Oil (C18-C36)	ND	5.0	1	06/21/2017 09:14

Surrogates	REC (%)	Limits	Date Analyzed
C9	86	78-109	06/21/2017 09:14

**Analyst(s):** TK

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-3-15.0	1706947-023A	Soil	06/17/2017 10:13	GC6A	140692

Analytes	Result	RL	DF	Date Analyzed
TPH-Diesel (C10-C23)	3.4	1.0	1	06/21/2017 10:00
TPH-Motor Oil (C18-C36)	ND	5.0	1	06/21/2017 10:00

Surrogates	REC (%)	Limits	Date Analyzed
C9	98	78-109	06/21/2017 10:00

**Analyst(s):** TK **Analytical Comments:** e4



## Analytical Report

**Client:** Langan  
**Date Received:** 6/20/17 12:30  
**Date Prepared:** 6/20/17  
**Project:** 770641901; 600 South 1st Street

**WorkOrder:** 1706947  
**Extraction Method:** SW3550B  
**Analytical Method:** SW8015B  
**Unit:** mg/Kg

### Total Extractable Petroleum Hydrocarbons w/out SG Clean-Up

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-3-26.0	1706947-025A	Soil	06/17/2017 10:27	GC11B	140692

Analytes	Result	RL	DF	Date Analyzed
TPH-Diesel (C10-C23)	120	2.0	2	06/22/2017 21:30
TPH-Motor Oil (C18-C36)	25	10	2	06/22/2017 21:30

Surrogates	REC (%)	Limits	Date Analyzed
C26	92	70-130	06/22/2017 21:30

**Analyst(s):** TK **Analytical Comments:** e4,e7,e2

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-3-36.0	1706947-027A	Soil	06/17/2017 11:18	GC39A	140762

Analytes	Result	RL	DF	Date Analyzed
TPH-Diesel (C10-C23)	5.4	1.0	1	06/21/2017 05:28
TPH-Motor Oil (C18-C36)	ND	5.0	1	06/21/2017 05:28

Surrogates	REC (%)	Limits	Date Analyzed
C9	100	78-109	06/21/2017 05:28

**Analyst(s):** TK **Analytical Comments:** e4

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-4-1.5	1706947-028A	Soil	06/17/2017 13:32	GC6B	140762

Analytes	Result	RL	DF	Date Analyzed
TPH-Diesel (C10-C23)	ND	1.0	1	06/21/2017 08:35
TPH-Motor Oil (C18-C36)	ND	5.0	1	06/21/2017 08:35

Surrogates	REC (%)	Limits	Date Analyzed
C9	98	78-109	06/21/2017 08:35

**Analyst(s):** TK



## Analytical Report

**Client:** Langan  
**Date Received:** 6/20/17 12:30  
**Date Prepared:** 6/20/17  
**Project:** 770641901; 600 South 1st Street

**WorkOrder:** 1706947  
**Extraction Method:** SW3550B  
**Analytical Method:** SW8015B  
**Unit:** mg/Kg

### Total Extractable Petroleum Hydrocarbons w/out SG Clean-Up

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-4-3.0	1706947-029A	Soil	06/17/2017 13:35	GC11B	140762

<u>Analytes</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
TPH-Diesel (C10-C23)	6.6	5.0	5	06/21/2017 21:02
TPH-Motor Oil (C18-C36)	150	25	5	06/21/2017 21:02

<u>Surrogates</u>	<u>REC (%)</u>	<u>Limits</u>	<u>Date Analyzed</u>
C9	100	78-109	06/21/2017 21:02

Analyst(s): TK Analytical Comments: e7,e2

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-4-5.0	1706947-030A	Soil	06/17/2017 13:37	GC6B	140762

<u>Analytes</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
TPH-Diesel (C10-C23)	ND	1.0	1	06/21/2017 01:29
TPH-Motor Oil (C18-C36)	ND	5.0	1	06/21/2017 01:29

<u>Surrogates</u>	<u>REC (%)</u>	<u>Limits</u>	<u>Date Analyzed</u>
C9	98	78-109	06/21/2017 01:29

Analyst(s): TK

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-4-15.0	1706947-033A	Soil	06/17/2017 13:48	GC6A	140762

<u>Analytes</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
TPH-Diesel (C10-C23)	38	1.0	1	06/21/2017 11:18
TPH-Motor Oil (C18-C36)	14	5.0	1	06/21/2017 11:18

<u>Surrogates</u>	<u>REC (%)</u>	<u>Limits</u>	<u>Date Analyzed</u>
C9	90	78-109	06/21/2017 11:18

Analyst(s): TK Analytical Comments: e1,e4

(Cont.)



# Analytical Report

**Client:** Langan  
**Date Received:** 6/20/17 12:30  
**Date Prepared:** 6/20/17  
**Project:** 770641901; 600 South 1st Street

**WorkOrder:** 1706947  
**Extraction Method:** SW3550B  
**Analytical Method:** SW8015B  
**Unit:** mg/Kg

## Total Extractable Petroleum Hydrocarbons w/out SG Clean-Up

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-4-35.0	1706947-037A	Soil	06/17/2017 14:15	GC6A	140762

Analytes	Result	RL	DF	Date Analyzed
TPH-Diesel (C10-C23)	ND	1.0	1	06/21/2017 12:37
TPH-Motor Oil (C18-C36)	ND	5.0	1	06/21/2017 12:37

Surrogates	REC (%)	Limits	Date Analyzed
C9	88	78-109	06/21/2017 12:37

Analyst(s): TK

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-4-44.0	1706947-039A	Soil	06/17/2017 14:35	GC11B	140762

Analytes	Result	RL	DF	Date Analyzed
TPH-Diesel (C10-C23)	22	1.0	1	06/22/2017 19:27
TPH-Motor Oil (C18-C36)	ND	5.0	1	06/22/2017 19:27

Surrogates	REC (%)	Limits	Date Analyzed
C26	94	70-130	06/22/2017 19:27

Analyst(s): TK

Analytical Comments: e4,e2

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-5-1.5	1706947-040A	Soil	06/17/2017 11:43	GC11B	140762

Analytes	Result	RL	DF	Date Analyzed
TPH-Diesel (C10-C23)	5.9	5.0	5	06/22/2017 03:07
TPH-Motor Oil (C18-C36)	93	25	5	06/22/2017 03:07

Surrogates	REC (%)	Limits	Date Analyzed
C9	104	78-109	06/22/2017 03:07

Analyst(s): TK

Analytical Comments: e7,e2

(Cont.)





# Analytical Report

**Client:** Langan  
**Date Received:** 6/20/17 12:30  
**Date Prepared:** 6/20/17  
**Project:** 770641901; 600 South 1st Street

**WorkOrder:** 1706947  
**Extraction Method:** SW3550B  
**Analytical Method:** SW8015B  
**Unit:** mg/Kg

## Total Extractable Petroleum Hydrocarbons w/out SG Clean-Up

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-5-5.0	1706947-042A	Soil	06/17/2017 11:52	GC11A	140762

Analytes	Result	RL	DF	Date Analyzed
TPH-Diesel (C10-C23)	1.2	1.0	1	06/22/2017 02:27
TPH-Motor Oil (C18-C36)	20	5.0	1	06/22/2017 02:27

Surrogates	REC (%)	Limits	Date Analyzed
C9	99	78-109	06/22/2017 02:27

**Analyst(s):** TK **Analytical Comments:** e7,e2

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-5-20.0	1706947-046A	Soil	06/17/2017 12:28	GC6B	140762

Analytes	Result	RL	DF	Date Analyzed
TPH-Diesel (C10-C23)	ND	1.0	1	06/21/2017 06:39
TPH-Motor Oil (C18-C36)	ND	5.0	1	06/21/2017 06:39

Surrogates	REC (%)	Limits	Date Analyzed
C9	100	78-109	06/21/2017 06:39

**Analyst(s):** TK

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-5-30.0	1706947-048A	Soil	06/17/2017 12:48	GC6A	140762

Analytes	Result	RL	DF	Date Analyzed
TPH-Diesel (C10-C23)	ND	1.0	1	06/21/2017 13:57
TPH-Motor Oil (C18-C36)	ND	5.0	1	06/21/2017 13:57

Surrogates	REC (%)	Limits	Date Analyzed
C9	89	78-109	06/21/2017 13:57

**Analyst(s):** TK



## Analytical Report

**Client:** Langan  
**Date Received:** 6/20/17 12:30  
**Date Prepared:** 6/20/17  
**Project:** 770641901; 600 South 1st Street

**WorkOrder:** 1706947  
**Extraction Method:** SW3550B  
**Analytical Method:** SW8015B  
**Unit:** mg/Kg

### Total Extractable Petroleum Hydrocarbons w/out SG Clean-Up

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-5-45.0	1706947-051A	Soil	06/17/2017 13:27	GC6A	140762

Analytes	Result	RL	DF	Date Analyzed
TPH-Diesel (C10-C23)	ND	1.0	1	06/21/2017 07:57
TPH-Motor Oil (C18-C36)	ND	5.0	1	06/21/2017 07:57

Surrogates	REC (%)	Limits	Date Analyzed
C9	87	78-109	06/21/2017 07:57

Analyst(s): TK

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-6-1.5	1706947-052A	Soil	06/17/2017 08:48	GC39A	140762

Analytes	Result	RL	DF	Date Analyzed
TPH-Diesel (C10-C23)	32	20	20	06/26/2017 12:04
TPH-Motor Oil (C18-C36)	530	100	20	06/26/2017 12:04

Surrogates	REC (%)	Limits	Date Analyzed
C9	106	78-109	06/26/2017 12:04

Analyst(s): TK

Analytical Comments: e7,e2

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-6-3.0	1706947-053A	Soil	06/17/2017 08:55	GC9a	140762

Analytes	Result	RL	DF	Date Analyzed
TPH-Diesel (C10-C23)	ND	2.0	2	06/23/2017 13:18
TPH-Motor Oil (C18-C36)	47	10	2	06/23/2017 13:18

Surrogates	REC (%)	Limits	Date Analyzed
C9	99	78-109	06/23/2017 13:18

Analyst(s): TK

Analytical Comments: e7,a3

(Cont.)



## Analytical Report

**Client:** Langan  
**Date Received:** 6/20/17 12:30  
**Date Prepared:** 6/20/17  
**Project:** 770641901; 600 South 1st Street

**WorkOrder:** 1706947  
**Extraction Method:** SW3550B  
**Analytical Method:** SW8015B  
**Unit:** mg/Kg

### Total Extractable Petroleum Hydrocarbons w/out SG Clean-Up

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-6-10.0	1706947-056A	Soil	06/17/2017 09:18	GC11A	140762

<u>Analytes</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
TPH-Diesel (C10-C23)	ND	1.0	1	06/22/2017 05:08
TPH-Motor Oil (C18-C36)	15	5.0	1	06/22/2017 05:08

<u>Surrogates</u>	<u>REC (%)</u>	<u>Limits</u>	<u>Date Analyzed</u>
C9	97	78-109	06/22/2017 05:08

Analyst(s): TK Analytical Comments: e7

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-6-30.0	1706947-060A	Soil	06/17/2017 10:23	GC6A	140762

<u>Analytes</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
TPH-Diesel (C10-C23)	ND	1.0	1	06/21/2017 10:39
TPH-Motor Oil (C18-C36)	ND	5.0	1	06/21/2017 10:39

<u>Surrogates</u>	<u>REC (%)</u>	<u>Limits</u>	<u>Date Analyzed</u>
C9	86	78-109	06/21/2017 10:39

Analyst(s): TK



## Quality Control Report

<b>Client:</b>	Langan	<b>WorkOrder:</b>	1706947
<b>Date Prepared:</b>	6/20/17	<b>BatchID:</b>	140763
<b>Date Analyzed:</b>	6/22/17	<b>Extraction Method:</b>	SW3550B
<b>Instrument:</b>	GC22	<b>Analytical Method:</b>	SW8081A/8082
<b>Matrix:</b>	Soil	<b>Unit:</b>	mg/kg
<b>Project:</b>	770641901; 600 South 1st Street	<b>Sample ID:</b>	MB/LCS/LCSD-140763 1706947-010AMS/MSD

### QC Summary Report for SW8081A/8082

Analyte	MB Result	RL	SPK Val	MB SS %REC	MB SS Limits
Aldrin	ND	0.0010	-	-	-
a-BHC	ND	0.0010	-	-	-
b-BHC	ND	0.0010	-	-	-
d-BHC	ND	0.0010	-	-	-
g-BHC	ND	0.0010	-	-	-
Chlordane (Technical)	ND	0.025	-	-	-
a-Chlordane	ND	0.0010	-	-	-
g-Chlordane	ND	0.0010	-	-	-
p,p-DDD	ND	0.0010	-	-	-
p,p-DDE	ND	0.0010	-	-	-
p,p-DDT	ND	0.0010	-	-	-
Dieldrin	ND	0.0010	-	-	-
Endosulfan I	ND	0.0010	-	-	-
Endosulfan II	ND	0.0010	-	-	-
Endosulfan sulfate	ND	0.0010	-	-	-
Endrin	ND	0.0010	-	-	-
Endrin aldehyde	ND	0.0010	-	-	-
Endrin ketone	ND	0.0010	-	-	-
Heptachlor	ND	0.0010	-	-	-
Heptachlor epoxide	ND	0.0010	-	-	-
Hexachlorobenzene	ND	0.010	-	-	-
Hexachlorocyclopentadiene	ND	0.020	-	-	-
Methoxychlor	ND	0.0010	-	-	-
Toxaphene	ND	0.050	-	-	-
Aroclor1016	ND	0.050	-	-	-
Aroclor1221	ND	0.050	-	-	-
Aroclor1232	ND	0.050	-	-	-
Aroclor1242	ND	0.050	-	-	-
Aroclor1248	ND	0.050	-	-	-
Aroclor1254	ND	0.050	-	-	-
Aroclor1260	ND	0.050	-	-	-
PCBs, total	ND	0.050	-	-	-
<b>Surrogate Recovery</b>					
Decachlorobiphenyl	0.05677		0.050	114	70-130



## Quality Control Report

<b>Client:</b> Langan	<b>WorkOrder:</b> 1706947
<b>Date Prepared:</b> 6/20/17	<b>BatchID:</b> 140763
<b>Date Analyzed:</b> 6/22/17	<b>Extraction Method:</b> SW3550B
<b>Instrument:</b> GC22	<b>Analytical Method:</b> SW8081A/8082
<b>Matrix:</b> Soil	<b>Unit:</b> mg/kg
<b>Project:</b> 770641901; 600 South 1st Street	<b>Sample ID:</b> MB/LCS/LCSD-140763 1706947-010AMS/MSD

### QC Summary Report for SW8081A/8082

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
Aldrin	0.0548	-	0.050	110	-	70-130	-	-
a-BHC	0.0508	-	0.050	102	-	70-130	-	-
b-BHC	0.0558	-	0.050	112	-	70-130	-	-
d-BHC	0.0638	-	0.050	128	-	70-130	-	-
g-BHC	0.0546	-	0.050	109	-	70-130	-	-
a-Chlordane	0.0555	-	0.050	111	-	70-130	-	-
g-Chlordane	0.0555	-	0.050	111	-	70-130	-	-
p,p-DDD	0.0597	-	0.050	119	-	70-130	-	-
p,p-DDE	0.0587	-	0.050	117	-	70-130	-	-
p,p-DDT	0.0638	-	0.050	128	-	70-130	-	-
Dieldrin	0.0636	-	0.050	127	-	70-130	-	-
Endosulfan I	0.0566	-	0.050	113	-	70-130	-	-
Endosulfan II	0.0600	-	0.050	120	-	70-130	-	-
Endosulfan sulfate	0.0597	-	0.050	119	-	70-130	-	-
Endrin	0.0557	-	0.050	111	-	70-130	-	-
Endrin aldehyde	0.0627	-	0.050	125	-	70-130	-	-
Endrin ketone	0.0703	-	0.050	141, F2	-	70-130	-	-
Heptachlor	0.0537	-	0.050	107	-	70-130	-	-
Heptachlor epoxide	0.0557	-	0.050	111	-	70-130	-	-
Methoxychlor	0.0596	-	0.050	119	-	70-130	-	-
Aroclor1016	0.153	0.154	0.15	102	102	70-130	0	20
Aroclor1260	0.179	0.178	0.15	119	118	70-130	0.515	20

**Surrogate Recovery**

Decachlorobiphenyl	0.0600	0.0606	0.050	120	121	70-130	1.08	20
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Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
Aldrin	NR	NR		ND<0.02	NR	NR	-	NR	-
a-BHC	NR	NR		ND<0.02	NR	NR	-	NR	-
b-BHC	NR	NR		ND<0.02	NR	NR	-	NR	-
d-BHC	NR	NR		ND<0.02	NR	NR	-	NR	-
g-BHC	NR	NR		ND<0.02	NR	NR	-	NR	-
a-Chlordane	NR	NR		ND<0.02	NR	NR	-	NR	-
g-Chlordane	NR	NR		ND<0.02	NR	NR	-	NR	-
p,p-DDD	NR	NR		ND<0.02	NR	NR	-	NR	-
p,p-DDE	NR	NR		ND<0.02	NR	NR	-	NR	-
p,p-DDT	NR	NR		ND<0.02	NR	NR	-	NR	-

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NELAP 4033ORELAP

QA/QC Officer



## Quality Control Report

<b>Client:</b>	Langan	<b>WorkOrder:</b>	1706947
<b>Date Prepared:</b>	6/20/17	<b>BatchID:</b>	140763
<b>Date Analyzed:</b>	6/22/17	<b>Extraction Method:</b>	SW3550B
<b>Instrument:</b>	GC22	<b>Analytical Method:</b>	SW8081A/8082
<b>Matrix:</b>	Soil	<b>Unit:</b>	mg/kg
<b>Project:</b>	770641901; 600 South 1st Street	<b>Sample ID:</b>	MB/LCS/LCSD-140763 1706947-010AMS/MSD

### QC Summary Report for SW8081A/8082

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
Dieldrin	NR	NR		ND<0.02	NR	NR	-	NR	-
Endosulfan I	NR	NR		ND<0.02	NR	NR	-	NR	-
Endosulfan II	NR	NR		ND<0.02	NR	NR	-	NR	-
Endosulfan sulfate	NR	NR		ND<0.02	NR	NR	-	NR	-
Endrin	NR	NR		ND<0.02	NR	NR	-	NR	-
Endrin aldehyde	NR	NR		ND<0.02	NR	NR	-	NR	-
Endrin ketone	NR	NR		ND<0.02	NR	NR	-	NR	-
Heptachlor	NR	NR		ND<0.02	NR	NR	-	NR	-
Heptachlor epoxide	NR	NR		ND<0.02	NR	NR	-	NR	-
Methoxychlor	NR	NR		ND<0.02	NR	NR	-	NR	-
Aroclor1016	NR	NR		ND<1	NR	NR	-	NR	-
Aroclor1260	NR	NR		ND<1	NR	NR	-	NR	-
<b>Surrogate Recovery</b>									
Decachlorobiphenyl	NR	NR			NR	NR	-	NR	-



## Quality Control Report

**Client:** Langan  
**Date Prepared:** 6/20/17  
**Date Analyzed:** 6/20/17 - 6/21/17  
**Instrument:** GC10, GC18, GC28  
**Matrix:** Soil  
**Project:** 770641901; 600 South 1st Street

**WorkOrder:** 1706947  
**BatchID:** 140735  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** mg/kg  
**Sample ID:** MB/LCS-140735  
 1706977-001AMS/MSD

### QC Summary Report for SW8260B

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Acetone	ND	0.936	0.10	1	-	94	72-156
tert-Amyl methyl ether (TAME)	ND	0.0368	0.0050	0.050	-	74	53-116
Benzene	ND	0.0429	0.0050	0.050	-	86	63-137
Bromobenzene	ND	0.0440	0.0050	0.050	-	88	68-126
Bromochloromethane	ND	0.0476	0.0050	0.050	-	95	72-126
Bromodichloromethane	ND	0.0386	0.0050	0.050	-	77	61-127
Bromoform	ND	0.0304	0.0050	0.050	-	61	49-100
Bromomethane	ND	0.0683	0.0050	0.050	-	137	40-161
2-Butanone (MEK)	ND	0.153	0.020	0.20	-	76	43-157
t-Butyl alcohol (TBA)	ND	0.150	0.050	0.20	-	75	41-135
n-Butyl benzene	ND	0.0660	0.0050	0.050	-	132	102-160
sec-Butyl benzene	ND	0.0663	0.0050	0.050	-	133	74-168
tert-Butyl benzene	ND	0.0560	0.0050	0.050	-	112	88-157
Carbon Disulfide	ND	0.0533	0.0050	0.050	-	107	42-151
Carbon Tetrachloride	ND	0.0487	0.0050	0.050	-	97	49-149
Chlorobenzene	ND	0.0432	0.0050	0.050	-	86	77-121
Chloroethane	ND	0.0482	0.0050	0.050	-	96	41-134
Chloroform	ND	0.0454	0.0050	0.050	-	91	69-133
Chloromethane	ND	0.0416	0.0050	0.050	-	83	31-119
2-Chlorotoluene	ND	0.0514	0.0050	0.050	-	103	79-139
4-Chlorotoluene	ND	0.0484	0.0050	0.050	-	97	77-138
Dibromochloromethane	ND	0.0355	0.0050	0.050	-	71	58-121
1,2-Dibromo-3-chloropropane	ND	0.0125	0.0040	0.020	-	63	39-115
1,2-Dibromoethane (EDB)	ND	0.0401	0.0040	0.050	-	80	67-119
Dibromomethane	ND	0.0404	0.0050	0.050	-	81	66-117
1,2-Dichlorobenzene	ND	0.0403	0.0050	0.050	-	81	59-109
1,3-Dichlorobenzene	ND	0.0452	0.0050	0.050	-	90	75-130
1,4-Dichlorobenzene	ND	0.0444	0.0050	0.050	-	89	71-122
Dichlorodifluoromethane	ND	0.0196	0.0050	0.050	-	39, F2	43-68
1,1-Dichloroethane	ND	0.0449	0.0050	0.050	-	90	62-139
1,2-Dichloroethane (1,2-DCA)	ND	0.0433	0.0040	0.050	-	87	58-135
1,1-Dichloroethene	ND	0.0479	0.0050	0.050	-	96	42-145
cis-1,2-Dichloroethene	ND	0.0439	0.0050	0.050	-	88	67-129
trans-1,2-Dichloroethene	ND	0.0443	0.0050	0.050	-	89	54-139
1,2-Dichloropropane	ND	0.0410	0.0050	0.050	-	82	68-125
1,3-Dichloropropane	ND	0.0391	0.0050	0.050	-	78	65-125
2,2-Dichloropropane	ND	0.0488	0.0050	0.050	-	98	45-151

(Cont.)



## Quality Control Report

**Client:** Langan  
**Date Prepared:** 6/20/17  
**Date Analyzed:** 6/20/17 - 6/21/17  
**Instrument:** GC10, GC18, GC28  
**Matrix:** Soil  
**Project:** 770641901; 600 South 1st Street

**WorkOrder:** 1706947  
**BatchID:** 140735  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** mg/kg  
**Sample ID:** MB/LCS-140735  
 1706977-001AMS/MSD

### QC Summary Report for SW8260B

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
1,1-Dichloropropene	ND	0.0449	0.0050	0.050	-	90	64-138
cis-1,3-Dichloropropene	ND	0.0386	0.0050	0.050	-	77	62-134
trans-1,3-Dichloropropene	ND	0.0369	0.0050	0.050	-	74	59-128
Diisopropyl ether (DIPE)	ND	0.0402	0.0050	0.050	-	80	52-129
Ethylbenzene	ND	0.0455	0.0050	0.050	-	91	74-142
Ethyl tert-butyl ether (ETBE)	ND	0.0401	0.0050	0.050	-	80	53-125
Freon 113	ND	0.0439	0.0050	0.050	-	88	51-126
Hexachlorobutadiene	ND	0.0591	0.0050	0.050	-	118	70-158
Hexachloroethane	ND	0.0446	0.0050	0.050	-	89	80-160
2-Hexanone	ND	0.0294	0.0050	0.050	-	59	41-116
Isopropylbenzene	ND	0.0571	0.0050	0.050	-	114	77-146
4-Isopropyl toluene	ND	0.0592	0.0050	0.050	-	118	96-159
Methyl-t-butyl ether (MTBE)	ND	0.0404	0.0050	0.050	-	81	58-122
Methylene chloride	ND	0.0465	0.0050	0.050	-	93	58-135
4-Methyl-2-pentanone (MIBK)	ND	0.0290	0.0050	0.050	-	58	40-112
Naphthalene	ND	0.0191	0.0050	0.050	-	38	23-73
n-Propyl benzene	ND	0.0571	0.0050	0.050	-	114	82-160
Styrene	ND	0.0429	0.0050	0.050	-	86	68-124
1,1,1,2-Tetrachloroethane	ND	0.0457	0.0050	0.050	-	91	70-128
1,1,2,2-Tetrachloroethane	ND	0.0341	0.0050	0.050	-	68	57-111
Tetrachloroethene	ND	0.0503	0.0050	0.050	-	101	73-145
Toluene	ND	0.0424	0.0050	0.050	-	85	76-130
1,2,3-Trichlorobenzene	ND	0.0270	0.0050	0.050	-	54	43-72
1,2,4-Trichlorobenzene	ND	0.0348	0.0050	0.050	-	70	47-95
1,1,1-Trichloroethane	ND	0.0486	0.0050	0.050	-	97	60-141
1,1,2-Trichloroethane	ND	0.0380	0.0050	0.050	-	76	62-118
Trichloroethene	ND	0.0462	0.0050	0.050	-	92	72-132
Trichlorofluoromethane	ND	0.0455	0.0050	0.050	-	91	43-135
1,2,3-Trichloropropane	ND	0.0392	0.0050	0.050	-	78	57-122
1,2,4-Trimethylbenzene	ND	0.0506	0.0050	0.050	-	101	81-152
1,3,5-Trimethylbenzene	ND	0.0537	0.0050	0.050	-	107	78-160
Vinyl Chloride	ND	0.0442	0.0050	0.050	-	88	42-131
Xylenes, Total	ND	0.134	0.0050	0.15	-	89	70-130

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## Quality Control Report

<b>Client:</b> Langan <b>Date Prepared:</b> 6/20/17 <b>Date Analyzed:</b> 6/20/17 - 6/21/17 <b>Instrument:</b> GC10, GC18, GC28 <b>Matrix:</b> Soil <b>Project:</b> 770641901; 600 South 1st Street	<b>WorkOrder:</b> 1706947 <b>BatchID:</b> 140735 <b>Extraction Method:</b> SW5030B <b>Analytical Method:</b> SW8260B <b>Unit:</b> mg/kg <b>Sample ID:</b> MB/LCS-140735 1706977-001AMS/MSD
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### QC Summary Report for SW8260B

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
<b>Surrogate Recovery</b>							
Dibromofluoromethane	0.1384	0.133		0.12	111	106	70-130
Toluene-d8	0.1405	0.144		0.12	112	115	70-130
4-BFB	0.0142	0.0117		0.012	114	93	70-130
Benzene-d6	0.08958	0.0875		0.10	90	88	60-140
Ethylbenzene-d10	0.1024	0.108		0.10	102	108	60-140
1,2-DCB-d4	0.07231	0.0826		0.10	72	83	60-140



## Quality Control Report

**Client:** Langan  
**Date Prepared:** 6/20/17  
**Date Analyzed:** 6/20/17 - 6/21/17  
**Instrument:** GC10, GC18, GC28  
**Matrix:** Soil  
**Project:** 770641901; 600 South 1st Street

**WorkOrder:** 1706947  
**BatchID:** 140735  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** mg/kg  
**Sample ID:** MB/LCS-140735  
 1706977-001AMS/MSD

### QC Summary Report for SW8260B

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
Acetone	1.01	0.966	1	ND	101	97	72-156	4.16	20
tert-Amyl methyl ether (TAME)	0.0388	0.0358	0.050	ND	78	72	53-116	7.90	20
Benzene	0.0445	0.0434	0.050	ND	85	83	63-137	2.30	20
Bromobenzene	0.0381	0.0359	0.050	ND	76	72	68-126	5.80	20
Bromochloromethane	0.0406	0.0385	0.050	ND	81	77	72-126	5.24	20
Bromodichloromethane	0.0397	0.0382	0.050	ND	79	76	61-127	3.94	20
Bromoform	0.0303	0.0282	0.050	ND	61	56	49-100	7.31	20
Bromomethane	0.0526	0.0477	0.050	ND	105	95	40-161	9.85	20
2-Butanone (MEK)	0.181	0.179	0.20	ND	85	84	43-157	0.948	20
t-Butyl alcohol (TBA)	0.151	0.151	0.20	ND	76	76	41-135	0	20
n-Butyl benzene	0.0646	0.0592	0.050	0.007021	115	104	102-160	8.72	20
sec-Butyl benzene	0.0586	0.0551	0.050	ND	117	110	74-168	6.09	20
tert-Butyl benzene	0.0558	0.0459	0.050	ND	103	83,F1	88-157	19.4	20
Carbon Disulfide	0.0409	0.0394	0.050	ND	82	79	42-151	3.68	20
Carbon Tetrachloride	0.0416	0.0399	0.050	ND	83	80	49-149	4.04	20
Chlorobenzene	0.0399	0.0386	0.050	ND	80	77	77-121	3.37	20
Chloroethane	0.0513	0.0475	0.050	ND	103	95	41-134	7.74	20
Chloroform	0.0446	0.0431	0.050	ND	85	82	69-133	3.38	20
Chloromethane	0.0504	0.0463	0.050	ND	101	93	31-119	8.44	20
2-Chlorotoluene	0.0456	0.0435	0.050	ND	91	87	79-139	4.56	20
4-Chlorotoluene	0.0417	0.0405	0.050	ND	83	81	77-138	3.00	20
Dibromochloromethane	0.0347	0.0329	0.050	ND	69	66	58-121	5.47	20
1,2-Dibromo-3-chloropropane	0.0126	0.0127	0.020	ND	44	44	39-115	0	20
1,2-Dibromoethane (EDB)	0.0383	0.0371	0.050	ND	77	74	67-119	3.01	20
Dibromomethane	0.0398	0.0387	0.050	ND	80	77	66-117	2.84	20
1,2-Dichlorobenzene	0.0354	0.0346	0.050	ND	71	69	59-109	2.15	20
1,3-Dichlorobenzene	0.0416	0.0403	0.050	ND	83	81	75-130	3.26	20
1,4-Dichlorobenzene	0.0399	0.0389	0.050	ND	80	78	71-122	2.62	20
Dichlorodifluoromethane	0.0204	0.0190	0.050	ND	41,F1	38,F1	43-68	7.48	20
1,1-Dichloroethane	0.0438	0.0424	0.050	ND	88	85	62-139	3.14	20
1,2-Dichloroethane (1,2-DCA)	0.0424	0.0414	0.050	ND	85	83	58-135	2.60	20
1,1-Dichloroethene	0.0394	0.0382	0.050	ND	79	76	42-145	3.14	20
cis-1,2-Dichloroethene	0.0414	0.0396	0.050	ND	83	79	67-129	4.46	20
trans-1,2-Dichloroethene	0.0416	0.0401	0.050	ND	83	80	54-139	3.53	20
1,2-Dichloropropane	0.0427	0.0416	0.050	ND	85	83	68-125	2.67	20
1,3-Dichloropropane	0.0405	0.0393	0.050	ND	81	79	65-125	3.06	20
2,2-Dichloropropane	0.0425	0.0409	0.050	ND	85	82	45-151	3.99	20

(Cont.)



## Quality Control Report

**Client:** Langan  
**Date Prepared:** 6/20/17  
**Date Analyzed:** 6/20/17 - 6/21/17  
**Instrument:** GC10, GC18, GC28  
**Matrix:** Soil  
**Project:** 770641901; 600 South 1st Street

**WorkOrder:** 1706947  
**BatchID:** 140735  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** mg/kg  
**Sample ID:** MB/LCS-140735  
 1706977-001AMS/MSD

### QC Summary Report for SW8260B

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
1,1-Dichloropropene	0.0430	0.0433	0.050	ND	86	87	64-138	0.575	20
cis-1,3-Dichloropropene	0.0411	0.0394	0.050	ND	82	79	62-134	4.20	20
trans-1,3-Dichloropropene	0.0432	0.0413	0.050	ND	86	83	59-128	4.37	20
Diisopropyl ether (DIPE)	0.0423	0.0409	0.050	ND	85	82	52-129	3.20	20
Ethylbenzene	0.0572	0.0582	0.050	0.01423	86	88	74-142	1.81	20
Ethyl tert-butyl ether (ETBE)	0.0410	0.0398	0.050	ND	82	80	53-125	2.84	20
Freon 113	0.0344	0.0326	0.050	ND	69	65	51-126	5.57	20
Hexachlorobutadiene	0.0469	0.0446	0.050	ND	94	89	70-158	5.14	20
Hexachloroethane	0.0545	0.0576	0.050	ND	100	107	80-160	5.59	20
2-Hexanone	0.0315	0.0310	0.050	ND	63	62	41-116	1.83	20
Isopropylbenzene	0.0473	0.0474	0.050	ND	95	95	77-146	0	20
4-Isopropyl toluene	0.0484	0.0456	0.050	ND	97	91,F1	96-159	5.96	20
Methyl-t-butyl ether (MTBE)	0.0400	0.0394	0.050	ND	80	79	58-122	1.53	20
Methylene chloride	0.0444	0.0427	0.050	ND	89	85	58-135	3.85	20
4-Methyl-2-pentanone (MIBK)	0.0453	0.0436	0.050	ND	91	87	40-112	3.89	20
Naphthalene	0.0264	0.0267	0.050	0.005125	42	43	23-73	1.11	20
n-Propyl benzene	0.0608	0.0580	0.050	0.008030	106	100	82-160	4.70	20
Styrene	0.0384	0.0385	0.050	ND	77	77	68-124	0	20
1,1,1,2-Tetrachloroethane	0.0392	0.0373	0.050	ND	78	75	70-128	5.00	20
1,1,2,2-Tetrachloroethane	0.0413	0.0381	0.050	ND	77	71	57-111	8.06	20
Tetrachloroethene	0.0411	0.0388	0.050	ND	82	78	73-145	5.63	20
Toluene	0.0488	0.0493	0.050	0.009502	79	80	76-130	0.944	20
1,2,3-Trichlorobenzene	0.0252	0.0249	0.050	ND	50	50	43-72	0	20
1,2,4-Trichlorobenzene	0.0302	0.0299	0.050	ND	60	60	47-95	0	20
1,1,1-Trichloroethane	0.0421	0.0406	0.050	ND	84	81	60-141	3.59	20
1,1,2-Trichloroethane	0.0394	0.0380	0.050	ND	79	76	62-118	3.67	20
Trichloroethene	0.0403	0.0384	0.050	ND	81	77	72-132	4.97	20
Trichlorofluoromethane	0.0370	0.0360	0.050	ND	74	72	43-135	2.63	20
1,2,3-Trichloropropane	0.0442	0.0410	0.050	ND	88	82	57-122	7.52	20
1,2,4-Trimethylbenzene	0.0859	0.0845	0.050	0.03740	97	94	81-152	1.69	20
1,3,5-Trimethylbenzene	0.0652	0.0615	0.050	0.01443	102	94	78-160	5.87	20
Vinyl Chloride	0.0520	0.0477	0.050	ND	104	95	42-131	8.73	20
Xylenes, Total	0.160	0.167	0.15	0.03902	81	85	70-130	4.15	20

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## Quality Control Report

<b>Client:</b>	Langan	<b>WorkOrder:</b>	1706947
<b>Date Prepared:</b>	6/20/17	<b>BatchID:</b>	140735
<b>Date Analyzed:</b>	6/20/17 - 6/21/17	<b>Extraction Method:</b>	SW5030B
<b>Instrument:</b>	GC10, GC18, GC28	<b>Analytical Method:</b>	SW8260B
<b>Matrix:</b>	Soil	<b>Unit:</b>	mg/kg
<b>Project:</b>	770641901; 600 South 1st Street	<b>Sample ID:</b>	MB/LCS-140735 1706977-001AMS/MSD

### QC Summary Report for SW8260B

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
<b>Surrogate Recovery</b>									
Dibromofluoromethane	0.146	0.149	0.12		117	119	70-130	1.44	20
Toluene-d8	0.156	0.154	0.12		125	123	70-130	1.29	20
4-BFB	0.0138	0.0131	0.012		111	105	70-130	5.57	20
Benzene-d6	0.0896	0.0867	0.10		90	87	60-140	3.25	20
Ethylbenzene-d10	0.0990	0.0960	0.10		99	96	60-140	3.05	20
1,2-DCB-d4	0.0742	0.0722	0.10		74	72	60-140	2.67	20



## Quality Control Report

**Client:** Langan  
**Date Prepared:** 6/21/17  
**Date Analyzed:** 6/21/17  
**Instrument:** GC21  
**Matrix:** Soil  
**Project:** 770641901; 600 South 1st Street

**WorkOrder:** 1706947  
**BatchID:** 140851  
**Extraction Method:** SW3550B  
**Analytical Method:** SW8270C  
**Unit:** mg/Kg  
**Sample ID:** MB/LCS-140851  
 1706A23-013AMS/MSD

### QC Summary Report for SW8270C

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Acenaphthene	ND	4.35	0.25	5	-	87	46-118
Acenaphthylene	ND	4.55	0.25	5	-	91	43-122
Acetochlor	ND	-	0.25	-	-	-	-
Anthracene	ND	4.48	0.25	5	-	90	47-125
Benzidine	ND	1.99	1.3	5	-	40	13-83
Benzo (a) anthracene	ND	4.57	0.25	5	-	91	53-117
Benzo (a) pyrene	ND	5.58	0.25	5	-	112	53-138
Benzo (b) fluoranthene	ND	4.94	0.25	5	-	99	48-125
Benzo (g,h,i) perylene	ND	5.31	0.25	5	-	106	51-146
Benzo (k) fluoranthene	ND	5.32	0.25	5	-	106	53-124
Benzyl Alcohol	ND	5.13	1.3	5	-	103	51-105
1,1-Biphenyl	ND	-	0.25	-	-	-	-
Bis (2-chloroethoxy) Methane	ND	4.48	0.25	5	-	90	48-115
Bis (2-chloroethyl) Ether	ND	4.51	0.25	5	-	90	51-105
Bis (2-chloroisopropyl) Ether	ND	4.87	0.25	5	-	97	85-119
Bis (2-ethylhexyl) Adipate	ND	5.02	0.25	5	-	100	46-117
Bis (2-ethylhexyl) Phthalate	ND	4.96	0.25	5	-	99	50-124
4-Bromophenyl Phenyl Ether	ND	4.47	0.25	5	-	89	70-112
Butylbenzyl Phthalate	ND	4.84	0.25	5	-	97	55-127
4-Chloroaniline	ND	2.40	0.50	5	-	48	18-77
4-Chloro-3-methylphenol	ND	4.98	0.25	5	-	100	49-123
2-Chloronaphthalene	ND	4.06	0.25	5	-	81	44-109
2-Chlorophenol	ND	4.96	0.25	5	-	99	55-116
4-Chlorophenyl Phenyl Ether	ND	4.63	0.25	5	-	93	45-122
Chrysene	ND	4.59	0.25	5	-	92	54-116
Dibenzo (a,h) anthracene	ND	5.43	0.25	5	-	109	52-141
Dibenzofuran	ND	4.47	0.25	5	-	89	46-117
Di-n-butyl Phthalate	ND	4.64	0.25	5	-	93	45-126
1,2-Dichlorobenzene	ND	4.68	0.25	5	-	94	55-105
1,3-Dichlorobenzene	ND	4.59	0.25	5	-	92	51-104
1,4-Dichlorobenzene	ND	4.27	0.25	5	-	85	50-102
3,3-Dichlorobenzidine	ND	2.35	0.50	5	-	47	20-84
2,4-Dichlorophenol	ND	5.23	0.25	5	-	105	54-124
Diethyl Phthalate	ND	4.50	0.25	5	-	90	42-118
2,4-Dimethylphenol	ND	4.95	0.25	5	-	99	53-120
Dimethyl Phthalate	ND	4.44	0.25	5	-	89	45-118
4,6-Dinitro-2-methylphenol	ND	4.38	1.3	5	-	87	32-126

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NELAP 4033ORELAP

 QA/QC Officer



## Quality Control Report

<b>Client:</b>	Langan	<b>WorkOrder:</b>	1706947
<b>Date Prepared:</b>	6/21/17	<b>BatchID:</b>	140851
<b>Date Analyzed:</b>	6/21/17	<b>Extraction Method:</b>	SW3550B
<b>Instrument:</b>	GC21	<b>Analytical Method:</b>	SW8270C
<b>Matrix:</b>	Soil	<b>Unit:</b>	mg/Kg
<b>Project:</b>	770641901; 600 South 1st Street	<b>Sample ID:</b>	MB/LCS-140851 1706A23-013AMS/MSD

### QC Summary Report for SW8270C

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
2,4-Dinitrophenol	ND	ND	6.3	5	-	117	20-130
2,4-Dinitrotoluene	ND	4.63	0.25	5	-	93	47-117
2,6-Dinitrotoluene	ND	5.11	0.25	5	-	102	48-121
Di-n-octyl Phthalate	ND	5.72	0.50	5	-	114	40-150
1,2-Diphenylhydrazine	ND	4.75	0.25	5	-	95	88-117
Fluoranthene	ND	4.56	0.25	5	-	91	45-126
Fluorene	ND	4.30	0.25	5	-	86	43-118
Hexachlorobenzene	ND	4.48	0.25	5	-	90	47-130
Hexachlorobutadiene	ND	4.59	0.25	5	-	92	50-121
Hexachlorocyclopentadiene	ND	4.02	1.3	5	-	80	30-89
Hexachloroethane	ND	4.60	0.25	5	-	92	50-106
Indeno (1,2,3-cd) pyrene	ND	5.25	0.25	5	-	105	51-138
Isophorone	ND	3.92	0.25	5	-	78	38-92
2-Methylnaphthalene	ND	4.74	0.25	5	-	95	51-121
2-Methylphenol (o-Cresol)	ND	4.78	0.25	5	-	96	48-114
3 & 4-Methylphenol (m,p-Cresol)	ND	4.59	0.25	5	-	92	30-130
Naphthalene	ND	4.60	0.25	5	-	92	50-113
2-Nitroaniline	ND	4.80	1.3	5	-	96	45-115
3-Nitroaniline	ND	3.15	1.3	5	-	63	31-93
4-Nitroaniline	ND	4.56	1.3	5	-	91	41-108
Nitrobenzene	ND	4.91	0.25	5	-	98	49-122
2-Nitrophenol	ND	5.12	1.3	5	-	102	54-121
4-Nitrophenol	ND	4.36	1.3	5	-	87	40-102
N-Nitrosodiphenylamine	ND	-	0.25	-	-	-	-
N-Nitrosodi-n-propylamine	ND	4.68	0.25	5	-	94	47-108
Pentachlorophenol	ND	5.16	1.3	5	-	103	39-134
Phenanthrene	ND	4.32	0.25	5	-	86	49-123
Phenol	ND	4.72	0.25	5	-	94	49-107
Pyrene	ND	4.85	0.25	5	-	97	55-124
Pyridine	ND	6.83	0.25	5	-	137, F2	70-130
1,2,4-Trichlorobenzene	ND	4.83	0.25	5	-	97	51-121
2,4,5-Trichlorophenol	ND	5.02	0.25	5	-	100	45-126
2,4,6-Trichlorophenol	ND	5.10	0.25	5	-	102	46-128

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NELAP 4033ORELAP

 QA/QC Officer



## Quality Control Report

<b>Client:</b> Langan	<b>WorkOrder:</b> 1706947
<b>Date Prepared:</b> 6/21/17	<b>BatchID:</b> 140851
<b>Date Analyzed:</b> 6/21/17	<b>Extraction Method:</b> SW3550B
<b>Instrument:</b> GC21	<b>Analytical Method:</b> SW8270C
<b>Matrix:</b> Soil	<b>Unit:</b> mg/Kg
<b>Project:</b> 770641901; 600 South 1st Street	<b>Sample ID:</b> MB/LCS-140851 1706A23-013AMS/MSD

### QC Summary Report for SW8270C

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
<b>Surrogate Recovery</b>							
2-Fluorophenol	4.955	5.21		5	99	104	47-125
Phenol-d5	4.617	4.98		5	92	100	45-117
Nitrobenzene-d5	4.317	5.00		5	86	100	39-121
2-Fluorobiphenyl	4.13	4.50		5	83	90	35-120
2,4,6-Tribromophenol	3.253	3.84		5	65	77	32-111
4-Terphenyl-d14	4.426	4.94		5	89	99	32-128



## Quality Control Report

<b>Client:</b>	Langan	<b>WorkOrder:</b>	1706947
<b>Date Prepared:</b>	6/21/17	<b>BatchID:</b>	140851
<b>Date Analyzed:</b>	6/21/17	<b>Extraction Method:</b>	SW3550B
<b>Instrument:</b>	GC21	<b>Analytical Method:</b>	SW8270C
<b>Matrix:</b>	Soil	<b>Unit:</b>	mg/Kg
<b>Project:</b>	770641901; 600 South 1st Street	<b>Sample ID:</b>	MB/LCS-140851 1706A23-013AMS/MSD

### QC Summary Report for SW8270C

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
Acenaphthene	NR	NR		ND<4	NR	NR	-	NR	-
Acenaphthylene	NR	NR		ND<4	NR	NR	-	NR	-
Anthracene	NR	NR		ND<4	NR	NR	-	NR	-
Benzidine	NR	NR		ND<21	NR	NR	-	NR	-
Benzo (a) anthracene	NR	NR		ND<4	NR	NR	-	NR	-
Benzo (a) pyrene	NR	NR		ND<4	NR	NR	-	NR	-
Benzo (b) fluoranthene	NR	NR		ND<4	NR	NR	-	NR	-
Benzo (g,h,i) perylene	NR	NR		ND<4	NR	NR	-	NR	-
Benzo (k) fluoranthene	NR	NR		ND<4	NR	NR	-	NR	-
Benzyl Alcohol	NR	NR		ND<21	NR	NR	-	NR	-
Bis (2-chloroethoxy) Methane	NR	NR		ND<4	NR	NR	-	NR	-
Bis (2-chloroethyl) Ether	NR	NR		ND<4	NR	NR	-	NR	-
Bis (2-chloroisopropyl) Ether	NR	NR		ND<4	NR	NR	-	NR	-
Bis (2-ethylhexyl) Adipate	NR	NR		ND<4	NR	NR	-	NR	-
Bis (2-ethylhexyl) Phthalate	NR	NR		ND<4	NR	NR	-	NR	-
4-Bromophenyl Phenyl Ether	NR	NR		ND<4	NR	NR	-	NR	-
Butylbenzyl Phthalate	NR	NR		ND<4	NR	NR	-	NR	-
4-Chloroaniline	NR	NR		ND<8	NR	NR	-	NR	-
4-Chloro-3-methylphenol	NR	NR		ND<4	NR	NR	-	NR	-
2-Chloronaphthalene	NR	NR		ND<4	NR	NR	-	NR	-
2-Chlorophenol	NR	NR		ND<4	NR	NR	-	NR	-
4-Chlorophenyl Phenyl Ether	NR	NR		ND<4	NR	NR	-	NR	-
Chrysene	NR	NR		ND<4	NR	NR	-	NR	-
Dibenzo (a,h) anthracene	NR	NR		ND<4	NR	NR	-	NR	-
Dibenzofuran	NR	NR		ND<4	NR	NR	-	NR	-
Di-n-butyl Phthalate	NR	NR		ND<4	NR	NR	-	NR	-
1,2-Dichlorobenzene	NR	NR		ND<4	NR	NR	-	NR	-
1,3-Dichlorobenzene	NR	NR		ND<4	NR	NR	-	NR	-
1,4-Dichlorobenzene	NR	NR		ND<4	NR	NR	-	NR	-
3,3-Dichlorobenzidine	NR	NR		ND<8	NR	NR	-	NR	-
2,4-Dichlorophenol	NR	NR		ND<4	NR	NR	-	NR	-
Diethyl Phthalate	NR	NR		ND<4	NR	NR	-	NR	-
2,4-Dimethylphenol	NR	NR		ND<4	NR	NR	-	NR	-
Dimethyl Phthalate	NR	NR		ND<4	NR	NR	-	NR	-
4,6-Dinitro-2-methylphenol	NR	NR		ND<21	NR	NR	-	NR	-
2,4-Dinitrophenol	NR	NR		ND<100	NR	NR	-	NR	-
2,4-Dinitrotoluene	NR	NR		ND<4	NR	NR	-	NR	-





## Quality Control Report

<b>Client:</b>	Langan	<b>WorkOrder:</b>	1706947
<b>Date Prepared:</b>	6/21/17	<b>BatchID:</b>	140851
<b>Date Analyzed:</b>	6/21/17	<b>Extraction Method:</b>	SW3550B
<b>Instrument:</b>	GC21	<b>Analytical Method:</b>	SW8270C
<b>Matrix:</b>	Soil	<b>Unit:</b>	mg/Kg
<b>Project:</b>	770641901; 600 South 1st Street	<b>Sample ID:</b>	MB/LCS-140851 1706A23-013AMS/MSD

### QC Summary Report for SW8270C

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
2,6-Dinitrotoluene	NR	NR		ND<4	NR	NR	-	NR	-
Di-n-octyl Phthalate	NR	NR		ND<8	NR	NR	-	NR	-
1,2-Diphenylhydrazine	NR	NR		ND<4	NR	NR	-	NR	-
Fluoranthene	NR	NR		ND<4	NR	NR	-	NR	-
Fluorene	NR	NR		ND<4	NR	NR	-	NR	-
Hexachlorobenzene	NR	NR		ND<4	NR	NR	-	NR	-
Hexachlorobutadiene	NR	NR		ND<4	NR	NR	-	NR	-
Hexachlorocyclopentadiene	NR	NR		ND<21	NR	NR	-	NR	-
Hexachloroethane	NR	NR		ND<4	NR	NR	-	NR	-
Indeno (1,2,3-cd) pyrene	NR	NR		ND<4	NR	NR	-	NR	-
Isophorone	NR	NR		ND<4	NR	NR	-	NR	-
2-Methylnaphthalene	NR	NR		ND<4	NR	NR	-	NR	-
2-Methylphenol (o-Cresol)	NR	NR		ND<4	NR	NR	-	NR	-
3 & 4-Methylphenol (m,p-Cresol)	NR	NR		ND<4	NR	NR	-	NR	-
Naphthalene	NR	NR		ND<4	NR	NR	-	NR	-
2-Nitroaniline	NR	NR		ND<21	NR	NR	-	NR	-
3-Nitroaniline	NR	NR		ND<21	NR	NR	-	NR	-
4-Nitroaniline	NR	NR		ND<21	NR	NR	-	NR	-
Nitrobenzene	NR	NR		ND<4	NR	NR	-	NR	-
2-Nitrophenol	NR	NR		ND<21	NR	NR	-	NR	-
4-Nitrophenol	NR	NR		ND<21	NR	NR	-	NR	-
N-Nitrosodi-n-propylamine	NR	NR		ND<4	NR	NR	-	NR	-
Pentachlorophenol	NR	NR		ND<21	NR	NR	-	NR	-
Phenanthrene	NR	NR		ND<4	NR	NR	-	NR	-
Phenol	NR	NR		ND<4	NR	NR	-	NR	-
Pyrene	NR	NR		ND<4	NR	NR	-	NR	-
Pyridine	NR	NR		ND<4	NR	NR	-	NR	-
1,2,4-Trichlorobenzene	NR	NR		ND<4	NR	NR	-	NR	-
2,4,5-Trichlorophenol	NR	NR		ND<4	NR	NR	-	NR	-
2,4,6-Trichlorophenol	NR	NR		ND<4	NR	NR	-	NR	-



## Quality Control Report

<b>Client:</b>	Langan	<b>WorkOrder:</b>	1706947
<b>Date Prepared:</b>	6/21/17	<b>BatchID:</b>	140851
<b>Date Analyzed:</b>	6/21/17	<b>Extraction Method:</b>	SW3550B
<b>Instrument:</b>	GC21	<b>Analytical Method:</b>	SW8270C
<b>Matrix:</b>	Soil	<b>Unit:</b>	mg/Kg
<b>Project:</b>	770641901; 600 South 1st Street	<b>Sample ID:</b>	MB/LCS-140851 1706A23-013AMS/MSD

### QC Summary Report for SW8270C

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
<b>Surrogate Recovery</b>									
2-Fluorophenol	NR	NR			NR	NR	-	NR	-
Phenol-d5	NR	NR			NR	NR	-	NR	-
Nitrobenzene-d5	NR	NR			NR	NR	-	NR	-
2-Fluorobiphenyl	NR	NR			NR	NR	-	NR	-
2,4,6-Tribromophenol	NR	NR			NR	NR	-	NR	-
4-Terphenyl-d14	NR	NR			NR	NR	-	NR	-



## Quality Control Report

<b>Client:</b> Langan	<b>WorkOrder:</b> 1706947
<b>Date Prepared:</b> 6/19/17	<b>BatchID:</b> 140693
<b>Date Analyzed:</b> 6/20/17	<b>Extraction Method:</b> SW3050B
<b>Instrument:</b> ICP-MS1	<b>Analytical Method:</b> SW6020
<b>Matrix:</b> Soil	<b>Unit:</b> mg/Kg
<b>Project:</b> 770641901; 600 South 1st Street	<b>Sample ID:</b> MB/LCS-140693 1706909-001EMS/MSD

### QC Summary Report for Metals

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Antimony	ND	53.7	0.50	50	-	107	75-125
Arsenic	ND	54.6	0.50	50	-	109	75-125
Barium	ND	531	5.0	500	-	106	75-125
Beryllium	ND	53.3	0.50	50	-	107	75-125
Cadmium	ND	53.2	0.25	50	-	106	75-125
Chromium	ND	54.0	0.50	50	-	108	75-125
Cobalt	ND	50.6	0.50	50	-	101	75-125
Copper	ND	53.6	0.50	50	-	107	75-125
Lead	ND	53.1	0.50	50	-	106	75-125
Mercury	ND	1.38	0.050	1.25	-	110	75-125
Molybdenum	ND	54.7	0.50	50	-	109	75-125
Nickel	ND	54.4	0.50	50	-	109	75-125
Selenium	ND	51.0	0.50	50	-	102	75-125
Silver	ND	54.0	0.50	50	-	108	75-125
Thallium	ND	50.0	0.50	50	-	100	75-125
Vanadium	ND	53.9	0.50	50	-	108	75-125
Zinc	ND	525	5.0	500	-	105	75-125
<b>Surrogate Recovery</b>							
Terbium	554.6	547		500	111	109	70-130



## Quality Control Report

<b>Client:</b>	Langan	<b>WorkOrder:</b>	1706947
<b>Date Prepared:</b>	6/19/17	<b>BatchID:</b>	140693
<b>Date Analyzed:</b>	6/20/17	<b>Extraction Method:</b>	SW3050B
<b>Instrument:</b>	ICP-MS1	<b>Analytical Method:</b>	SW6020
<b>Matrix:</b>	Soil	<b>Unit:</b>	mg/Kg
<b>Project:</b>	770641901; 600 South 1st Street	<b>Sample ID:</b>	MB/LCS-140693 1706909-001EMS/MSD

### QC Summary Report for Metals

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
Antimony	49.2	52.4	50	0.5902	97	104	75-125	6.16	20
Arsenic	50.5	54.6	50	2.253	96	105	75-125	7.92	20
Barium	549	590	500	80.90	94	102	75-125	7.24	20
Beryllium	45.2	47.5	50	ND	90	95	75-125	4.98	20
Cadmium	48.2	52.5	50	ND	96	105	75-125	8.62	20
Chromium	612	730	50	540	149,F13	385,F13	75-125	17.6	20
Cobalt	93.8	102	50	42.69	102	118	75-125	8.17	20
Copper	63.7	68.8	50	20.55	86	96	75-125	7.71	20
Lead	131	173	50	95.16	72,F10	156,F10	75-125	27.6,F10	20
Mercury	1.40	1.55	1.25	0.2304	94	106	75-125	9.96	20
Molybdenum	51.4	55.0	50	ND	102	109	75-125	6.60	20
Nickel	1090	1140	50	840	503,F13	595,F13	75-125	4.12	20
Selenium	48.6	50.9	50	ND	97	102	75-125	4.52	20
Silver	48.9	51.9	50	ND	98	104	75-125	5.81	20
Thallium	46.8	49.8	50	ND	94	100	75-125	6.29	20
Vanadium	78.6	88.1	50	36.62	84	103	75-125	11.3	20
Zinc	503	550	500	53.58	90	99	75-125	8.93	20

#### Surrogate Recovery

Terbium	507	542	500		101	108	70-130	6.61	20
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Analyte	DLT Result	DLTRef Val	%D	%D Limit
Antimony	ND<2.5	0.5902	-	-
Arsenic	ND<2.5	2.253	-	-
Barium	87.2	80.90	7.79	-
Beryllium	ND<2.5	ND	-	-
Cadmium	ND<1.2	ND	-	-
Chromium	586	540	8.52	20
Cobalt	49.2	42.69	15.2	20
Copper	22.2	20.55	8.03	20
Lead	102	95.16	7.19	20
Mercury	0.333	0.2304	44.5	-
Molybdenum	ND<2.5	ND	-	-
Nickel	889	840	5.83	20
Selenium	ND<2.5	ND	-	-

(Cont.)



## Quality Control Report

<b>Client:</b>	Langan	<b>WorkOrder:</b>	1706947
<b>Date Prepared:</b>	6/19/17	<b>BatchID:</b>	140693
<b>Date Analyzed:</b>	6/20/17	<b>Extraction Method:</b>	SW3050B
<b>Instrument:</b>	ICP-MS1	<b>Analytical Method:</b>	SW6020
<b>Matrix:</b>	Soil	<b>Unit:</b>	mg/Kg
<b>Project:</b>	770641901; 600 South 1st Street	<b>Sample ID:</b>	MB/LCS-140693 1706909-001EMS/MSD

### QC Summary Report for Metals

Analyte	DLT Result	DLTRef Val	%D	%D Limit
Silver	ND<2.5	ND	-	-
Thallium	ND<2.5	ND	-	-
Vanadium	40.1	36.62	9.50	20
Zinc	57.6	53.58	7.50	-

%D Control Limit applied to analytes with concentrations greater than 25 times the reporting limits.



## Quality Control Report

<b>Client:</b> Langan	<b>WorkOrder:</b> 1706947
<b>Date Prepared:</b> 6/20/17	<b>BatchID:</b> 140760
<b>Date Analyzed:</b> 6/21/17	<b>Extraction Method:</b> SW3050B
<b>Instrument:</b> ICP-MS1	<b>Analytical Method:</b> SW6020
<b>Matrix:</b> Soil	<b>Unit:</b> mg/Kg
<b>Project:</b> 770641901; 600 South 1st Street	<b>Sample ID:</b> MB/LCS-140760

### QC Summary Report for Metals

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Antimony	ND	50.1	0.50	50	-	100	75-125
Arsenic	ND	50.7	0.50	50	-	101	75-125
Barium	ND	494	5.0	500	-	99	75-125
Beryllium	ND	49.9	0.50	50	-	100	75-125
Cadmium	ND	49.9	0.25	50	-	100	75-125
Chromium	ND	51.6	0.50	50	-	103	75-125
Cobalt	ND	48.4	0.50	50	-	97	75-125
Copper	ND	50.6	0.50	50	-	101	75-125
Lead	ND	50.6	0.50	50	-	101	75-125
Mercury	ND	1.30	0.050	1.25	-	104	75-125
Molybdenum	ND	51.4	0.50	50	-	103	75-125
Nickel	ND	51.1	0.50	50	-	102	75-125
Selenium	ND	50.3	0.50	50	-	101	75-125
Silver	ND	50.3	0.50	50	-	101	75-125
Thallium	ND	48.1	0.50	50	-	96	75-125
Vanadium	ND	51.3	0.50	50	-	103	75-125
Zinc	ND	485	5.0	500	-	97	75-125
<b>Surrogate Recovery</b>							
Terbium	531.4	509		500	106	102	70-130



## Quality Control Report

**Client:** Langan  
**Date Prepared:** 6/20/17  
**Date Analyzed:** 6/21/17  
**Instrument:** ICP-MS1  
**Matrix:** Soil  
**Project:** 770641901; 600 South 1st Street

**WorkOrder:** 1706947  
**BatchID:** 140761  
**Extraction Method:** SW3050B  
**Analytical Method:** SW6020  
**Unit:** mg/Kg  
**Sample ID:** MB/LCS-140761  
 1706947-060AMS/MSD

### QC Summary Report for Metals

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Antimony	ND	51.0	0.50	50	-	102	75-125
Arsenic	ND	50.2	0.50	50	-	100	75-125
Barium	ND	494	5.0	500	-	99	75-125
Beryllium	ND	49.1	0.50	50	-	98	75-125
Cadmium	ND	50.0	0.25	50	-	100	75-125
Chromium	ND	50.5	0.50	50	-	101	75-125
Cobalt	ND	47.7	0.50	50	-	95	75-125
Copper	ND	50.2	0.50	50	-	100	75-125
Lead	ND	49.7	0.50	50	-	99	75-125
Mercury	ND	1.28	0.050	1.25	-	102	75-125
Molybdenum	ND	52.3	0.50	50	-	105	75-125
Nickel	ND	50.2	0.50	50	-	100	75-125
Selenium	ND	48.3	0.50	50	-	97	75-125
Silver	ND	50.3	0.50	50	-	101	75-125
Thallium	ND	47.2	0.50	50	-	94	75-125
Vanadium	ND	50.9	0.50	50	-	102	75-125
Zinc	ND	486	5.0	500	-	97	75-125
<b>Surrogate Recovery</b>							
Terbium	534	515		500	107	103	70-130



## Quality Control Report

<b>Client:</b>	Langan	<b>WorkOrder:</b>	1706947
<b>Date Prepared:</b>	6/20/17	<b>BatchID:</b>	140761
<b>Date Analyzed:</b>	6/21/17	<b>Extraction Method:</b>	SW3050B
<b>Instrument:</b>	ICP-MS1	<b>Analytical Method:</b>	SW6020
<b>Matrix:</b>	Soil	<b>Unit:</b>	mg/Kg
<b>Project:</b>	770641901; 600 South 1st Street	<b>Sample ID:</b>	MB/LCS-140761 1706947-060AMS/MSD

### QC Summary Report for Metals

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
Antimony	52.2	49.5	50	0.5139	103	98	75-125	5.27	20
Arsenic	56.3	53.1	50	3.386	106	99	75-125	5.92	20
Barium	617	600	500	73.61	109	105	75-125	2.76	20
Beryllium	49.5	47.7	50	ND	98	95	75-125	3.64	20
Cadmium	51.4	50.2	50	ND	103	100	75-125	2.48	20
Chromium	96.1	96.6	50	33.91	124	125	75-125	0.508	20
Cobalt	55.9	54.0	50	6.636	99	95	75-125	3.49	20
Copper	77.5	75.4	50	19.98	115	111	75-125	2.83	20
Lead	58.0	56.2	50	5.125	106	102	75-125	3.07	20
Mercury	1.41	1.34	1.25	0.05170	108	103	75-125	4.65	20
Molybdenum	54.1	51.2	50	0.6505	107	101	75-125	5.54	20
Nickel	126	126	50	56.04	140,F10	139,F10	75-125	0.397	20
Selenium	50.0	48.2	50	ND	100	96	75-125	3.75	20
Silver	51.2	50.1	50	ND	102	100	75-125	2.17	20
Thallium	48.9	47.1	50	ND	98	94	75-125	3.63	20
Vanadium	87.1	86.0	50	25.93	122	120	75-125	1.32	20
Zinc	544	530	500	35.44	102	99	75-125	2.49	20

#### Surrogate Recovery

Terbium	528	504	500		106	101	70-130	4.71	20
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Analyte	DLT Result	DLTRef Val	%D	%D Limit
Antimony	ND<2.5	0.5139	-	-
Arsenic	3.39	3.386	0.118	-
Barium	76.0	73.61	3.25	-
Beryllium	ND<2.5	ND	-	-
Cadmium	ND<1.2	ND	-	-
Chromium	35.5	33.91	4.69	20
Cobalt	7.30	6.636	10.0	-
Copper	20.6	19.98	3.10	20
Lead	5.58	5.125	8.88	-
Mercury	0.291	0.05170	463	-
Molybdenum	ND<2.5	0.6505	-	-
Nickel	57.2	56.04	2.07	20
Selenium	ND<2.5	ND	-	-

(Cont.)





## Quality Control Report

<b>Client:</b>	Langan	<b>WorkOrder:</b>	1706947
<b>Date Prepared:</b>	6/20/17	<b>BatchID:</b>	140761
<b>Date Analyzed:</b>	6/21/17	<b>Extraction Method:</b>	SW3050B
<b>Instrument:</b>	ICP-MS1	<b>Analytical Method:</b>	SW6020
<b>Matrix:</b>	Soil	<b>Unit:</b>	mg/Kg
<b>Project:</b>	770641901; 600 South 1st Street	<b>Sample ID:</b>	MB/LCS-140761 1706947-060AMS/MSD

### QC Summary Report for Metals

Analyte	DLT Result	DLTRef Val	%D	%D Limit
Silver	ND<2.5	ND	-	-
Thallium	ND<2.5	ND	-	-
Vanadium	28.0	25.93	7.98	20
Zinc	37.5	35.44	5.81	-

%D Control Limit applied to analytes with concentrations greater than 25 times the reporting limits.



## Quality Control Report

<b>Client:</b>	Langan	<b>WorkOrder:</b>	1706947
<b>Date Prepared:</b>	6/23/17	<b>BatchID:</b>	140939
<b>Date Analyzed:</b>	6/24/17 - 6/26/17	<b>Extraction Method:</b>	SW3050B
<b>Instrument:</b>	ICP-MS3	<b>Analytical Method:</b>	SW6020
<b>Matrix:</b>	Soil	<b>Unit:</b>	mg/Kg
<b>Project:</b>	770641901; 600 South 1st Street	<b>Sample ID:</b>	MB/LCS-140939 1706B45-001AMS/MSD

### QC Summary Report for Metals

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Cadmium	ND	51.1	0.25	50	-	102	75-125
Chromium	ND	50.2	0.50	50	-	100	75-125
Lead	ND	50.8	0.50	50	-	102	75-125
Nickel	ND	52.2	0.50	50	-	104	75-125
Zinc	ND	519	5.0	500	-	104	75-125
<b>Surrogate Recovery</b>							
Terbium	477.8	537		500	96	107	70-130

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
Cadmium	47.8	45.3	50	ND	95	90	75-125	5.33	20
Chromium	181	183	50	132.0	97	103	75-125	1.48	20
Lead	57.5	55.0	50	9.106	97	92	75-125	4.37	20
Nickel	221	233	50	163.8	114	139,F10	75-125	5.55	20
Zinc	526	506	500	50.60	95	91	75-125	3.85	20
<b>Surrogate Recovery</b>									
Terbium	484	460	500		97	92	70-130	4.91	20

Analyte	DLT Result	DLTRef Val	%D	%D Limit
Cadmium	ND<1.2	ND	-	-
Chromium	142	132.0	7.58	20
Lead	9.34	9.106	2.57	-
Nickel	170	163.8	3.79	20
Zinc	51.2	50.60	1.19	-

%D Control Limit applied to analytes with concentrations greater than 25 times the reporting limits.



## Quality Control Report

**Client:** Langan  
**Date Prepared:** 6/20/17  
**Date Analyzed:** 6/21/17 - 6/25/17  
**Instrument:** GC3, GC7  
**Matrix:** Soil  
**Project:** 770641901; 600 South 1st Street

**WorkOrder:** 1706947  
**BatchID:** 140758  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8021B/8015Bm  
**Unit:** mg/Kg  
**Sample ID:** MB/LCS-140758  
 1706947-030AMS/MSD

### QC Summary Report for SW8021B/8015Bm

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
TPH(btex)	ND	0.571	0.40	0.60	-	95	82-118
MTBE	ND	0.101	0.050	0.10	-	101	61-119
Benzene	ND	0.0909	0.0050	0.10	-	91	77-128
Toluene	ND	0.0939	0.0050	0.10	-	94	74-132
Ethylbenzene	ND	0.101	0.0050	0.10	-	101	84-127
Xylenes	ND	0.317	0.015	0.30	-	106	86-129
<b>Surrogate Recovery</b>							
2-Fluorotoluene	0.09937	0.101		0.10	99	101	75-134

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
TPH(btex)	0.507	0.507	0.60	ND	84	85	58-129	0.111	20
MTBE	0.0789	0.0833	0.10	ND	79	83	47-118	5.40	20
Benzene	0.0956	0.0943	0.10	ND	93	91	55-129	1.36	20
Toluene	0.0893	0.0900	0.10	ND	86	87	56-130	0.821	20
Ethylbenzene	0.102	0.100	0.10	ND	102	101	63-129	1.78	20
Xylenes	0.302	0.298	0.30	ND	99	98	64-131	1.26	20
<b>Surrogate Recovery</b>									
2-Fluorotoluene	0.0874	0.0884	0.10		87	88	62-126	1.15	20



## Quality Control Report

<b>Client:</b> Langan	<b>WorkOrder:</b> 1706947
<b>Date Prepared:</b> 6/20/17	<b>BatchID:</b> 140759
<b>Date Analyzed:</b> 6/21/17	<b>Extraction Method:</b> SW5030B
<b>Instrument:</b> GC3, GC7	<b>Analytical Method:</b> SW8021B/8015Bm
<b>Matrix:</b> Soil	<b>Unit:</b> mg/Kg
<b>Project:</b> 770641901; 600 South 1st Street	<b>Sample ID:</b> MB/LCS-140759

### QC Summary Report for SW8021B/8015Bm

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
TPH(btex)	ND	0.583	0.40	0.60	-	97	82-118
MTBE	ND	0.102	0.050	0.10	-	103	61-119
Benzene	ND	0.0952	0.0050	0.10	-	95	77-128
Toluene	ND	0.0983	0.0050	0.10	-	98	74-132
Ethylbenzene	ND	0.106	0.0050	0.10	-	106	84-127
Xylenes	ND	0.328	0.015	0.30	-	109	86-129
<b>Surrogate Recovery</b>							
2-Fluorotoluene	0.09796	0.106		0.10	98	105	75-134



## Quality Control Report

<b>Client:</b> Langan	<b>WorkOrder:</b> 1706947
<b>Date Prepared:</b> 6/27/17	<b>BatchID:</b> 141151
<b>Date Analyzed:</b> 6/28/17	<b>Extraction Method:</b> SW5030B
<b>Instrument:</b> GC7	<b>Analytical Method:</b> SW8021B/8015Bm
<b>Matrix:</b> Soil	<b>Unit:</b> mg/Kg
<b>Project:</b> 770641901; 600 South 1st Street	<b>Sample ID:</b> MB/LCS-141151

### QC Summary Report for SW8021B/8015Bm

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
TPH(btex)	ND	0.568	0.40	0.60	-	95	82-118
MTBE	ND	0.0798	0.050	0.10	-	80	61-119
Benzene	ND	0.0972	0.0050	0.10	-	97	77-128
Toluene	ND	0.102	0.0050	0.10	-	102	74-132
Ethylbenzene	ND	0.107	0.0050	0.10	-	107	84-127
Xylenes	ND	0.335	0.015	0.30	-	112	86-129
<b>Surrogate Recovery</b>							
2-Fluorotoluene	0.09364	0.0926		0.10	94	93	75-134



## Quality Control Report

<b>Client:</b>	Langan	<b>WorkOrder:</b>	1706947
<b>Date Prepared:</b>	6/19/17	<b>BatchID:</b>	140692
<b>Date Analyzed:</b>	6/20/17	<b>Extraction Method:</b>	SW3550B
<b>Instrument:</b>	GC9a	<b>Analytical Method:</b>	SW8015B
<b>Matrix:</b>	Soil	<b>Unit:</b>	mg/Kg
<b>Project:</b>	770641901; 600 South 1st Street	<b>Sample ID:</b>	MB/LCS-140692 1706907-004AMS/MSD

### QC Report for SW8015B w/out SG Clean-Up

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
TPH-Diesel (C10-C23)	ND	40.2	1.0	40	-	101	79-133
TPH-Motor Oil (C18-C36)	ND	-	5.0	-	-	-	-
<b>Surrogate Recovery</b>							
C9	24.95	25.3		25	100	101	77-109

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
TPH-Diesel (C10-C23)	47.1	48.6	40	5.258	105	108	59-150	3.01	30
<b>Surrogate Recovery</b>									
C9	25.2	25.2	25		101	101	78-109	0	30



## Quality Control Report

<b>Client:</b>	Langan	<b>WorkOrder:</b>	1706947
<b>Date Prepared:</b>	6/20/17	<b>BatchID:</b>	140762
<b>Date Analyzed:</b>	6/21/17	<b>Extraction Method:</b>	SW3550B
<b>Instrument:</b>	GC39A	<b>Analytical Method:</b>	SW8015B
<b>Matrix:</b>	Soil	<b>Unit:</b>	mg/Kg
<b>Project:</b>	770641901; 600 South 1st Street	<b>Sample ID:</b>	MB/LCS-140762 1706947-027AMS/MSD

### QC Report for SW8015B w/out SG Clean-Up

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
TPH-Diesel (C10-C23)	ND	43.6	1.0	40	-	109	79-133
TPH-Motor Oil (C18-C36)	ND	-	5.0	-	-	-	-
<b>Surrogate Recovery</b>							
C9	24.67	24.4		25	99	98	77-109

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
TPH-Diesel (C10-C23)	48.0	50.1	40	5.365	107	112	59-150	4.30	30
<b>Surrogate Recovery</b>									
C9	25.4	25.5	25		102	102	78-109	0	30

1534 Willow Pass Rd  
Pittsburg, CA 94565-1701  
(925) 252-9262

# CHAIN-OF-CUSTODY RECORD

WorkOrder: 1706947

ClientCode: TWRF

WaterTrax    WriteOn    EDF    Excel    EQUIS    Email    HardCopy    ThirdParty    J-flag

**Report to:**  
Peter Cusack  
Langan  
555 Montgomery St., Suite 1300  
San Francisco, CA 94111  
(415) 955-5244   FAX: (415) 955-9041

Email: pcusack@langan.com  
cc/3rd Party: kstaehlin@langan.com;  
PO:  
ProjectNo: 770641901; 600 South 1st Street

**Bill to:**  
Accounts Payable  
Langan  
555 Montgomery St., Suite 1300  
San Francisco, CA 94111  
Langan\_InvoiceCapture@concursoft.com

**Requested TATs:** 2 days;  
5 days;  
**Date Received:** 06/20/2017  
**Date Logged:** 06/20/2017

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)											
					1	2	3	4	5	6	7	8	9	10	11	12
1706947-001	E-1-1.5	Soil	6/17/2017 11:27	<input type="checkbox"/>	A	A	A		A		A		A			
1706947-003	E-1-5.0	Soil	6/17/2017 11:33	<input type="checkbox"/>		A	A		A		A		A			
1706947-006	E-1-15.0	Soil	6/17/2017 11:42	<input type="checkbox"/>		A					A	A	A			
1706947-010	E-2-1.5	Soil	6/17/2017 07:46	<input type="checkbox"/>	A	A			A		A		A			
1706947-011	E-2-3.0	Soil	6/17/2017 07:49	<input type="checkbox"/>							A	A	A			
1706947-014	E-2-10.0	Soil	6/17/2017 08:04	<input type="checkbox"/>		A			A		A		A			
1706947-015	E-2-15.0	Soil	6/17/2017 08:08	<input type="checkbox"/>							A	A	A			
1706947-017	E-2-24.0	Soil	6/17/2017 09:04	<input type="checkbox"/>		A		A		A	A	A	A			
1706947-018	E-2-30.0	Soil	6/17/2017 09:13	<input type="checkbox"/>							A	A	A			
1706947-019	E-3-1.5	Soil	6/17/2017 10:02	<input type="checkbox"/>	A				A		A		A			
1706947-021	E-3-7.5	Soil	6/17/2017 10:07	<input type="checkbox"/>							A	A	A			
1706947-023	E-3-15.0	Soil	6/17/2017 10:13	<input type="checkbox"/>					A		A		A			
1706947-025	E-3-26.0	Soil	6/17/2017 10:27	<input type="checkbox"/>		A			A		A		A			
1706947-027	E-3-36.0	Soil	6/17/2017 11:18	<input type="checkbox"/>							A	A	A			
1706947-028	E-4-1.5	Soil	6/17/2017 13:32	<input type="checkbox"/>	A				A		A		A			

**Test Legend:**

1	8081PCB_S	2	8260B_S	3	8270_S	4	ASBEST400 (435 CARB)_S
5	CAM17MS_TTLC_S	6	CARB435_400	7	G-MBTEX_S	8	LUFTMS_6020_TTLC_S
9	TPH(DMO)_S	10		11		12	

Prepared by: Kena Ponce

The following SampID: 017A contains testgroup Asbestos 400 (CARB435)\_S.; The following SampIDs: 001A, 003A, 006A, 010A, 011A, 014A, 015A, 017A, 018A, 019A, 021A, 023A, 025A, 027A, 028A, 029A, 030A, 033A, 037A, 039A, 040A, 042A, 046A, 048A, 051A, 052A, 053A, 056A, 060A contain testgroup Multi Range\_S.

**Comments:**

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days). Hazardous samples will be returned to client or disposed of at client expense.





1534 Willow Pass Rd  
Pittsburg, CA 94565-1701  
(925) 252-9262

# CHAIN-OF-CUSTODY RECORD

WorkOrder: 1706947

ClientCode: TWRF

WaterTrax    WriteOn    EDF    Excel    EQUIS    Email    HardCopy    ThirdParty    J-flag

**Report to:**  
Peter Cusack  
Langan  
555 Montgomery St., Suite 1300  
San Francisco, CA 94111  
(415) 955-5244   FAX: (415) 955-9041

Email: pcusack@langan.com  
cc/3rd Party: kstaehlin@langan.com;  
PO:  
ProjectNo: 770641901; 600 South 1st Street

**Bill to:**  
Accounts Payable  
Langan  
555 Montgomery St., Suite 1300  
San Francisco, CA 94111  
Langan\_InvoiceCapture@concurolutio

**Requested TATs:** 2 days;  
5 days;  
**Date Received:** 06/20/2017  
**Date Logged:** 06/20/2017

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)											
					1	2	3	4	5	6	7	8	9	10	11	12
1706947-029	E-4-3.0	Soil	6/17/2017 13:35	<input type="checkbox"/>					A			A		A		
1706947-030	E-4-5.0	Soil	6/17/2017 13:37	<input type="checkbox"/>		A	A		A			A		A		
1706947-033	E-4-15.0	Soil	6/17/2017 13:48	<input type="checkbox"/>								A	A	A		
1706947-037	E-4-35.0	Soil	6/17/2017 14:15	<input type="checkbox"/>		A	A		A			A		A		
1706947-039	E-4-44.0	Soil	6/17/2017 14:35	<input type="checkbox"/>								A	A	A		
1706947-040	E-5-1.5	Soil	6/17/2017 11:43	<input type="checkbox"/>	A				A			A		A		
1706947-042	E-5-5.0	Soil	6/17/2017 11:52	<input type="checkbox"/>								A	A	A		
1706947-046	E-5-20.0	Soil	6/17/2017 12:28	<input type="checkbox"/>					A			A		A		
1706947-048	E-5-30.0	Soil	6/17/2017 12:48	<input type="checkbox"/>								A	A	A		
1706947-051	E-5-45.0	Soil	6/17/2017 13:27	<input type="checkbox"/>								A	A	A		
1706947-052	E-6-1.5	Soil	6/17/2017 08:48	<input type="checkbox"/>	A							A	A	A		
1706947-053	E-6-3.0	Soil	6/17/2017 08:55	<input type="checkbox"/>					A			A		A		
1706947-056	E-6-10.0	Soil	6/17/2017 09:18	<input type="checkbox"/>		A	A		A			A		A		
1706947-060	E-6-30.0	Soil	6/17/2017 10:23	<input type="checkbox"/>					A			A		A		

**Test Legend:**

1	8081PCB_S	2	8260B_S	3	8270_S	4	ASBEST400 (435 CARB)_S
5	CAM17MS_TTLC_S	6	CARB435_400	7	G-MBTEX_S	8	LUFTMS_6020_TTLC_S
9	TPH(DMO)_S	10		11		12	

Prepared by: Kena Ponce

The following SampID: 017A contains testgroup Asbestos 400 (CARB435)\_S.; The following SampIDs: 001A, 003A, 006A, 010A, 011A, 014A, 015A, 017A, 018A, 019A, 021A, 023A, 025A, 027A, 028A, 029A, 030A, 033A, 037A, 039A, 040A, 042A, 046A, 048A, 051A, 052A, 053A, 056A, 060A contain testgroup Multi Range\_S.

**Comments:**

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).  
Hazardous samples will be returned to client or disposed of at client expense.



### WORK ORDER SUMMARY

**Client Name:** LANGAN  
**Client Contact:** Peter Cusack  
**Contact's Email:** pcusack@langan.com

**Project:** 770641901; 600 South 1st Street

**Comments:**

**Work Order:** 1706947  
**QC Level:** LEVEL 2  
**Date Logged:** 6/20/2017

WaterTrax     WriteOn     EDF     Excel     Fax     Email     HardCopy     ThirdParty     J-flag

Lab ID	Client ID	Matrix	Test Name	Containers /Composites	Bottle & Preservative	De-chlorinated	Collection Date & Time	TAT	Sediment Content	Hold	SubOut		
1706947-001A	E-1-1.5	Soil	Multi-Range TPH(g,d,mo) by EPA 8015Bm	1	Acetate Liner	<input type="checkbox"/>	6/17/2017 11:27	5 days		<input type="checkbox"/>			
			SW6020 (CAM 17)			<input type="checkbox"/>						5 days	<input type="checkbox"/>
			SW8270C (SVOCs)			<input type="checkbox"/>						5 days	<input type="checkbox"/>
			SW8260B (VOCs)			<input type="checkbox"/>						5 days	<input type="checkbox"/>
			SW8081A/8082 (OC Pesticides+PCBs)			<input type="checkbox"/>						5 days	<input type="checkbox"/>
1706947-002A	E-1-3.0	Soil		1	Acetate Liner	<input type="checkbox"/>	6/17/2017 11:30			<input checked="" type="checkbox"/>			
1706947-003A	E-1-5.0	Soil	Multi-Range TPH(g,d,mo) by EPA 8015Bm	1	Acetate Liner	<input type="checkbox"/>	6/17/2017 11:33	5 days		<input type="checkbox"/>			
			SW6020 (CAM 17)			<input type="checkbox"/>						5 days	<input type="checkbox"/>
			SW8270C (SVOCs)			<input type="checkbox"/>						5 days	<input type="checkbox"/>
			SW8260B (VOCs)			<input type="checkbox"/>						5 days	<input type="checkbox"/>
1706947-004A	E-1-7.5	Soil		1	Acetate Liner	<input type="checkbox"/>	6/17/2017 11:36			<input checked="" type="checkbox"/>			
1706947-005A	E-1-10.0	Soil		1	Acetate Liner	<input type="checkbox"/>	6/17/2017 11:38			<input checked="" type="checkbox"/>			
1706947-006A	E-1-15.0	Soil	SW6020 (LUFT)	1	Acetate Liner	<input type="checkbox"/>	6/17/2017 11:42	5 days		<input type="checkbox"/>			
			Multi-Range TPH(g,d,mo) by EPA 8015Bm			<input type="checkbox"/>						5 days	<input type="checkbox"/>
			SW8260B (VOCs)			<input type="checkbox"/>						5 days	<input type="checkbox"/>

**NOTES:** - STLC and TCLP extractions require 2 days to complete; therefore, all TATs begin after the extraction is completed (i.e., One-day TAT yields results in 3 days from sample submission).  
- MAI assumes that all material present in the provided sampling container is considered part of the sample - MAI does not exclude any material from the sample prior to sample preparation unless requested in writing by the client.



### WORK ORDER SUMMARY

**Client Name:** LANGAN  
**Client Contact:** Peter Cusack  
**Contact's Email:** pcusack@langan.com

**Project:** 770641901; 600 South 1st Street

**Comments:**

**Work Order:** 1706947  
**QC Level:** LEVEL 2  
**Date Logged:** 6/20/2017

WaterTrax     WriteOn     EDF     Excel     Fax     Email     HardCopy     ThirdParty     J-flag

Lab ID	Client ID	Matrix	Test Name	Containers /Composites	Bottle & Preservative	De-chlorinated	Collection Date & Time	TAT	Sediment Content	Hold	SubOut
1706947-007A	E-1-20.0	Soil		1	Acetate Liner	<input type="checkbox"/>	6/17/2017 11:49			<input checked="" type="checkbox"/>	
1706947-008A	E-1-25.0	Soil		1	Acetate Liner	<input type="checkbox"/>	6/17/2017 11:59			<input checked="" type="checkbox"/>	
1706947-009A	E-1-30.5	Soil		1	Acetate Liner	<input type="checkbox"/>	6/17/2017 12:12			<input checked="" type="checkbox"/>	
1706947-010A	E-2-1.5	Soil	Multi-Range TPH(g,d,mo) by EPA 8015Bm	1	Acetate Liner	<input type="checkbox"/>	6/17/2017 7:46	5 days		<input type="checkbox"/>	
			SW6020 (CAM 17)			<input type="checkbox"/>		5 days	<input type="checkbox"/>		
			SW8260B (VOCs)			<input type="checkbox"/>		5 days	<input type="checkbox"/>		
			SW8081A/8082 (OC Pesticides+PCBs)			<input type="checkbox"/>		5 days	<input type="checkbox"/>		
1706947-011A	E-2-3.0	Soil	SW6020 (LUFT)	1	Acetate Liner	<input type="checkbox"/>	6/17/2017 7:49	5 days		<input type="checkbox"/>	
			Multi-Range TPH(g,d,mo) by EPA 8015Bm			<input type="checkbox"/>		5 days	<input type="checkbox"/>		
1706947-012A	E-2-5.0	Soil		1	Acetate Liner	<input type="checkbox"/>	6/17/2017 7:56			<input checked="" type="checkbox"/>	
1706947-013A	E-2-7.5	Soil		1	Acetate Liner	<input type="checkbox"/>	6/17/2017 7:59			<input checked="" type="checkbox"/>	
1706947-014A	E-2-10.0	Soil	Multi-Range TPH(g,d,mo) by EPA 8015Bm	1	Acetate Liner	<input type="checkbox"/>	6/17/2017 8:04	5 days		<input type="checkbox"/>	
			SW6020 (CAM 17)			<input type="checkbox"/>		5 days	<input type="checkbox"/>		
			SW8260B (VOCs)			<input type="checkbox"/>		5 days	<input type="checkbox"/>		
1706947-015A	E-2-15.0	Soil	SW6020 (LUFT)	1	Acetate Liner	<input type="checkbox"/>	6/17/2017 8:08	5 days		<input type="checkbox"/>	

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### WORK ORDER SUMMARY

**Client Name:** LANGAN  
**Client Contact:** Peter Cusack  
**Contact's Email:** pcusack@langan.com

**Project:** 770641901; 600 South 1st Street

**Work Order:** 1706947  
**QC Level:** LEVEL 2  
**Date Logged:** 6/20/2017

**Comments:**

WaterTrax     WriteOn     EDF     Excel     Fax     Email     HardCopy     ThirdParty     J-flag

Lab ID	Client ID	Matrix	Test Name	Containers /Composites	Bottle & Preservative	De-chlorinated	Collection Date & Time	TAT	Sediment Content	Hold	SubOut
1706947-015A	E-2-15.0	Soil	Multi-Range TPH(g,d,mo) by EPA 8015Bm	1	Acetate Liner	<input type="checkbox"/>	6/17/2017 8:08	5 days		<input type="checkbox"/>	
1706947-016A	E-2-20.0	Soil		1	Acetate Liner	<input type="checkbox"/>	6/17/2017 8:17			<input checked="" type="checkbox"/>	
1706947-017A	E-2-24.0	Soil	Multi-Range TPH(g,d,mo) by EPA 8015Bm	1	Acetate Liner	<input type="checkbox"/>	6/17/2017 9:04	5 days		<input type="checkbox"/>	
			Asbestos 400 (CARB435)			<input type="checkbox"/>		5 days		<input type="checkbox"/>	SubOut
			SW8260B (VOCs)			<input type="checkbox"/>		5 days		<input type="checkbox"/>	
1706947-018A	E-2-30.0	Soil	SW6020 (LUFT)	1	Acetate Liner	<input type="checkbox"/>	6/17/2017 9:13	5 days		<input type="checkbox"/>	
			Multi-Range TPH(g,d,mo) by EPA 8015Bm			<input type="checkbox"/>		5 days		<input type="checkbox"/>	
1706947-019A	E-3-1.5	Soil	Multi-Range TPH(g,d,mo) by EPA 8015Bm	1	Acetate Liner	<input type="checkbox"/>	6/17/2017 10:02	5 days		<input type="checkbox"/>	
			SW6020 (CAM 17)			<input type="checkbox"/>		5 days		<input type="checkbox"/>	
			SW8081A/8082 (OC Pesticides+PCBs)			<input type="checkbox"/>		5 days		<input type="checkbox"/>	
1706947-020A	E-3-3.0	Soil		1	Acetate Liner	<input type="checkbox"/>	6/17/2017 10:04			<input checked="" type="checkbox"/>	
1706947-021A	E-3-7.5	Soil	SW6020 (LUFT)	1	Acetate Liner	<input type="checkbox"/>	6/17/2017 10:07	5 days		<input type="checkbox"/>	
			Multi-Range TPH(g,d,mo) by EPA 8015Bm			<input type="checkbox"/>		5 days		<input type="checkbox"/>	
1706947-022A	E-3-10.0	Soil		1	Acetate Liner	<input type="checkbox"/>	6/17/2017 10:10			<input checked="" type="checkbox"/>	

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### WORK ORDER SUMMARY

**Client Name:** LANGAN  
**Client Contact:** Peter Cusack  
**Contact's Email:** pcusack@langan.com

**Project:** 770641901; 600 South 1st Street

**Comments:**

**Work Order:** 1706947  
**QC Level:** LEVEL 2  
**Date Logged:** 6/20/2017

WaterTrax     WriteOn     EDF     Excel     Fax     Email     HardCopy     ThirdParty     J-flag

Lab ID	Client ID	Matrix	Test Name	Containers /Composites	Bottle & Preservative	De-chlorinated	Collection Date & Time	TAT	Sediment Content	Hold	SubOut
1706947-023A	E-3-15.0	Soil	Multi-Range TPH(g,d,mo) by EPA 8015Bm SW6020 (CAM 17)	1	Acetate Liner	<input type="checkbox"/>	6/17/2017 10:13	5 days		<input type="checkbox"/>	
						<input type="checkbox"/>		5 days		<input type="checkbox"/>	
1706947-024A	E-3-20.0	Soil		1	Acetate Liner	<input type="checkbox"/>	6/17/2017 10:19			<input checked="" type="checkbox"/>	
1706947-025A	E-3-26.0	Soil	Multi-Range TPH(g,d,mo) by EPA 8015Bm SW6020 (CAM 17) SW8260B (VOCs)	1	Acetate Liner	<input type="checkbox"/>	6/17/2017 10:27	5 days		<input type="checkbox"/>	
						<input type="checkbox"/>		5 days		<input type="checkbox"/>	
						<input type="checkbox"/>		5 days		<input type="checkbox"/>	
1706947-026A	E-3-30.0	Soil		1	Acetate Liner	<input type="checkbox"/>	6/17/2017 10:35			<input checked="" type="checkbox"/>	
1706947-027A	E-3-36.0	Soil	SW6020 (LUFT) Multi-Range TPH(g,d,mo) by EPA 8015Bm	1	Acetate Liner	<input type="checkbox"/>	6/17/2017 11:18	5 days		<input type="checkbox"/>	
						<input type="checkbox"/>		5 days		<input type="checkbox"/>	
1706947-028A	E-4-1.5	Soil	Multi-Range TPH(g,d,mo) by EPA 8015Bm SW6020 (CAM 17) SW8081A/8082 (OC Pesticides+PCBs)	1	Acetate Liner	<input type="checkbox"/>	6/17/2017 13:32	5 days		<input type="checkbox"/>	
						<input type="checkbox"/>		5 days		<input type="checkbox"/>	
						<input type="checkbox"/>		5 days		<input type="checkbox"/>	
1706947-029A	E-4-3.0	Soil	Multi-Range TPH(g,d,mo) by EPA 8015Bm SW6020 (CAM 17)	1	Acetate Liner	<input type="checkbox"/>	6/17/2017 13:35	5 days		<input type="checkbox"/>	
						<input type="checkbox"/>		5 days		<input type="checkbox"/>	

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### WORK ORDER SUMMARY

**Client Name:** LANGAN  
**Client Contact:** Peter Cusack  
**Contact's Email:** pcusack@langan.com

**Project:** 770641901; 600 South 1st Street

**Comments:**

**Work Order:** 1706947  
**QC Level:** LEVEL 2  
**Date Logged:** 6/20/2017

WaterTrax     WriteOn     EDF     Excel     Fax     Email     HardCopy     ThirdParty     J-flag

Lab ID	Client ID	Matrix	Test Name	Containers /Composites	Bottle & Preservative	De-chlorinated	Collection Date & Time	TAT	Sediment Content	Hold	SubOut
1706947-030A	E-4-5.0	Soil	Multi-Range TPH(g,d,mo) by EPA 8015Bm	1	Acetate Liner	<input type="checkbox"/>	6/17/2017 13:37	5 days		<input type="checkbox"/>	
			SW6020 (CAM 17)			<input type="checkbox"/>		5 days		<input type="checkbox"/>	
			SW8270C (SVOCs)			<input type="checkbox"/>		5 days		<input type="checkbox"/>	
			SW8260B (VOCs)			<input type="checkbox"/>		5 days		<input type="checkbox"/>	
1706947-031A	E-4-7.5	Soil		1	Acetate Liner	<input type="checkbox"/>	6/17/2017 13:41			<input checked="" type="checkbox"/>	
1706947-032A	E-4-10.0	Soil		1	Acetate Liner	<input type="checkbox"/>	6/17/2017 13:43			<input checked="" type="checkbox"/>	
1706947-033A	E-4-15.0	Soil	SW6020 (LUFT)	1	Acetate Liner	<input type="checkbox"/>	6/17/2017 13:48	5 days		<input type="checkbox"/>	
			Multi-Range TPH(g,d,mo) by EPA 8015Bm			<input type="checkbox"/>		5 days		<input type="checkbox"/>	
1706947-034A	E-4-20.0	Soil		1	Acetate Liner	<input type="checkbox"/>	6/17/2017 13:51			<input checked="" type="checkbox"/>	
1706947-035A	E-4-24.0	Soil		1	Acetate Liner	<input type="checkbox"/>	6/17/2017 13:59			<input checked="" type="checkbox"/>	
1706947-036A	E-4-31.0	Soil		1	Acetate Liner	<input type="checkbox"/>	6/17/2017 14:07			<input checked="" type="checkbox"/>	
1706947-037A	E-4-35.0	Soil	Multi-Range TPH(g,d,mo) by EPA 8015Bm	1	Acetate Liner	<input type="checkbox"/>	6/17/2017 14:15	5 days		<input type="checkbox"/>	
			SW6020 (CAM 17)			<input type="checkbox"/>		5 days		<input type="checkbox"/>	
			SW8270C (SVOCs)			<input type="checkbox"/>		5 days		<input type="checkbox"/>	
			SW8260B (VOCs)			<input type="checkbox"/>		5 days		<input type="checkbox"/>	

**NOTES:** - STLC and TCLP extractions require 2 days to complete; therefore, all TATs begin after the extraction is completed (i.e., One-day TAT yields results in 3 days from sample submission).

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### WORK ORDER SUMMARY

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**Client Contact:** Peter Cusack  
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**Project:** 770641901; 600 South 1st Street

**Comments:**

**Work Order:** 1706947  
**QC Level:** LEVEL 2  
**Date Logged:** 6/20/2017

WaterTrax     WriteOn     EDF     Excel     Fax     Email     HardCopy     ThirdParty     J-flag

Lab ID	Client ID	Matrix	Test Name	Containers /Composites	Bottle & Preservative	De-chlorinated	Collection Date & Time	TAT	Sediment Content	Hold	SubOut
1706947-038A	E-4-40.0	Soil		1	Acetate Liner	<input type="checkbox"/>	6/17/2017 14:23			<input checked="" type="checkbox"/>	
1706947-039A	E-4-44.0	Soil	SW6020 (LUFT)	1	Acetate Liner	<input type="checkbox"/>	6/17/2017 14:35	5 days		<input type="checkbox"/>	
			Multi-Range TPH(g,d,mo) by EPA 8015Bm			<input type="checkbox"/>		5 days		<input type="checkbox"/>	
1706947-040A	E-5-1.5	Soil	Multi-Range TPH(g,d,mo) by EPA 8015Bm	1	Acetate Liner	<input type="checkbox"/>	6/17/2017 11:43	5 days		<input type="checkbox"/>	
			SW6020 (CAM 17)			<input type="checkbox"/>		5 days		<input type="checkbox"/>	
			SW8081A/8082 (OC Pesticides+PCBs)			<input type="checkbox"/>		5 days		<input type="checkbox"/>	
1706947-041A	E-5-3.0	Soil		1	Acetate Liner	<input type="checkbox"/>	6/17/2017 11:48			<input checked="" type="checkbox"/>	
1706947-042A	E-5-5.0	Soil	SW6020 (LUFT)	1	Acetate Liner	<input type="checkbox"/>	6/17/2017 11:52	5 days		<input type="checkbox"/>	
			Multi-Range TPH(g,d,mo) by EPA 8015Bm			<input type="checkbox"/>		5 days		<input type="checkbox"/>	
1706947-043A	E-5-7.5	Soil		1	Acetate Liner	<input type="checkbox"/>	6/17/2017 11:58			<input checked="" type="checkbox"/>	
1706947-044A	E-5-10.0	Soil		1	Acetate Liner	<input type="checkbox"/>	6/17/2017 12:07			<input checked="" type="checkbox"/>	
1706947-045A	E-5-15.0	Soil		1	Acetate Liner	<input type="checkbox"/>	6/17/2017 12:15			<input checked="" type="checkbox"/>	
1706947-046A	E-5-20.0	Soil	Multi-Range TPH(g,d,mo) by EPA 8015Bm	1	Acetate Liner	<input type="checkbox"/>	6/17/2017 12:28	5 days		<input type="checkbox"/>	
			SW6020 (CAM 17)			<input type="checkbox"/>		5 days		<input type="checkbox"/>	
1706947-047A	E-5-25.0	Soil		1	Acetate Liner	<input type="checkbox"/>	6/17/2017 12:34			<input checked="" type="checkbox"/>	

**NOTES:** - STLC and TCLP extractions require 2 days to complete; therefore, all TATs begin after the extraction is completed (i.e., One-day TAT yields results in 3 days from sample submission).

- MAI assumes that all material present in the provided sampling container is considered part of the sample - MAI does not exclude any material from the sample prior to sample preparation unless requested in writing by the client.



### WORK ORDER SUMMARY

**Client Name:** LANGAN  
**Client Contact:** Peter Cusack  
**Contact's Email:** pcusack@langan.com

**Project:** 770641901; 600 South 1st Street

**Comments:**

**Work Order:** 1706947  
**QC Level:** LEVEL 2  
**Date Logged:** 6/20/2017

WaterTrax     WriteOn     EDF     Excel     Fax     Email     HardCopy     ThirdParty     J-flag

Lab ID	Client ID	Matrix	Test Name	Containers /Composites	Bottle & Preservative	De-chlorinated	Collection Date & Time	TAT	Sediment Content	Hold	SubOut
1706947-048A	E-5-30.0	Soil	SW6020 (LUFT)	1	Acetate Liner	<input type="checkbox"/>	6/17/2017 12:48	5 days		<input type="checkbox"/>	
			Multi-Range TPH(g,d,mo) by EPA 8015Bm			<input type="checkbox"/>		5 days			
1706947-049A	E-5-35.0	Soil		1	Acetate Liner	<input type="checkbox"/>	6/17/2017 13:03			<input checked="" type="checkbox"/>	
1706947-050A	E-5-40.0	Soil		1	Acetate Liner	<input type="checkbox"/>	6/17/2017 13:15			<input checked="" type="checkbox"/>	
1706947-051A	E-5-45.0	Soil	SW6020 (LUFT)	1	Acetate Liner	<input type="checkbox"/>	6/17/2017 13:27	5 days		<input type="checkbox"/>	
			Multi-Range TPH(g,d,mo) by EPA 8015Bm			<input type="checkbox"/>		5 days			
1706947-052A	E-6-1.5	Soil	SW6020 (LUFT)	1	Acetate Liner	<input type="checkbox"/>	6/17/2017 8:48	5 days		<input type="checkbox"/>	
			Multi-Range TPH(g,d,mo) by EPA 8015Bm			<input type="checkbox"/>		5 days			
			SW8081A/8082 (OC Pesticides+PCBs)			<input type="checkbox"/>		5 days			
1706947-053A	E-6-3.0	Soil	Multi-Range TPH(g,d,mo) by EPA 8015Bm	1	Acetate Liner	<input type="checkbox"/>	6/17/2017 8:55	5 days		<input type="checkbox"/>	
			SW6020 (CAM 17)			<input type="checkbox"/>		5 days			
1706947-054A	E-6-5.0	Soil		1	Acetate Liner	<input type="checkbox"/>	6/17/2017 9:01			<input checked="" type="checkbox"/>	
1706947-055A	E-6-7.5	Soil		1	Acetate Liner	<input type="checkbox"/>	6/17/2017 9:08			<input checked="" type="checkbox"/>	
1706947-056A	E-6-10.0	Soil	Multi-Range TPH(g,d,mo) by EPA 8015Bm	1	Acetate Liner	<input type="checkbox"/>	6/17/2017 9:18	5 days		<input type="checkbox"/>	
			SW6020 (CAM 17)			<input type="checkbox"/>		5 days			

**NOTES:** - STLC and TCLP extractions require 2 days to complete; therefore, all TATs begin after the extraction is completed (i.e., One-day TAT yields results in 3 days from sample submission).

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### WORK ORDER SUMMARY

**Client Name:** LANGAN  
**Client Contact:** Peter Cusack  
**Contact's Email:** pcusack@langan.com

**Project:** 770641901; 600 South 1st Street

**Work Order:** 1706947  
**QC Level:** LEVEL 2  
**Date Logged:** 6/20/2017

**Comments:**

WaterTrax     WriteOn     EDF     Excel     Fax     Email     HardCopy     ThirdParty     J-flag

Lab ID	Client ID	Matrix	Test Name	Containers /Composites	Bottle & Preservative	De-chlorinated	Collection Date & Time	TAT	Sediment Content	Hold	SubOut
1706947-056A	E-6-10.0	Soil	SW8270C (SVOCs)	1	Acetate Liner	<input type="checkbox"/>	6/17/2017 9:18	5 days		<input type="checkbox"/>	
			SW8260B (VOCs)			<input type="checkbox"/>		5 days		<input type="checkbox"/>	
1706947-057A	E-6-15.0	Soil		1	Acetate Liner	<input type="checkbox"/>	6/17/2017 9:33			<input checked="" type="checkbox"/>	
1706947-058A	E-6-20.0	Soil		1	Acetate Liner	<input type="checkbox"/>	6/17/2017 9:45			<input checked="" type="checkbox"/>	
1706947-059A	E-6-25.0	Soil		1	Acetate Liner	<input type="checkbox"/>	6/17/2017 10:04			<input checked="" type="checkbox"/>	
1706947-060A	E-6-30.0	Soil	Multi-Range TPH(g,d,mo) by EPA 8015Bm	1	Acetate Liner	<input type="checkbox"/>	6/17/2017 10:23	5 days		<input type="checkbox"/>	
			SW6020 (CAM 17)			<input type="checkbox"/>		5 days		<input type="checkbox"/>	
1706947-061A	E-6-35.0	Soil		1	Acetate Liner	<input type="checkbox"/>	6/17/2017 10:37			<input checked="" type="checkbox"/>	
1706947-062A	E-6-40.0	Soil		1	Acetate Liner	<input type="checkbox"/>	6/17/2017 10:48			<input checked="" type="checkbox"/>	
1706947-063A	E-6-44.0	Soil		1	Acetate Liner	<input type="checkbox"/>	6/17/2017 11:09			<input checked="" type="checkbox"/>	
1706947-064A	E-2	Soil		1	Acetate Liner	<input type="checkbox"/>	6/17/2017 9:25			<input checked="" type="checkbox"/>	

**NOTES:** - STLC and TCLP extractions require 2 days to complete; therefore, all TATs begin after the extraction is completed (i.e., One-day TAT yields results in 3 days from sample submission).  
- MAI assumes that all material present in the provided sampling container is considered part of the sample - MAI does not exclude any material from the sample prior to sample preparation unless requested in writing by the client.

# LANGAN

## CHAIN OF CUSTODY RECORD

- 555 Montgomery Street, Suite 1300, San Francisco, CA 94111
- 501 14th Street, Third Floor, Oakland CA 94612
- 3320 Data Drive, Suite 350, Rancho Cordova, CA 95670-7982
- 4030 Moorpark Ave. Suite 210, San Jose, CA 95117-1849

Site Name: 600 SOUTH 1ST STREET  
 Job Number: 770641901  
 Project Manager/Contact: PETER CUSACK  
 Samplers: KSS  
 Recorder (Signature Required): [Signature]

Turnaround Time  
STANDARD

Field Sample Identification No.	Date	Time	Lab Sample No.	Matrix								Analysis Requested							Silica gel clean-up	Hold	Remarks			
				Soil	Water	Air	Other	HCL	H <sub>2</sub> SO <sub>4</sub>	HNO <sub>3</sub>	Ice	TPH	VOCS	SVOCs	OCPS; PCBs	ASBESTOS BY CAL 835	CAM 17	LUFTS						
E-1-1.5	6/17/17	1127		X									X	X	X	X	X							
E-1-3.0		1130		X									X	X	X	X	X						X	
E-1-5.0		1133		X									X	X	X	X	X						X	
E-1-7.5		1136		X									X	X	X	X	X						X	
E-1-10.0		1138		X									X	X	X	X	X						X	
E-1-15.0		1142		X									X	X	X	X	X						X	
E-1-20.0		1149		X									X	X	X	X	X						X	
E-1-25.0		1159		X									X	X	X	X	X						X	
E-1-30.5		1212		X									X	X	X	X	X						X	
E-2-1.5		0746		X									X	X	X	X	X						X	
E-2-3.0		0749		X									X	X	X	X	X						X	
E-2-5.0		0756		X									X	X	X	X	X						X	
E-2-7.5		0759		X									X	X	X	X	X						X	
E-2-10.0	6/17/17	0804		X									X	X	X	X	X						X	

Relinquished by: (Signature) <u>[Signature]</u>	Date: <u>6-20-17</u>	Time: <u>0940</u>	Received by: (Signature) <u>[Signature]</u>	Date: <u>6-20-17</u>	Time: <u>0940</u>
Relinquished by: (Signature) <u>[Signature]</u>	Date: <u>6-20-17</u>	Time: <u>1230</u>	Received by: (Signature) <u>[Signature]</u>	Date: <u>6/20/17</u>	Time: <u>1230</u>
Relinquished by: (Signature) _____	Date: _____	Time: _____	Received by Lab: (Signature) _____	Date: _____	Time: _____

Sent to Laboratory (Name): MCCAMBELL ANALYTICAL  
 Laboratory Comments/Notes: \_\_\_\_\_  
 Method of Shipment:  Lab courier  Fed Ex  Airborne  UPS  
 Hand Carried  Private Courier (Co. Name) \_\_\_\_\_

# LANGAN

## CHAIN OF CUSTODY RECORD

555 Montgomery Street, Suite 1300, San Francisco, CA 94111  
 501 14th Street, Third Floor, Oakland CA 94612  
 3320 Data Drive, Suite 350, Rancho Cordova, CA 95670-7982  
 4030 Moorpark Ave. Suite 210, San Jose, CA 95117-1849

Site Name: 600 SOUTH 1ST STREET  
 Job Number: 77064901  
 Project Manager/Contact: PETER CUSAK  
 Samplers: KSS  
 Recorder (Signature Required): [Signature]

Turnaround  
Time  
**STANDARD**

### Analysis Requested

### No. Containers & Preservative

Field Sample Identification No.	Date	Time	Lab Sample No.	Matrix										Analysis Requested							Silica gel clean-up	Hold	Remarks				
				Soil	Water	Air	Other	HCL	H <sub>2</sub> SO <sub>4</sub>	HNO <sub>3</sub>	Ice	TPH (pl. memo)	VOCs	SVOCs	OCs & PCBs	ASBESTOS BY CANS 4-63	CAM 17	LUFTS									
E-2-15.0	4/17/17	0808		X													X										
E-2-20.0		0817		X													X										
E-2-24.0		0904		X													X										
E-2-30.0		0913		X													X										
E-3-1.5		1002		X													X										
E-3-3.0		1004		X													X										
E-3-7.5		1007		X													X										
E-3-10.0		1010		X													X										
E-3-15.0		1013		X													X										
E-3-20.0		1019		X													X										
E-3-26.0		1027		X													X										
E-3-30.0		1035		X													X										
E-3-36.0		1118		X													X										
E-4-1.5	6/17/17	1332		X													X										

Relinquished by: (Signature) <u>[Signature]</u>	Date: <u>6-20-17</u>	Time: <u>0940</u>	Received by: (Signature) <u>[Signature]</u>	Date: <u>6-20-17</u>	Time: <u>0940</u>
Relinquished by: (Signature) <u>[Signature]</u>	Date: <u>6-20-17</u>	Time: <u>1230</u>	Received by: (Signature) <u>[Signature]</u>	Date: <u>6/20/17</u>	Time: <u>1230</u>
Relinquished by: (Signature)	Date:	Time:	Received by Lab: (Signature)	Date:	Time:

Sent to Laboratory (Name): McCAMPBELL ANALYTICAL

Method of Shipment:  Lab courier  Fed Ex  Airborne  UPS  
 Hand Carried  Private Courier (Co. Name) \_\_\_\_\_

White Copy - Original      Yellow Copy - Laboratory      Pink Copy - Field      COC Number: 10.8

*to E-2 sample not listed E-2-40 not on COC*

Page 140 of 144

# LANGAN

## CHAIN OF CUSTODY RECORD

- 555 Montgomery Street, Suite 1300, San Francisco, CA 94111
- 501 14th Street, Third Floor, Oakland CA 94612
- 3320 Data Drive, Suite 350, Rancho Cordova, CA 95670-7982
- 4030 Moorpark Ave. Suite 210, San Jose, CA 95117-1849

Site Name: 600 SOUTH 1st STREET  
 Job Number: 770 (CAL 901)  
 Project Manager/Contact: PETER CUSACK  
 Samplers: KSS  
 Recorder (Signature Required): [Signature]

Turnaround Time <u>STANDARD</u>
---------------------------------------

Field Sample Identification No.	Date	Time	Lab Sample No.	Matrix & Preservative								Analysis Requested								Remarks		
				Soil	Water	Air	Other	HCL	H <sub>2</sub> SO <sub>4</sub>	HNO <sub>3</sub>	Ice	No. Containers	TPH and/or VOCs	SVOCs	OCPs & PCBs	ASBESTOS BY CAMEL	AMIT	LUFTS	Silica gel clean-up		Hold	
E-4-3.0	6/17/17	1335		X																		
E-4-5.0		1337		X																		
E-4-7.5		1341		X																		
E-4-10.0		1343		X																		
E-4-15.0		1348		X																		
E-4-20.0		1351		X																		
E-4-24.0		1359		X																		
E-4-31.0		1407		X																		
E-4-35.0		1415		X																		
E-4-40.0		1423		X																		
E-4-44.0	6/17/17	1435		X																		

Relinquished by: (Signature) <u>[Signature]</u>	Date: <u>6-20-17</u>	Time: <u>0940</u>	Received by: (Signature) <u>[Signature]</u>	Date: <u>6-20-17</u>	Time: <u>0940</u>
Relinquished by: (Signature) <u>[Signature]</u>	Date: <u>6-20-17</u>	Time: <u>1230</u>	Received by: (Signature) <u>[Signature]</u>	Date: <u>6/20/17</u>	Time: <u>1230</u>
Relinquished by: (Signature)	Date:	Time:	Received by Lab: (Signature)	Date:	Time:

Sent to Laboratory (Name): McCAMPBELL ANALYTICAL  
 Laboratory Comments/Notes:

Method of Shipment:  Lab courier  Fed Ex  Airborne  UPS  
 Hand Carried  Private Courier (Co. Name)

# LANGAN

## CHAIN OF CUSTODY RECORD

- 555 Montgomery Street, Suite 1300, San Francisco, CA 94111
- 501 14th Street, Third Floor, Oakland CA 94612
- 3320 Data Drive, Suite 350, Rancho Cordova, CA 95670-7982
- ~~4030 Moorpark Ave. Suite 210, San Jose, CA 95117-1649~~

Site Name: 600 South 1<sup>st</sup> Street

4 Armeden Blvd, suite 590, SJ, CA 95113

Job Number: 770641901

Project Manager/Contact: Peter Wack

Samplers: Wendy Kwong

Recorder (Signature Required): Wendy Kwong

Analysis Requested

Turnaround  
Time  
Standard

Field Sample Identification No.	Date	Time	Lab Sample No.	No. Containers & Preservative											Analysis Requested		Silica gel clean-up	Hold	Remarks													
				Soil	Water	Air	Other	HCL	H <sub>2</sub> SO <sub>4</sub>	HNO <sub>3</sub>	Ice	TPH-g,d,m	VOCs	SVOCS	oils + PCBs	Asbestos				CAN 17	LURTS											
E-5-1.5	6/17/17	1143		X											X		X	X														- please name samples according to COS
E-5-3.0		1148		X											X		X	X						X								
E-5-5.0		1152		X											X		X	X						X								
E-5-7.5		1158		X											X		X	X						X								
E-5-10.0		1207		X											X		X	X						X								
E-5-15.0		1215		X											X		X	X						X								
E-5-20.0		1228		X											X		X	X						X								
E-5-25.0		1234		X											X		X	X						X								
E-5-30.0		1248		X											X		X	X						X								
E-5-35.0		1303		X											X		X	X						X								
E-5-40.0		1315		X											X		X	X						X								
E-5-48.0	6/17/17	1329		X											X		X	X						X								

Relinquished by: (Signature) <u>[Signature]</u>	Date: <u>6-20-17</u>	Time: <u>0940</u>	Received by: (Signature) <u>[Signature]</u>	Date: <u>6-20-17</u>	Time: <u>0940</u>
Relinquished by: (Signature) <u>[Signature]</u>	Date: <u>6-20-17</u>	Time: <u>1230</u>	Received by: (Signature) <u>[Signature]</u>	Date: <u>6/20/17</u>	Time: <u>1230</u>
Relinquished by: (Signature)	Date:	Time:	Received by Lab: (Signature)	Date:	Time:

Sent to Laboratory (Name): McC Campbell Analytical  
 Laboratory Comments/Notes:

Method of Shipment  Lab courier  Fed Ex  Airborne  UPS  
 Hand Carried  Private Courier (Co. Name)

# LANGAN

## CHAIN OF CUSTODY RECORD

- 555 Montgomery Street, Suite 1300, San Francisco, CA 94111
- 501 14th Street, Third Floor, Oakland CA 94612
- 3320 Data Drive, Suite 350, Rancho Cordova, CA 95670-7982
- 4030 Moorpark Ave. Suite 210, San Jose, CA 95117-1849

Site Name: 900 South 1st street  
 Job Number: 770641901  
 Project Manager/Contact: Peter Cwack  
 Samplers: Wendy Kwang  
 Recorder (Signature Required): [Signature]

Turnaround Time	
Standard	

Field Sample Identification No.	Date	Time	Lab Sample No.	Soil	Water	Air	Other	Matrix & Preservative				Analysis Requested										Silica gel clean-up	Hold	Remarks												
								HCL	H <sub>2</sub> SO <sub>4</sub>	HNO <sub>3</sub>	Ice	TPH-g,d/mo	VOCs	SVOCs	Oil & PCBs	Asbestos	CMU17	METS																		
E-6-1.5	6/17/17	0848		X									X																					- please name samples according to COC		
E-6-3.0		0855		X									X																							
E-6-5.0		0801		X																																
E-6-7.5		0908		X																																
E-6-10.0		0918		X									X	X																						
E-6-15.0		0933		X																																
E-6-20.0		0945		X																																
E-6-25.0		1004		X																																
E-6-30.0		1023		X									X																							
E-6-35.0		1037		X																																
E-6-40.0		1048		X																																
E-6-44.0	6/17/17	1109		X																																

Relinquished by: (Signature) <u>[Signature]</u>	Date: <u>6-20-17</u>	Time: <u>0946</u>	Received by: (Signature) <u>[Signature]</u>	Date: <u>6-20-17</u>	Time: <u>0946</u>
Relinquished by: (Signature) <u>[Signature]</u>	Date: <u>6-20-17</u>	Time: <u>1230</u>	Received by: (Signature) <u>[Signature]</u>	Date: <u>6/20/17</u>	Time: <u>1230</u>
Relinquished by: (Signature) <u>[Signature]</u>	Date: _____	Time: _____	Received by Lab: (Signature) _____	Date: _____	Time: _____

Sent to Laboratory (Name): McLampbell Analytical  
 Laboratory Comments/Notes: \_\_\_\_\_

Method of Shipment:  Lab courier  Fed Ex  Airborne  UPS  
 Hand Carried  Private Courier (Co. Name) \_\_\_\_\_



### Sample Receipt Checklist

Client Name: **Langan**  
 Project Name: **770641901; 600 South 1st Street**  
 WorkOrder No: **1706947** Matrix: Soil  
 Carrier: Bernie Cummins (MAI Courier)

Date and Time Received: **6/20/2017 12:30**  
 Date Logged: **6/20/2017**  
 Received by: **Kena Ponce**  
 Logged by: **Kena Ponce**

**Chain of Custody (COC) Information**

Chain of custody present? Yes  No   
 Chain of custody signed when relinquished and received? Yes  No   
 Chain of custody agrees with sample labels? Yes  No   
 Sample IDs noted by Client on COC? Yes  No   
 Date and Time of collection noted by Client on COC? Yes  No   
 Sampler's name noted on COC? Yes  No

**Sample Receipt Information**

Custody seals intact on shipping container/cooler? Yes  No  NA   
 Shipping container/cooler in good condition? Yes  No   
 Samples in proper containers/bottles? Yes  No   
 Sample containers intact? Yes  No   
 Sufficient sample volume for indicated test? Yes  No

**Sample Preservation and Hold Time (HT) Information**

All samples received within holding time? Yes  No  NA   
 Sample/Temp Blank temperature Temp: 10.8°C NA   
 Water - VOA vials have zero headspace / no bubbles? Yes  No  NA   
 Sample labels checked for correct preservation? Yes  No   
 pH acceptable upon receipt (Metal: <2; 522: <4; 218.7: >8)? Yes  No  NA   
 Samples Received on Ice? Yes  No   
 (Ice Type: WET ICE )

**UCMR3 Samples:**

Total Chlorine tested and acceptable upon receipt for EPA 522? Yes  No  NA   
 Free Chlorine tested and acceptable upon receipt for EPA 218.7, 300.1, 537, 539? Yes  No  NA

Comments:



# McC Campbell Analytical, Inc.

"When Quality Counts"

## Analytical Report

**WorkOrder:** 1706947 A

**Report Created for:** Langan

555 Montgomery St., Suite 1300  
San Francisco, CA 94111

**Project Contact:** Peter Cusack

**Project P.O.:**

**Project Name:** 770641901; 600 South 1st Street

**Project Received:** 06/20/2017

Analytical Report reviewed & approved for release on 07/05/2017 by:

Angela Rydelius,  
Laboratory Manager

*The report shall not be reproduced except in full, without the written approval of the laboratory. The analytical results relate only to the items tested. Results reported conform to the most current NELAP standards, where applicable, unless otherwise stated in the case narrative.*







## Glossary of Terms & Qualifier Definitions

**Client:** Langan  
**Project:** 770641901; 600 South 1st Street  
**WorkOrder:** 1706947

### Glossary Abbreviation

%D	Serial Dilution Percent Difference
95% Interval	95% Confident Interval
DF	Dilution Factor
DI WET	(DISTLC) Waste Extraction Test using DI water
DISS	Dissolved (direct analysis of 0.45 µm filtered and acidified water sample)
DLT	Dilution Test (Serial Dilution)
DUP	Duplicate
EDL	Estimated Detection Limit
ERS	External reference sample. Second source calibration verification.
ITEF	International Toxicity Equivalence Factor
LCS	Laboratory Control Sample
MB	Method Blank
MB % Rec	% Recovery of Surrogate in Method Blank, if applicable
MDL	Method Detection Limit
ML	Minimum Level of Quantitation
MS	Matrix Spike
MSD	Matrix Spike Duplicate
N/A	Not Applicable
ND	Not detected at or above the indicated MDL or RL
NR	Data Not Reported due to matrix interference or insufficient sample amount.
PDS	Post Digestion Spike
PDSD	Post Digestion Spike Duplicate
PF	Prep Factor
RD	Relative Difference
RL	Reporting Limit (The RL is the lowest calibration standard in a multipoint calibration.)
RPD	Relative Percent Deviation
RRT	Relative Retention Time
SPK Val	Spike Value
SPKRef Val	Spike Reference Value
SPLP	Synthetic Precipitation Leachate Procedure
ST	Sorbent Tube
TCLP	Toxicity Characteristic Leachate Procedure
TEQ	Toxicity Equivalents
WET (STLC)	Waste Extraction Test (Soluble Threshold Limit Concentration)



## Glossary of Terms & Qualifier Definitions

**Client:** Langan  
**Project:** 770641901; 600 South 1st Street  
**WorkOrder:** 1706947

### Analytical Qualifiers

S	Surrogate spike recovery outside accepted recovery limits
a3	Sample diluted due to high organic content.
a4	Reporting limits raised due to the sample's matrix prohibiting a full volume extraction.
c1	Surrogate recovery outside of the control limits due to the dilution of the sample.
c4	Surrogate recovery outside of the control limits due to coelution with another peak(s) / cluttered chromatogram.
c7	Surrogate value diluted out of range
c11	The surrogate recovery is above the upper control limit. The target analyte(s) were Not Detected (ND); therefore, the data has been reported.
d1	Weakly modified or unmodified gasoline is significant
d7	Strongly aged gasoline or diesel range compounds are significant in the TPH(g) chromatogram
d9	No recognizable pattern
e1	Unmodified or weakly modified diesel is significant
e2	Diesel range compounds are significant; no recognizable pattern
e4	Gasoline range compounds are significant.
e7	Oil range compounds are significant

### Quality Control Qualifiers

F1	MS/MSD recovery and/or RPD is out of acceptance criteria; LCS validates the prep batch.
F2	LCS/LCSD recovery and/or RPD is out of acceptance criteria.
F10	MS/MSD outside control limits. Physical or chemical interferences exist due to sample matrix.
F13	Indigenous sample results too high for a representative matrix spike analysis.



## Analytical Report

**Client:** Langan  
**Date Received:** 6/20/17 12:30  
**Date Prepared:** 7/1/17  
**Project:** 770641901; 600 South 1st Street

**WorkOrder:** 1706947  
**Extraction Method:** CA Title 22  
**Analytical Method:** SW6020  
**Unit:** mg/L

### Metals (STLC)

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-1-1.5	1706947-001A	Soil	06/17/2017 11:27	ICP-MS3	141416

Analytes	Result	RL	DF	Date Analyzed
Chromium	0.21	0.10	1	07/03/2017 20:06

Analyst(s): ND

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-1-5.0	1706947-003A	Soil	06/17/2017 11:33	ICP-MS3	141418

Analytes	Result	RL	DF	Date Analyzed
Chromium	ND	0.10	1	07/03/2017 20:13

Analyst(s): ND

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-2-3.0	1706947-011A	Soil	06/17/2017 07:49	ICP-MS3	141416

Analytes	Result	RL	DF	Date Analyzed
Chromium	0.15	0.10	1	07/03/2017 20:31

Analyst(s): ND

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-2-15.0	1706947-015A	Soil	06/17/2017 08:08	ICP-MS3	141415

Analytes	Result	RL	DF	Date Analyzed
Chromium	0.28	0.10	1	07/03/2017 20:38

Analyst(s): ND

(Cont.)



## Analytical Report

**Client:** Langan  
**Date Received:** 6/20/17 12:30  
**Date Prepared:** 7/1/17  
**Project:** 770641901; 600 South 1st Street

**WorkOrder:** 1706947  
**Extraction Method:** CA Title 22  
**Analytical Method:** SW6020  
**Unit:** mg/L

### Metals (STLC)

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-2-24.0	1706947-017A	Soil	06/17/2017 09:04	ICP-MS3	141415

Analytes	Result	RL	DF	Date Analyzed
Chromium	0.28	0.10	1	07/03/2017 20:44

Analyst(s): ND

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-3-36.0	1706947-027A	Soil	06/17/2017 11:18	ICP-MS3	141418

Analytes	Result	RL	DF	Date Analyzed
Chromium	0.37	0.10	1	07/03/2017 21:21

Analyst(s): ND

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-4-44.0	1706947-039A	Soil	06/17/2017 14:35	ICP-MS3	141416

Analytes	Result	RL	DF	Date Analyzed
Chromium	0.12	0.10	1	07/03/2017 21:40

Analyst(s): ND

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-5-1.5	1706947-040A	Soil	06/17/2017 11:43	ICP-MS3	141415

Analytes	Result	RL	DF	Date Analyzed
Chromium	0.10	0.10	1	07/03/2017 21:46

Analyst(s): ND

(Cont.)



## Analytical Report

**Client:** Langan  
**Date Received:** 6/20/17 12:30  
**Date Prepared:** 7/1/17  
**Project:** 770641901; 600 South 1st Street

**WorkOrder:** 1706947  
**Extraction Method:** CA Title 22  
**Analytical Method:** SW6020  
**Unit:** mg/L

### Metals (STLC)

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-5-5.0	1706947-042A	Soil	06/17/2017 11:52	ICP-MS3	141415

Analytes	Result	RL	DF	Date Analyzed
Chromium	0.13	0.10	1	07/03/2017 21:52

Analyst(s): ND

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-5-20.0	1706947-046A	Soil	06/17/2017 12:28	ICP-MS3	141415

Analytes	Result	RL	DF	Date Analyzed
Chromium	0.29	0.10	1	07/03/2017 21:58

Analyst(s): ND

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-5-30.0	1706947-048A	Soil	06/17/2017 12:48	ICP-MS3	141415

Analytes	Result	RL	DF	Date Analyzed
Chromium	ND	0.10	1	07/03/2017 22:05

Analyst(s): ND

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-5-45.0	1706947-051A	Soil	06/17/2017 13:27	ICP-MS3	141415

Analytes	Result	RL	DF	Date Analyzed
Chromium	0.53	0.10	1	07/03/2017 22:11

Analyst(s): ND

(Cont.)



# Analytical Report

**Client:** Langan  
**Date Received:** 6/20/17 12:30  
**Date Prepared:** 7/1/17  
**Project:** 770641901; 600 South 1st Street

**WorkOrder:** 1706947  
**Extraction Method:** CA Title 22  
**Analytical Method:** SW6020  
**Unit:** mg/L

## Metals (STLC)

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-6-1.5	1706947-052A	Soil	06/17/2017 08:48	ICP-MS3	141415

Analytes	Result	RL	DF	Date Analyzed
Chromium	0.28	0.10	1	07/03/2017 22:17

Analyst(s): ND

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-6-3.0	1706947-053A	Soil	06/17/2017 08:55	ICP-MS3	141416

Analytes	Result	RL	DF	Date Analyzed
Chromium	0.15	0.10	1	07/03/2017 22:42

Analyst(s): ND



## Analytical Report

**Client:** Langan  
**Date Received:** 6/20/17 12:30  
**Date Prepared:** 7/1/17  
**Project:** 770641901; 600 South 1st Street

**WorkOrder:** 1706947  
**Extraction Method:** CA Title 22  
**Analytical Method:** SW6020  
**Unit:** mg/L

### Metals (STLC)

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-1-15.0	1706947-006A	Soil	06/17/2017 11:42	ICP-MS3	141415

Analytes	Result	RL	DF	Date Analyzed
Chromium	ND	0.10	1	07/03/2017 20:19
Lead	ND	0.10	1	07/03/2017 20:19

Analyst(s): ND

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-2-1.5	1706947-010A	Soil	06/17/2017 07:46	ICP-MS3	141418

Analytes	Result	RL	DF	Date Analyzed
Chromium	0.25	0.10	1	07/03/2017 20:25
Lead	4.0	0.10	1	07/03/2017 20:25

Analyst(s): ND

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-3-1.5	1706947-019A	Soil	06/17/2017 10:02	ICP-MS3	141415

Analytes	Result	RL	DF	Date Analyzed
Chromium	0.28	0.10	1	07/03/2017 20:50
Lead	12	0.10	1	07/03/2017 20:50

Analyst(s): ND

(Cont.)



## Analytical Report

**Client:** Langan  
**Date Received:** 6/20/17 12:30  
**Date Prepared:** 7/1/17  
**Project:** 770641901; 600 South 1st Street

**WorkOrder:** 1706947  
**Extraction Method:** CA Title 22  
**Analytical Method:** SW6020  
**Unit:** mg/L

### Metals (STLC)

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-3-26.0	1706947-025A	Soil	06/17/2017 10:27	ICP-MS3	141415

Analytes	Result	RL	DF	Date Analyzed
Chromium	0.18	0.10	1	07/03/2017 20:56
Lead	0.67	0.10	1	07/03/2017 20:56

Analyst(s): ND

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-4-1.5	1706947-028A	Soil	06/17/2017 13:32	ICP-MS3	141417

Analytes	Result	RL	DF	Date Analyzed
Chromium	0.23	0.10	1	07/03/2017 21:27
Lead	4.8	0.10	1	07/03/2017 21:27

Analyst(s): ND

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-4-3.0	1706947-029A	Soil	06/17/2017 13:35	ICP-MS3	141417

Analytes	Result	RL	DF	Date Analyzed
Chromium	0.15	0.10	1	07/03/2017 21:33
Lead	1.0	0.10	1	07/03/2017 21:33

Analyst(s): ND





## Analytical Report

**Client:** Langan  
**Date Received:** 6/20/17 12:30  
**Date Prepared:** 6/30/17  
**Project:** 770641901; 600 South 1st Street

**WorkOrder:** 1706947  
**Extraction Method:** SW1311/SW3010  
**Analytical Method:** SW6020  
**Unit:** mg/L

### Metals (TCLP)

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-3-1.5	1706947-019A	Soil	06/17/2017 10:02	ICP-MS2	141381

Analytes	Result	RL	DF	Date Analyzed
Lead	ND	0.10	1	07/03/2017 18:41

Analyst(s): DB

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-4-3.0	1706947-029A	Soil	06/17/2017 13:35	ICP-MS2	141381

Analytes	Result	RL	DF	Date Analyzed
Lead	ND	0.10	1	07/03/2017 18:47

Analyst(s): DB



## Quality Control Report

<b>Client:</b>	Langan	<b>WorkOrder:</b>	1706947
<b>Date Prepared:</b>	7/1/17	<b>BatchID:</b>	141415
<b>Date Analyzed:</b>	7/3/17	<b>Extraction Method:</b>	CA Title 22
<b>Instrument:</b>	ICP-MS1	<b>Analytical Method:</b>	SW6020
<b>Matrix:</b>	Soil	<b>Unit:</b>	mg/L
<b>Project:</b>	770641901; 600 South 1st Street	<b>Sample ID:</b>	MB/LCS-141415 1706E71-001AMS/MSD

### QC Summary Report for Metals (STLC)

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Chromium	ND	10.1	0.10	10	-	101	75-125
Lead	ND	9.93	0.10	10	-	99	75-125

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
Chromium	186	184	10	160	276,F1	256,F1	75-125	1.04	20
Lead	137	137	10	150	0,F1	0,F1	75-125	NA	20

(Cont.)



## Quality Control Report

<b>Client:</b>	Langan	<b>WorkOrder:</b>	1706947
<b>Date Prepared:</b>	7/1/17	<b>BatchID:</b>	141416
<b>Date Analyzed:</b>	7/3/17	<b>Extraction Method:</b>	CA Title 22
<b>Instrument:</b>	ICP-MS1	<b>Analytical Method:</b>	SW6020
<b>Matrix:</b>	Soil	<b>Unit:</b>	mg/L
<b>Project:</b>	770641901; 600 South 1st Street	<b>Sample ID:</b>	MB/LCS-141416 1706C81-001AMS/MSD

### QC Summary Report for Metals (STLC)

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Chromium	ND	10.1	0.10	10	-	101	75-125

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
Chromium	10.2	10.0	10	0.1494	100	99	75-125	1.11	20

(Cont.)



## Quality Control Report

<b>Client:</b>	Langan	<b>WorkOrder:</b>	1706947
<b>Date Prepared:</b>	7/1/17	<b>BatchID:</b>	141417
<b>Date Analyzed:</b>	7/3/17	<b>Extraction Method:</b>	CA Title 22
<b>Instrument:</b>	ICP-MS1	<b>Analytical Method:</b>	SW6020
<b>Matrix:</b>	Soil	<b>Unit:</b>	mg/L
<b>Project:</b>	770641901; 600 South 1st Street	<b>Sample ID:</b>	MB/LCS-141417 1706C30-001AMS/MSD

### QC Summary Report for Metals (STLC)

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Chromium	ND	10.0	0.10	10	-	100	75-125
Lead	ND	10.0	0.10	10	-	100	75-125

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
Chromium	10.6	10.3	10	0.1440	104	102	75-125	2.57	20
Lead	10.4	10.3	10	ND	104	103	75-125	0.791	20

(Cont.)



## Quality Control Report

<b>Client:</b>	Langan	<b>WorkOrder:</b>	1706947
<b>Date Prepared:</b>	7/1/17	<b>BatchID:</b>	141418
<b>Date Analyzed:</b>	7/3/17	<b>Extraction Method:</b>	CA Title 22
<b>Instrument:</b>	ICP-MS2	<b>Analytical Method:</b>	SW6020
<b>Matrix:</b>	Soil	<b>Unit:</b>	mg/L
<b>Project:</b>	770641901; 600 South 1st Street	<b>Sample ID:</b>	MB/LCS-141418 1706C12-001AMS/MSD

### QC Summary Report for Metals (STLC)

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Chromium	ND	10.6	0.10	10	-	106	75-125
Lead	ND	9.83	0.10	10	-	98	75-125

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
Chromium	10.5	10.6	10	0.4062	101	101	75-125	0	20
Lead	12.7	12.8	10	2.7	100	102	75-125	1.30	20



## Quality Control Report

<b>Client:</b>	Langan	<b>WorkOrder:</b>	1706947
<b>Date Prepared:</b>	6/30/17	<b>BatchID:</b>	141381
<b>Date Analyzed:</b>	7/3/17	<b>Extraction Method:</b>	SW1311/SW3010
<b>Instrument:</b>	ICP-MS2	<b>Analytical Method:</b>	SW6020
<b>Matrix:</b>	Soil	<b>Unit:</b>	mg/L
<b>Project:</b>	770641901; 600 South 1st Street	<b>Sample ID:</b>	MB/LCS-141381 1706C81-001AMS/MSD

### QC Summary Report for Metals (TCLP)

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Lead	ND	10.0	0.10	10	-	100	75-125

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
Lead	10.1	10.0	10	ND	101	100	75-125	0.895	20

1534 Willow Pass Rd  
Pittsburg, CA 94565-1701  
(925) 252-9262

# CHAIN-OF-CUSTODY RECORD

WorkOrder: 1706947 **A** ClientCode: TWRF

WaterTrax  WriteOn  EDF  Excel  Fax  Email  HardCopy  ThirdParty  J-flag

**Report to:**  
Peter Cusack  
Langan  
555 Montgomery St., Suite 1300  
San Francisco, CA 94111  
(415) 955-5244 FAX: (415) 955-9041

Email: pcusack@langan.com  
cc/3rd Party: kstaehlin@langan.com;  
PO:  
ProjectNo: 770641901; 600 South 1st Street

**Bill to:**  
Accounts Payable  
Langan  
555 Montgomery St., Suite 1300  
San Francisco, CA 94111  
Langan\_InvoiceCapture@concursoft.com

**Requested TAT: 5 days;**  
**Date Received: 06/20/2017**  
**Date Logged: 06/20/2017**  
**Date Add-On: 06/28/2017**

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)												
					1	2	3	4	5	6	7	8	9	10	11	12	
1706947-001	E-1-1.5	Soil	6/17/2017 11:27	<input type="checkbox"/>	A												
1706947-003	E-1-5.0	Soil	6/17/2017 11:33	<input type="checkbox"/>	A												
1706947-006	E-1-15.0	Soil	6/17/2017 11:42	<input type="checkbox"/>		A											
1706947-010	E-2-1.5	Soil	6/17/2017 07:46	<input type="checkbox"/>		A											
1706947-011	E-2-3.0	Soil	6/17/2017 07:49	<input type="checkbox"/>	A												
1706947-015	E-2-15.0	Soil	6/17/2017 08:08	<input type="checkbox"/>	A												
1706947-017	E-2-24.0	Soil	6/17/2017 09:04	<input type="checkbox"/>	A												
1706947-019	E-3-1.5	Soil	6/17/2017 10:02	<input type="checkbox"/>		A	A										
1706947-025	E-3-26.0	Soil	6/17/2017 10:27	<input type="checkbox"/>		A											
1706947-027	E-3-36.0	Soil	6/17/2017 11:18	<input type="checkbox"/>	A												
1706947-028	E-4-1.5	Soil	6/17/2017 13:32	<input type="checkbox"/>		A											
1706947-029	E-4-3.0	Soil	6/17/2017 13:35	<input type="checkbox"/>		A	A										
1706947-039	E-4-44.0	Soil	6/17/2017 14:35	<input type="checkbox"/>	A												
1706947-040	E-5-1.5	Soil	6/17/2017 11:43	<input type="checkbox"/>	A												
1706947-042	E-5-5.0	Soil	6/17/2017 11:52	<input type="checkbox"/>	A												

**Test Legend:**

1	CRMS_STLC_S	2	PBCRMS_STLC_S	3	PBMS_TCLP_S	4	
5		6		7		8	
9		10		11		12	

**Prepared by: Kena Ponce**  
**Add-On Prepared By: Maria Venegas**

**Comments:** STLC's & TCLPs added 6/28/17 STAT

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).  
Hazardous samples will be returned to client or disposed of at client expense.



1534 Willow Pass Rd  
Pittsburg, CA 94565-1701  
(925) 252-9262

# CHAIN-OF-CUSTODY RECORD

WorkOrder: 1706947 **A** ClientCode: TWRF

WaterTrax  
  WriteOn  
  EDF  
  Excel  
  Fax  
 Email  
  HardCopy  
  ThirdParty  
  J-flag

**Report to:**  
 Peter Cusack  
 Langan  
 555 Montgomery St., Suite 1300  
 San Francisco, CA 94111  
 (415) 955-5244    FAX: (415) 955-9041

Email: pcusack@langan.com  
 cc/3rd Party: kstaehlin@langan.com;  
 PO:  
 ProjectNo: 770641901; 600 South 1st Street

**Bill to:**  
 Accounts Payable  
 Langan  
 555 Montgomery St., Suite 1300  
 San Francisco, CA 94111  
 Langan\_InvoiceCapture@concursoft.com

**Requested TAT: 5 days;**  
  
**Date Received: 06/20/2017**  
**Date Logged: 06/20/2017**  
**Date Add-On: 06/28/2017**

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)												
					1	2	3	4	5	6	7	8	9	10	11	12	
1706947-046	E-5-20.0	Soil	6/17/2017 12:28	<input type="checkbox"/>	A												
1706947-048	E-5-30.0	Soil	6/17/2017 12:48	<input type="checkbox"/>	A												
1706947-051	E-5-45.0	Soil	6/17/2017 13:27	<input type="checkbox"/>	A												
1706947-052	E-6-1.5	Soil	6/17/2017 08:48	<input type="checkbox"/>	A												
1706947-053	E-6-3.0	Soil	6/17/2017 08:55	<input type="checkbox"/>	A												

**Test Legend:**

1	CRMS_STLC_S	2	PBCRMS_STLC_S	3	PBMS_TCLP_S	4	
5		6		7		8	
9		10		11		12	

**Prepared by: Kena Ponce**  
**Add-On Prepared By: Maria Venegas**

**Comments:**    STLC's & TCLPs added 6/28/17 STAT

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days). Hazardous samples will be returned to client or disposed of at client expense.





### WORK ORDER SUMMARY

**Client Name:** LANGAN  
**Client Contact:** Peter Cusack  
**Contact's Email** pcusack@langan.com

**Project:** 770641901; 600 South 1st Street  
**Comments:** STLC's & TCLPs added 6/28/17 STAT

**Work Order:** 1706947  
**QC Level:** LEVEL 2  
**Date Logged:** 6/20/2017  
**Date Add-On:** 6/28/2017

Lab ID	Client ID	Matrix	Test Name	Containers /Composites	Bottle & Preservative	Collection Date & Time	TAT	Sediment Content	Hold	SubOut
1706947-001A	E-1-1.5	Soil	SW6020 (Chromium) (STLC)	1	Acetate Liner	6/17/2017 11:27	5 days*		<input type="checkbox"/>	
1706947-003A	E-1-5.0	Soil	SW6020 (Chromium) (STLC)	1	Acetate Liner	6/17/2017 11:33	5 days*		<input type="checkbox"/>	
1706947-006A	E-1-15.0	Soil	SW6020 (Chromium & Lead) (STLC)	1	Acetate Liner	6/17/2017 11:42	5 days*		<input type="checkbox"/>	
1706947-010A	E-2-1.5	Soil	SW6020 (Chromium & Lead) (STLC)	1	Acetate Liner	6/17/2017 7:46	5 days*		<input type="checkbox"/>	
1706947-011A	E-2-3.0	Soil	SW6020 (Chromium) (STLC)	1	Acetate Liner	6/17/2017 7:49	5 days*		<input type="checkbox"/>	
1706947-015A	E-2-15.0	Soil	SW6020 (Chromium) (STLC)	1	Acetate Liner	6/17/2017 8:08	5 days*		<input type="checkbox"/>	
1706947-017A	E-2-24.0	Soil	SW6020 (Chromium) (STLC)	1	Acetate Liner	6/17/2017 9:04	5 days*		<input type="checkbox"/>	
1706947-019A	E-3-1.5	Soil	SW6020 (Lead) (TCLP)	1	Acetate Liner	6/17/2017 10:02	5 days*		<input type="checkbox"/>	
			SW6020 (Chromium & Lead) (STLC)				5 days*		<input type="checkbox"/>	
1706947-025A	E-3-26.0	Soil	SW6020 (Chromium & Lead) (STLC)	1	Acetate Liner	6/17/2017 10:27	5 days*		<input type="checkbox"/>	
1706947-027A	E-3-36.0	Soil	SW6020 (Chromium) (STLC)	1	Acetate Liner	6/17/2017 11:18	5 days*		<input type="checkbox"/>	
1706947-028A	E-4-1.5	Soil	SW6020 (Chromium & Lead) (STLC)	1	Acetate Liner	6/17/2017 13:32	5 days*		<input type="checkbox"/>	
1706947-029A	E-4-3.0	Soil	SW6020 (Lead) (TCLP)	1	Acetate Liner	6/17/2017 13:35	5 days*		<input type="checkbox"/>	
			SW6020 (Chromium & Lead) (STLC)				5 days*		<input type="checkbox"/>	
1706947-039A	E-4-44.0	Soil	SW6020 (Chromium) (STLC)	1	Acetate Liner	6/17/2017 14:35	5 days*		<input type="checkbox"/>	
1706947-040A	E-5-1.5	Soil	SW6020 (Chromium) (STLC)	1	Acetate Liner	6/17/2017 11:43	5 days*		<input type="checkbox"/>	
1706947-042A	E-5-5.0	Soil	SW6020 (Chromium) (STLC)	1	Acetate Liner	6/17/2017 11:52	5 days*		<input type="checkbox"/>	

**NOTES:** - STLC and TCLP extractions require 2 days to complete; therefore, all TATs begin after the extraction is completed (i.e., One-day TAT yields results in 3 days from sample submission).

- MAI assumes that all material present in the provided sampling container is considered part of the sample - MAI does not exclude any material from the sample prior to sample preparation unless requested in writing by the client.



### WORK ORDER SUMMARY

**Client Name:** LANGAN  
**Client Contact:** Peter Cusack  
**Contact's Email** pcusack@langan.com

**Project:** 770641901; 600 South 1st Street  
**Comments:** STLC's & TCLPs added 6/28/17 STAT

**Work Order:** 1706947  
**QC Level:** LEVEL 2  
**Date Logged:** 6/20/2017  
**Date Add-On:** 6/28/2017

Lab ID	Client ID	Matrix	Test Name	Containers /Composites	Bottle & Preservative	Collection Date & Time	TAT	Sediment Content	Hold	SubOut
1706947-046A	E-5-20.0	Soil	SW6020 (Chromium) (STLC)	1	Acetate Liner	6/17/2017 12:28	5 days*		<input type="checkbox"/>	
1706947-048A	E-5-30.0	Soil	SW6020 (Chromium) (STLC)	1	Acetate Liner	6/17/2017 12:48	5 days*		<input type="checkbox"/>	
1706947-051A	E-5-45.0	Soil	SW6020 (Chromium) (STLC)	1	Acetate Liner	6/17/2017 13:27	5 days*		<input type="checkbox"/>	
1706947-052A	E-6-1.5	Soil	SW6020 (Chromium) (STLC)	1	Acetate Liner	6/17/2017 8:48	5 days*		<input type="checkbox"/>	
1706947-053A	E-6-3.0	Soil	SW6020 (Chromium) (STLC)	1	Acetate Liner	6/17/2017 8:55	5 days*		<input type="checkbox"/>	

**NOTES:** - STLC and TCLP extractions require 2 days to complete; therefore, all TATs begin after the extraction is completed (i.e., One-day TAT yields results in 3 days from sample submission).  
- MAI assumes that all material present in the provided sampling container is considered part of the sample - MAI does not exclude any material from the sample prior to sample preparation unless requested in writing by the client.

# LANGAN

## CHAIN OF CUSTODY RECORD

- 555 Montgomery Street, Suite 1300, San Francisco, CA 94111
- 501 14th Street, Third Floor, Oakland CA 94612
- 3320 Data Drive, Suite 350, Rancho Cordova, CA 95670-7982
- 4030 Moorpark Ave. Suite 210, San Jose, CA 95117-1849

Site Name: 6000 SOUTH 1ST STREET  
 Job Number: 770641901  
 Project Manager/Contact: PETER CUSACK  
 Samplers: KSS  
 Recorder (Signature Required): [Signature]

Turnaround  
Time  
STANDARD

Field Sample Identification No.	Date	Time	Lab Sample No.	Matrix & Preservative										Analysis Requested										Silica gel clean-up	Hold	Remarks
				Soil	Water	Air	Other	HCL	H <sub>2</sub> SO <sub>4</sub>	HNO <sub>3</sub>	Ice	TPH	VOCs	SVOCs	OCs; PCBs	ASBESTOS BY CAL 335	CAM 17	LUFTS	STLC	STLC Pb						
E-1-1.5	6/17/17	1127		X										X	X	X	X	X	X	X	X					
E-1-3.0		1130		X										X	X	X	X	X	X	X	X					
E-1-5.0		1133		X										X	X	X	X	X	X	X	X					
E-1-7.5		1136		X										X	X	X	X	X	X	X	X					
E-1-10.0		1138		X										X	X	X	X	X	X	X	X					
E-1-15.0		1142		X										X	X	X	X	X	X	X	X					
E-1-20.0		1149		X										X	X	X	X	X	X	X	X					
E-1-25.0		1159		X										X	X	X	X	X	X	X	X					
E-1-30.5		1212		X										X	X	X	X	X	X	X	X					
E-2-1.5		0746		X										X	X	X	X	X	X	X	X					
E-2-3.0		0749		X										X	X	X	X	X	X	X	X					
E-2-5.0		0756		X										X	X	X	X	X	X	X	X					
E-2-7.5		0759		X										X	X	X	X	X	X	X	X					
E-2-10.0	6/17/17	0804		X										X	X	X	X	X	X	X	X					

Relinquished by: (Signature) <u>[Signature]</u>	Date: <u>6-20-17</u>	Time: <u>0940</u>	Received by: (Signature) <u>[Signature]</u>	Date: <u>6-20-17</u>	Time: <u>0940</u>
Relinquished by: (Signature) <u>[Signature]</u>	Date: <u>6-20-17</u>	Time: <u>1230</u>	Received by: (Signature) <u>[Signature]</u>	Date: <u>6/20/17</u>	Time: <u>1230</u>
Relinquished by: (Signature) _____	Date: _____	Time: _____	Received by Lab: (Signature) _____	Date: _____	Time: _____

Sent to Laboratory (Name): MCCAMBELL ANALYTICAL  
 Laboratory Comments/Notes: added 6/20/17 STAT  
 Method of Shipment:  Lab courier  Fed Ex  Airborne  UPS  
 Hand Carried  Private Courier (Co. Name) \_\_\_\_\_

# LANGAN

## CHAIN OF CUSTODY RECORD

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- 3320 Data Drive, Suite 350, Rancho Cordova, CA 95670-7982
- 4030 Moorpark Ave. Suite 210, San Jose, CA 95117-1849

Site Name: 600 SOUTH 1ST STREET  
 Job Number: 770641901  
 Project Manager/Contact: PETER CUSACK  
 Samplers: KSS  
 Recorder (Signature Required): [Signature]

Turnaround  
 Time  
STANDARD

Field Sample Identification No.	Date	Time	Lab Sample No.	Matrix								Analysis Requested								Silica gel clean-up	Hold	Remarks					
				Soil	Water	Air	Other	HCL	H <sub>2</sub> SO <sub>4</sub>	HNO <sub>3</sub>	Ice	TPH g/d, mo	VOCs	SVOCs	OCs & PCBs	ASBESTOS BY OAS 4E	CAM 17	LUFTS	STLC CY				STLC Pb	TLLP Pb			
E-2-15.0	4/17/17	0808		X										X			X										
E-2-20.0		0817		X										X			X										
E-2-24.0		0904		X										X			X										
E-2-30.0		0913		X										X			X										
E-3-1.5		1002		X										X			X	X	X								
E-3-3.0		1004		X										X			X										
E-3-7.5		1007		X										X			X										
E-3-10.0		1010		X										X			X										
E-3-15.0		1013		X										X			X										
E-3-20.0		1019		X										X			X										
E-3-26.0		1027		X										X			X	X									
E-3-30.0		1035		X										X			X										
E-3-36.0		1118		X										X			X										
E-4-1.5	6/17/17	1332		X										X			X	X									

Relinquished by: (Signature) <u>[Signature]</u>	Date: <u>6-20-17</u>	Time: <u>0940</u>	Received by: (Signature) <u>[Signature]</u>	Date: <u>6-20-17</u>	Time: <u>0940</u>
Relinquished by: (Signature) <u>[Signature]</u>	Date: <u>6-20-17</u>	Time: <u>1230</u>	Received by: (Signature) <u>[Signature]</u>	Date: <u>6/20/17</u>	Time: <u>1230</u>
Relinquished by: (Signature) <u>[Signature]</u>	Date:	Time:	Received by Lab: (Signature)	Date:	Time:

Sent to Laboratory (Name): <u>MCCAMPBELL ANALYTICAL</u> Laboratory Comments/Notes:	Method of Shipment: <input checked="" type="checkbox"/> Lab courier <input type="checkbox"/> Fed Ex <input type="checkbox"/> Airborne <input type="checkbox"/> UPS <input type="checkbox"/> Hand Carried <input type="checkbox"/> Private Courier (Co. Name)
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to Extra Sample not Listed E-2-40 not on COC

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# LANGAN

## CHAIN OF CUSTODY RECORD

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- 501 14th Street, Third Floor, Oakland CA 94612
- 3320 Data Drive, Suite 350, Rancho Cordova, CA 95670-7982
- 4030 Moorpark Ave. Suite 210, San Jose, CA 95117-1849

Site Name: 600 SOUTH 1st STREET  
 Job Number: 770641901  
 Project Manager/Contact: PETER CUSACK  
 Samplers: KSS  
 Recorder (Signature Required): [Signature]

Turnaround Time  
STANDARD

Field Sample Identification No.	Date	Time	Lab Sample No.	Matrix & Preservative								Analysis Requested										Silica gel clean-up	Hold	Remarks									
				Soil	Water	Air	Other	HCL	H <sub>2</sub> SO <sub>4</sub>	HNO <sub>3</sub>	Ice	TPH	Al	di	mo	VOCs	SVOCs	OCPS	PBBs	ASBESTOS BY CHANGES	CAM				IT	LI	FT	S	STL	Cx	STL	Pb	TCL
E-4-3.0	6/17/17	1335		X										X	X									X	X	X							
E-4-5.0		1337		X										X	X																		
E-4-7.5		1341		X																													
E-4-10.0		1343		X																													
E-4-15.0		1348		X										X																			
E-4-20.0		1351		X																													
E-4-24.0		1359		X																													
E-4-31.0		1407		X																													
E-4-35.0		1415		X										X	X																		
E-4-40.0		1423		X																													
E-4-44.0	6/17/17	1435		X										X										X									

Relinquished by: (Signature) <u>[Signature]</u>	Date: <u>6-20-17</u>	Time: <u>0940</u>	Received by: (Signature) <u>[Signature]</u>	Date: <u>6-20-17</u>	Time: <u>0940</u>
Relinquished by: (Signature) <u>[Signature]</u>	Date: <u>6-20-17</u>	Time: <u>1230</u>	Received by: (Signature) <u>[Signature]</u>	Date: <u>6/20/17</u>	Time: <u>1230</u>
Relinquished by: (Signature)	Date:	Time:	Received by Lab: (Signature)	Date:	Time:

Sent to Laboratory (Name): MCCAMPBELL ANALYTICAL

Laboratory Comments/Notes:

Method of Shipment:  Lab courier  Fed Ex  Airborne  UPS  
 Hand Carried  Private Courier (Co. Name)

# LANGAN

## CHAIN OF CUSTODY RECORD

- 555 Montgomery Street, Suite 1300, San Francisco, CA 94111
- 501 14th Street, Third Floor, Oakland CA 94612
- 3320 Data Drive, Suite 350, Rancho Cordova, CA 95670-7982
- ~~4030 Moorpark Ave, Suite 210, San Jose, CA 95117-1849~~

Site Name: 600 South 1st Street  
 Job Number: 770641901  
 Project Manager/Contact: Peter Cusack  
 Samplers: Wendy Kwong  
 Recorder (Signature Required): Wendy Kwong

1 Almaden Blvd, Suite 590, SJ, CA 95113

Turnaround  
Time  
Standard

Field Sample Identification No.	Date	Time	Lab Sample No.	Matrix				No. Containers & Preservative				Analysis Requested										Silica gel clean-up	Hold	Remarks				
				Soil	Water	Air	Other	HCL	H <sub>2</sub> SO <sub>4</sub>	HNO <sub>3</sub>	Ice	TPH-g, d, m	VOCs	SVOCs	o,p,p'-PCBs	Arochlor	CANUT	LUFTS	STLC-CX									
E-5-1.5	6/17/17	1143		X										X			X											- please name samples according to COS
E-5-3.0		1148		X										X														
E-5-5.0		1152		X										X														
E-5-7.5		1153		X										X														
E-5-10.0		1207		X										X														
E-5-15A		1215		X										X														
E-5-20.0		1228		X										X														
E-5-25.0		1234		X										X														
E-5-30.0		1248		X										X														
E-5-35.0		1303		X										X														
E-5-40.0		1315		X										X														
E-5-48.0	6/17/17	1329		X										X														

Relinquished by: (Signature) <u>[Signature]</u>	Date: <u>6-20-17</u>	Time: <u>0940</u>	Received by: (Signature) <u>[Signature]</u>	Date: <u>6-20-17</u>	Time: <u>0940</u>
Relinquished by: (Signature) <u>[Signature]</u>	Date: <u>6-20-17</u>	Time: <u>1230</u>	Received by: (Signature) <u>[Signature]</u>	Date: <u>6/20/17</u>	Time: <u>1230</u>
Relinquished by: (Signature)	Date:	Time:	Received by Lab: (Signature)	Date:	Time:

Sent to Laboratory (Name): McC Campbell Analytical  
 Laboratory Comments/Notes:  
 Method of Shipment:  Lab courier  Fed Ex  Airborne  UPS  
 Hand Carried  Private Courier (Co. Name)

# LANGAN

## CHAIN OF CUSTODY RECORD

- 555 Montgomery Street, Suite 1300, San Francisco, CA 94111
- 501 14th Street, Third Floor, Oakland CA 94612
- 3320 Data Drive, Suite 350, Rancho Cordova, CA 95670-7982
- 4030 Moorpark Ave. Suite 210, San Jose, CA 95117-1849

Site Name: 900 South 1st Street

Job Number: 770641901

Project Manager/Contact: Peter Cwack

Samplers: Wendy Kwang

Recorder (Signature Required): [Signature]

Analysis Requested													
TPH-g.d.ms	VOCs	SVCs	0.05+PUBs	Asbestos	CM 17	METS	515/CC	Silica gel clean-up	Hold				
X			X		X		X						
X					X		X						
									X				
X	X	X			X								
X									X				
X									X				
X									X				
X									X				
X									X				
X									X				
X									X				
X									X				
X									X				
X									X				
X									X				
X									X				
X									X				
X									X				

Turnaround Time  
Standard

Field Sample Identification No.	Date	Time	Lab Sample No.	Matrix				No. Containers & Preservative				Analysis Requested										Silica gel clean-up	Hold	Remarks								
				Soil	Water	Air	Other	HCL	H <sub>2</sub> SO <sub>4</sub>	HNO <sub>3</sub>	Ice	TPH-g.d.ms	VOCs	SVCs	0.05+PUBs	Asbestos	CM 17	METS	515/CC													
E-6-1.5	6/17/17	0848		X									X					X														-please name samples according to COC
E-6-3.0		0855		X									X						X													
E-6-5.0		0901		X																				X								
E-6-7.5		0908		X																				X								
E-6-10.0		0918		X									X	X					X													
E-6-15.0		0933		X																				X								
E-6-20.0		0945		X																				X								
E-6-25.0		1004		X																				X								
E-6-30.0		1023		X									X											X								
E-6-35.0		1037		X																				X								
E-6-40.0		1048		X																				X								
E-6-44.0	6/17/17	1109		X																				X								

Relinquished by: (Signature) <u>[Signature]</u>	Date: <u>6-20-17</u>	Time: <u>0940</u>	Received by: (Signature) <u>[Signature]</u>	Date: <u>6-20-17</u>	Time: <u>0940</u>
Relinquished by: (Signature) <u>[Signature]</u>	Date: <u>6-20-17</u>	Time: <u>1230</u>	Received by: (Signature) <u>[Signature]</u>	Date: <u>6/20/17</u>	Time: <u>1230</u>
Relinquished by: (Signature) _____	Date: _____	Time: _____	Received by Lab: (Signature) _____	Date: _____	Time: _____

Sent to Laboratory (Name): McCampbell Analytical

Laboratory Comments/Notes:

Method of Shipment  Lab courier  Fed Ex  Airborne  UPS

Hand Carried  Private Courier (Co. Name) \_\_\_\_\_



# McC Campbell Analytical, Inc.

"When Quality Counts"

## Analytical Report

**WorkOrder:** 1706947 B

**Report Created for:** Langan

555 Montgomery St., Suite 1300  
San Francisco, CA 94111

**Project Contact:** Peter Cusack

**Project P.O.:**

**Project Name:** 770641901; 600 South 1st Street

**Project Received:** 06/20/2017

Analytical Report reviewed & approved for release on 07/14/2017 by:

Angela Rydelius,  
Laboratory Manager

*The report shall not be reproduced except in full, without the written approval of the laboratory. The analytical results relate only to the items tested. Results reported conform to the most current NELAP standards, where applicable, unless otherwise stated in the case narrative.*







## Glossary of Terms & Qualifier Definitions

**Client:** Langan  
**Project:** 770641901; 600 South 1st Street  
**WorkOrder:** 1706947

### Glossary Abbreviation

%D	Serial Dilution Percent Difference
95% Interval	95% Confident Interval
DF	Dilution Factor
DI WET	(DISTLC) Waste Extraction Test using DI water
DISS	Dissolved (direct analysis of 0.45 µm filtered and acidified water sample)
DLT	Dilution Test (Serial Dilution)
DUP	Duplicate
EDL	Estimated Detection Limit
ERS	External reference sample. Second source calibration verification.
ITEF	International Toxicity Equivalence Factor
LCS	Laboratory Control Sample
MB	Method Blank
MB % Rec	% Recovery of Surrogate in Method Blank, if applicable
MDL	Method Detection Limit
ML	Minimum Level of Quantitation
MS	Matrix Spike
MSD	Matrix Spike Duplicate
N/A	Not Applicable
ND	Not detected at or above the indicated MDL or RL
NR	Data Not Reported due to matrix interference or insufficient sample amount.
PDS	Post Digestion Spike
PDSD	Post Digestion Spike Duplicate
PF	Prep Factor
RD	Relative Difference
RL	Reporting Limit (The RL is the lowest calibration standard in a multipoint calibration.)
RPD	Relative Percent Deviation
RRT	Relative Retention Time
SPK Val	Spike Value
SPKRef Val	Spike Reference Value
SPLP	Synthetic Precipitation Leachate Procedure
ST	Sorbent Tube
TCLP	Toxicity Characteristic Leachate Procedure
TEQ	Toxicity Equivalents
WET (STLC)	Waste Extraction Test (Soluble Threshold Limit Concentration)



## Glossary of Terms & Qualifier Definitions

**Client:** Langan  
**Project:** 770641901; 600 South 1st Street  
**WorkOrder:** 1706947

### Analytical Qualifiers

H	Samples were analyzed out of holding time
S	Surrogate spike recovery outside accepted recovery limits
a3	Sample diluted due to high organic content.
a4	Reporting limits raised due to the sample's matrix prohibiting a full volume extraction.
c1	Surrogate recovery outside of the control limits due to the dilution of the sample.
c4	Surrogate recovery outside of the control limits due to coelution with another peak(s) / cluttered chromatogram.
c7	Surrogate value diluted out of range
c11	The surrogate recovery is above the upper control limit. The target analyte(s) were Not Detected (ND); therefore, the data has been reported.
d1	Weakly modified or unmodified gasoline is significant
d7	Strongly aged gasoline or diesel range compounds are significant in the TPH(g) chromatogram
d9	No recognizable pattern
e1	Unmodified or weakly modified diesel is significant
e2	Diesel range compounds are significant; no recognizable pattern
e4	Gasoline range compounds are significant.
e7	Oil range compounds are significant

### Quality Control Qualifiers

F1	MS/MSD recovery and/or RPD is out of acceptance criteria; LCS validates the prep batch.
F2	LCS/LCSD recovery and/or RPD is out of acceptance criteria.
F3	The surrogate standard recovery and/or RPD is outside of acceptance limits.
F10	MS/MSD outside control limits. Physical or chemical interferences exist due to sample matrix.
F13	Indigenous sample results too high for a representative matrix spike analysis.



## Analytical Report

**Client:** Langan  
**Date Received:** 6/20/17 12:30  
**Date Prepared:** 7/7/17  
**Project:** 770641901; 600 South 1st Street

**WorkOrder:** 1706947  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** mg/kg

### Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-3-36.0	1706947-027A	Soil	06/17/2017 11:18	GC18	141661
Analytes	Result	Qualifiers	RL	DF	Date Analyzed
Acetone	ND	H	0.40	4	07/14/2017 15:59
tert-Amyl methyl ether (TAME)	ND	H	0.020	4	07/14/2017 15:59
Benzene	<b>0.031</b>	H	0.020	4	07/14/2017 15:59
Bromobenzene	ND	H	0.020	4	07/14/2017 15:59
Bromochloromethane	ND	H	0.020	4	07/14/2017 15:59
Bromodichloromethane	ND	H	0.020	4	07/14/2017 15:59
Bromoform	ND	H	0.020	4	07/14/2017 15:59
Bromomethane	ND	H	0.020	4	07/14/2017 15:59
2-Butanone (MEK)	ND	H	0.080	4	07/14/2017 15:59
t-Butyl alcohol (TBA)	ND	H	0.20	4	07/14/2017 15:59
n-Butyl benzene	<b>0.059</b>	H	0.020	4	07/14/2017 15:59
sec-Butyl benzene	ND	H	0.020	4	07/14/2017 15:59
tert-Butyl benzene	ND	H	0.020	4	07/14/2017 15:59
Carbon Disulfide	ND	H	0.020	4	07/14/2017 15:59
Carbon Tetrachloride	ND	H	0.020	4	07/14/2017 15:59
Chlorobenzene	ND	H	0.020	4	07/14/2017 15:59
Chloroethane	ND	H	0.020	4	07/14/2017 15:59
Chloroform	ND	H	0.020	4	07/14/2017 15:59
Chloromethane	ND	H	0.020	4	07/14/2017 15:59
2-Chlorotoluene	ND	H	0.020	4	07/14/2017 15:59
4-Chlorotoluene	ND	H	0.020	4	07/14/2017 15:59
Dibromochloromethane	ND	H	0.020	4	07/14/2017 15:59
1,2-Dibromo-3-chloropropane	ND	H	0.016	4	07/14/2017 15:59
1,2-Dibromoethane (EDB)	ND	H	0.016	4	07/14/2017 15:59
Dibromomethane	ND	H	0.020	4	07/14/2017 15:59
1,2-Dichlorobenzene	ND	H	0.020	4	07/14/2017 15:59
1,3-Dichlorobenzene	ND	H	0.020	4	07/14/2017 15:59
1,4-Dichlorobenzene	ND	H	0.020	4	07/14/2017 15:59
Dichlorodifluoromethane	ND	H	0.020	4	07/14/2017 15:59
1,1-Dichloroethane	ND	H	0.020	4	07/14/2017 15:59
1,2-Dichloroethane (1,2-DCA)	ND	H	0.016	4	07/14/2017 15:59
1,1-Dichloroethene	ND	H	0.020	4	07/14/2017 15:59
cis-1,2-Dichloroethene	ND	H	0.020	4	07/14/2017 15:59
trans-1,2-Dichloroethene	ND	H	0.020	4	07/14/2017 15:59
1,2-Dichloropropane	ND	H	0.020	4	07/14/2017 15:59
1,3-Dichloropropane	ND	H	0.020	4	07/14/2017 15:59
2,2-Dichloropropane	ND	H	0.020	4	07/14/2017 15:59

(Cont.)



## Analytical Report

**Client:** Langan  
**Date Received:** 6/20/17 12:30  
**Date Prepared:** 7/7/17  
**Project:** 770641901; 600 South 1st Street

**WorkOrder:** 1706947  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** mg/kg

### Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-3-36.0	1706947-027A	Soil	06/17/2017 11:18	GC18	141661
Analytes	Result	Qualifiers	RL	DF	Date Analyzed
1,1-Dichloropropene	ND	H	0.020	4	07/14/2017 15:59
cis-1,3-Dichloropropene	ND	H	0.020	4	07/14/2017 15:59
trans-1,3-Dichloropropene	ND	H	0.020	4	07/14/2017 15:59
Diisopropyl ether (DIPE)	ND	H	0.020	4	07/14/2017 15:59
Ethylbenzene	<b>0.12</b>	H	0.020	4	07/14/2017 15:59
Ethyl tert-butyl ether (ETBE)	ND	H	0.020	4	07/14/2017 15:59
Freon 113	ND	H	0.020	4	07/14/2017 15:59
Hexachlorobutadiene	ND	H	0.020	4	07/14/2017 15:59
Hexachloroethane	ND	H	0.020	4	07/14/2017 15:59
2-Hexanone	ND	H	0.020	4	07/14/2017 15:59
Isopropylbenzene	ND	H	0.020	4	07/14/2017 15:59
4-Isopropyl toluene	ND	H	0.020	4	07/14/2017 15:59
Methyl-t-butyl ether (MTBE)	ND	H	0.020	4	07/14/2017 15:59
Methylene chloride	ND	H	0.020	4	07/14/2017 15:59
4-Methyl-2-pentanone (MIBK)	ND	H	0.020	4	07/14/2017 15:59
Naphthalene	<b>0.11</b>	H	0.020	4	07/14/2017 15:59
n-Propyl benzene	<b>0.057</b>	H	0.020	4	07/14/2017 15:59
Styrene	ND	H	0.020	4	07/14/2017 15:59
1,1,1,2-Tetrachloroethane	ND	H	0.020	4	07/14/2017 15:59
1,1,2,2-Tetrachloroethane	ND	H	0.020	4	07/14/2017 15:59
Tetrachloroethene	ND	H	0.020	4	07/14/2017 15:59
Toluene	<b>0.24</b>	H	0.020	4	07/14/2017 15:59
1,2,3-Trichlorobenzene	ND	H	0.020	4	07/14/2017 15:59
1,2,4-Trichlorobenzene	ND	H	0.020	4	07/14/2017 15:59
1,1,1-Trichloroethane	ND	H	0.020	4	07/14/2017 15:59
1,1,2-Trichloroethane	ND	H	0.020	4	07/14/2017 15:59
Trichloroethene	ND	H	0.020	4	07/14/2017 15:59
Trichlorofluoromethane	ND	H	0.020	4	07/14/2017 15:59
1,2,3-Trichloropropane	ND	H	0.020	4	07/14/2017 15:59
1,2,4-Trimethylbenzene	<b>0.34</b>	H	0.020	4	07/14/2017 15:59
1,3,5-Trimethylbenzene	<b>0.10</b>	H	0.020	4	07/14/2017 15:59
Vinyl Chloride	ND	H	0.020	4	07/14/2017 15:59
Xylenes, Total	<b>0.35</b>	H	0.020	4	07/14/2017 15:59

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# Analytical Report

**Client:** Langan  
**Date Received:** 6/20/17 12:30  
**Date Prepared:** 7/7/17  
**Project:** 770641901; 600 South 1st Street

**WorkOrder:** 1706947  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** mg/kg

## Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-3-36.0	1706947-027A	Soil	06/17/2017 11:18	GC18	141661

Analytes	Result	Qualifiers	RL	DF	Date Analyzed
<u>Surrogates</u>	<u>REC (%)</u>	<u>Qualifiers</u>	<u>Limits</u>		
Dibromofluoromethane	92	H	70-130		07/14/2017 15:59
Toluene-d8	97	H	70-130		07/14/2017 15:59
4-BFB	87	H	70-130		07/14/2017 15:59
Benzene-d6	68	H	60-140		07/14/2017 15:59
Ethylbenzene-d10	81	H	60-140		07/14/2017 15:59
1,2-DCB-d4	69	H	60-140		07/14/2017 15:59

Analyst(s): AK



## Analytical Report

**Client:** Langan  
**Date Received:** 6/20/17 12:30  
**Date Prepared:** 7/11/17  
**Project:** 770641901; 600 South 1st Street

**WorkOrder:** 1706947  
**Extraction Method:** SW3550B  
**Analytical Method:** SW8270C  
**Unit:** mg/Kg

### Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-3-36.0	1706947-027A	Soil	06/17/2017 11:18	GC21	141769
Analytes	Result	Qualifiers	RL	DF	Date Analyzed
Acenaphthene	ND	H	0.25	1	07/11/2017 20:18
Acenaphthylene	ND	H	0.25	1	07/11/2017 20:18
Acetochlor	ND	H	0.25	1	07/11/2017 20:18
Anthracene	ND	H	0.25	1	07/11/2017 20:18
Benzidine	ND	H	1.3	1	07/11/2017 20:18
Benzo (a) anthracene	ND	H	0.25	1	07/11/2017 20:18
Benzo (a) pyrene	ND	H	0.25	1	07/11/2017 20:18
Benzo (b) fluoranthene	ND	H	0.25	1	07/11/2017 20:18
Benzo (g,h,i) perylene	ND	H	0.25	1	07/11/2017 20:18
Benzo (k) fluoranthene	ND	H	0.25	1	07/11/2017 20:18
Benzyl Alcohol	ND	H	1.3	1	07/11/2017 20:18
1,1-Biphenyl	ND	H	0.25	1	07/11/2017 20:18
Bis (2-chloroethoxy) Methane	ND	H	0.25	1	07/11/2017 20:18
Bis (2-chloroethyl) Ether	ND	H	0.25	1	07/11/2017 20:18
Bis (2-chloroisopropyl) Ether	ND	H	0.25	1	07/11/2017 20:18
Bis (2-ethylhexyl) Adipate	ND	H	0.25	1	07/11/2017 20:18
Bis (2-ethylhexyl) Phthalate	ND	H	0.25	1	07/11/2017 20:18
4-Bromophenyl Phenyl Ether	ND	H	0.25	1	07/11/2017 20:18
Butylbenzyl Phthalate	ND	H	0.25	1	07/11/2017 20:18
4-Chloroaniline	ND	H	0.50	1	07/11/2017 20:18
4-Chloro-3-methylphenol	ND	H	0.25	1	07/11/2017 20:18
2-Chloronaphthalene	ND	H	0.25	1	07/11/2017 20:18
2-Chlorophenol	ND	H	0.25	1	07/11/2017 20:18
4-Chlorophenyl Phenyl Ether	ND	H	0.25	1	07/11/2017 20:18
Chrysene	ND	H	0.25	1	07/11/2017 20:18
Dibenzo (a,h) anthracene	ND	H	0.25	1	07/11/2017 20:18
Dibenzofuran	ND	H	0.25	1	07/11/2017 20:18
Di-n-butyl Phthalate	ND	H	0.25	1	07/11/2017 20:18
1,2-Dichlorobenzene	ND	H	0.25	1	07/11/2017 20:18
1,3-Dichlorobenzene	ND	H	0.25	1	07/11/2017 20:18
1,4-Dichlorobenzene	ND	H	0.25	1	07/11/2017 20:18
3,3-Dichlorobenzidine	ND	H	0.50	1	07/11/2017 20:18
2,4-Dichlorophenol	ND	H	0.25	1	07/11/2017 20:18
Diethyl Phthalate	ND	H	0.25	1	07/11/2017 20:18
2,4-Dimethylphenol	ND	H	0.25	1	07/11/2017 20:18
Dimethyl Phthalate	ND	H	0.25	1	07/11/2017 20:18
4,6-Dinitro-2-methylphenol	ND	H	1.3	1	07/11/2017 20:18

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## Analytical Report

**Client:** Langan  
**Date Received:** 6/20/17 12:30  
**Date Prepared:** 7/11/17  
**Project:** 770641901; 600 South 1st Street

**WorkOrder:** 1706947  
**Extraction Method:** SW3550B  
**Analytical Method:** SW8270C  
**Unit:** mg/Kg

### Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-3-36.0	1706947-027A	Soil	06/17/2017 11:18	GC21	141769
Analytes	Result	Qualifiers	RL	DF	Date Analyzed
2,4-Dinitrophenol	ND	H	6.3	1	07/11/2017 20:18
2,4-Dinitrotoluene	ND	H	0.25	1	07/11/2017 20:18
2,6-Dinitrotoluene	ND	H	0.25	1	07/11/2017 20:18
Di-n-octyl Phthalate	ND	H	0.50	1	07/11/2017 20:18
1,2-Diphenylhydrazine	ND	H	0.25	1	07/11/2017 20:18
Fluoranthene	ND	H	0.25	1	07/11/2017 20:18
Fluorene	ND	H	0.25	1	07/11/2017 20:18
Hexachlorobenzene	ND	H	0.25	1	07/11/2017 20:18
Hexachlorobutadiene	ND	H	0.25	1	07/11/2017 20:18
Hexachlorocyclopentadiene	ND	H	1.3	1	07/11/2017 20:18
Hexachloroethane	ND	H	0.25	1	07/11/2017 20:18
Indeno (1,2,3-cd) pyrene	ND	H	0.25	1	07/11/2017 20:18
Isophorone	ND	H	0.25	1	07/11/2017 20:18
2-Methylnaphthalene	ND	H	0.25	1	07/11/2017 20:18
2-Methylphenol (o-Cresol)	ND	H	0.25	1	07/11/2017 20:18
3 & 4-Methylphenol (m,p-Cresol)	ND	H	0.25	1	07/11/2017 20:18
Naphthalene	ND	H	0.25	1	07/11/2017 20:18
2-Nitroaniline	ND	H	1.3	1	07/11/2017 20:18
3-Nitroaniline	ND	H	1.3	1	07/11/2017 20:18
4-Nitroaniline	ND	H	1.3	1	07/11/2017 20:18
Nitrobenzene	ND	H	0.25	1	07/11/2017 20:18
2-Nitrophenol	ND	H	1.3	1	07/11/2017 20:18
4-Nitrophenol	ND	H	1.3	1	07/11/2017 20:18
N-Nitrosodiphenylamine	ND	H	0.25	1	07/11/2017 20:18
N-Nitrosodi-n-propylamine	ND	H	0.25	1	07/11/2017 20:18
Pentachlorophenol	ND	H	1.3	1	07/11/2017 20:18
Phenanthrene	ND	H	0.25	1	07/11/2017 20:18
Phenol	<b>5.9</b>	H	0.25	1	07/11/2017 20:18
Pyrene	ND	H	0.25	1	07/11/2017 20:18
Pyridine	ND	H	0.25	1	07/11/2017 20:18
1,2,4-Trichlorobenzene	ND	H	0.25	1	07/11/2017 20:18
2,4,5-Trichlorophenol	ND	H	0.25	1	07/11/2017 20:18
2,4,6-Trichlorophenol	ND	H	0.25	1	07/11/2017 20:18

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NELAP 4033ORELAP

 Angela Rydelius, Lab Manager



## Analytical Report

**Client:** Langan  
**Date Received:** 6/20/17 12:30  
**Date Prepared:** 7/11/17  
**Project:** 770641901; 600 South 1st Street

**WorkOrder:** 1706947  
**Extraction Method:** SW3550B  
**Analytical Method:** SW8270C  
**Unit:** mg/Kg

### Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-3-36.0	1706947-027A	Soil	06/17/2017 11:18	GC21	141769

Analytes	Result	Qualifiers	RL	DF	Date Analyzed
<u>Surrogates</u>	<u>REC (%)</u>	<u>Qualifiers</u>	<u>Limits</u>		
2-Fluorophenol	112	H	30-130		07/11/2017 20:18
Phenol-d5	105	H	30-130		07/11/2017 20:18
Nitrobenzene-d5	96	H	30-130		07/11/2017 20:18
2-Fluorobiphenyl	89	H	30-130		07/11/2017 20:18
2,4,6-Tribromophenol	78	H	16-130		07/11/2017 20:18
4-Terphenyl-d14	98	H	30-130		07/11/2017 20:18

**Analyst(s):** REB





# Analytical Report

**Client:** Langan  
**Date Received:** 6/20/17 12:30  
**Date Prepared:** 7/7/17  
**Project:** 770641901; 600 South 1st Street

**WorkOrder:** 1706947  
**Extraction Method:** SW3050B  
**Analytical Method:** SW6020  
**Unit:** mg/Kg

## Lead

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-3-3.0	1706947-020A	Soil	06/17/2017 10:04	ICP-MS3	141650

Analytes	Result	RL	DF	Date Analyzed
Lead	19	0.50	1	07/10/2017 20:41

Surrogates	REC (%)	Limits	Date Analyzed
Terbium	101	70-130	07/10/2017 20:41

**Analyst(s):** JC



## Quality Control Report

**Client:** Langan  
**Date Prepared:** 7/7/17  
**Date Analyzed:** 7/9/17 - 7/10/17  
**Instrument:** GC10  
**Matrix:** Soil  
**Project:** 770641901; 600 South 1st Street

**WorkOrder:** 1706947  
**BatchID:** 141661  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** mg/kg  
**Sample ID:** MB/LCS-141661

### QC Summary Report for SW8260B

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Acetone	ND	1.13	0.10	1	-	113	72-156
tert-Amyl methyl ether (TAME)	ND	0.0427	0.0050	0.050	-	85	53-116
Benzene	ND	0.0498	0.0050	0.050	-	99	63-137
Bromobenzene	ND	0.0496	0.0050	0.050	-	99	68-126
Bromochloromethane	ND	0.0493	0.0050	0.050	-	99	72-126
Bromodichloromethane	ND	0.0451	0.0050	0.050	-	90	61-127
Bromoform	ND	0.0378	0.0050	0.050	-	76	49-100
Bromomethane	ND	0.0599	0.0050	0.050	-	120	40-161
2-Butanone (MEK)	ND	0.197	0.020	0.20	-	99	43-157
t-Butyl alcohol (TBA)	ND	0.186	0.050	0.20	-	93	41-135
n-Butyl benzene	ND	0.0730	0.0050	0.050	-	146	102-160
sec-Butyl benzene	ND	0.0732	0.0050	0.050	-	146	74-168
tert-Butyl benzene	ND	0.0599	0.0050	0.050	-	120	88-157
Carbon Disulfide	ND	0.0507	0.0050	0.050	-	101	42-151
Carbon Tetrachloride	ND	0.0531	0.0050	0.050	-	106	49-149
Chlorobenzene	ND	0.0492	0.0050	0.050	-	98	77-121
Chloroethane	ND	0.0518	0.0050	0.050	-	104	41-134
Chloroform	ND	0.0493	0.0050	0.050	-	99	69-133
Chloromethane	ND	0.0515	0.0050	0.050	-	103	31-119
2-Chlorotoluene	ND	0.0558	0.0050	0.050	-	112	79-139
4-Chlorotoluene	ND	0.0528	0.0050	0.050	-	106	77-138
Dibromochloromethane	ND	0.0466	0.0050	0.050	-	93	58-121
1,2-Dibromo-3-chloropropane	ND	0.0173	0.0040	0.020	-	87	39-115
1,2-Dibromoethane (EDB)	ND	0.0473	0.0040	0.050	-	95	67-119
Dibromomethane	ND	0.0443	0.0050	0.050	-	89	66-117
1,2-Dichlorobenzene	ND	0.0414	0.0050	0.050	-	83	59-109
1,3-Dichlorobenzene	ND	0.0481	0.0050	0.050	-	96	75-130
1,4-Dichlorobenzene	ND	0.0455	0.0050	0.050	-	91	71-122
Dichlorodifluoromethane	ND	0.0270	0.0050	0.050	-	54	43-68
1,1-Dichloroethane	ND	0.0526	0.0050	0.050	-	105	62-139
1,2-Dichloroethane (1,2-DCA)	ND	0.0517	0.0040	0.050	-	103	58-135
1,1-Dichloroethene	ND	0.0495	0.0050	0.050	-	99	42-145
cis-1,2-Dichloroethene	ND	0.0501	0.0050	0.050	-	100	67-129
trans-1,2-Dichloroethene	ND	0.0515	0.0050	0.050	-	103	54-139
1,2-Dichloropropane	ND	0.0491	0.0050	0.050	-	98	68-125
1,3-Dichloropropane	ND	0.0515	0.0050	0.050	-	103	65-125
2,2-Dichloropropane	ND	0.0541	0.0050	0.050	-	108	45-151

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## Quality Control Report

**Client:** Langan  
**Date Prepared:** 7/7/17  
**Date Analyzed:** 7/9/17 - 7/10/17  
**Instrument:** GC10  
**Matrix:** Soil  
**Project:** 770641901; 600 South 1st Street

**WorkOrder:** 1706947  
**BatchID:** 141661  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** mg/kg  
**Sample ID:** MB/LCS-141661

### QC Summary Report for SW8260B

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
1,1-Dichloropropene	ND	0.0529	0.0050	0.050	-	106	64-138
cis-1,3-Dichloropropene	ND	0.0527	0.0050	0.050	-	105	62-134
trans-1,3-Dichloropropene	ND	0.0512	0.0050	0.050	-	102	59-128
Diisopropyl ether (DIPE)	ND	0.0464	0.0050	0.050	-	93	52-129
Ethylbenzene	ND	0.0594	0.0050	0.050	-	119	74-142
Ethyl tert-butyl ether (ETBE)	ND	0.0463	0.0050	0.050	-	93	53-125
Freon 113	ND	0.0454	0.0050	0.050	-	91	51-126
Hexachlorobutadiene	ND	0.0624	0.0050	0.050	-	125	70-158
Hexachloroethane	ND	0.0602	0.0050	0.050	-	121	80-160
2-Hexanone	ND	0.0409	0.0050	0.050	-	82	41-116
Isopropylbenzene	ND	0.0619	0.0050	0.050	-	124	77-146
4-Isopropyl toluene	ND	0.0584	0.0050	0.050	-	117	96-159
Methyl-t-butyl ether (MTBE)	ND	0.0460	0.0050	0.050	-	92	58-122
Methylene chloride	ND	0.0550	0.0050	0.050	-	110	58-135
4-Methyl-2-pentanone (MIBK)	ND	0.0419	0.0050	0.050	-	84	40-112
Naphthalene	ND	0.0235	0.0050	0.050	-	47	23-73
n-Propyl benzene	ND	0.0642	0.0050	0.050	-	128	82-160
Styrene	ND	0.0468	0.0050	0.050	-	94	68-124
1,1,1,2-Tetrachloroethane	ND	0.0491	0.0050	0.050	-	98	70-128
1,1,2,2-Tetrachloroethane	ND	0.0388	0.0050	0.050	-	78	57-111
Tetrachloroethene	ND	0.0571	0.0050	0.050	-	114	73-145
Toluene	ND	0.0518	0.0050	0.050	-	104	76-130
1,2,3-Trichlorobenzene	ND	0.0283	0.0050	0.050	-	57	43-72
1,2,4-Trichlorobenzene	ND	0.0350	0.0050	0.050	-	70	47-95
1,1,1-Trichloroethane	ND	0.0523	0.0050	0.050	-	105	60-141
1,1,2-Trichloroethane	ND	0.0464	0.0050	0.050	-	93	62-118
Trichloroethene	ND	0.0522	0.0050	0.050	-	104	72-132
Trichlorofluoromethane	ND	0.0485	0.0050	0.050	-	97	43-135
1,2,3-Trichloropropane	ND	0.0481	0.0050	0.050	-	96	57-122
1,2,4-Trimethylbenzene	ND	0.0527	0.0050	0.050	-	105	81-152
1,3,5-Trimethylbenzene	ND	0.0640	0.0050	0.050	-	128	78-160
Vinyl Chloride	ND	0.0527	0.0050	0.050	-	105	42-131
Xylenes, Total	ND	0.162	0.0050	0.15	-	108	70-130

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## Quality Control Report

<b>Client:</b> Langan	<b>WorkOrder:</b> 1706947
<b>Date Prepared:</b> 7/7/17	<b>BatchID:</b> 141661
<b>Date Analyzed:</b> 7/9/17 - 7/10/17	<b>Extraction Method:</b> SW5030B
<b>Instrument:</b> GC10	<b>Analytical Method:</b> SW8260B
<b>Matrix:</b> Soil	<b>Unit:</b> mg/kg
<b>Project:</b> 770641901; 600 South 1st Street	<b>Sample ID:</b> MB/LCS-141661

### QC Summary Report for SW8260B

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
<b>Surrogate Recovery</b>							
Dibromofluoromethane	0.1315	0.132		0.12	105	106	70-130
Toluene-d8	0.1697	0.163		0.12	136,F3	130	70-130
4-BFB	0.01506	0.0149		0.012	120	119	70-130
Benzene-d6	0.1059	0.104		0.10	106	104	60-140
Ethylbenzene-d10	0.1413	0.132		0.10	141,F3	132	60-140
1,2-DCB-d4	0.0941	0.0902		0.10	94	90	60-140



## Quality Control Report

**Client:** Langan  
**Date Prepared:** 7/10/17  
**Date Analyzed:** 7/10/17 - 7/11/17  
**Instrument:** GC21  
**Matrix:** Soil  
**Project:** 770641901; 600 South 1st Street

**WorkOrder:** 1706947  
**BatchID:** 141769  
**Extraction Method:** SW3550B  
**Analytical Method:** SW8270C  
**Unit:** mg/Kg  
**Sample ID:** MB/LCS-141769  
 1707193-005AMS/MSD

### QC Summary Report for SW8270C

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Acenaphthene	ND	4.26	0.25	5	-	85	46-118
Acenaphthylene	ND	4.98	0.25	5	-	99	43-122
Acetochlor	ND	-	0.25	-	-	-	-
Anthracene	ND	4.89	0.25	5	-	98	47-125
Benzidine	ND	2.43	1.3	5	-	49	13-83
Benzo (a) anthracene	ND	4.58	0.25	5	-	92	53-117
Benzo (a) pyrene	ND	5.20	0.25	5	-	104	53-138
Benzo (b) fluoranthene	ND	5.17	0.25	5	-	103	48-125
Benzo (g,h,i) perylene	ND	5.33	0.25	5	-	107	51-146
Benzo (k) fluoranthene	ND	5.15	0.25	5	-	103	53-124
Benzyl Alcohol	ND	5.39	1.3	5	-	108, F2	51-105
1,1-Biphenyl	ND	-	0.25	-	-	-	-
Bis (2-chloroethoxy) Methane	ND	4.92	0.25	5	-	98	48-115
Bis (2-chloroethyl) Ether	ND	4.54	0.25	5	-	91	51-105
Bis (2-chloroisopropyl) Ether	ND	4.91	0.25	5	-	98	85-119
Bis (2-ethylhexyl) Adipate	ND	5.63	0.25	5	-	113	46-117
Bis (2-ethylhexyl) Phthalate	ND	4.90	0.25	5	-	98	50-124
4-Bromophenyl Phenyl Ether	ND	5.38	0.25	5	-	108	70-112
Butylbenzyl Phthalate	ND	5.50	0.25	5	-	110	55-127
4-Chloroaniline	ND	2.54	0.50	5	-	51	18-77
4-Chloro-3-methylphenol	ND	5.58	0.25	5	-	112	49-123
2-Chloronaphthalene	ND	4.36	0.25	5	-	87	44-109
2-Chlorophenol	ND	5.46	0.25	5	-	109	55-116
4-Chlorophenyl Phenyl Ether	ND	4.88	0.25	5	-	98	45-122
Chrysene	ND	4.17	0.25	5	-	83	54-116
Dibenzo (a,h) anthracene	ND	4.90	0.25	5	-	98	52-141
Dibenzofuran	ND	4.81	0.25	5	-	96	46-117
Di-n-butyl Phthalate	ND	4.88	0.25	5	-	98	45-126
1,2-Dichlorobenzene	ND	4.83	0.25	5	-	97	55-105
1,3-Dichlorobenzene	ND	5.04	0.25	5	-	101	51-104
1,4-Dichlorobenzene	ND	4.12	0.25	5	-	82	50-102
3,3-Dichlorobenzidine	ND	3.04	0.50	5	-	61	20-84
2,4-Dichlorophenol	ND	5.87	0.25	5	-	117	54-124
Diethyl Phthalate	ND	4.66	0.25	5	-	93	42-118
2,4-Dimethylphenol	ND	5.02	0.25	5	-	100	53-120
Dimethyl Phthalate	ND	4.78	0.25	5	-	96	45-118
4,6-Dinitro-2-methylphenol	ND	5.00	1.3	5	-	100	32-126

(Cont.)

NELAP 4033ORELAP

QA/QC Officer



## Quality Control Report

**Client:** Langan  
**Date Prepared:** 7/10/17  
**Date Analyzed:** 7/10/17 - 7/11/17  
**Instrument:** GC21  
**Matrix:** Soil  
**Project:** 770641901; 600 South 1st Street

**WorkOrder:** 1706947  
**BatchID:** 141769  
**Extraction Method:** SW3550B  
**Analytical Method:** SW8270C  
**Unit:** mg/Kg  
**Sample ID:** MB/LCS-141769  
 1707193-005AMS/MSD

### QC Summary Report for SW8270C

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
2,4-Dinitrophenol	ND	4.49	6.3	5	-	90	20-130
2,4-Dinitrotoluene	ND	4.85	0.25	5	-	97	47-117
2,6-Dinitrotoluene	ND	5.05	0.25	5	-	101	48-121
Di-n-octyl Phthalate	ND	5.65	0.50	5	-	113	40-150
1,2-Diphenylhydrazine	ND	5.03	0.25	5	-	101	88-117
Fluoranthene	ND	5.31	0.25	5	-	106	45-126
Fluorene	ND	4.61	0.25	5	-	92	43-118
Hexachlorobenzene	ND	4.61	0.25	5	-	92	47-130
Hexachlorobutadiene	ND	4.91	0.25	5	-	98	50-121
Hexachlorocyclopentadiene	ND	3.56	1.3	5	-	71	30-89
Hexachloroethane	ND	4.29	0.25	5	-	86	50-106
Indeno (1,2,3-cd) pyrene	ND	4.78	0.25	5	-	96	51-138
Isophorone	ND	4.28	0.25	5	-	86	38-92
2-Methylnaphthalene	ND	4.96	0.25	5	-	99	51-121
2-Methylphenol (o-Cresol)	ND	4.78	0.25	5	-	96	48-114
3 & 4-Methylphenol (m,p-Cresol)	ND	4.97	0.25	5	-	99	30-130
Naphthalene	ND	4.39	0.25	5	-	88	50-113
2-Nitroaniline	ND	5.30	1.3	5	-	106	45-115
3-Nitroaniline	ND	3.70	1.3	5	-	74	31-93
4-Nitroaniline	ND	4.84	1.3	5	-	97	41-108
Nitrobenzene	ND	5.12	0.25	5	-	102	49-122
2-Nitrophenol	ND	5.79	1.3	5	-	116	54-121
4-Nitrophenol	ND	4.78	1.3	5	-	96	40-102
N-Nitrosodiphenylamine	ND	-	0.25	-	-	-	-
N-Nitrosodi-n-propylamine	ND	5.06	0.25	5	-	101	47-108
Pentachlorophenol	ND	6.11	1.3	5	-	122	39-134
Phenanthrene	ND	4.14	0.25	5	-	83	49-123
Phenol	ND	5.34	0.25	5	-	107	49-107
Pyrene	ND	5.26	0.25	5	-	105	55-124
Pyridine	ND	7.47	0.25	5	-	149, F2	70-130
1,2,4-Trichlorobenzene	ND	5.21	0.25	5	-	104	51-121
2,4,5-Trichlorophenol	ND	4.98	0.25	5	-	100	45-126
2,4,6-Trichlorophenol	ND	4.94	0.25	5	-	99	46-128



## Quality Control Report

<b>Client:</b> Langan	<b>WorkOrder:</b> 1706947
<b>Date Prepared:</b> 7/10/17	<b>BatchID:</b> 141769
<b>Date Analyzed:</b> 7/10/17 - 7/11/17	<b>Extraction Method:</b> SW3550B
<b>Instrument:</b> GC21	<b>Analytical Method:</b> SW8270C
<b>Matrix:</b> Soil	<b>Unit:</b> mg/Kg
<b>Project:</b> 770641901; 600 South 1st Street	<b>Sample ID:</b> MB/LCS-141769 1707193-005AMS/MSD

### QC Summary Report for SW8270C

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
<b>Surrogate Recovery</b>							
2-Fluorophenol	6.254	5.62		5	125	112	47-125
Phenol-d5	5.557	5.26		5	111	105	45-117
Nitrobenzene-d5	5.211	5.59		5	104	112	39-121
2-Fluorobiphenyl	4.705	5.04		5	94	101	35-120
2,4,6-Tribromophenol	4.253	5.00		5	85	100	32-111
4-Terphenyl-d14	5.113	5.56		5	102	111	32-128



## Quality Control Report

**Client:** Langan  
**Date Prepared:** 7/10/17  
**Date Analyzed:** 7/10/17 - 7/11/17  
**Instrument:** GC21  
**Matrix:** Soil  
**Project:** 770641901; 600 South 1st Street

**WorkOrder:** 1706947  
**BatchID:** 141769  
**Extraction Method:** SW3550B  
**Analytical Method:** SW8270C  
**Unit:** mg/Kg  
**Sample ID:** MB/LCS-141769  
 1707193-005AMS/MSD

### QC Summary Report for SW8270C

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
Acenaphthene	NR	NR		ND<2	NR	NR	-	NR	-
Acenaphthylene	NR	NR		ND<2	NR	NR	-	NR	-
Anthracene	NR	NR		ND<2	NR	NR	-	NR	-
Benzidine	NR	NR		ND<10	NR	NR	-	NR	-
Benzo (a) anthracene	NR	NR		ND<2	NR	NR	-	NR	-
Benzo (a) pyrene	NR	NR		ND<2	NR	NR	-	NR	-
Benzo (b) fluoranthene	NR	NR		ND<2	NR	NR	-	NR	-
Benzo (g,h,i) perylene	NR	NR		ND<2	NR	NR	-	NR	-
Benzo (k) fluoranthene	NR	NR		ND<2	NR	NR	-	NR	-
Benzyl Alcohol	NR	NR		ND<10	NR	NR	-	NR	-
Bis (2-chloroethoxy) Methane	NR	NR		ND<2	NR	NR	-	NR	-
Bis (2-chloroethyl) Ether	NR	NR		ND<2	NR	NR	-	NR	-
Bis (2-chloroisopropyl) Ether	NR	NR		ND<2	NR	NR	-	NR	-
Bis (2-ethylhexyl) Adipate	NR	NR		ND<2	NR	NR	-	NR	-
Bis (2-ethylhexyl) Phthalate	NR	NR		ND<2	NR	NR	-	NR	-
4-Bromophenyl Phenyl Ether	NR	NR		ND<2	NR	NR	-	NR	-
Butylbenzyl Phthalate	NR	NR		ND<2	NR	NR	-	NR	-
4-Chloroaniline	NR	NR		ND<4	NR	NR	-	NR	-
4-Chloro-3-methylphenol	NR	NR		ND<2	NR	NR	-	NR	-
2-Chloronaphthalene	NR	NR		ND<2	NR	NR	-	NR	-
2-Chlorophenol	NR	NR		ND<2	NR	NR	-	NR	-
4-Chlorophenyl Phenyl Ether	NR	NR		ND<2	NR	NR	-	NR	-
Chrysene	NR	NR		ND<2	NR	NR	-	NR	-
Dibenzo (a,h) anthracene	NR	NR		ND<2	NR	NR	-	NR	-
Dibenzofuran	NR	NR		ND<2	NR	NR	-	NR	-
Di-n-butyl Phthalate	NR	NR		ND<2	NR	NR	-	NR	-
1,2-Dichlorobenzene	NR	NR		ND<2	NR	NR	-	NR	-
1,3-Dichlorobenzene	NR	NR		ND<2	NR	NR	-	NR	-
1,4-Dichlorobenzene	NR	NR		ND<2	NR	NR	-	NR	-
3,3-Dichlorobenzidine	NR	NR		ND<4	NR	NR	-	NR	-
2,4-Dichlorophenol	NR	NR		ND<2	NR	NR	-	NR	-
Diethyl Phthalate	NR	NR		ND<2	NR	NR	-	NR	-
2,4-Dimethylphenol	NR	NR		ND<2	NR	NR	-	NR	-
Dimethyl Phthalate	NR	NR		ND<2	NR	NR	-	NR	-
4,6-Dinitro-2-methylphenol	NR	NR		ND<10	NR	NR	-	NR	-
2,4-Dinitrophenol	NR	NR		ND<50	NR	NR	-	NR	-
2,4-Dinitrotoluene	NR	NR		ND<2	NR	NR	-	NR	-

(Cont.)

NELAP 4033ORELAP

QA/QC Officer





## Quality Control Report

**Client:** Langan  
**Date Prepared:** 7/10/17  
**Date Analyzed:** 7/10/17 - 7/11/17  
**Instrument:** GC21  
**Matrix:** Soil  
**Project:** 770641901; 600 South 1st Street

**WorkOrder:** 1706947  
**BatchID:** 141769  
**Extraction Method:** SW3550B  
**Analytical Method:** SW8270C  
**Unit:** mg/Kg  
**Sample ID:** MB/LCS-141769  
 1707193-005AMS/MSD

### QC Summary Report for SW8270C

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
2,6-Dinitrotoluene	NR	NR		ND<2	NR	NR	-	NR	-
Di-n-octyl Phthalate	NR	NR		ND<4	NR	NR	-	NR	-
1,2-Diphenylhydrazine	NR	NR		ND<2	NR	NR	-	NR	-
Fluoranthene	NR	NR		ND<2	NR	NR	-	NR	-
Fluorene	NR	NR		ND<2	NR	NR	-	NR	-
Hexachlorobenzene	NR	NR		ND<2	NR	NR	-	NR	-
Hexachlorobutadiene	NR	NR		ND<2	NR	NR	-	NR	-
Hexachlorocyclopentadiene	NR	NR		ND<10	NR	NR	-	NR	-
Hexachloroethane	NR	NR		ND<2	NR	NR	-	NR	-
Indeno (1,2,3-cd) pyrene	NR	NR		ND<2	NR	NR	-	NR	-
Isophorone	NR	NR		ND<2	NR	NR	-	NR	-
2-Methylnaphthalene	NR	NR		ND<2	NR	NR	-	NR	-
2-Methylphenol (o-Cresol)	NR	NR		ND<2	NR	NR	-	NR	-
3 & 4-Methylphenol (m,p-Cresol)	NR	NR		ND<2	NR	NR	-	NR	-
Naphthalene	NR	NR		ND<2	NR	NR	-	NR	-
2-Nitroaniline	NR	NR		ND<10	NR	NR	-	NR	-
3-Nitroaniline	NR	NR		ND<10	NR	NR	-	NR	-
4-Nitroaniline	NR	NR		ND<10	NR	NR	-	NR	-
Nitrobenzene	NR	NR		ND<2	NR	NR	-	NR	-
2-Nitrophenol	NR	NR		ND<10	NR	NR	-	NR	-
4-Nitrophenol	NR	NR		ND<10	NR	NR	-	NR	-
N-Nitrosodi-n-propylamine	NR	NR		ND<2	NR	NR	-	NR	-
Pentachlorophenol	NR	NR		ND<10	NR	NR	-	NR	-
Phenanthrene	NR	NR		ND<2	NR	NR	-	NR	-
Phenol	NR	NR		ND<2	NR	NR	-	NR	-
Pyrene	NR	NR		ND<2	NR	NR	-	NR	-
Pyridine	NR	NR		ND<2	NR	NR	-	NR	-
1,2,4-Trichlorobenzene	NR	NR		ND<2	NR	NR	-	NR	-
2,4,5-Trichlorophenol	NR	NR		ND<2	NR	NR	-	NR	-
2,4,6-Trichlorophenol	NR	NR		ND<2	NR	NR	-	NR	-



## Quality Control Report

<b>Client:</b>	Langan	<b>WorkOrder:</b>	1706947
<b>Date Prepared:</b>	7/10/17	<b>BatchID:</b>	141769
<b>Date Analyzed:</b>	7/10/17 - 7/11/17	<b>Extraction Method:</b>	SW3550B
<b>Instrument:</b>	GC21	<b>Analytical Method:</b>	SW8270C
<b>Matrix:</b>	Soil	<b>Unit:</b>	mg/Kg
<b>Project:</b>	770641901; 600 South 1st Street	<b>Sample ID:</b>	MB/LCS-141769 1707193-005AMS/MSD

### QC Summary Report for SW8270C

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
<b>Surrogate Recovery</b>									
2-Fluorophenol	NR	NR			NR	NR	-	NR	-
Phenol-d5	NR	NR			NR	NR	-	NR	-
Nitrobenzene-d5	NR	NR			NR	NR	-	NR	-
2-Fluorobiphenyl	NR	NR			NR	NR	-	NR	-
2,4,6-Tribromophenol	NR	NR			NR	NR	-	NR	-
4-Terphenyl-d14	NR	NR			NR	NR	-	NR	-



## Quality Control Report

<b>Client:</b>	Langan	<b>WorkOrder:</b>	1706947
<b>Date Prepared:</b>	7/7/17	<b>BatchID:</b>	141650
<b>Date Analyzed:</b>	7/10/17	<b>Extraction Method:</b>	SW3050B
<b>Instrument:</b>	ICP-MS1	<b>Analytical Method:</b>	SW6020
<b>Matrix:</b>	Soil	<b>Unit:</b>	mg/Kg
<b>Project:</b>	770641901; 600 South 1st Street	<b>Sample ID:</b>	MB/LCS-141650 1706853-005AMS/MSD 1706853-005APDS

### QC Summary Report for Metals

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Lead	ND	50.7	0.50	50	-	101	75-125

#### Surrogate Recovery

Terbium	534.4	538		500	107	108	70-130
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Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
Lead	101	90.8	50	28.74	144,F10	124	75-125	10.3	20

#### Surrogate Recovery

Terbium	561	484	500		112	97	70-130	14.8	20
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Analyte	PDS Result	SPK Val	SPKRef Val	PDS %REC	PDS Limits
Lead	81.2	50	28.74	105	75-125

Analyte	DLT Result	DLTRef Val	%D	%D Limit
Lead	29.3	28.74	1.95	20

%D Control Limit applied to analytes with concentrations greater than 25 times the reporting limits.



1534 Willow Pass Rd  
Pittsburg, CA 94565-1701  
(925) 252-9262

# CHAIN-OF-CUSTODY RECORD

WorkOrder: 1706947 **B** ClientCode: TWRF

WaterTrax  
  WriteOn  
  EDF  
  Excel  
  Fax  
 Email  
  HardCopy  
  ThirdParty  
  J-flag

**Report to:**  
 Peter Cusack  
 Langan  
 555 Montgomery St., Suite 1300  
 San Francisco, CA 94111  
 (415) 955-5244    FAX: (415) 955-9041

Email: pcusack@langan.com  
 cc/3rd Party: kstaehlin@langan.com;  
 PO:  
 ProjectNo: 770641901; 600 South 1st Street

**Bill to:**  
 Accounts Payable  
 Langan  
 555 Montgomery St., Suite 1300  
 San Francisco, CA 94111  
 Langan\_InvoiceCapture@concursoft.com

**Requested TAT: 5 days;**  
  
**Date Received: 06/20/2017**  
**Date Logged: 06/20/2017**  
**Date Add-On: 07/07/2017**

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)												
					1	2	3	4	5	6	7	8	9	10	11	12	
1706947-020	E-3-3.0	Soil	6/17/2017 10:04	<input type="checkbox"/>			A										
1706947-027	E-3-36.0	Soil	6/17/2017 11:18	<input type="checkbox"/>	A	A											

**Test Legend:**

1	8260B_S	2	8270_S	3	PBMS_TTLC_S	4	
5		6		7		8	
9		10		11		12	

**Prepared by: Kena Ponce**  
**Add-On Prepared By: Maria Venegas**

**Comments:**    STLC's & TCLPs added 6/28/17 STAT. Sample 020 off hold for 8260,8270 & Lead 7/7/17 STAT.

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days). Hazardous samples will be returned to client or disposed of at client expense.



### WORK ORDER SUMMARY

**Client Name:** LANGAN  
**Client Contact:** Peter Cusack  
**Contact's Email** pcusack@langan.com

**Project:** 770641901; 600 South 1st Street

**Work Order:** 1706947  
**QC Level:** LEVEL 2  
**Date Logged:** 6/20/2017  
**Date Add-On:** 7/7/2017

**Comments:** STLC's & TCLPs added 6/28/17 STAT. Sample 020 off hold for 8260,8270 & Lead 7/7/17 STAT.

Lab ID	Client ID	Matrix	Test Name	Containers /Composites	Bottle & Preservative	Collection Date & Time	TAT	Sediment Content	Hold	SubOut
1706947-020A	E-3-3.0	Soil	SW6020 (Lead)	1	Acetate Liner	6/17/2017 10:04	5 days		<input type="checkbox"/>	
1706947-027A	E-3-36.0	Soil	SW8270C (SVOCs)	1	Acetate Liner	6/17/2017 11:18	5 days		<input type="checkbox"/>	
			SW8260B (VOCs)				5 days		<input type="checkbox"/>	

**NOTES:** - STLC and TCLP extractions require 2 days to complete; therefore, all TATs begin after the extraction is completed (i.e., One-day TAT yields results in 3 days from sample submission).  
- MAI assumes that all material present in the provided sampling container is considered part of the sample - MAI does not exclude any material from the sample prior to sample preparation unless requested in writing by the client.

# LANGAN

## CHAIN OF CUSTODY RECORD

- 555 Montgomery Street, Suite 1300, San Francisco, CA 94111
- 501 14th Street, Third Floor, Oakland CA 94612
- 3320 Data Drive, Suite 350, Rancho Cordova, CA 95670-7982
- 4030 Moorpark Ave. Suite 210, San Jose, CA 95117-1849

Site Name: 600 SOUTH 1st STREET  
 Job Number: 770041901  
 Project Manager/Contact: PETER CUSACK  
 Samplers: KSS  
 Recorder (Signature Required): [Signature]

Turnaround  
Time  
**STANDARD**

Field Sample Identification No.	Date	Time	Lab Sample No.	Matrix				No. Containers & Preservative				Analysis Requested								Silica gel clean-up	Hold	Remarks						
				Soil	Water	Air	Other	HCL	H <sub>2</sub> SO <sub>4</sub>	HNO <sub>3</sub>	Ice	TPH	VOCs	SVOCs	OCs & PCBs	ASBESTOS BY CAS	CAM 11	LUFTS	STLC CY				STLC PD	TCLP PD	TTLC PD			
E-2-15.0	4/17/17	0808		X									X															
E-2-20.0	}	0817		X									X															
E-2-24.0		0904		X									X															
E-2-30.0		0913		X									X															
E-3-1.5		1002		X									X					X	X	X								
E-3-3.0	1004		X										X						X									
E-3-7.5	1007		X										X															
E-3-10.0	1010		X										X															
E-3-15.0	1013		X										X															
E-3-20.0	1019		X										X															
E-3-26.0	1027		X										X					X	X									
E-3-30.0	1035		X										X															
E-3-36.0	1118		X										X	X				X	X									
E-4-1.5	4/17/17	1332		X									X					X	X									
Relinquished by: (Signature) <u>[Signature]</u>			Date: 6-20-17	Time: 0940	Received by: (Signature) <u>[Signature]</u>			Date: 6-20-17	Time: 0940																			
Relinquished by: (Signature) <u>[Signature]</u>			Date: 6-20-17	Time: 1230	Received by: (Signature) <u>[Signature]</u>			Date: 4/20/17	Time: 1230																			
Relinquished by: (Signature) <u>[Signature]</u>			Date:	Time:	Received by Lab: (Signature)			Date:	Time:																			
Sent to Laboratory (Name): <u>MCCAMPBELL ANALYTICAL</u>					Method of Shipment					<input checked="" type="checkbox"/> Lab courier <input type="checkbox"/> Fed Ex <input type="checkbox"/> Airborne <input type="checkbox"/> UPS																		
Laboratory Comments/Notes: <u>added 7/1/17, OK'ed per client to run pass holding time</u>					<input type="checkbox"/> Hand Carried <input type="checkbox"/> Private Courier (Co. Name)																							

White Copy - Original      Yellow Copy - Laboratory      Pink Copy - Field      COC Number: 10.8

*to EATE Sample not listed E-2-40 not on COC*



# McC Campbell Analytical, Inc.

"When Quality Counts"

## Analytical Report

**WorkOrder:** 1706994 **Amended:** 07/06/2017

**Report Created for:** Langan

555 Montgomery St., Suite 1300  
San Francisco, CA 94111

**Project Contact:** Peter Cusack

**Project P.O.:**

**Project Name:** 770641701; 600 South 1st Street

**Project Received:** 06/20/2017

Analytical Report reviewed & approved for release on 06/27/2017 by:

Angela Rydelius,  
Laboratory Manager

*The report shall not be reproduced except in full, without the written approval of the laboratory. The analytical results relate only to the items tested. Results reported conform to the most current NELAP standards, where applicable, unless otherwise stated in the case narrative.*





## Glossary of Terms & Qualifier Definitions

**Client:** Langan  
**Project:** 770641701; 600 South 1st Street  
**WorkOrder:** 1706994

### Glossary Abbreviation

%D	Serial Dilution Percent Difference
95% Interval	95% Confident Interval
DF	Dilution Factor
DI WET	(DISTLC) Waste Extraction Test using DI water
DISS	Dissolved (direct analysis of 0.45 µm filtered and acidified water sample)
DLT	Dilution Test (Serial Dilution)
DUP	Duplicate
EDL	Estimated Detection Limit
ERS	External reference sample. Second source calibration verification.
ITEF	International Toxicity Equivalence Factor
LCS	Laboratory Control Sample
MB	Method Blank
MB % Rec	% Recovery of Surrogate in Method Blank, if applicable
MDL	Method Detection Limit
ML	Minimum Level of Quantitation
MS	Matrix Spike
MSD	Matrix Spike Duplicate
N/A	Not Applicable
ND	Not detected at or above the indicated MDL or RL
NR	Data Not Reported due to matrix interference or insufficient sample amount.
PDS	Post Digestion Spike
PDSD	Post Digestion Spike Duplicate
PF	Prep Factor
RD	Relative Difference
RL	Reporting Limit (The RL is the lowest calibration standard in a multipoint calibration.)
RPD	Relative Percent Deviation
RRT	Relative Retention Time
SPK Val	Spike Value
SPKRef Val	Spike Reference Value
SPLP	Synthetic Precipitation Leachate Procedure
ST	Sorbent Tube
TCLP	Toxicity Characteristic Leachate Procedure
TEQ	Toxicity Equivalents
WET (STLC)	Waste Extraction Test (Soluble Threshold Limit Concentration)





## Glossary of Terms & Qualifier Definitions

**Client:** Langan  
**Project:** 770641701; 600 South 1st Street  
**WorkOrder:** 1706994

### Analytical Qualifiers

S	Surrogate spike recovery outside accepted recovery limits
F	Sample was filtered upon arrival to the lab
a3	Sample diluted due to high organic content.
b1	Aqueous sample that contains greater than ~1 vol. % sediment
c4	Surrogate recovery outside of the control limits due to coelution with another peak(s) / cluttered chromatogram.
d1	Weakly modified or unmodified gasoline is significant
e2	Diesel range compounds are significant; no recognizable pattern
e4	Gasoline range compounds are significant.
e7	Oil range compounds are significant



## Analytical Report

**Client:** Langan  
**Date Received:** 6/20/17 12:30  
**Date Prepared:** 6/21/17  
**Project:** 770641701; 600 South 1st Street

**WorkOrder:** 1706994  
**Extraction Method:** SW3510C  
**Analytical Method:** SW8082  
**Unit:** µg/L

### Polychlorinated Biphenyls (PCBs) Aroclors

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
ER-6-GW	1706994-001E	Water	06/17/2017 13:45	GC20	140854

Analytes	Result	RL	DF	Date Analyzed
Aroclor1016	ND	0.50	1	06/24/2017 07:22
Aroclor1221	ND	0.50	1	06/24/2017 07:22
Aroclor1232	ND	0.50	1	06/24/2017 07:22
Aroclor1242	ND	0.50	1	06/24/2017 07:22
Aroclor1248	ND	0.50	1	06/24/2017 07:22
Aroclor1254	ND	0.50	1	06/24/2017 07:22
Aroclor1260	ND	0.50	1	06/24/2017 07:22
PCBs, total	ND	0.50	1	06/24/2017 07:22

Surrogates	REC (%)	Limits	Date Analyzed
Decachlorobiphenyl	95	70-130	06/24/2017 07:22

Analyst(s): CK

Analytical Comments: b1



# Analytical Report

**Client:** Langan  
**Date Received:** 6/20/17 12:30  
**Date Prepared:** 6/24/17  
**Project:** 770641701; 600 South 1st Street

**WorkOrder:** 1706994  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** µg/L

## Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
ER-6-GW	1706994-001B	Water	06/17/2017 13:45	GC18	141011

Analytes	Result	RL	DF	Date Analyzed
Acetone	ND	10	1	06/24/2017 15:03
tert-Amyl methyl ether (TAME)	ND	0.50	1	06/24/2017 15:03
Benzene	ND	0.50	1	06/24/2017 15:03
Bromobenzene	ND	0.50	1	06/24/2017 15:03
Bromochloromethane	ND	0.50	1	06/24/2017 15:03
Bromodichloromethane	ND	0.50	1	06/24/2017 15:03
Bromoform	ND	0.50	1	06/24/2017 15:03
Bromomethane	ND	0.50	1	06/24/2017 15:03
2-Butanone (MEK)	ND	2.0	1	06/24/2017 15:03
t-Butyl alcohol (TBA)	ND	2.0	1	06/24/2017 15:03
n-Butyl benzene	ND	0.50	1	06/24/2017 15:03
sec-Butyl benzene	ND	0.50	1	06/24/2017 15:03
tert-Butyl benzene	ND	0.50	1	06/24/2017 15:03
Carbon Disulfide	ND	0.50	1	06/24/2017 15:03
Carbon Tetrachloride	ND	0.50	1	06/24/2017 15:03
Chlorobenzene	ND	0.50	1	06/24/2017 15:03
Chloroethane	ND	0.50	1	06/24/2017 15:03
Chloroform	ND	0.50	1	06/24/2017 15:03
Chloromethane	ND	0.50	1	06/24/2017 15:03
2-Chlorotoluene	ND	0.50	1	06/24/2017 15:03
4-Chlorotoluene	ND	0.50	1	06/24/2017 15:03
Dibromochloromethane	ND	0.50	1	06/24/2017 15:03
1,2-Dibromo-3-chloropropane	ND	0.20	1	06/24/2017 15:03
1,2-Dibromoethane (EDB)	ND	0.50	1	06/24/2017 15:03
Dibromomethane	ND	0.50	1	06/24/2017 15:03
1,2-Dichlorobenzene	ND	0.50	1	06/24/2017 15:03
1,3-Dichlorobenzene	ND	0.50	1	06/24/2017 15:03
1,4-Dichlorobenzene	ND	0.50	1	06/24/2017 15:03
Dichlorodifluoromethane	ND	0.50	1	06/24/2017 15:03
1,1-Dichloroethane	ND	0.50	1	06/24/2017 15:03
1,2-Dichloroethane (1,2-DCA)	ND	0.50	1	06/24/2017 15:03
1,1-Dichloroethene	ND	0.50	1	06/24/2017 15:03
cis-1,2-Dichloroethene	ND	0.50	1	06/24/2017 15:03
trans-1,2-Dichloroethene	ND	0.50	1	06/24/2017 15:03
1,2-Dichloropropane	ND	0.50	1	06/24/2017 15:03
1,3-Dichloropropane	ND	0.50	1	06/24/2017 15:03
2,2-Dichloropropane	ND	0.50	1	06/24/2017 15:03

(Cont.)



# Analytical Report

**Client:** Langan  
**Date Received:** 6/20/17 12:30  
**Date Prepared:** 6/24/17  
**Project:** 770641701; 600 South 1st Street

**WorkOrder:** 1706994  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** µg/L

## Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
ER-6-GW	1706994-001B	Water	06/17/2017 13:45	GC18	141011

Analytes	Result	RL	DF	Date Analyzed
1,1-Dichloropropene	ND	0.50	1	06/24/2017 15:03
cis-1,3-Dichloropropene	ND	0.50	1	06/24/2017 15:03
trans-1,3-Dichloropropene	ND	0.50	1	06/24/2017 15:03
Diisopropyl ether (DIPE)	ND	0.50	1	06/24/2017 15:03
Ethylbenzene	ND	0.50	1	06/24/2017 15:03
Ethyl tert-butyl ether (ETBE)	ND	0.50	1	06/24/2017 15:03
Freon 113	ND	0.50	1	06/24/2017 15:03
Hexachlorobutadiene	ND	0.50	1	06/24/2017 15:03
Hexachloroethane	ND	0.50	1	06/24/2017 15:03
2-Hexanone	ND	0.50	1	06/24/2017 15:03
Isopropylbenzene	ND	0.50	1	06/24/2017 15:03
4-Isopropyl toluene	ND	0.50	1	06/24/2017 15:03
Methyl-t-butyl ether (MTBE)	ND	0.50	1	06/24/2017 15:03
Methylene chloride	ND	0.50	1	06/24/2017 15:03
4-Methyl-2-pentanone (MIBK)	ND	0.50	1	06/24/2017 15:03
Naphthalene	ND	0.50	1	06/24/2017 15:03
n-Propyl benzene	ND	0.50	1	06/24/2017 15:03
Styrene	ND	0.50	1	06/24/2017 15:03
1,1,1,2-Tetrachloroethane	ND	0.50	1	06/24/2017 15:03
1,1,2,2-Tetrachloroethane	ND	0.50	1	06/24/2017 15:03
Tetrachloroethene	ND	0.50	1	06/24/2017 15:03
Toluene	ND	0.50	1	06/24/2017 15:03
1,2,3-Trichlorobenzene	ND	0.50	1	06/24/2017 15:03
1,2,4-Trichlorobenzene	ND	0.50	1	06/24/2017 15:03
1,1,1-Trichloroethane	ND	0.50	1	06/24/2017 15:03
1,1,2-Trichloroethane	ND	0.50	1	06/24/2017 15:03
Trichloroethene	ND	0.50	1	06/24/2017 15:03
Trichlorofluoromethane	ND	0.50	1	06/24/2017 15:03
1,2,3-Trichloropropane	ND	0.50	1	06/24/2017 15:03
1,2,4-Trimethylbenzene	ND	0.50	1	06/24/2017 15:03
1,3,5-Trimethylbenzene	ND	0.50	1	06/24/2017 15:03
Vinyl Chloride	ND	0.50	1	06/24/2017 15:03
Xylenes, Total	ND	0.50	1	06/24/2017 15:03

(Cont.)



# Analytical Report

**Client:** Langan  
**Date Received:** 6/20/17 12:30  
**Date Prepared:** 6/24/17  
**Project:** 770641701; 600 South 1st Street

**WorkOrder:** 1706994  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** µg/L

## Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
ER-6-GW	1706994-001B	Water	06/17/2017 13:45	GC18	141011

Analytes	Result	RL	DF	Date Analyzed
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>	
Dibromofluoromethane	117	70-130		06/24/2017 15:03
Toluene-d8	99	70-130		06/24/2017 15:03
4-BFB	113	70-130		06/24/2017 15:03
<u>Analyst(s):</u> KF		<u>Analytical Comments:</u> b1		



# Analytical Report

**Client:** Langan  
**Date Received:** 6/20/17 12:30  
**Date Prepared:** 6/24/17  
**Project:** 770641701; 600 South 1st Street

**WorkOrder:** 1706994  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** µg/L

## Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-2-GW	1706994-002B	Water	06/17/2017 08:30	GC18	141011
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Acetone	ND		330	33	06/24/2017 17:04
tert-Amyl methyl ether (TAME)	ND		17	33	06/24/2017 17:04
Benzene	<b>84</b>		17	33	06/24/2017 17:04
Bromobenzene	ND		17	33	06/24/2017 17:04
Bromochloromethane	ND		17	33	06/24/2017 17:04
Bromodichloromethane	ND		17	33	06/24/2017 17:04
Bromoform	ND		17	33	06/24/2017 17:04
Bromomethane	ND		17	33	06/24/2017 17:04
2-Butanone (MEK)	ND		67	33	06/24/2017 17:04
t-Butyl alcohol (TBA)	ND		67	33	06/24/2017 17:04
n-Butyl benzene	<b>25</b>		17	33	06/24/2017 17:04
sec-Butyl benzene	ND		17	33	06/24/2017 17:04
tert-Butyl benzene	ND		17	33	06/24/2017 17:04
Carbon Disulfide	ND		17	33	06/24/2017 17:04
Carbon Tetrachloride	ND		17	33	06/24/2017 17:04
Chlorobenzene	ND		17	33	06/24/2017 17:04
Chloroethane	ND		17	33	06/24/2017 17:04
Chloroform	ND		17	33	06/24/2017 17:04
Chloromethane	ND		17	33	06/24/2017 17:04
2-Chlorotoluene	ND		17	33	06/24/2017 17:04
4-Chlorotoluene	ND		17	33	06/24/2017 17:04
Dibromochloromethane	ND		17	33	06/24/2017 17:04
1,2-Dibromo-3-chloropropane	ND		6.7	33	06/24/2017 17:04
1,2-Dibromoethane (EDB)	ND		17	33	06/24/2017 17:04
Dibromomethane	ND		17	33	06/24/2017 17:04
1,2-Dichlorobenzene	ND		17	33	06/24/2017 17:04
1,3-Dichlorobenzene	ND		17	33	06/24/2017 17:04
1,4-Dichlorobenzene	ND		17	33	06/24/2017 17:04
Dichlorodifluoromethane	ND		17	33	06/24/2017 17:04
1,1-Dichloroethane	ND		17	33	06/24/2017 17:04
1,2-Dichloroethane (1,2-DCA)	ND		17	33	06/24/2017 17:04
1,1-Dichloroethene	ND		17	33	06/24/2017 17:04
cis-1,2-Dichloroethene	ND		17	33	06/24/2017 17:04
trans-1,2-Dichloroethene	ND		17	33	06/24/2017 17:04
1,2-Dichloropropane	ND		17	33	06/24/2017 17:04
1,3-Dichloropropane	ND		17	33	06/24/2017 17:04
2,2-Dichloropropane	ND		17	33	06/24/2017 17:04

(Cont.)



# Analytical Report

**Client:** Langan  
**Date Received:** 6/20/17 12:30  
**Date Prepared:** 6/24/17  
**Project:** 770641701; 600 South 1st Street

**WorkOrder:** 1706994  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** µg/L

## Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-2-GW	1706994-002B	Water	06/17/2017 08:30	GC18	141011

Analytes	Result	RL	DF	Date Analyzed
1,1-Dichloropropene	ND	17	33	06/24/2017 17:04
cis-1,3-Dichloropropene	ND	17	33	06/24/2017 17:04
trans-1,3-Dichloropropene	ND	17	33	06/24/2017 17:04
Diisopropyl ether (DIPE)	ND	17	33	06/24/2017 17:04
Ethylbenzene	730	17	33	06/24/2017 17:04
Ethyl tert-butyl ether (ETBE)	ND	17	33	06/24/2017 17:04
Freon 113	ND	17	33	06/24/2017 17:04
Hexachlorobutadiene	ND	17	33	06/24/2017 17:04
Hexachloroethane	ND	17	33	06/24/2017 17:04
2-Hexanone	ND	17	33	06/24/2017 17:04
Isopropylbenzene	69	17	33	06/24/2017 17:04
4-Isopropyl toluene	ND	17	33	06/24/2017 17:04
Methyl-t-butyl ether (MTBE)	ND	17	33	06/24/2017 17:04
Methylene chloride	ND	17	33	06/24/2017 17:04
4-Methyl-2-pentanone (MIBK)	ND	17	33	06/24/2017 17:04
Naphthalene	130	17	33	06/24/2017 17:04
n-Propyl benzene	180	17	33	06/24/2017 17:04
Styrene	ND	17	33	06/24/2017 17:04
1,1,1,2-Tetrachloroethane	ND	17	33	06/24/2017 17:04
1,1,2,2-Tetrachloroethane	ND	17	33	06/24/2017 17:04
Tetrachloroethene	ND	17	33	06/24/2017 17:04
Toluene	440	17	33	06/24/2017 17:04
1,2,3-Trichlorobenzene	ND	17	33	06/24/2017 17:04
1,2,4-Trichlorobenzene	ND	17	33	06/24/2017 17:04
1,1,1-Trichloroethane	ND	17	33	06/24/2017 17:04
1,1,2-Trichloroethane	ND	17	33	06/24/2017 17:04
Trichloroethene	ND	17	33	06/24/2017 17:04
Trichlorofluoromethane	ND	17	33	06/24/2017 17:04
1,2,3-Trichloropropane	ND	17	33	06/24/2017 17:04
1,2,4-Trimethylbenzene	330	17	33	06/24/2017 17:04
1,3,5-Trimethylbenzene	ND	17	33	06/24/2017 17:04
Vinyl Chloride	ND	17	33	06/24/2017 17:04
Xylenes, Total	450	17	33	06/24/2017 17:04

(Cont.)



# Analytical Report

**Client:** Langan  
**Date Received:** 6/20/17 12:30  
**Date Prepared:** 6/24/17  
**Project:** 770641701; 600 South 1st Street

**WorkOrder:** 1706994  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8260B  
**Unit:** µg/L

## Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-2-GW	1706994-002B	Water	06/17/2017 08:30	GC18	141011

Analytes	Result	RL	DF	Date Analyzed
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>	
Dibromofluoromethane	109		70-130	06/24/2017 17:04
Toluene-d8	103		70-130	06/24/2017 17:04
4-BFB	114		70-130	06/24/2017 17:04
<u>Analyst(s):</u> KF			<u>Analytical Comments:</u> b1	





# Analytical Report

**Client:** Langan  
**Date Received:** 6/20/17 12:30  
**Date Prepared:** 6/21/17  
**Project:** 770641701; 600 South 1st Street

**WorkOrder:** 1706994  
**Extraction Method:** E625  
**Analytical Method:** SW8270C  
**Unit:** µg/L

## Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
ER-6-GW	1706994-001C	Water	06/17/2017 13:45	GC17	140784

Analytes	Result	RL	DF	Date Analyzed
Acenaphthene	ND	9.6	5	06/22/2017 10:53
Acenaphthylene	ND	9.6	5	06/22/2017 10:53
Acetochlor	ND	9.6	5	06/22/2017 10:53
Anthracene	ND	9.6	5	06/22/2017 10:53
Benzidine	ND	48	5	06/22/2017 10:53
Benzo (a) anthracene	ND	9.6	5	06/22/2017 10:53
Benzo (a) pyrene	ND	9.6	5	06/22/2017 10:53
Benzo (b) fluoranthene	ND	9.6	5	06/22/2017 10:53
Benzo (g,h,i) perylene	ND	9.6	5	06/22/2017 10:53
Benzo (k) fluoranthene	ND	9.6	5	06/22/2017 10:53
Benzyl Alcohol	ND	48	5	06/22/2017 10:53
1,1-Biphenyl	ND	9.6	5	06/22/2017 10:53
Bis (2-chloroethoxy) Methane	ND	9.6	5	06/22/2017 10:53
Bis (2-chloroethyl) Ether	ND	9.6	5	06/22/2017 10:53
Bis (2-chloroisopropyl) Ether	ND	9.6	5	06/22/2017 10:53
Bis (2-ethylhexyl) Adipate	ND	9.6	5	06/22/2017 10:53
Bis (2-ethylhexyl) Phthalate	ND	19	5	06/22/2017 10:53
4-Bromophenyl Phenyl Ether	ND	48	5	06/22/2017 10:53
Butylbenzyl Phthalate	ND	9.6	5	06/22/2017 10:53
4-Chloroaniline	ND	19	5	06/22/2017 10:53
4-Chloro-3-methylphenol	ND	48	5	06/22/2017 10:53
2-Chloronaphthalene	ND	9.6	5	06/22/2017 10:53
2-Chlorophenol	ND	9.6	5	06/22/2017 10:53
4-Chlorophenyl Phenyl Ether	ND	9.6	5	06/22/2017 10:53
Chrysene	ND	9.6	5	06/22/2017 10:53
Dibenzo (a,h) anthracene	ND	9.6	5	06/22/2017 10:53
Dibenzofuran	ND	9.6	5	06/22/2017 10:53
Di-n-butyl Phthalate	ND	9.6	5	06/22/2017 10:53
1,2-Dichlorobenzene	ND	9.6	5	06/22/2017 10:53
1,3-Dichlorobenzene	ND	9.6	5	06/22/2017 10:53
1,4-Dichlorobenzene	ND	9.6	5	06/22/2017 10:53
3,3-Dichlorobenzidine	ND	19	5	06/22/2017 10:53
2,4-Dichlorophenol	ND	9.6	5	06/22/2017 10:53
Diethyl Phthalate	ND	9.6	5	06/22/2017 10:53
2,4-Dimethylphenol	ND	9.6	5	06/22/2017 10:53
Dimethyl Phthalate	ND	9.6	5	06/22/2017 10:53
4,6-Dinitro-2-methylphenol	ND	48	5	06/22/2017 10:53

(Cont.)



## Analytical Report

**Client:** Langan  
**Date Received:** 6/20/17 12:30  
**Date Prepared:** 6/21/17  
**Project:** 770641701; 600 South 1st Street

**WorkOrder:** 1706994  
**Extraction Method:** E625  
**Analytical Method:** SW8270C  
**Unit:** µg/L

### Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
ER-6-GW	1706994-001C	Water	06/17/2017 13:45	GC17	140784

Analytes	Result	RL	DF	Date Analyzed
2,4-Dinitrophenol	ND	120	5	06/22/2017 10:53
2,4-Dinitrotoluene	ND	9.6	5	06/22/2017 10:53
2,6-Dinitrotoluene	ND	9.6	5	06/22/2017 10:53
Di-n-octyl Phthalate	ND	9.6	5	06/22/2017 10:53
1,2-Diphenylhydrazine	ND	9.6	5	06/22/2017 10:53
Fluoranthene	ND	9.6	5	06/22/2017 10:53
Fluorene	ND	9.6	5	06/22/2017 10:53
Hexachlorobenzene	ND	9.6	5	06/22/2017 10:53
Hexachlorobutadiene	ND	9.6	5	06/22/2017 10:53
Hexachlorocyclopentadiene	ND	48	5	06/22/2017 10:53
Hexachloroethane	ND	9.6	5	06/22/2017 10:53
Indeno (1,2,3-cd) pyrene	ND	9.6	5	06/22/2017 10:53
Isophorone	ND	9.6	5	06/22/2017 10:53
2-Methylnaphthalene	ND	9.6	5	06/22/2017 10:53
2-Methylphenol (o-Cresol)	ND	9.6	5	06/22/2017 10:53
3 & 4-Methylphenol (m,p-Cresol)	ND	9.6	5	06/22/2017 10:53
Naphthalene	ND	9.6	5	06/22/2017 10:53
2-Nitroaniline	ND	48	5	06/22/2017 10:53
3-Nitroaniline	ND	48	5	06/22/2017 10:53
4-Nitroaniline	ND	48	5	06/22/2017 10:53
Nitrobenzene	ND	9.6	5	06/22/2017 10:53
2-Nitrophenol	ND	48	5	06/22/2017 10:53
4-Nitrophenol	ND	48	5	06/22/2017 10:53
N-Nitrosodiphenylamine	ND	9.6	5	06/22/2017 10:53
N-Nitrosodi-n-propylamine	ND	9.6	5	06/22/2017 10:53
Pentachlorophenol	ND	48	5	06/22/2017 10:53
Phenanthrene	ND	9.6	5	06/22/2017 10:53
Phenol	ND	9.6	5	06/22/2017 10:53
Pyrene	ND	9.6	5	06/22/2017 10:53
Pyridine	ND	9.6	5	06/22/2017 10:53
1,2,4-Trichlorobenzene	ND	9.6	5	06/22/2017 10:53
2,4,5-Trichlorophenol	ND	9.6	5	06/22/2017 10:53
2,4,6-Trichlorophenol	ND	9.6	5	06/22/2017 10:53

(Cont.)



# Analytical Report

**Client:** Langan  
**Date Received:** 6/20/17 12:30  
**Date Prepared:** 6/21/17  
**Project:** 770641701; 600 South 1st Street

**WorkOrder:** 1706994  
**Extraction Method:** E625  
**Analytical Method:** SW8270C  
**Unit:** µg/L

## Semi-Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
ER-6-GW	1706994-001C	Water	06/17/2017 13:45	GC17	140784

Analytes	Result	RL	DF	Date Analyzed
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>	
2-Fluorophenol	54		8-130	06/22/2017 10:53
Phenol-d5	45		5-130	06/22/2017 10:53
Nitrobenzene-d5	68		20-140	06/22/2017 10:53
2-Fluorobiphenyl	92		40-140	06/22/2017 10:53
2,4,6-Tribromophenol	102		16-180	06/22/2017 10:53
4-Terphenyl-d14	122		40-170	06/22/2017 10:53

Analyst(s): REB

Analytical Comments: a3,b1



## Analytical Report

**Client:** Langan  
**Date Received:** 6/20/17 12:30  
**Date Prepared:** 6/21/17  
**Project:** 770641701; 600 South 1st Street

**WorkOrder:** 1706994  
**Extraction Method:** E200.8  
**Analytical Method:** E200.8  
**Unit:** µg/L

### Dissolved CAM / CCR 17 Metals

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
ER-6-GW	1706994-001D	Water	06/17/2017 13:45	ICP-MS2	140853

Analytes	Result	Qualifiers	RL	DF	Date Analyzed
Antimony	1.1	F	0.50	1	06/22/2017 21:04
Arsenic	5.8	F	0.50	1	06/22/2017 21:04
Barium	290	F	5.0	1	06/22/2017 21:04
Beryllium	ND	F	0.50	1	06/22/2017 21:04
Cadmium	ND	F	0.25	1	06/22/2017 21:04
Chromium	ND	F	0.50	1	06/22/2017 21:04
Cobalt	2.1	F	0.50	1	06/22/2017 21:04
Copper	2.1	F	2.0	1	06/22/2017 21:04
Lead	ND	F	0.50	1	06/22/2017 21:04
Mercury	ND	F	0.050	1	06/22/2017 21:04
Molybdenum	27	F	0.50	1	06/22/2017 21:04
Nickel	3.6	F	0.50	1	06/22/2017 21:04
Selenium	5.6	F	0.50	1	06/22/2017 21:04
Silver	ND	F	0.19	1	06/22/2017 21:04
Thallium	ND	F	0.50	1	06/22/2017 21:04
Vanadium	5.1	F	0.50	1	06/22/2017 21:04
Zinc	ND	F	15	1	06/22/2017 21:04

Analyst(s): JC

Analytical Comments: b1



## Analytical Report

**Client:** Langan  
**Date Received:** 6/20/17 12:30  
**Date Prepared:** 6/22/17  
**Project:** 770641701; 600 South 1st Street

**WorkOrder:** 1706994  
**Extraction Method:** SW5030B  
**Analytical Method:** SW8021B/8015Bm  
**Unit:** µg/L

### Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
ER-6-GW	1706994-001A	Water	06/17/2017 13:45	GC3	140940

Analytes	Result	RL	DF	Date Analyzed
TPH(g) (C6-C12)	ND	50	1	06/22/2017 21:52
MTBE	---	5.0	1	06/22/2017 21:52
Benzene	---	0.50	1	06/22/2017 21:52
Toluene	---	0.50	1	06/22/2017 21:52
Ethylbenzene	---	0.50	1	06/22/2017 21:52
Xylenes	---	1.5	1	06/22/2017 21:52

Surrogates	REC (%)	Limits	Date Analyzed
aaa-TFT	109	89-115	06/22/2017 21:52

Analyst(s): HD

Analytical Comments: b1

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-2-GW	1706994-002A	Water	06/17/2017 08:30	GC3	140940

Analytes	Result	RL	DF	Date Analyzed
TPH(g) (C6-C12)	<b>12,000</b>	500	10	06/22/2017 22:24
MTBE	---	50	10	06/22/2017 22:24
Benzene	---	5.0	10	06/22/2017 22:24
Toluene	---	5.0	10	06/22/2017 22:24
Ethylbenzene	---	5.0	10	06/22/2017 22:24
Xylenes	---	15	10	06/22/2017 22:24

Surrogates	REC (%)	Qualifiers	Limits	Date Analyzed
aaa-TFT	177	S	89-115	06/22/2017 22:24

Analyst(s): HD

Analytical Comments: d1,c4,b1



## Analytical Report

**Client:** Langan  
**Date Received:** 6/20/17 12:30  
**Date Prepared:** 6/21/17  
**Project:** 770641701; 600 South 1st Street

**WorkOrder:** 1706994  
**Extraction Method:** SW3510C  
**Analytical Method:** SW8015B  
**Unit:** µg/L

### Total Extractable Petroleum Hydrocarbons w/out SG Clean-Up

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
ER-6-GW	1706994-001A	Water	06/17/2017 13:45	GC9b	140785

Analytes	Result	RL	DF	Date Analyzed
TPH-Diesel (C10-C23)	56	50	1	06/23/2017 02:17
TPH-Motor Oil (C18-C36)	360	250	1	06/23/2017 02:17

Surrogates	REC (%)	Limits	Date Analyzed
C9	91	66-138	06/23/2017 02:17

**Analyst(s):** TK **Analytical Comments:** e7,e2,b1

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
E-2-GW	1706994-002A	Water	06/17/2017 08:30	GC39A	140785

Analytes	Result	RL	DF	Date Analyzed
TPH-Diesel (C10-C23)	13,000	500	10	06/24/2017 16:47
TPH-Motor Oil (C18-C36)	3200	2500	10	06/24/2017 16:47

Surrogates	REC (%)	Limits	Date Analyzed
C26	106	59-139	06/24/2017 16:47

**Analyst(s):** TK **Analytical Comments:** e4,e7,e2,b1



## Quality Control Report

<b>Client:</b> Langan	<b>WorkOrder:</b> 1706994
<b>Date Prepared:</b> 6/21/17	<b>BatchID:</b> 140854
<b>Date Analyzed:</b> 6/24/17	<b>Extraction Method:</b> SW3510C
<b>Instrument:</b> GC20	<b>Analytical Method:</b> SW8082
<b>Matrix:</b> Water	<b>Unit:</b> µg/L
<b>Project:</b> 770641701; 600 South 1st Street	<b>Sample ID:</b> MB/LCS/LCSD-140854

### QC Summary Report for SW8082

Analyte	MB Result	RL	SPK Val	MB SS %REC	MB SS Limits
Aroclor1016	ND	0.50	-	-	-
Aroclor1221	ND	0.50	-	-	-
Aroclor1232	ND	0.50	-	-	-
Aroclor1242	ND	0.50	-	-	-
Aroclor1248	ND	0.50	-	-	-
Aroclor1254	ND	0.50	-	-	-
Aroclor1260	ND	0.50	-	-	-
PCBs, total	ND	0.50	-	-	-

**Surrogate Recovery**

Decachlorobiphenyl	1.164	1.25	93	70-130
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Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
Aroclor1016	3.53	3.50	3.75	94	93	70-130	0.750	20
Aroclor1260	3.53	3.54	3.75	94	95	70-130	0.519	20

**Surrogate Recovery**

Decachlorobiphenyl	1.15	1.15	1.25	92	92	70-130	0	20
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## Quality Control Report

<b>Client:</b>	Langan	<b>WorkOrder:</b>	1706994
<b>Date Prepared:</b>	6/24/17	<b>BatchID:</b>	141011
<b>Date Analyzed:</b>	6/24/17	<b>Extraction Method:</b>	SW5030B
<b>Instrument:</b>	GC18	<b>Analytical Method:</b>	SW8260B
<b>Matrix:</b>	Water	<b>Unit:</b>	µg/L
<b>Project:</b>	770641701; 600 South 1st Street	<b>Sample ID:</b>	MB/LCS/LCSD-141011

### QC Summary Report for SW8260B

Analyte	MB Result	RL	SPK Val	MB SS %REC	MB SS Limits
Acetone	ND	10	-	-	-
tert-Amyl methyl ether (TAME)	ND	0.50	-	-	-
Benzene	ND	0.50	-	-	-
Bromobenzene	ND	0.50	-	-	-
Bromochloromethane	ND	0.50	-	-	-
Bromodichloromethane	ND	0.50	-	-	-
Bromoform	ND	0.50	-	-	-
Bromomethane	ND	0.50	-	-	-
2-Butanone (MEK)	ND	2.0	-	-	-
t-Butyl alcohol (TBA)	ND	2.0	-	-	-
n-Butyl benzene	ND	0.50	-	-	-
sec-Butyl benzene	ND	0.50	-	-	-
tert-Butyl benzene	ND	0.50	-	-	-
Carbon Disulfide	ND	0.50	-	-	-
Carbon Tetrachloride	ND	0.50	-	-	-
Chlorobenzene	ND	0.50	-	-	-
Chloroethane	ND	0.50	-	-	-
Chloroform	ND	0.50	-	-	-
Chloromethane	ND	0.50	-	-	-
2-Chlorotoluene	ND	0.50	-	-	-
4-Chlorotoluene	ND	0.50	-	-	-
Dibromochloromethane	ND	0.50	-	-	-
1,2-Dibromo-3-chloropropane	ND	0.20	-	-	-
1,2-Dibromoethane (EDB)	ND	0.50	-	-	-
Dibromomethane	ND	0.50	-	-	-
1,2-Dichlorobenzene	ND	0.50	-	-	-
1,3-Dichlorobenzene	ND	0.50	-	-	-
1,4-Dichlorobenzene	ND	0.50	-	-	-
Dichlorodifluoromethane	ND	0.50	-	-	-
1,1-Dichloroethane	ND	0.50	-	-	-
1,2-Dichloroethane (1,2-DCA)	ND	0.50	-	-	-
1,1-Dichloroethene	ND	0.50	-	-	-
cis-1,2-Dichloroethene	ND	0.50	-	-	-
trans-1,2-Dichloroethene	ND	0.50	-	-	-
1,2-Dichloropropane	ND	0.50	-	-	-
1,3-Dichloropropane	ND	0.50	-	-	-
2,2-Dichloropropane	ND	0.50	-	-	-
1,1-Dichloropropene	ND	0.50	-	-	-
cis-1,3-Dichloropropene	ND	0.50	-	-	-

(Cont.)





## Quality Control Report

<b>Client:</b>	Langan	<b>WorkOrder:</b>	1706994
<b>Date Prepared:</b>	6/24/17	<b>BatchID:</b>	141011
<b>Date Analyzed:</b>	6/24/17	<b>Extraction Method:</b>	SW5030B
<b>Instrument:</b>	GC18	<b>Analytical Method:</b>	SW8260B
<b>Matrix:</b>	Water	<b>Unit:</b>	µg/L
<b>Project:</b>	770641701; 600 South 1st Street	<b>Sample ID:</b>	MB/LCS/LCSD-141011

### QC Summary Report for SW8260B

Analyte	MB Result	RL	SPK Val	MB SS %REC	MB SS Limits
trans-1,3-Dichloropropene	ND	0.50	-	-	-
Diisopropyl ether (DIPE)	ND	0.50	-	-	-
Ethylbenzene	ND	0.50	-	-	-
Ethyl tert-butyl ether (ETBE)	ND	0.50	-	-	-
Freon 113	ND	0.50	-	-	-
Hexachlorobutadiene	ND	0.50	-	-	-
Hexachloroethane	ND	0.50	-	-	-
2-Hexanone	ND	0.50	-	-	-
Isopropylbenzene	ND	0.50	-	-	-
4-Isopropyl toluene	ND	0.50	-	-	-
Methyl-t-butyl ether (MTBE)	ND	0.50	-	-	-
Methylene chloride	ND	0.50	-	-	-
4-Methyl-2-pentanone (MIBK)	ND	0.50	-	-	-
Naphthalene	ND	0.50	-	-	-
n-Propyl benzene	ND	0.50	-	-	-
Styrene	ND	0.50	-	-	-
1,1,1,2-Tetrachloroethane	ND	0.50	-	-	-
1,1,2,2-Tetrachloroethane	ND	0.50	-	-	-
Tetrachloroethene	ND	0.50	-	-	-
Toluene	ND	0.50	-	-	-
1,2,3-Trichlorobenzene	ND	0.50	-	-	-
1,2,4-Trichlorobenzene	ND	0.50	-	-	-
1,1,1-Trichloroethane	ND	0.50	-	-	-
1,1,2-Trichloroethane	ND	0.50	-	-	-
Trichloroethene	ND	0.50	-	-	-
Trichlorofluoromethane	ND	0.50	-	-	-
1,2,3-Trichloropropane	ND	0.50	-	-	-
1,2,4-Trimethylbenzene	ND	0.50	-	-	-
1,3,5-Trimethylbenzene	ND	0.50	-	-	-
Vinyl Chloride	ND	0.50	-	-	-
Xylenes, Total	ND	0.50	-	-	-

#### Surrogate Recovery

Dibromofluoromethane	28.86	25	115	70-130
Toluene-d8	24.78	25	99	70-130
4-BFB	2.782	2.5	111	70-130

(Cont.)



## Quality Control Report

<b>Client:</b>	Langan	<b>WorkOrder:</b>	1706994
<b>Date Prepared:</b>	6/24/17	<b>BatchID:</b>	141011
<b>Date Analyzed:</b>	6/24/17	<b>Extraction Method:</b>	SW5030B
<b>Instrument:</b>	GC18	<b>Analytical Method:</b>	SW8260B
<b>Matrix:</b>	Water	<b>Unit:</b>	µg/L
<b>Project:</b>	770641701; 600 South 1st Street	<b>Sample ID:</b>	MB/LCS/LCSD-141011

### QC Summary Report for SW8260B

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
Acetone	216	214	200	108	107	46-155	0.878	20
tert-Amyl methyl ether (TAME)	8.93	9.07	10	89	91	54-140	1.60	20
Benzene	9.50	9.64	10	95	96	47-158	1.43	20
Bromobenzene	10.0	10.0	10	100	100	50-155	0	20
Bromochloromethane	10.3	10.3	10	103	103	48-160	0	20
Bromodichloromethane	9.51	9.56	10	95	96	60-156	0.464	20
Bromoform	9.39	9.10	10	94	91	43-149	3.12	20
Bromomethane	6.99	7.16	10	70	72	61-159	2.39	20
2-Butanone (MEK)	43.5	43.3	40	109	108	61-124	0.341	20
t-Butyl alcohol (TBA)	32.4	35.3	40	81	88	42-140	8.62	20
n-Butyl benzene	9.14	9.40	10	91	94	74-138	2.81	20
sec-Butyl benzene	9.62	9.47	10	96	95	72-142	1.62	20
tert-Butyl benzene	9.40	9.40	10	94	94	74-140	0	20
Carbon Disulfide	9.65	9.71	10	97	97	64-127	0	20
Carbon Tetrachloride	9.52	9.68	10	95	97	61-158	1.63	20
Chlorobenzene	9.49	9.62	10	95	96	43-157	1.34	20
Chloroethane	9.38	9.25	10	94	92	50-127	1.48	20
Chloroform	9.80	9.90	10	98	99	56-154	0.955	20
Chloromethane	7.63	7.28	10	76	73	41-132	4.67	20
2-Chlorotoluene	9.45	9.37	10	94	94	50-155	0	20
4-Chlorotoluene	9.56	9.38	10	96	94	53-153	1.87	20
Dibromochloromethane	9.45	9.52	10	94	95	49-156	0.778	20
1,2-Dibromo-3-chloropropane	3.53	3.55	4	88	89	46-149	0.500	20
1,2-Dibromoethane (EDB)	9.90	9.97	10	99	100	44-155	0.631	20
Dibromomethane	10.2	10.2	10	102	102	50-157	0	20
1,2-Dichlorobenzene	9.29	9.62	10	93	96	48-156	3.44	20
1,3-Dichlorobenzene	9.11	9.28	10	91	93	49-159	1.77	20
1,4-Dichlorobenzene	9.33	9.43	10	93	94	51-151	1.12	20
Dichlorodifluoromethane	11.6	11.5	10	116	115	61-117	0.994	20
1,1-Dichloroethane	9.81	9.96	10	98	100	53-153	1.52	20
1,2-Dichloroethane (1,2-DCA)	10.4	10.4	10	104	104	66-125	0	20
1,1-Dichloroethene	9.66	9.69	10	97	97	47-149	0	20
cis-1,2-Dichloroethene	9.83	9.98	10	98	100	54-155	1.52	20
trans-1,2-Dichloroethene	9.65	9.80	10	96	98	46-151	1.53	20
1,2-Dichloropropane	9.95	10.1	10	100	101	54-153	1.51	20
1,3-Dichloropropane	9.74	9.85	10	97	99	49-150	1.13	20
2,2-Dichloropropane	9.33	9.44	10	93	94	74-147	1.16	20
1,1-Dichloropropene	9.56	9.74	10	96	97	54-150	1.90	20
cis-1,3-Dichloropropene	9.03	9.19	10	90	92	55-159	1.78	20

(Cont.)



## Quality Control Report

<b>Client:</b>	Langan	<b>WorkOrder:</b>	1706994
<b>Date Prepared:</b>	6/24/17	<b>BatchID:</b>	141011
<b>Date Analyzed:</b>	6/24/17	<b>Extraction Method:</b>	SW5030B
<b>Instrument:</b>	GC18	<b>Analytical Method:</b>	SW8260B
<b>Matrix:</b>	Water	<b>Unit:</b>	µg/L
<b>Project:</b>	770641701; 600 South 1st Street	<b>Sample ID:</b>	MB/LCS/LCSD-141011

### QC Summary Report for SW8260B

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
trans-1,3-Dichloropropene	9.13	9.17	10	91	92	74-131	0.363	20
Diisopropyl ether (DIPE)	9.73	9.76	10	97	98	57-136	0.268	20
Ethylbenzene	8.98	9.13	10	90	91	60-152	1.59	20
Ethyl tert-butyl ether (ETBE)	9.38	9.44	10	94	94	55-137	0	20
Freon 113	10.2	10.3	10	102	103	47-138	1.05	20
Hexachlorobutadiene	9.05	9.65	10	91	97	66-160	6.43	20
Hexachloroethane	8.66	8.84	10	87	88	75-130	2.06	20
2-Hexanone	9.41	9.54	10	94	95	70-115	1.33	20
Isopropylbenzene	9.23	9.29	10	92	93	59-156	0.576	20
4-Isopropyl toluene	9.34	9.34	10	93	93	75-138	0	20
Methyl-t-butyl ether (MTBE)	9.51	9.59	10	95	96	53-139	0.853	20
Methylene chloride	10.3	10.3	10	103	103	66-127	0	20
4-Methyl-2-pentanone (MIBK)	9.31	9.39	10	93	94	42-153	0.852	20
Naphthalene	9.43	9.67	10	94	97	66-127	2.57	20
n-Propyl benzene	9.57	9.45	10	96	94	54-155	1.28	20
Styrene	8.71	8.59	10	87	86	51-152	1.40	20
1,1,1,2-Tetrachloroethane	9.78	9.88	10	98	99	58-159	1.08	20
1,1,2,2-Tetrachloroethane	9.46	9.55	10	95	96	51-150	0.984	20
Tetrachloroethene	9.08	9.36	10	91	94	55-145	3.06	20
Toluene	8.34	8.57	10	83	86	52-137	2.70	20
1,2,3-Trichlorobenzene	11.3	11.7	10	113	117	70-136	3.10	20
1,2,4-Trichlorobenzene	9.83	9.89	10	98	99	74-137	0.586	20
1,1,1-Trichloroethane	9.42	9.63	10	94	96	57-156	2.16	20
1,1,2-Trichloroethane	9.61	9.68	10	96	97	51-150	0.727	20
Trichloroethene	9.82	10.0	10	98	100	43-157	2.23	20
Trichlorofluoromethane	11.1	11.2	10	111	112	50-147	0.954	20
1,2,3-Trichloropropane	10.6	10.4	10	106	105	41-152	1.70	20
1,2,4-Trimethylbenzene	9.22	9.21	10	92	92	57-157	0	20
1,3,5-Trimethylbenzene	9.12	9.18	10	91	92	56-159	0.722	20
Vinyl Chloride	9.96	9.92	10	100	99	42-137	0.456	20
Xylenes, Total	26.1	26.0	30	87	87	70-130	0	20
<b>Surrogate Recovery</b>								
Dibromofluoromethane	29.2	29.2	25	117	117	70-130	0	20
Toluene-d8	24.8	25.1	25	99	100	70-130	1.40	20
4-BFB	3.13	3.08	2.5	125	123	70-130	1.37	20



## Quality Control Report

<b>Client:</b>	Langan	<b>WorkOrder:</b>	1706994
<b>Date Prepared:</b>	6/20/17	<b>BatchID:</b>	140784
<b>Date Analyzed:</b>	6/20/17	<b>Extraction Method:</b>	E625
<b>Instrument:</b>	GC17	<b>Analytical Method:</b>	SW8270C
<b>Matrix:</b>	Water	<b>Unit:</b>	µg/L
<b>Project:</b>	770641701; 600 South 1st Street	<b>Sample ID:</b>	MB/LCS/LCSD-140784

### QC Summary Report for SW8270C

Analyte	MB Result	RL	SPK Val	MB SS %REC	MB SS Limits
Acenaphthene	ND	2.0	-	-	-
Acenaphthylene	ND	2.0	-	-	-
Acetochlor	ND	2.0	-	-	-
Anthracene	ND	2.0	-	-	-
Benzidine	ND	10	-	-	-
Benzo (a) anthracene	ND	2.0	-	-	-
Benzo (a) pyrene	ND	2.0	-	-	-
Benzo (b) fluoranthene	ND	2.0	-	-	-
Benzo (g,h,i) perylene	ND	2.0	-	-	-
Benzo (k) fluoranthene	ND	2.0	-	-	-
Benzyl Alcohol	ND	10	-	-	-
1,1-Biphenyl	ND	2.0	-	-	-
Bis (2-chloroethoxy) Methane	ND	2.0	-	-	-
Bis (2-chloroethyl) Ether	ND	2.0	-	-	-
Bis (2-chloroisopropyl) Ether	ND	2.0	-	-	-
Bis (2-ethylhexyl) Adipate	ND	2.0	-	-	-
Bis (2-ethylhexyl) Phthalate	ND	4.0	-	-	-
4-Bromophenyl Phenyl Ether	ND	10	-	-	-
Butylbenzyl Phthalate	ND	2.0	-	-	-
4-Chloroaniline	ND	4.0	-	-	-
4-Chloro-3-methylphenol	ND	10	-	-	-
2-Chloronaphthalene	ND	2.0	-	-	-
2-Chlorophenol	ND	2.0	-	-	-
4-Chlorophenyl Phenyl Ether	ND	2.0	-	-	-
Chrysene	ND	2.0	-	-	-
Dibenzo (a,h) anthracene	ND	2.0	-	-	-
Dibenzofuran	ND	2.0	-	-	-
Di-n-butyl Phthalate	ND	2.0	-	-	-
1,2-Dichlorobenzene	ND	2.0	-	-	-
1,3-Dichlorobenzene	ND	2.0	-	-	-
1,4-Dichlorobenzene	ND	2.0	-	-	-
3,3-Dichlorobenzidine	ND	4.0	-	-	-
2,4-Dichlorophenol	ND	2.0	-	-	-
Diethyl Phthalate	ND	2.0	-	-	-
2,4-Dimethylphenol	ND	2.0	-	-	-
Dimethyl Phthalate	ND	2.0	-	-	-
4,6-Dinitro-2-methylphenol	ND	10	-	-	-
2,4-Dinitrophenol	ND	25	-	-	-
2,4-Dinitrotoluene	ND	2.0	-	-	-

(Cont.)

NELAP 4033ORELAP

QA/QC Officer



## Quality Control Report

<b>Client:</b>	Langan	<b>WorkOrder:</b>	1706994
<b>Date Prepared:</b>	6/20/17	<b>BatchID:</b>	140784
<b>Date Analyzed:</b>	6/20/17	<b>Extraction Method:</b>	E625
<b>Instrument:</b>	GC17	<b>Analytical Method:</b>	SW8270C
<b>Matrix:</b>	Water	<b>Unit:</b>	µg/L
<b>Project:</b>	770641701; 600 South 1st Street	<b>Sample ID:</b>	MB/LCS/LCSD-140784

### QC Summary Report for SW8270C

Analyte	MB Result	RL	SPK Val	MB SS %REC	MB SS Limits
2,6-Dinitrotoluene	ND	2.0	-	-	-
Di-n-octyl Phthalate	ND	2.0	-	-	-
1,2-Diphenylhydrazine	ND	2.0	-	-	-
Fluoranthene	ND	2.0	-	-	-
Fluorene	ND	2.0	-	-	-
Hexachlorobenzene	ND	2.0	-	-	-
Hexachlorobutadiene	ND	2.0	-	-	-
Hexachlorocyclopentadiene	ND	10	-	-	-
Hexachloroethane	ND	2.0	-	-	-
Indeno (1,2,3-cd) pyrene	ND	2.0	-	-	-
Isophorone	ND	2.0	-	-	-
2-Methylnaphthalene	ND	2.0	-	-	-
2-Methylphenol (o-Cresol)	ND	2.0	-	-	-
3 & 4-Methylphenol (m,p-Cresol)	ND	2.0	-	-	-
Naphthalene	ND	2.0	-	-	-
2-Nitroaniline	ND	10	-	-	-
3-Nitroaniline	ND	10	-	-	-
4-Nitroaniline	ND	10	-	-	-
Nitrobenzene	ND	2.0	-	-	-
2-Nitrophenol	ND	10	-	-	-
4-Nitrophenol	ND	10	-	-	-
N-Nitrosodiphenylamine	ND	2.0	-	-	-
N-Nitrosodi-n-propylamine	ND	2.0	-	-	-
Pentachlorophenol	ND	10	-	-	-
Phenanthrene	ND	2.0	-	-	-
Phenol	ND	2.0	-	-	-
Pyrene	ND	2.0	-	-	-
Pyridine	ND	2.0	-	-	-
1,2,4-Trichlorobenzene	ND	2.0	-	-	-
2,4,5-Trichlorophenol	ND	2.0	-	-	-
2,4,6-Trichlorophenol	ND	2.0	-	-	-



## Quality Control Report

<b>Client:</b>	Langan	<b>WorkOrder:</b>	1706994
<b>Date Prepared:</b>	6/20/17	<b>BatchID:</b>	140784
<b>Date Analyzed:</b>	6/20/17	<b>Extraction Method:</b>	E625
<b>Instrument:</b>	GC17	<b>Analytical Method:</b>	SW8270C
<b>Matrix:</b>	Water	<b>Unit:</b>	µg/L
<b>Project:</b>	770641701; 600 South 1st Street	<b>Sample ID:</b>	MB/LCS/LCSD-140784

### QC Summary Report for SW8270C

Analyte	MB Result	RL	SPK Val	MB SS %REC	MB SS Limits
<b>Surrogate Recovery</b>					
2-Fluorophenol	23.22		20	116	8-130
Phenol-d5	24.5		20	123	5-130
Nitrobenzene-d5	20.9		20	105	20-140
2-Fluorobiphenyl	21.23		20	106	40-140
2,4,6-Tribromophenol	23.17		20	116	16-180
4-Terphenyl-d14	23.6		20	118	40-170



## Quality Control Report

**Client:** Langan  
**Date Prepared:** 6/20/17  
**Date Analyzed:** 6/20/17  
**Instrument:** GC17  
**Matrix:** Water  
**Project:** 770641701; 600 South 1st Street

**WorkOrder:** 1706994  
**BatchID:** 140784  
**Extraction Method:** E625  
**Analytical Method:** SW8270C  
**Unit:** µg/L  
**Sample ID:** MB/LCS/LCSD-140784

### QC Summary Report for SW8270C

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
Acenaphthene	9.28	9.32	10	93	93	63-119	0	25
Acenaphthylene	9.34	9.27	10	93	93	57-125	0	25
Acetochlor	7.90	7.87	10	79	79	30-130	0	25
Anthracene	9.18	8.77	10	92	88	67-130	4.50	25
Benzidine	30.2	33.2	50	60	66	43-106	9.43	25
Benzo (a) anthracene	7.93	8.08	10	79	81	64-109	1.92	25
Benzo (a) pyrene	9.43	9.48	10	94	95	74-130	0.563	25
Benzo (b) fluoranthene	9.67	9.81	10	97	98	70-128	1.44	25
Benzo (g,h,i) perylene	8.46	8.66	10	85	87	69-128	2.37	25
Benzo (k) fluoranthene	9.27	9.20	10	93	92	66-130	0.747	25
Benzyl Alcohol	43.6	42.2	50	87	84	53-117	3.09	25
1,1-Biphenyl	8.77	8.72	10	88	87	78-107	0.507	25
Bis (2-chloroethoxy) Methane	8.59	8.50	10	86	85	60-118	1.11	25
Bis (2-chloroethyl) Ether	9.11	8.93	10	91	89	47-116	2.03	25
Bis (2-chloroisopropyl) Ether	8.38	8.25	10	84	82	44-116	1.65	25
Bis (2-ethylhexyl) Adipate	9.05	8.95	10	90	89	55-122	1.10	25
Bis (2-ethylhexyl) Phthalate	9.16	9.01	10	92	90	64-131	1.68	25
4-Bromophenyl Phenyl Ether	ND	ND	10	85	80	68-129	5.14	25
Butylbenzyl Phthalate	8.89	8.94	10	89	89	66-131	0	25
4-Chloroaniline	8.74	8.82	10	87	88	63-120	0.867	25
4-Chloro-3-methylphenol	ND	ND	10	92	92	69-127	0	25
2-Chloronaphthalene	9.13	9.21	10	91	92	61-120	0.847	25
2-Chlorophenol	8.77	8.72	10	88	87	49-119	0.581	25
4-Chlorophenyl Phenyl Ether	9.28	9.20	10	93	92	65-124	0.937	25
Chrysene	7.84	8.08	10	78	81	67-121	3.00	25
Dibenzo (a,h) anthracene	8.63	8.67	10	86	87	74-126	0.452	25
Dibenzofuran	9.28	9.20	10	93	92	64-122	0.932	25
Di-n-butyl Phthalate	8.35	7.96	10	83	80	64-139	4.78	25
1,2-Dichlorobenzene	8.56	8.22	10	86	82	44-115	4.10	25
1,3-Dichlorobenzene	8.30	8.27	10	83	83	42-114	0	25
1,4-Dichlorobenzene	8.24	8.31	10	82	83	43-114	0.897	25
3,3-Dichlorobenzidine	8.05	8.30	10	80	83	10-154	3.09	25
2,4-Dichlorophenol	8.92	8.96	10	89	90	65-123	0.487	25
Diethyl Phthalate	9.06	8.94	10	91	89	62-127	1.34	25
2,4-Dimethylphenol	9.08	8.88	10	91	89	60-119	2.16	25
Dimethyl Phthalate	9.04	8.94	10	90	89	63-125	1.15	25
4,6-Dinitro-2-methylphenol	34.6	35.7	50	69	71	59-123	3.04	25
2,4-Dinitrophenol	28.9	32.0	50	58	64	43-127	10.0	25
2,4-Dinitrotoluene	9.37	9.45	10	94	95	68-125	0.869	25

(Cont.)

NELAP 4033ORELAP

QA/QC Officer



## Quality Control Report

**Client:** Langan  
**Date Prepared:** 6/20/17  
**Date Analyzed:** 6/20/17  
**Instrument:** GC17  
**Matrix:** Water  
**Project:** 770641701; 600 South 1st Street

**WorkOrder:** 1706994  
**BatchID:** 140784  
**Extraction Method:** E625  
**Analytical Method:** SW8270C  
**Unit:** µg/L  
**Sample ID:** MB/LCS/LCSD-140784

### QC Summary Report for SW8270C

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
2,6-Dinitrotoluene	9.46	9.38	10	95	94	66-126	0.864	25
Di-n-octyl Phthalate	11.2	11.2	10	112	112	58-141	0	25
1,2-Diphenylhydrazine	8.89	8.43	10	89	84	66-128	5.33	25
Fluoranthene	8.76	8.48	10	88	85	68-134	3.20	25
Fluorene	9.44	9.35	10	94	93	63-121	0.962	25
Hexachlorobenzene	8.52	7.87	10	85	79	68-127	7.86	25
Hexachlorobutadiene	8.29	8.06	10	83	81	48-122	2.82	25
Hexachlorocyclopentadiene	30.9	30.8	50	62	62	36-109	0	25
Hexachloroethane	7.99	8.01	10	80	80	43-116	0	25
Indeno (1,2,3-cd) pyrene	8.52	8.60	10	85	86	73-128	0.933	25
Isophorone	8.64	8.52	10	86	85	64-121	1.33	25
2-Methylnaphthalene	9.00	8.62	10	90	86	58-122	4.36	25
2-Methylphenol (o-Cresol)	10.0	9.80	10	100	98	55-121	2.08	25
3 & 4-Methylphenol (m,p-Cresol)	9.55	9.41	10	95	94	58-121	1.46	25
Naphthalene	8.63	8.40	10	86	84	53-120	2.70	25
2-Nitroaniline	46.1	45.9	50	92	92	65-124	0	25
3-Nitroaniline	46.7	46.9	50	93	94	67-125	0.312	25
4-Nitroaniline	46.5	46.8	50	93	94	65-124	0.525	25
Nitrobenzene	8.53	8.41	10	85	84	54-125	1.43	25
2-Nitrophenol	44.0	43.5	50	88	87	56-132	1.12	25
4-Nitrophenol	46.4	46.0	50	93	92	60-126	0.995	25
N-Nitrosodiphenylamine	8.98	8.60	10	90	86	67-132	4.26	25
N-Nitrosodi-n-propylamine	8.77	8.30	10	88	83	61-120	5.52	25
Pentachlorophenol	15.0	14.6	20	75	73	50-146	3.30	25
Phenanthrene	8.37	8.00	10	84	80	67-127	4.58	25
Phenol	8.76	8.84	10	88	88	52-119	0	25
Pyrene	8.50	8.62	10	85	86	67-132	1.48	25
Pyridine	7.32	7.24	10	73	72	40-160	1.14	25
1,2,4-Trichlorobenzene	8.41	8.12	10	84	81	50-121	3.56	25
2,4,5-Trichlorophenol	8.90	9.04	10	89	90	62-124	1.56	25
2,4,6-Trichlorophenol	8.92	9.10	10	89	91	61-125	2.03	25





## Quality Control Report

<b>Client:</b>	Langan	<b>WorkOrder:</b>	1706994
<b>Date Prepared:</b>	6/20/17	<b>BatchID:</b>	140784
<b>Date Analyzed:</b>	6/20/17	<b>Extraction Method:</b>	E625
<b>Instrument:</b>	GC17	<b>Analytical Method:</b>	SW8270C
<b>Matrix:</b>	Water	<b>Unit:</b>	µg/L
<b>Project:</b>	770641701; 600 South 1st Street	<b>Sample ID:</b>	MB/LCS/LCSD-140784

### QC Summary Report for SW8270C

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
<b>Surrogate Recovery</b>								
2-Fluorophenol	20.6	20.7	20	103	104	29-140	0.293	25
Phenol-d5	22.8	22.4	20	114	112	38-148	1.84	25
Nitrobenzene-d5	21.4	21.3	20	107	107	31-152	0	25
2-Fluorobiphenyl	21.4	21.6	20	107	108	40-140	0.649	25
2,4,6-Tribromophenol	23.0	21.5	20	115	107	39-150	6.88	25
4-Terphenyl-d14	21.2	22.2	20	106	111	38-147	4.66	25



## Quality Control Report

**Client:** Langan  
**Date Prepared:** 6/21/17  
**Date Analyzed:** 6/22/17  
**Instrument:** ICP-MS2  
**Matrix:** Water  
**Project:** 770641701; 600 South 1st Street

**WorkOrder:** 1706994  
**BatchID:** 140853  
**Extraction Method:** E200.8  
**Analytical Method:** E200.8  
**Unit:** µg/L  
**Sample ID:** MB/LCS-140853  
 1706994-001DMS/MSD

### QC Summary Report for Dissolved Metals

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Antimony	ND	48.6	0.50	50	-	97	85-115
Arsenic	ND	50.7	0.50	50	-	101	85-115
Barium	ND	505	5.0	500	-	101	85-115
Beryllium	ND	49.0	0.50	50	-	98	85-115
Cadmium	ND	48.3	0.25	50	-	97	85-115
Chromium	ND	48.8	0.50	50	-	98	85-115
Cobalt	ND	47.1	0.50	50	-	94	85-115
Copper	ND	49.0	2.0	50	-	98	85-115
Lead	ND	47.8	0.50	50	-	96	85-115
Mercury	ND	1.28	0.050	1.25	-	103	85-115
Molybdenum	ND	50.8	0.50	50	-	102	85-115
Nickel	ND	50.0	0.50	50	-	100	85-115
Selenium	ND	48.9	0.50	50	-	98	85-115
Silver	ND	49.7	0.19	50	-	99	85-115
Thallium	ND	44.8	0.50	50	-	90	85-115
Vanadium	ND	49.2	0.50	50	-	98	85-115
Zinc	ND	489	15	500	-	98	85-115

(Cont.)



## Quality Control Report

<b>Client:</b>	Langan	<b>WorkOrder:</b>	1706994
<b>Date Prepared:</b>	6/21/17	<b>BatchID:</b>	140853
<b>Date Analyzed:</b>	6/22/17	<b>Extraction Method:</b>	E200.8
<b>Instrument:</b>	ICP-MS2	<b>Analytical Method:</b>	E200.8
<b>Matrix:</b>	Water	<b>Unit:</b>	µg/L
<b>Project:</b>	770641701; 600 South 1st Street	<b>Sample ID:</b>	MB/LCS-140853 1706994-001DMS/MSD

### QC Summary Report for Dissolved Metals

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
Antimony	50.5	49.4	50	1.075	99	97	70-130	2.20	20
Arsenic	57.6	57.2	50	5.787	104	103	70-130	0.871	20
Barium	818	799	500	293.1	105	101	70-130	2.36	20
Beryllium	47.5	46.1	50	ND	95	92	70-130	2.93	20
Cadmium	48.5	49.2	50	ND	97	98	70-130	1.45	20
Chromium	48.6	49.6	50	ND	96	98	70-130	2.10	20
Cobalt	46.6	45.3	50	2.102	89	86	70-130	2.83	20
Copper	48.7	49.6	50	2.072	93	95	70-130	2.01	20
Lead	49.9	47.9	50	ND	99	95	70-130	4.15	20
Mercury	1.36	1.40	1.25	ND	106	109	70-130	3.05	20
Molybdenum	79.3	78.3	50	27.24	104	102	70-130	1.31	20
Nickel	51.0	51.9	50	3.563	95	97	70-130	1.61	20
Selenium	54.7	55.4	50	5.638	98	99	70-130	1.22	20
Silver	48.3	47.6	50	ND	97	95	70-130	1.42	20
Thallium	47.0	45.1	50	ND	94	90	70-130	4.06	20
Vanadium	54.7	55.5	50	5.120	99	101	70-130	1.43	20
Zinc	477	485	500	ND	94	96	70-130	1.68	20



## Quality Control Report

<b>Client:</b>	Langan	<b>WorkOrder:</b>	1706994
<b>Date Prepared:</b>	6/22/17	<b>BatchID:</b>	140940
<b>Date Analyzed:</b>	6/22/17	<b>Extraction Method:</b>	SW5030B
<b>Instrument:</b>	GC3	<b>Analytical Method:</b>	SW8021B/8015Bm
<b>Matrix:</b>	Water	<b>Unit:</b>	µg/L
<b>Project:</b>	770641701; 600 South 1st Street	<b>Sample ID:</b>	MB/LCS-140940 1706A12-001AMS/MSD

### QC Summary Report for SW8021B/8015Bm

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
TPH(btex)	ND	51.2	40	60	-	85	78-116
MTBE	ND	11.3	5.0	10	-	113	72-122
Benzene	ND	9.16	0.50	10	-	92	81-123
Toluene	ND	9.82	0.50	10	-	98	83-129
Ethylbenzene	ND	10.1	0.50	10	-	101	88-126
Xylenes	ND	29.4	1.5	30	-	98	87-131
<b>Surrogate Recovery</b>							
aaa-TFT	10.61	10.3		10	106	103	89-116

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
TPH(btex)	52.9	53.7	60	ND	88	90	63-133	1.43	20
MTBE	11.1	11.6	10	ND	111	116	69-122	3.93	20
Benzene	9.02	9.41	10	ND	90	94	84-125	4.21	20
Toluene	9.53	9.97	10	ND	95	100	87-131	4.54	20
Ethylbenzene	9.71	10.1	10	ND	97	101	92-126	3.64	20
Xylenes	28.9	28.6	30	ND	96	95	88-132	1.04	20
<b>Surrogate Recovery</b>									
aaa-TFT	10.3	10.5	10		103	105	90-117	2.47	20



## Quality Control Report

<b>Client:</b> Langan	<b>WorkOrder:</b> 1706994
<b>Date Prepared:</b> 6/20/17	<b>BatchID:</b> 140785
<b>Date Analyzed:</b> 6/21/17	<b>Extraction Method:</b> SW3510C
<b>Instrument:</b> GC39A	<b>Analytical Method:</b> SW8015B
<b>Matrix:</b> Water	<b>Unit:</b> µg/L
<b>Project:</b> 770641701; 600 South 1st Street	<b>Sample ID:</b> MB/LCS/LCSD-140785

### QC Report for SW8015B w/out SG Clean-Up

Analyte	MB Result	RL	SPK Val	MB SS %REC	MB SS Limits
TPH-Diesel (C10-C23)	ND	50	-	-	-
TPH-Motor Oil (C18-C36)	ND	250	-	-	-

**Surrogate Recovery**

C9	613		625	98	79-111
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Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
TPH-Diesel (C10-C23)	1250	1200	1000	125	120	88-134	4.42	30
<b>Surrogate Recovery</b>								
C9	620	625	625	99	100	79-111	0.782	30



1534 Willow Pass Rd  
Pittsburg, CA 94565-1701  
(925) 252-9262

# CHAIN-OF-CUSTODY RECORD

WorkOrder: 1706994

ClientCode: TWRF

WaterTrax   
  WriteOn   
  EDF   
  Excel   
  EQuIS   
 Email   
 HardCopy   
 ThirdParty   
 J-flag

**Report to:**

Peter Cusack  
Langan  
555 Montgomery St., Suite 1300  
San Francisco, CA 94111  
(415) 955-5244    FAX: (415) 955-9041

Email: pcusack@langan.com  
cc/3rd Party: kstaehlin@langan.com;  
PO:  
ProjectNo: 770641701; 600 South 1st Street

**Bill to:**

Accounts Payable  
Langan  
555 Montgomery St., Suite 1300  
San Francisco, CA 94111  
Langan\_InvoiceCapture@concursoft.com

**Requested TAT: 5 days;**

**Date Received: 06/20/2017**

**Date Logged: 06/21/2017**

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)											
					1	2	3	4	5	6	7	8	9	10	11	12
1706994-001	ER-6-GW	Water	6/17/2017 13:45	<input type="checkbox"/>	E	B	C	D	A	D	A					
1706994-002	E-2-GW	Water	6/17/2017 08:30	<input type="checkbox"/>		B			A		A					

**Test Legend:**

1	8082_PCB_W	2	8260B_W	3	8270_W	4	CAM17MS DISS
5	G-MBTEX_W	6	PRDISSOLVED	7	TPH(DMO)_W	8	
9		10		11		12	

**Prepared by: Agustina Venegas**

The following SampIDs: 001A, 002A contain testgroup Multi Range\_W.

**Comments:**

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).  
Hazardous samples will be returned to client or disposed of at client expense.



### WORK ORDER SUMMARY

**Client Name:** LANGAN  
**Client Contact:** Peter Cusack  
**Contact's Email:** pcusack@langan.com

**Project:** 770641701; 600 South 1st Street

**Work Order:** 1706994  
**QC Level:** LEVEL 2  
**Date Logged:** 6/21/2017

**Comments:**

WaterTrax     WriteOn     EDF     Excel     Fax     Email     HardCopy     ThirdParty     J-flag

Lab ID	Client ID	Matrix	Test Name	Containers /Composites	Bottle & Preservative	De-chlorinated	Collection Date & Time	TAT	Sediment Content	Hold	SubOut
1706994-001A	ER-6-GW	Water	Multi-Range TPH(g,d,mo) by EPA 8015Bm	4	2 VOAs w/HCL + 2-aVOAs (multi-range)	<input type="checkbox"/>	6/17/2017 13:45	5 days	10%+	<input type="checkbox"/>	
1706994-001B	ER-6-GW	Water	SW8260B (VOCs)	2	VOA w/ HCl	<input type="checkbox"/>	6/17/2017 13:45	5 days	10%+	<input type="checkbox"/>	
1706994-001C	ER-6-GW	Water	SW8270C (SVOCs)	1	1LA Narrow Mouth	<input type="checkbox"/>	6/17/2017 13:45	5 days	10%+	<input type="checkbox"/>	
1706994-001D	ER-6-GW	Water	E200.8 (CAM 17) (Dissolved-Lab Filtered)	1	250mL HDPE, unprsv.	<input type="checkbox"/>	6/17/2017 13:45	5 days	10%+	<input type="checkbox"/>	
1706994-001E	ER-6-GW	Water	SW8082 (PCBs Only)	1	VOA	<input type="checkbox"/>	6/17/2017 13:45	5 days	10%+	<input type="checkbox"/>	
1706994-002A	E-2-GW	Water	Multi-Range TPH(g,d,mo) by EPA 8015Bm	4	2 VOAs w/HCL + 2-aVOAs (multi-range)	<input type="checkbox"/>	6/17/2017 8:30	5 days	25%+	<input type="checkbox"/>	
1706994-002B	E-2-GW	Water	SW8260B (VOCs)	2	VOA w/ HCl	<input type="checkbox"/>	6/17/2017 8:30	5 days	25%+	<input type="checkbox"/>	

**NOTES:** - STLC and TCLP extractions require 2 days to complete; therefore, all TATs begin after the extraction is completed (i.e., One-day TAT yields results in 3 days from sample submission).  
- MAI assumes that all material present in the provided sampling container is considered part of the sample - MAI does not exclude any material from the sample prior to sample preparation unless requested in writing by the client.

1706994

\* PLEASE C.C. ANNIE S. \*  
 @ KSTAHLIN@LANGAN.COM 11458

**LANGAN**

**CHAIN OF CUSTODY RECORD**

- 555 Montgomery Street, Suite 1300, San Francisco, CA 94111
- 501 14th Street, Third Floor, Oakland CA 94612
- 3320 Data Drive, Suite 350, Rancho Cordova, CA 95670-7982
- 4030 Moorpark Ave. Suite 210, San Jose, CA 95117-1849

Site Name: 600 Saturn 24 Street  
 Job Number: 770641701  
 Project Manager/Contact: Peter Wyack  
 Samplers: Wendy Puro & KSS  
 Recorder (Signature Required): [Signature]

Turnaround Time  
standard

Field Sample Identification No.	Date	Time	Lab Sample No.	Matrix				No. Containers & Preservative						Analysis Requested										Silica gel clean-up	Hold	Remarks		
				Soil	Water	Air	Other	HCL	H <sub>2</sub> SO <sub>4</sub>	HNO <sub>3</sub>	Ice	MA	PH-7.1, m	VOCs	SOLs	CMIA	PCBs											
<u>EB-6-GW</u>	<u>6/17/17</u>	<u>1345</u>			<u>X</u>			<u>6</u>				<u>5</u>	<u>7</u>			<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>	<u>X</u>								<u>- please filter sample in lab</u>
<u>E-2-GW</u>	<u>6/17/17</u>	<u>0830</u>			<u>X</u>			<u>4</u>				<u>4</u>				<u>X</u>	<u>X</u>											

+10  
+25

Relinquished by: (Signature) <u>[Signature]</u>	Date: <u>6-20-17</u>	Time: <u>0940</u>	Received by: (Signature) <u>[Signature]</u>	Date: <u>6-20-17</u>	Time: <u>0940</u>
Relinquished by: (Signature) <u>[Signature]</u>	Date: <u>6-20-17</u>	Time: <u>1230</u>	Received by: (Signature) <u>[Signature]</u>	Date: <u>6/20</u>	Time: <u>1230</u>
Relinquished by: (Signature) <u>[Signature]</u>	Date: <u>6-20-17</u>	Time: <u>1230</u>	Received by Lab: (Signature) <u>[Signature]</u>	Date: <u>6/20</u>	Time: <u>1230</u>

Sent to Laboratory (Name): MCCAMPBELL ANALYTICAL  
 Laboratory Comments/Notes: \_\_\_\_\_  
 Method of Shipment:  Lab courier  Fed Ex  Airborne  UPS  
 Hand Carried  Private Courier (Co. Name) \_\_\_\_\_

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### Sample Receipt Checklist

Client Name: **Langan**  
 Project Name: **770641701; 600 South 1st Street**  
 WorkOrder No: **1706994** Matrix: Water  
 Carrier: Bernie Cummins (MAI Courier)

Date and Time Received: **6/20/2017 12:30**  
 Date Logged: **6/21/2017**  
 Received by: **Agustina Venegas**  
 Logged by: **Agustina Venegas**

#### Chain of Custody (COC) Information

Chain of custody present? Yes  No   
 Chain of custody signed when relinquished and received? Yes  No   
 Chain of custody agrees with sample labels? Yes  No   
 Sample IDs noted by Client on COC? Yes  No   
 Date and Time of collection noted by Client on COC? Yes  No   
 Sampler's name noted on COC? Yes  No

#### Sample Receipt Information

Custody seals intact on shipping container/cooler? Yes  No  NA   
 Shipping container/cooler in good condition? Yes  No   
 Samples in proper containers/bottles? Yes  No   
 Sample containers intact? Yes  No   
 Sufficient sample volume for indicated test? Yes  No

#### Sample Preservation and Hold Time (HT) Information

All samples received within holding time? Yes  No  NA   
 Sample/Temp Blank temperature Temp: 8.9°C NA   
 Water - VOA vials have zero headspace / no bubbles? Yes  No  NA   
 Sample labels checked for correct preservation? Yes  No   
 pH acceptable upon receipt (Metal: <2; 522: <4; 218.7: >8)? Yes  No  NA   
 Samples Received on Ice? Yes  No   
 (Ice Type: WET ICE )

#### UCMR3 Samples:

Total Chlorine tested and acceptable upon receipt for EPA 522? Yes  No  NA   
 Free Chlorine tested and acceptable upon receipt for EPA 218.7, 300.1, 537, 539? Yes  No  NA

Comments: