

TO: Max Shahbazian, PG
Regional Water Quality Control Board, San Francisco Bay Region

Melanie Morash
United States Environmental Protection Agency

CC: Hector Vargas, Jon Weisberg and Elma Fung, Texas Instruments, Inc.
Shaun Moore and Heather O’Cleirigh, Advanced Micro Devices, Inc.
Peter Bennett, Haley & Aldrich, Inc.

FROM: Joshua Graber, Senior Project Manager
Dorinda Shipman, Principal, PG, CHG

DATE: 26 May 2015

PROJECT: Off-Property Vapor Intrusion Assessment
Building SU3-8
Sunnyvale, California
Project Number: 750620726

SUBJECT: Results of Indoor Air Testing at Building SU3-8, March 2015

Langan Treadwell Rollo (Langan), on behalf of Texas Instruments (TI) and Advanced Micro Devices (AMD), has completed pathway and ambient air testing at the buildings identified as SU3-8 (site) in our *Addendum to Work Plan for Off-Property Vapor Intrusion Assessment, Building SU3-8, Sunnyvale, California* dated 12 March 2015 (Work Plan Addendum). Building SU3-8 was not proposed for indoor air or pathway sample collection in our *Work Plan for Off-Property Vapor Intrusion Assessment, National Semiconductor and Monolithic Memories Superfund Sites Operable Unit 1, Subunits 1 and 3* dated 28 August 2014 (Work Plan) because Building SU3-8 does not overlie shallow groundwater concentrations of trichloroethylene (TCE) greater than 100 micrograms per liter ($\mu\text{g/L}$). However, in an email dated 20 November 2014, the United States Environmental Protection Agency (USEPA) recommended that an external, visual survey be completed to assess whether sampling SU3-8 during the winter/heating season was appropriate. The San Francisco Bay Regional Water Quality Control Board (Water Board) concurred with the USEPA’s comments on 21 November 2014.

As described in the Work Plan Addendum, Langan Treadwell Rollo visited SU3-8 to gather information related to the layout and construction of the buildings which comprise SU3-8 on 29 January 2015. The information obtained during that site visit was summarized in an email to USEPA and Water Board representatives on 3 February 2015 along with a recommended evaluation approach for assessing vapor intrusion risk. Langan recommended evaluating the

potential pathways associated with the elevators in Buildings 1245, 1247 and 1257 in an email dated 6 February 2015, as these are the only buildings with elevators that open into enclosed, common spaces. Based on the construction and layout of the buildings, the Water Board and USEPA concurred with our recommendation by email dated 6 February 2015. Our proposed approach along with additional site information was provided to the Water Board and USEPA in our Work Plan Addendum, which was subsequently approved by email dated 17 March 2015. The sampling and analysis described herein were conducted in general accordance with the Work Plan and Work Plan Addendum, with the following exception. Heating, ventilation, and air conditioning (HVAC) units were operating normally during sampling in the elevator lobbies. According to the property owner, HVAC units in the common areas of Buildings 1245, 1247, and 1257 are set to a constant temperature and operate every day in the same manner. Therefore, as advised by the property owner, we were not able to turn the HVAC units off for sampling.

Building and Area Description

SU3-8 is zoned in a residential area of Sunnyvale, California and is comprised of an apartment community (Figure 1). This site was not identified in our Work Plan with a site-specific identification number and therefore, was identified as SU3-8 in the Work Plan Addendum for sample identification and reporting purposes.

Groundwater is expected to be present at approximately 12 feet below ground surface with TCE concentrations beneath the site estimated to be between 5 and 15 µg/L.

SU3-8 is comprised of 12 apartment buildings constructed over at least one or, in most cases, two levels of ventilated parking and/or storage (Figure 2). None of the apartments or normally-occupied spaces (i.e. leasing offices) are constructed on-grade. Each level of unattended parking and/or storage has a grated gate that allows for natural outdoor air ventilation. In addition to the grated gates, several grated openings are present in the parking areas that allow for additional ventilation. Also, when carbon monoxide levels, exceed pre-determined levels due to vehicle exhaust, a mechanically-controlled fan is automatically activated to ventilate these areas. HVAC units in the elevator lobbies are set to a constant temperature and operate every day in the same manner; therefore, as advised by the property owner, HVAC systems could not be adjusted in any of the areas sampled over the sampling period. A health club and spa consisting of exercise equipment, steam room and hot tubs is located in Building 1257. At the time of the sampling, Building 1257 was under renovation. We understand the renovations mainly consisted of demolition at the time of sampling; however, access was not provided to the areas under construction. Photographs of accessible areas and the construction occurring at the time of sampling are included in Appendix A.

A dewatering system is present beneath the SU3-8 site. The dewatering system was installed in 1990 during construction of the apartment community. Water generated by the dewatering system is pumped to a treatment system located along Lakeside Drive where it is treated and ultimately discharged under National Pollutant Discharge Elimination System (NPDES) permit¹.

Summary of Sampling Method/Approach

Building surveys and inventories were completed at Buildings 1245, 1247 and 1257 on 29 January and 19 February 2015 by Langan personnel. The building surveys and inventory were completed to identify potential preferential pathways for vapor migration, potential indoor sources of volatile organic compounds (VOCs), and appropriate sample locations. The surveys consisted of evaluating accessible areas such as parking garages, accessible storage units, mechanical and electrical rooms, elevator rooms, and lobbies using a photoionization detector (PID) capable of measuring volatile organic vapors down to the part per billion (ppb) level. During the survey, the PID was used to assess whether specific areas contained measurable or elevated concentrations of VOCs and to identify potential preferential pathways for soil vapor migration such as gaps and cracks in building foundations, slab penetrations (such as piping and utility lines), floor drains, elevators, sumps, fire suppression lines, and sanitary sewer cleanouts. The following preferential pathways were identified during the building surveys: elevators and drains in the garage spaces. Fire suppression lines enter the buildings at the ground level and do not penetrate the slab in contact with the ground. Mechanical rooms were also observed; however, slab penetrations were not identified on the lowest level.

Based on the observations made during the building surveys, the following sample locations were proposed in the Work Plan Addendum and subsequently approved by USEPA and the Water Board.

Building 1245 Sample Locations

- One pathway sample in the elevator lobby on the first occupied floor.
- One pathway sample in the elevator lobby beneath the first occupied floor (ground level).
- One pathway sample in the ground level garage area outside the elevator lobby.

¹ First Quarter 2015 NPDES Self-Monitoring Report, Texas Instruments, Inc. (formerly National Semiconductor Corporation) – Treated Groundwater Discharge NPDES Permit No. CAG912002 – RWQCB Order No. R2-2012-0012, April 2015.

MEMO

Building 1247 Sample Locations

- One pathway sample in the elevator lobby on the first occupied floor.
- One pathway sample in the elevator lobby beneath the first occupied floor (ground level).
- One pathway sample in the ground level garage area outside the elevator lobby.

Building 1257 Sample Locations

- One pathway sample in the elevator lobby on the first occupied floor.
- One pathway sample in the elevator lobby beneath the first occupied floor (ground level).
- One pathway sample in the ground level garage area outside the elevator lobby.

As described in the Work Plan Addendum, only pathway air sample locations were identified during the building walk-throughs. Pathway samples (identified in Table 1 with a 'PS' in the sample designation) were collected from areas that are not normally occupied for extended periods of time over the course of a day, such as elevator lobbies and parking garages. No indoor air samples were proposed because no occupied areas (i.e. apartments or leasing offices) are constructed directly above the ground surface. The proposed sample locations and sampling rationale were approved by the Water Board and USEPA prior to conducting the sampling.

Due to the multitude of influences on air quality, one ambient air (AA) sample was collected over the same time period as the pathway samples were collected. For the purposes of field quality assurance/quality control (QA/QC), one field duplicate sample (DUP) was collected on the same day as the pathway samples were collected.

A summary of the air sample names and locations is presented in Table 1. Air samples were collected in summa canisters over a 24-hour period on 26 to 27 March 2015. A total of 9 samples and one duplicate sample were collected from SU3-8 in Buildings 1245, 1247, and 1257. According to the property owner, HVAC systems in the elevator lobbies are set to a constant temperature and operate every day in the same manner; therefore, as advised by the property owner, HVAC systems could not be adjusted during sampling. Parking areas are naturally ventilated at all times and automatically ventilated when carbon monoxide concentrations exceed pre-determined levels due to vehicle exhaust. Sample locations are shown on Figure 2. Photographs taken at the time of air sampling are presented in Appendix A.

Following sample collection, summa canisters were delivered to Eurofins, a State of California certified laboratory, for analysis of selected VOCs using method TO-15 analysis with selective ion monitoring (SIM), in accordance with the Work Plan. Certified laboratory reports and chain-of-custody records are presented in Appendix B.

Screening Criteria

Sample results were compared to both the USEPA's Residential Air Regional Screening Levels (RSLs) (revised in January 2015) and the Water Board's Indoor Air Residential Land Use Environmental Screening Levels (ESLs) (revised in December 2013). Both the Water Board ESLs and USEPA RSLs are calculated using standard exposure assumptions and published toxicity values. These screening values are calculated assuming a target incremental lifetime cancer risk of 10^{-6} (i.e., one-in-a-million) and/or a target non-cancer hazard index of 1.

TCE results were also compared to the USEPA's interim accelerated Response Action Level (RAL), as defined in Table 2. USEPA recommends the use of the interim TCE indoor air accelerated RAL of 2 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) for residential land use.

Pathway Air Sample Results

The locations of pathway samples collected at Buildings 1245, 1247, and 1257 are shown on Figure 2 and the detected results are presented in Table 2. Pathway sample collection began on 26 March 2015 and was completed over a 24-hour period on 27 March 2015 in Buildings 1245, 1247 and 1257. Pathway sample results are discussed below.

Building 1245

- TCE was not detected above Water Board ESL, USEPA RSL, or USEPA RAL in any of the samples collected. TCE was not detected above laboratory reporting limits (i.e. not detected above $0.13 \mu\text{g}/\text{m}^3$) at two of the three sample locations. TCE was only detected at a very low concentration of $0.15 \mu\text{g}/\text{m}^3$ in pathway sample SU3-8-PS2-2015-03-26, which was collected from the ground level garage area. Considering that the garage is openly ventilated and TCE was also detected in the ambient sample at a higher concentration ($0.36 \mu\text{g}/\text{m}^3$), it is likely that this concentration is associated with TCE concentrations in ambient air.
- 1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113), ethylbenzene, xylenes, methylene chloride, toluene, and trichlorofluoromethane were detected above laboratory reporting limits but below the Water Board ESLs and USEPA RSLs.
- 1,2-Dichloroethane (1,2-DCA) was detected in one pathway sample collected from the ground level garage area (SU3-8-PS2-2015-03-26) at a concentration of $0.15 \mu\text{g}/\text{m}^3$ which slightly exceeds the Water Board ESL of $0.12 \mu\text{g}/\text{m}^3$ and the USEPA RSL of $0.11 \mu\text{g}/\text{m}^3$. 1,2-DCA was not detected in the other samples collected in this building.

- Chloroform was detected in all four pathway samples collected at Building 1245, including the duplicate sample, at concentrations ranging from 0.31 to 0.48 $\mu\text{g}/\text{m}^3$. Detected concentrations were below the Water Board ESL of 0.46 $\mu\text{g}/\text{m}^3$ but above the USEPA RSL of 0.12 $\mu\text{g}/\text{m}^3$ with the exception of one pathway sample from the ground level garage area (SU3-8-PS2-2015-03-26) which was detected at a concentration 0.48 $\mu\text{g}/\text{m}^3$, exceeding both the Water Board ESL and USEPA RSL. All chloroform pathway sample detections were below the concentration detected in the ambient air sample (1.9 $\mu\text{g}/\text{m}^3$).
- Tetrachloroethene (PCE) was detected in one pathway sample collected from the ground level garage area (SU3-8-PS2-2015-03-26) at a concentration of 0.57 $\mu\text{g}/\text{m}^3$, which is below the USEPA RSL of 11 $\mu\text{g}/\text{m}^3$ but above the Water Board ESL of 0.41 $\mu\text{g}/\text{m}^3$.
- All other VOC concentrations were below their respective Water Board ESLs and USEPA RSLs.

Building 1247

- TCE was not detected in any samples collected. TCE lab reporting limits (0.13 mg/m^3) were significantly below the Water Board ESL, USEPA RSL, and USEPA RAL.
- Freon 113, xylenes, methyl tert-butyl ether (MTBE), toluene, and trichlorofluoromethane were detected above laboratory reporting limits but below the Water Board ESLs and USEPA RSLs (Table 2).
- 1,2-DCA, chloroform, ethylbenzene, and methylene chloride were detected in one pathway sample (SU3-8-PS6-2015-03-26) collected from the elevator lobby on the first occupied floor at concentrations of 0.85, 0.77, 1.8, and 1,500 $\mu\text{g}/\text{m}^3$, respectively. All of these concentrations were above the respective Water Board ESLs and USEPA RSLs.
- In addition to the chloroform detected in pathway sample SU3-8-PS6-2015-03-26, chloroform was also detected in two pathway samples collected from the elevator lobby at ground level (SU3-8-PS4-2015-03-26) and the ground level garage area (SU3-8-PS5-2015-03-26) at concentrations of 0.14 and 0.15 $\mu\text{g}/\text{m}^3$. These chloroform detections are slightly above the USEPA RSL of 0.12 $\mu\text{g}/\text{m}^3$, but below the Water Board ESL of 0.46 $\mu\text{g}/\text{m}^3$. All chloroform detections were below the concentration detected in the ambient air sample (1.9 $\mu\text{g}/\text{m}^3$).
- Ethylbenzene was detected in pathway samples collected from the ground level garage area (SU3-8-PS5-2015-03-26) and from the elevator lobby on the first occupied floor (SU3-8-PS6-2015-03-26) at concentrations of 3.4 and 1.8 $\mu\text{g}/\text{m}^3$, which are above the Water Board ESL and USEPA RSL of 0.97 and 1.10 $\mu\text{g}/\text{m}^3$, respectively. Ethylbenzene was also detected above the residential Water Board ESL and USEPA RSL in the ambient air sample at a concentration of 2.3 $\mu\text{g}/\text{m}^3$.

MEMO

- PCE was detected in one pathway sample collected from the elevator lobby at ground level (SU3-8-PS4-2015-03-26) at a concentration of $0.53 \mu\text{g}/\text{m}^3$, which is above the Water Board ESL of $0.41 \mu\text{g}/\text{m}^3$ but below the USEPA RSL of $11 \mu\text{g}/\text{m}^3$. PCE was also detected in pathway sample SU3-8-PS6-2015-03-26 collected in the elevator lobby on the first occupied floor at a concentration of $24 \mu\text{g}/\text{m}^3$.
- All other VOCs concentrations were below their respective ESLs and RSLs.

Building 1257

- TCE was only detected in one sample collected from the elevator lobby on the first occupied floor (SU3-8-PS9-2015-03-26) at a concentration of $0.23 \mu\text{g}/\text{m}^3$, which is below its Water Board ESL, USEPA RSL and USEPA RAL.
- Freon 113, 1,4-dichlorobenzene (1,4-DCB), xylenes, toluene, and trichlorofluoromethane were detected above laboratory reporting limits but below the Water Board ESLs and USEPA RSLs with concentrations ranging from 0.16 to $7.2 \mu\text{g}/\text{m}^3$.
- 1,2-DCA was detected above its USEPA RSL of $0.11 \mu\text{g}/\text{m}^3$ and its Water Board ESL of $0.12 \mu\text{g}/\text{m}^3$ in the pathway samples collected from the elevator lobby at ground level (SU3-8-PS7-2015-03-26) and elevator lobby area on the first occupied floor (SU3-PS9-2015-03-26) at concentrations of 0.14 and $0.21 \mu\text{g}/\text{m}^3$, respectively.
- Chloroform was detected in all three pathway samples collected at concentrations of 8.7 , 0.44 and $1.8 \mu\text{g}/\text{m}^3$. Chloroform concentrations were above the Water Board ESL of $0.46 \mu\text{g}/\text{m}^3$ and the USEPA RSL of $0.12 \mu\text{g}/\text{m}^3$ for all three samples, except for the pathway sample collected from the ground level garage area (SU3-8-PS8-2015-03-26) where chloroform was above its USEPA RSL but below its Water Board ESL. All chloroform pathway sample detections were below the ambient air sample concentration ($1.9 \mu\text{g}/\text{m}^3$).
- Ethylbenzene, methylene chloride and PCE were detected in one pathway sample collected from the elevator lobby at ground level (SU3-8-PS7-2015-03-26) at concentrations of 1 , 41 and $0.98 \mu\text{g}/\text{m}^3$, respectively. These concentrations exceed the respective Water Board ESLs but not the USEPA RSLs. Ethylbenzene was also detected at $2.3 \mu\text{g}/\text{m}^3$ in the ambient air sample, which is above the residential ESL and RSL.
- All other VOCs concentrations were below their respective ESLs and RSLs.

Ambient Air Sample Results

One ambient air sample (SU3-8-AA1-2015-03-26) was collected between 26 March and 27 March 2015. Freon 113, chloroform, ethylbenzene, xylenes, methylene chloride, toluene, TCE, and trichlorofluoromethane were detected in the ambient air sample at concentrations ranging from 0.36 to 4.9 $\mu\text{g}/\text{m}^3$. Chloroform and ethylbenzene were detected above the Water Board ESLs and USEPA RSLs at concentrations of 1.9 and 2.3 $\mu\text{g}/\text{m}^3$, respectively. All other detected VOCs were below the respective Water Board ESLs and USEPA RSLs. All VOCs detected in ambient air were also detected in at least two pathway samples. Concentrations of Freon 113, chloroform, ethylbenzene, xylenes, toluene, TCE, and trichlorofluoromethane were generally higher or on the same order of magnitude in the ambient sample as in the pathway samples, with few exceptions.

Discussion and Recommendations

TCE was not detected above the Water Board's Residential Land Use ESL, the USEPA's Residential Air RSL, or the USEPA's accelerated Residential RAL in any of the samples collected. TCE was only detected in two of the nine pathway samples, but at concentrations below the ambient air sample concentration, which indicates that the pathway sample detections are likely associated with ambient air.

Of the VOCs detected, 1,2-DCA, chloroform, ethylbenzene, methylene chloride and PCE were the only compounds with concentrations above the Residential Water Board ESLs and USEPA RSLs. 1,2-DCA, ethylbenzene, methylene chloride and PCE were not detected in water samples collected in December 2014 from the dewatering system present beneath SU3-8² or in the nearest groundwater monitoring well 128A (Table 3), which is located immediately north of the SU3-8 (Figure 1), which indicates the presence of these chemicals is not associated with vapor intrusion.

Further, 1,2-DCA, chloroform, ethylbenzene, methylene chloride and PCE are commonly associated with background VOC concentrations in residential settings³. 1,2-DCA, ethylbenzene, methylene chloride and PCE are commonly found in a variety of products used for a variety of purposes in residential settings. According to the Agency for Toxic Substance and Disease Registry (ATSDR), 1,2-DCA, chloroform, ethylbenzene, methylene chloride and PCE are used in the following ways. 1,2-DCA is used to make a variety of plastic and vinyl products including polyvinyl chloride (PVC) pipes, furniture and automobile upholstery, wall coverings, housewares, and automobile parts. Ethylbenzene can be found in gasoline, paints and inks, pesticides, carpet glues, varnishes and paints, tobacco products, and automotive

² *First Quarter 2015 NPDES Self-Monitoring Report, Texas Instruments, Inc. (formerly National Semiconductor Corporation) – Treated Groundwater Discharge NPDES Permit No. CAG912002 – RWQCB Order No. R2-2012-0012, April 2015.*

³ *Background Indoor Air Concentrations of Volatile Organic Compounds in North American Residences (1990–2005): A Compilation of Statistics for Assessing Vapor Intrusion* USEPA Office of Solid Waste and Emergency Response, June 2011.

products. Methylene chloride is used as an industrial solvent and as a paint stripper and may be found in some aerosol and pesticide products. Methylene chloride is also a common laboratory contaminant⁴. PCE is a manufactured chemical that is widely used as a dry cleaning agent and a metal degreasing solvent.

Chloroform and ethylbenzene were also detected in the ambient air sample at concentrations exceeding the Water Board ESL and USEPA RSL, which indicates that outdoor, ambient air was a significant source of the concentrations detected in the pathway samples.

Chloroform concentrations in indoor air are known to be associated with off-gassing from municipal water supplies, which is the likely source of chloroform in the pathway samples. The highest chloroform concentrations were detected in samples collected from Building 1257 which contains the health spa. A steam room and hot tub are present in the health spa. Chloroform was also detected at a concentration of 1.9 $\mu\text{g}/\text{m}^3$ in the ambient air sample. Furthermore, chloroform was not detected in well 128A in 2013 but was detected at a very low concentration of 0.6 micrograms per liter in well 128A during TI's 2014 Annual Groundwater Monitoring event (Table 3). Therefore, the chloroform concentrations detected are not likely associated with vapor intrusion but are likely attributable to off-gassing from the municipal water supply.

The highest 1,2-DCA (0.85 $\mu\text{g}/\text{m}^3$), methylene chloride (1,500 $\mu\text{g}/\text{m}^3$), and PCE (24 $\mu\text{g}/\text{m}^3$) concentrations were all detected in the same pathway sample (SU3-8-PS6-2015-03-26) collected from the elevator lobby on the first occupied floor of Building 1247. A comparison of these results to the results of the pathway sample (SU3-8-PS4-2015-03-26) collected from the elevator lobby on the ground level, directly beneath the first occupied floor lobby, indicate that the elevator is not a pathway for these VOCs for the following reasons:

- 1,2-DCA was not detected,
- Methylene chloride was detected at a concentration over 99% lower (2.2 $\mu\text{g}/\text{m}^3$), and
- PCE was only detected at a concentration of 0.53 $\mu\text{g}/\text{m}^3$ or approximately 2% of the concentration detected from the elevator lobby above.

If the elevator shaft was the source of these compounds, we would expect similar concentrations in both elevator lobbies, which was not the case. Additionally, concentrations detected in samples from elevator lobbies directly above and below one another did not appear to be correlated, further supporting that the source of these VOCs in indoor air is not related to vapor intrusion migrating into the building via the elevator shaft pathway.

⁴ USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review, Office of Emergency and Remedial Response. October 1999.

MEMO

Considering the multiple lines of evidence presented, we believe that the 1,2-DCA, chloroform, ethylbenzene, methylene chloride and PCE concentrations detected are likely associated with an interior or outdoor source and not vapor intrusion. Given that these compounds are generally not detected in groundwater near SU3-8, TCE was not detected at a significant concentration in any pathway samples, and TCE concentrations were below the ambient air concentration, we conclude that vapor intrusion is not significantly impacting air quality at SU3-8 and no additional evaluation is warranted.

Attachments

Table 1 – Sample Summary
Table 2 – Pathway and Ambient Air Analytical Results
Table 3 – Groundwater Analytical Results, SU3-8
Figure 1 – Site Location Map
Figure 2 – Sampling Locations
Appendix A – Photographs
Appendix B – Laboratory Analytical Reports

750620726.02 JDG

TABLES

**Table 1
Sample Summary
Building SU3-8
Sunnyvale, CA**

Sample ID	Building Number	Location Notes	HVAC Systems ¹
Pathway Samples			
SU3-8-PS1-2015-03-26	Building 1245	Ground Level Elevator Lobby	Normal Operating Condition
SU3-8-DUP1-2015-03-26	Building 1245	Ground Level Elevator Lobby	Normal Operating Condition
SU3-8-PS2-2015-03-26	Building 1245	Ground Level Parking Garage Area	Normal Operating Condition
SU3-8-PS3-2015-03-26	Building 1245	First Occupied Floor Elevator Lobby Area	Normal Operating Condition
SU3-8-PS4-2015-03-26	Building 1247	Ground Level Elevator Lobby	Normal Operating Condition
SU3-8-PS5-2015-03-26	Building 1247	Ground Level Parking Garage Area	Normal Operating Condition
SU3-8-PS6-2015-03-26	Building 1247	First Occupied Floor Elevator Lobby Area	Normal Operating Condition
SU3-8-PS7-2015-03-26	Building 1257	Ground Level Elevator Lobby	Normal Operating Condition
SU3-8-PS8-2015-03-26	Building 1257	Ground Level Parking Garage Area	Normal Operating Condition
SU3-8-PS9-2015-03-26	Building 1257	First Occupied Floor Elevator Lobby Area	Normal Operating Condition
Ambient Samples			
SU3-8-AA1-2015-03-26	Outdoor	Outdoor	NA
Total			11

Notes:

¹ - Parking areas are naturally ventilated at all times and automatically ventilated when carbon monoxide concentrations exceed pre-determined levels due to vehicle exhaust. According to the property owner, HVAC systems in the elevator lobbies are set to a constant temperature and operate at all times and therefore, could not be adjusted during sampling.
HVAC - heating, ventilation, and air conditioning
NA - not applicable

Table 2
Pathway and Ambient Air Analytical Results
Building SU3-8
Sunnyvale, California

Chemical Name	Building Number	Sample Date	1,1,2-Trichloro-1,2,2-Trifluoroethane	1,2-DCA	1,4-DCB	Chloroform	Ethylbenzene	m- and p-Xylenes	Methylene Chloride	o-Xylene	MTBE	PCE	Toluene	TCE ¹	Trichlorofluoromethane	All Other VOCs
Unit			µg/m³													
ESL Indoor Air Residential Land Use			NE	0.12	0.22	0.46	0.97	NE	5.18	NE	NE	0.41	313	0.59	NE	--
RSL Indoor Air Residential Land Use			31,000	0.11	0.26	0.12	1.10	NE	100	100	NE	11	5,200	0.48	730	
SU3-8																
SU3-8-PS1-2015-03-26	1245	3/27/2015	0.56	< 0.10	< 0.15	0.34	0.61	2.3	0.9	0.84	< 0.090	< 0.17	4.1	< 0.13	1.3	ND
SU3-8-DUP1-2015-03-26	1245	3/27/2015	0.55	< 0.10	< 0.15	0.33	0.6	2.2	0.92	0.8	< 0.090	< 0.17	3.8	< 0.13	1.3	ND
SU3-8-PS2-2015-03-26	1245	3/27/2015	0.56	0.15	< 0.15	0.48	< 0.11	0.11	4.3	< 0.11	< 0.090	0.57	1.8	0.15	1.3	ND
SU3-8-PS3-2015-03-26	1245	3/27/2015	0.57	< 0.10	< 0.15	0.31	0.24	0.81	1.1	0.32	< 0.090	< 0.17	1.6	< 0.13	1.3	ND
SU3-8-PS4-2015-03-26	1247	3/27/2015	0.54	< 0.10	< 0.15	0.14	0.23	0.72	2.2	0.3	< 0.090	0.53	1.6	< 0.13	1.3	ND
SU3-8-PS5-2015-03-26	1247	3/27/2015	0.56	0.11	< 0.15	0.15	3.4	13	0.68	5	< 0.090	< 0.17	16	< 0.13	1.3	ND
SU3-8-PS6-2015-03-26	1247	3/27/2015	0.53	0.85	< 0.15	0.77	1.8	4.2	1500	1.8	0.1	24	63	< 0.13	1.4	ND
SU3-8-PS7-2015-03-26	1257	3/27/2015	0.57	0.14	< 0.15	8.7	1	3.1	41	1.2	< 0.090	0.98	7.2	< 0.13	1.3	ND
SU3-8-PS8-2015-03-26	1257	3/27/2015	0.61	0.1	< 0.15	0.44	0.64	2.1	1.1	0.82	< 0.090	< 0.17	3.7	< 0.13	1.4	ND
SU3-8-PS9-2015-03-26	1257	3/27/2015	0.59	0.21	0.16	1.8	0.31	0.91	0.86	0.37	< 0.090	0.18	1.8	0.23	1.4	ND
SU3-8-AA1-2015-03-26	Ambient	3/27/2015	0.56	< 0.10	< 0.15	1.9	2.3	4.9	1.2	1.1	< 0.090	< 0.17	2.9	0.36	1.2	ND

Notes:

1 - USEPA recommends the use of interim indoor air accelerated Response Action Level (RAL) for TCE inhalation exposure from subsurface vapor intrusion. The accelerated RALs for Residential land use is 2 µg/m³

µg/m³ - Micrograms per cubic meter

< Compound not detected above reporting limit

ESL: Environmental Screening Level. San Francisco Bay Regional Water Quality Control Board

RSL: Regional Screening Level. United States Environmental Protection Agency (USEPA)

ND - Not detected. Compounds not detected included 1,1,1-TCA, 1,1,2-TCA, 1,1-DCA, 1,1-DCE, 1,2,3-TCB, 1,2,4-TCB, 1,2-DCB, 1,3-DCB, chlorobenzene, chloroethane, cis-1,2-DCE, trans-1,2-DCE, and vinyl chloride. Non-detect results ranged from less than 0.026 to 0.19 µg/m³.

NE - Not established

1,2,3-TCB: 1,2,3-trichlorobenzene

1,2,4-TCB: 1,2,4-trichlorobenzene

1,2-DCB: 1,2-dichlorobenzene

1,3-DCB: 1,3-dichlorobenzene

1,4-DCB: 1,4-dichlorobenzene

MTBE: methyl tert-butyl ether

1,1,1-TCA: 1,1,1-trichloroethane

1,1,2-TCA: 1,1,2-trichloroethane

1,2-DCA: 1,2-dichloroethane

1,1-DCA: 1,1-dichloroethane

1,1,2-Trichloro-1,2,2-Trifluoroethane: Freon 113

PCE: tetrachloroethene

TCE: trichloroethene

cis-1,2-DCE: cis-1,2-dichloroethene

trans-1,2-DCE: trans-1,2-dichloroethene

1,1-DCE: 1,1-dichloroethene

Exceedance Summary:

10 - Result Exceeds ESL Indoor Air Residential Land Use

10 - Result Exceeds RSL Air Residential

Table 3
Groundwater Analytical Results SU3-8
Operable Unit 1
Sunnyvale, California

Chemical Name			1,1,1-TCA	1,1,2-TCA	1,1-DCA	1,1-DCE	1,2,3-TCB	1,2,4-TCB	1,2-DCB	1,2-DCA	1,3-DCB	1,4-DCB	BDCMA	Chloro-benzene	Chlorof orm	cis-1,2-DCE	Cymene	Ethyl-benzene	Freon-113	O-Xylene	M,P Xylenes	MTBE	PCE	trans-1,2-DCE	TCE	Vinyl Chloride	Total Xylenes	All Other VOCs	
Unit			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	
Well ID	Sample Date	DUP																											
Cleanup Standard (µg/L)			200	--	5	6	--	--	60	--	--	5	--	--	5	6	--	68	1,200	175^A	175	--	5	10	5	0.5	175	--	
A-Aquifer Wells																													
128A	10/15/2013		< 0.5	< 0.5	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	11	< 0.5	< 0.5	4.4	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	6.8	< 0.5	< 0.5	ND
128A	11/14/2014		< 0.5	< 0.5	0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.6	16	< 0.5	< 0.5	6.9	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	14	< 0.5	< 0.5	ND

Notes:

A. Cleanup standard is for total xylenes.

Total Chlorinated Ethenes is the sum of the PCE, TCE, cis-1,2-DCE, trans-1,2-DCE, and vinyl chloride concentrations.

TB: - Trip Blank Sample

µg/L - micrograms per Liter

VOCs - Volatile Organic Compounds

1,1,1-TCA - 1,1,1-Trichloroethane

1,1,2-TCA - 1,1,2-Trichloroethane

1,1-DCA - 1,1-Dichloroethane

1,1-DCE - 1,1-Dichloroethene

1,2,3-TCB - 1,2,3-Trichlorobenzene

1,2,4-TCB - 1,2,4-Trichloro-benzene

1,2-DCB - 1,2-Dichlorobenzene

1,2-DCA - 1,2-Dichloroethane

1,3-DCB - 1,3-Dichlorobenzene

1,4-DCB - 1,4-Dichlorobenzene

BDCMA-Bromodichloromethane

cis-1,2-DCE - cis-1,2-Dichloroethene

PCE - Tetrachloroethene

trans-1,2-DCE - trans-1,2-Dichloroethene

Bold - Analytes detected above the laboratory reporting limit and cleanup standard are shown in bold lettering.

ND - Not detected above the laboratory reporting limit

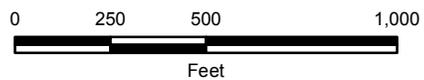
NA - Not Analyzed

FIGURES



Notes:

1. Aerial Orthophoto mosaic is provided by Santa Clara County and the United States Geological Survey (USGS). Imagery was captured in April, 2011.
2. Map displayed in California State Plane Coordinate System, Zone III, North American Datum of 1983 (NAD83), US Survey Feet.
3. All locations are considered accurate.



BUILDING SU3-8
Sunnyvale, California

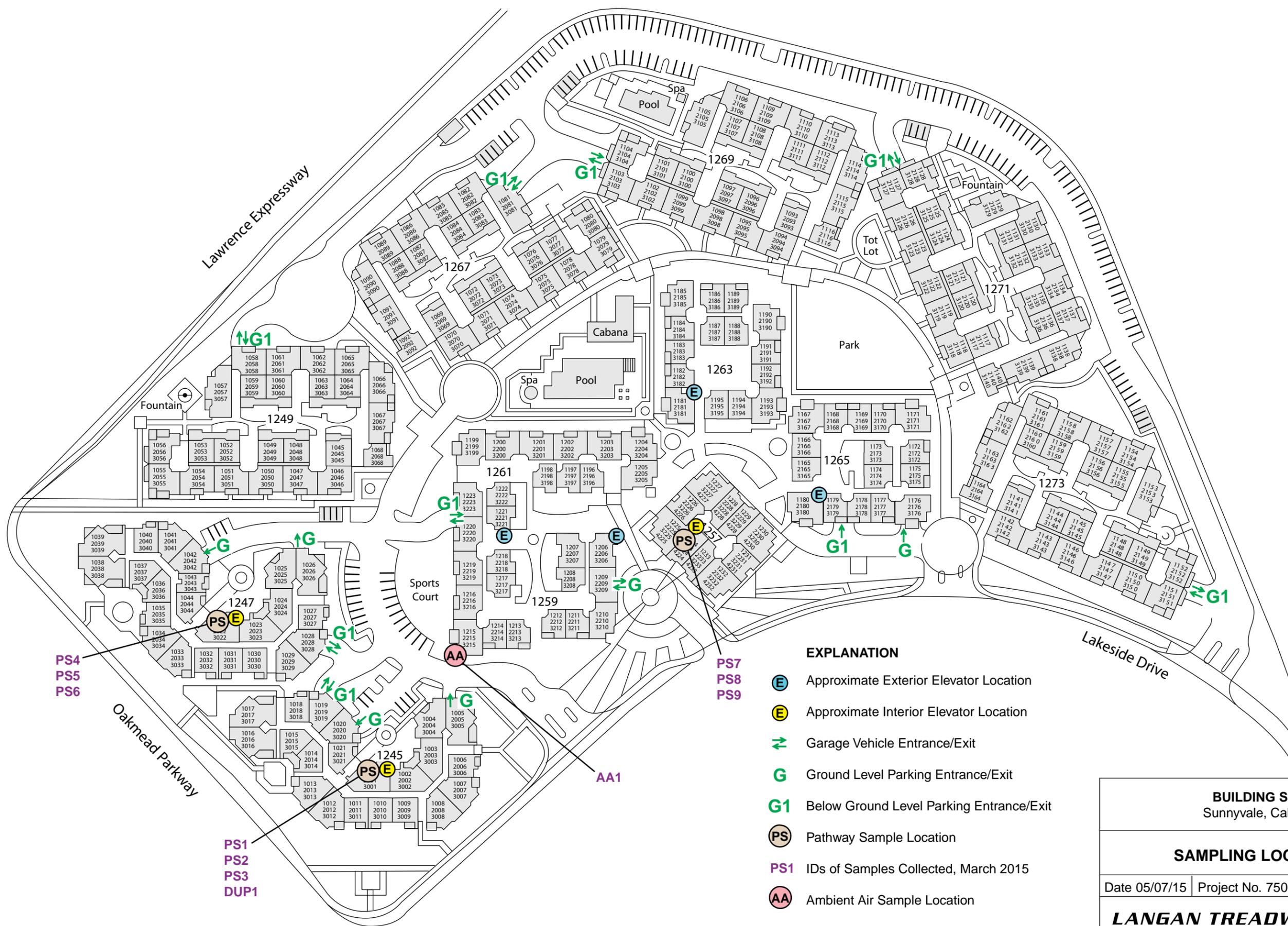
SITE LOCATION MAP

LANGAN TREADWELL ROLLO

Date 5/6/2015

Project 750620726

Figure 1



EXPLANATION

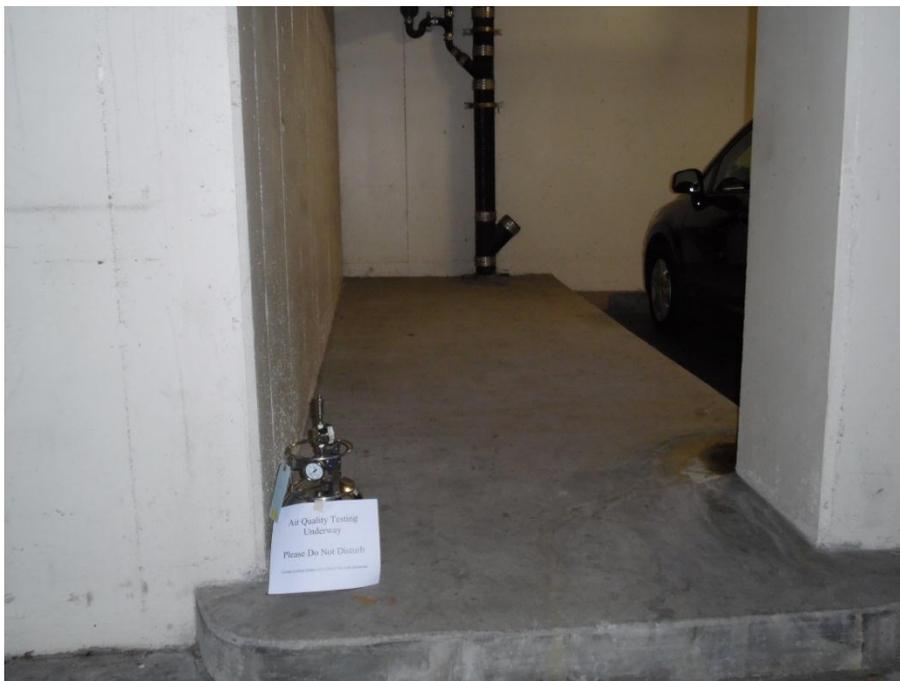
- E Approximate Exterior Elevator Location
- E Approximate Interior Elevator Location
- ↔ Garage Vehicle Entrance/Exit
- G Ground Level Parking Entrance/Exit
- G1 Below Ground Level Parking Entrance/Exit
- PS Pathway Sample Location
- PS1 IDs of Samples Collected, March 2015
- AA Ambient Air Sample Location

BUILDING SU3-8 Sunnyvale, California		
SAMPLING LOCATIONS		
Date 05/07/15	Project No. 750620726	Figure 2
LANGAN TREADWELL ROLLO		

APPENDIX A
PHOTOGRAPHS



PS1 and DUP1 - ground level elevator lobby in Building 1245



PS2 - outside the ground level elevator lobby at Building 1245



PS3 - first occupied floor elevator lobby in Building 1245



PS4 - ground level elevator lobby in Building 1247



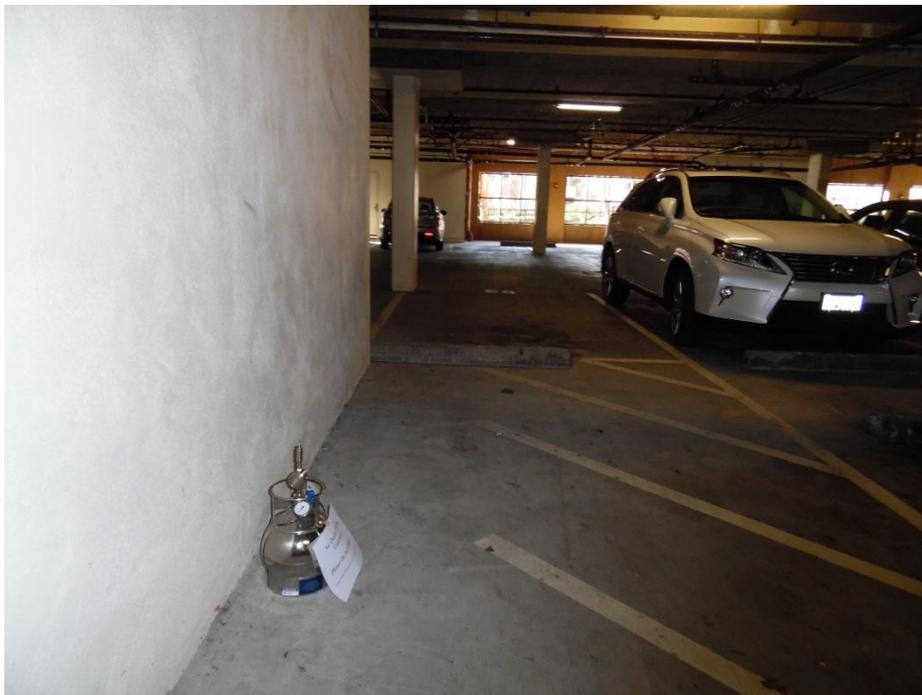
PS5 - ground level outside elevator lobby in Building 1247



PS6 - first occupied floor elevator lobby in Building 1247



PS7 - Ground level elevator lobby under construction in Building 1257



PS8 - ground level outside elevator lobby in Building 1257



PS9 - first occupied floor elevator lobby in Building 1257



Dry walled ceiling ground level elevator lobby in Building 1257

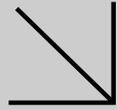


AA1 located outside near Building 1259

APPENDIX B
LABORATORY ANALYTICAL REPORTS



Calscience



WORK ORDER NUMBER: 15-03-2257

The difference is service



AIR | SOIL | WATER | MARINE CHEMISTRY

Analytical Report For

Client: Treadwell & Rollo - A Langan Company

Client Project Name: TI Off - Property SU3-8

Attention: Joshua Graber
555 Montgomery St., Suite 1300
San Francisco, CA 94111-2554

Vikas Patel

Approved for release on 04/07/2015 by:
Vikas Patel
Project Manager

ResultLink ▶

Email your PM ▶



Eurofins Calscience, Inc. (Calscience) certifies that the test results provided in this report meet all NELAC requirements for parameters for which accreditation is required or available. Any exceptions to NELAC requirements are noted in the case narrative. The original report of subcontracted analyses, if any, is attached to this report. The results in this report are limited to the sample(s) tested and any reproduction thereof must be made in its entirety. The client or recipient of this report is specifically prohibited from making material changes to said report and, to the extent that such changes are made, Calscience is not responsible, legally or otherwise. The client or recipient agrees to indemnify Calscience for any defense to any litigation which may arise.



Contents

Client Project Name: TI Off - Property SU3-8
Work Order Number: 15-03-2257

1	Work Order Narrative.	3
2	Sample Summary.	4
3	Detections Summary.	5
4	Client Sample Data.	8
	4.1 EPA TO-15 SIM (Air).	8
5	Quality Control Sample Data.	19
	5.1 LCS/LCSD.	19
6	Summa Canister Vacuum Summary.	22
7	Sample Analysis Summary.	23
8	Glossary of Terms and Qualifiers.	24
9	Chain-of-Custody/Sample Receipt Form.	25

Condition Upon Receipt:

Samples were received under Chain-of-Custody (COC) on 03/28/15. They were assigned to Work Order 15-03-2257.

Unless otherwise noted on the Sample Receiving forms all samples were received in good condition and within the recommended EPA temperature criteria for the methods noted on the COC. The COC and Sample Receiving Documents are integral elements of the analytical report and are presented at the back of the report.

Holding Times:

All samples were analyzed within prescribed holding times (HT) and/or in accordance with the Calscience Sample Acceptance Policy unless otherwise noted in the analytical report and/or comprehensive case narrative, if required.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of ≤ 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

Quality Control:

All quality control parameters (QC) were within established control limits except where noted in the QC summary forms or described further within this report.

Subcontractor Information:

Unless otherwise noted below (or on the subcontract form), no samples were subcontracted.

Additional Comments:

Air - Sorbent-extracted air methods (EPA TO-4A, EPA TO-10, EPA TO-13A, EPA TO-17): Analytical results are converted from mass/sample basis to mass/volume basis using client-supplied air volumes.

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are always reported on a wet weight basis.



Calscience

Sample Summary

Client: Treadwell & Rollo - A Langan Company	Work Order: 15-03-2257
555 Montgomery St., Suite 1300	Project Name: TI Off - Property SU3-8
San Francisco, CA 94111-2554	PO Number:
	Date/Time Received: 03/28/15 10:10
	Number of Containers: 11

Attn: Joshua Graber

Sample Identification	Lab Number	Collection Date and Time	Number of Containers	Matrix
SU3-8-PS1-2015-03-26	15-03-2257-1	03/27/15 11:34	1	Air
SU3-8-PS2-2015-03-26	15-03-2257-2	03/27/15 12:11	1	Air
SU3-8-PS3-2015-03-26	15-03-2257-3	03/27/15 12:49	1	Air
SU3-8-PS4-2015-03-26	15-03-2257-4	03/27/15 14:09	1	Air
SU3-8-PS5-2015-03-26	15-03-2257-5	03/27/15 14:12	1	Air
SU3-8-PS6-2015-03-26	15-03-2257-6	03/27/15 11:47	1	Air
SU3-8-PS7-2015-03-26	15-03-2257-7	03/27/15 13:45	1	Air
SU3-8-PS8-2015-03-26	15-03-2257-8	03/27/15 13:06	1	Air
SU3-8-PS9-2015-03-26	15-03-2257-9	03/27/15 13:02	1	Air
SU3-8-DUP1-2015-03-26	15-03-2257-10	03/27/15 11:34	1	Air
SU3-8-AA1-2015-03-26	15-03-2257-11	03/27/15 14:18	1	Air


 Return to Contents



Calscience

Detections Summary

Client: Treadwell & Rollo - A Langan Company
 555 Montgomery St., Suite 1300
 San Francisco, CA 94111-2554

Work Order: 15-03-2257
 Project Name: TI Off - Property SU3-8
 Received: 03/28/15

Attn: Joshua Graber

Page 1 of 3

Client SampleID

Analyte	Result	Qualifiers	RL	Units	Method	Extraction
SU3-8-PS1-2015-03-26 (15-03-2257-1)						
1,1,2-Trichloro-1,2,2-Trifluoroethane	0.56		0.19	ug/m3	EPA TO-15 SIM	N/A
Chloroform	0.34		0.12	ug/m3	EPA TO-15 SIM	N/A
Ethylbenzene	0.61		0.11	ug/m3	EPA TO-15 SIM	N/A
Methylene Chloride	0.90		0.087	ug/m3	EPA TO-15 SIM	N/A
Toluene	4.1		0.19	ug/m3	EPA TO-15 SIM	N/A
Trichlorofluoromethane	1.3		0.14	ug/m3	EPA TO-15 SIM	N/A
o-Xylene	0.84		0.11	ug/m3	EPA TO-15 SIM	N/A
p/m-Xylene	2.3		0.11	ug/m3	EPA TO-15 SIM	N/A
SU3-8-PS2-2015-03-26 (15-03-2257-2)						
1,1,2-Trichloro-1,2,2-Trifluoroethane	0.56		0.19	ug/m3	EPA TO-15 SIM	N/A
1,2-Dichloroethane	0.15		0.10	ug/m3	EPA TO-15 SIM	N/A
Chloroform	0.48		0.12	ug/m3	EPA TO-15 SIM	N/A
Methylene Chloride	4.3		0.087	ug/m3	EPA TO-15 SIM	N/A
Tetrachloroethene	0.57		0.17	ug/m3	EPA TO-15 SIM	N/A
Toluene	1.8		0.19	ug/m3	EPA TO-15 SIM	N/A
Trichloroethene	0.15		0.13	ug/m3	EPA TO-15 SIM	N/A
Trichlorofluoromethane	1.3		0.14	ug/m3	EPA TO-15 SIM	N/A
p/m-Xylene	0.11		0.11	ug/m3	EPA TO-15 SIM	N/A
SU3-8-PS3-2015-03-26 (15-03-2257-3)						
1,1,2-Trichloro-1,2,2-Trifluoroethane	0.57		0.19	ug/m3	EPA TO-15 SIM	N/A
Chloroform	0.31		0.12	ug/m3	EPA TO-15 SIM	N/A
Ethylbenzene	0.24		0.11	ug/m3	EPA TO-15 SIM	N/A
Methylene Chloride	1.1		0.087	ug/m3	EPA TO-15 SIM	N/A
Toluene	1.6		0.19	ug/m3	EPA TO-15 SIM	N/A
Trichlorofluoromethane	1.3		0.14	ug/m3	EPA TO-15 SIM	N/A
o-Xylene	0.32		0.11	ug/m3	EPA TO-15 SIM	N/A
p/m-Xylene	0.81		0.11	ug/m3	EPA TO-15 SIM	N/A
SU3-8-PS4-2015-03-26 (15-03-2257-4)						
1,1,2-Trichloro-1,2,2-Trifluoroethane	0.54		0.19	ug/m3	EPA TO-15 SIM	N/A
Chloroform	0.14		0.12	ug/m3	EPA TO-15 SIM	N/A
Ethylbenzene	0.23		0.11	ug/m3	EPA TO-15 SIM	N/A
Methylene Chloride	2.2		0.087	ug/m3	EPA TO-15 SIM	N/A
Tetrachloroethene	0.53		0.17	ug/m3	EPA TO-15 SIM	N/A
Toluene	1.6		0.19	ug/m3	EPA TO-15 SIM	N/A
Trichlorofluoromethane	1.3		0.14	ug/m3	EPA TO-15 SIM	N/A
o-Xylene	0.30		0.11	ug/m3	EPA TO-15 SIM	N/A
p/m-Xylene	0.72		0.11	ug/m3	EPA TO-15 SIM	N/A

* MDL is shown



Calscience

Detections Summary

Client: Treadwell & Rollo - A Langan Company
 555 Montgomery St., Suite 1300
 San Francisco, CA 94111-2554

Work Order: 15-03-2257
 Project Name: TI Off - Property SU3-8
 Received: 03/28/15

Attn: Joshua Graber

Page 2 of 3

Client SampleID

Analyte	Result	Qualifiers	RL	Units	Method	Extraction
SU3-8-PS5-2015-03-26 (15-03-2257-5)						
1,1,2-Trichloro-1,2,2-Trifluoroethane	0.56		0.19	ug/m3	EPA TO-15 SIM	N/A
1,2-Dichloroethane	0.11		0.10	ug/m3	EPA TO-15 SIM	N/A
Chloroform	0.15		0.12	ug/m3	EPA TO-15 SIM	N/A
Ethylbenzene	3.4		0.11	ug/m3	EPA TO-15 SIM	N/A
Methylene Chloride	0.68		0.087	ug/m3	EPA TO-15 SIM	N/A
Toluene	16		0.19	ug/m3	EPA TO-15 SIM	N/A
Trichlorofluoromethane	1.3		0.14	ug/m3	EPA TO-15 SIM	N/A
o-Xylene	5.0		0.11	ug/m3	EPA TO-15 SIM	N/A
p/m-Xylene	13		0.11	ug/m3	EPA TO-15 SIM	N/A
SU3-8-PS6-2015-03-26 (15-03-2257-6)						
1,1,2-Trichloro-1,2,2-Trifluoroethane	0.53		0.19	ug/m3	EPA TO-15 SIM	N/A
1,2-Dichloroethane	0.85		0.10	ug/m3	EPA TO-15 SIM	N/A
Chloroform	0.77		0.12	ug/m3	EPA TO-15 SIM	N/A
Ethylbenzene	1.8		0.11	ug/m3	EPA TO-15 SIM	N/A
Methyl-t-Butyl Ether (MTBE)	0.10		0.090	ug/m3	EPA TO-15 SIM	N/A
Methylene Chloride	1500		8.7	ug/m3	EPA TO-15 SIM	N/A
Tetrachloroethene	24		0.17	ug/m3	EPA TO-15 SIM	N/A
Toluene	63		1.9	ug/m3	EPA TO-15 SIM	N/A
Trichlorofluoromethane	1.4		0.14	ug/m3	EPA TO-15 SIM	N/A
o-Xylene	1.8		0.11	ug/m3	EPA TO-15 SIM	N/A
p/m-Xylene	4.2		0.11	ug/m3	EPA TO-15 SIM	N/A
SU3-8-DUP1-2015-03-26 (15-03-2257-10)						
1,1,2-Trichloro-1,2,2-Trifluoroethane	0.55		0.19	ug/m3	EPA TO-15 SIM	N/A
Chloroform	0.33		0.12	ug/m3	EPA TO-15 SIM	N/A
Ethylbenzene	0.60		0.11	ug/m3	EPA TO-15 SIM	N/A
Methylene Chloride	0.92		0.087	ug/m3	EPA TO-15 SIM	N/A
Toluene	3.8		0.19	ug/m3	EPA TO-15 SIM	N/A
Trichlorofluoromethane	1.3		0.14	ug/m3	EPA TO-15 SIM	N/A
o-Xylene	0.80		0.11	ug/m3	EPA TO-15 SIM	N/A
p/m-Xylene	2.2		0.11	ug/m3	EPA TO-15 SIM	N/A

* MDL is shown



Calscience

Detections Summary

Client: Treadwell & Rollo - A Langan Company
 555 Montgomery St., Suite 1300
 San Francisco, CA 94111-2554

Work Order: 15-03-2257
 Project Name: TI Off - Property SU3-8
 Received: 03/28/15

Attn: Joshua Graber

Page 3 of 3

Client SampleID

<u>Analyte</u>	<u>Result</u>	<u>Qualifiers</u>	<u>RL</u>	<u>Units</u>	<u>Method</u>	<u>Extraction</u>
SU3-8-AA1-2015-03-26 (15-03-2257-11)						
1,1,2-Trichloro-1,2,2-Trifluoroethane	0.56		0.19	ug/m3	EPA TO-15 SIM	N/A
Chloroform	1.9		0.12	ug/m3	EPA TO-15 SIM	N/A
Ethylbenzene	2.3		0.11	ug/m3	EPA TO-15 SIM	N/A
Methylene Chloride	1.2		0.087	ug/m3	EPA TO-15 SIM	N/A
Toluene	2.9		0.19	ug/m3	EPA TO-15 SIM	N/A
Trichloroethene	0.36		0.13	ug/m3	EPA TO-15 SIM	N/A
Trichlorofluoromethane	1.2		0.14	ug/m3	EPA TO-15 SIM	N/A
o-Xylene	1.1		0.11	ug/m3	EPA TO-15 SIM	N/A
p/m-Xylene	4.9		0.11	ug/m3	EPA TO-15 SIM	N/A

Subcontracted analyses, if any, are not included in this summary.

Return to Contents

* MDL is shown



Calscience

Analytical Report

Treadwell & Rollo - A Langan Company
555 Montgomery St., Suite 1300
San Francisco, CA 94111-2554

Date Received: 03/28/15
Work Order: 15-03-2257
Preparation: N/A
Method: EPA TO-15 SIM
Units: ug/m3

Project: TI Off - Property SU3-8

Page 1 of 11

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SU3-8-PS1-2015-03-26	15-03-2257-1-A	03/27/15 11:34	Air	GC/MS DD	N/A	04/01/15 17:53	150401L01

Parameter	Result	RL	DF	Qualifiers
1,1,1-Trichloroethane	ND	0.14	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	0.56	0.19	1.00	
1,1,2-Trichloroethane	ND	0.14	1.00	
1,1-Dichloroethane	ND	0.10	1.00	
1,1-Dichloroethene	ND	0.099	1.00	
1,2,4-Trichlorobenzene	ND	0.19	1.00	
1,2-Dichlorobenzene	ND	0.15	1.00	
1,2-Dichloroethane	ND	0.10	1.00	
1,3-Dichlorobenzene	ND	0.15	1.00	
1,4-Dichlorobenzene	ND	0.15	1.00	
Chlorobenzene	ND	0.12	1.00	
Chloroethane	ND	0.066	1.00	
Chloroform	0.34	0.12	1.00	
Ethylbenzene	0.61	0.11	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	0.090	1.00	
Methylene Chloride	0.90	0.087	1.00	
Tetrachloroethene	ND	0.17	1.00	
Toluene	4.1	0.19	1.00	
Trichloroethene	ND	0.13	1.00	
Trichlorofluoromethane	1.3	0.14	1.00	
Vinyl Chloride	ND	0.026	1.00	
c-1,2-Dichloroethene	ND	0.099	1.00	
o-Xylene	0.84	0.11	1.00	
p/m-Xylene	2.3	0.11	1.00	
t-1,2-Dichloroethene	ND	0.099	1.00	
1,2,3-Trichlorobenzene	ND	0.19	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,2-Dichloroethane-d4	101	37-163	
1,4-Bromofluorobenzene	97	45-153	
Toluene-d8	94	73-121	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

Treadwell & Rollo - A Langan Company
555 Montgomery St., Suite 1300
San Francisco, CA 94111-2554

Date Received: 03/28/15
Work Order: 15-03-2257
Preparation: N/A
Method: EPA TO-15 SIM
Units: ug/m3

Project: TI Off - Property SU3-8

Page 2 of 11

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SU3-8-PS2-2015-03-26	15-03-2257-2-A	03/27/15 12:11	Air	GC/MS DD	N/A	04/01/15 18:48	150401L01

Parameter	Result	RL	DF	Qualifiers
1,1,1-Trichloroethane	ND	0.14	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	0.56	0.19	1.00	
1,1,2-Trichloroethane	ND	0.14	1.00	
1,1-Dichloroethane	ND	0.10	1.00	
1,1-Dichloroethene	ND	0.099	1.00	
1,2,4-Trichlorobenzene	ND	0.19	1.00	
1,2-Dichlorobenzene	ND	0.15	1.00	
1,2-Dichloroethane	0.15	0.10	1.00	
1,3-Dichlorobenzene	ND	0.15	1.00	
1,4-Dichlorobenzene	ND	0.15	1.00	
Chlorobenzene	ND	0.12	1.00	
Chloroethane	ND	0.066	1.00	
Chloroform	0.48	0.12	1.00	
Ethylbenzene	ND	0.11	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	0.090	1.00	
Methylene Chloride	4.3	0.087	1.00	
Tetrachloroethene	0.57	0.17	1.00	
Toluene	1.8	0.19	1.00	
Trichloroethene	0.15	0.13	1.00	
Trichlorofluoromethane	1.3	0.14	1.00	
Vinyl Chloride	ND	0.026	1.00	
c-1,2-Dichloroethene	ND	0.099	1.00	
o-Xylene	ND	0.11	1.00	
p/m-Xylene	0.11	0.11	1.00	
t-1,2-Dichloroethene	ND	0.099	1.00	
1,2,3-Trichlorobenzene	ND	0.19	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,2-Dichloroethane-d4	100	37-163	
1,4-Bromofluorobenzene	88	45-153	
Toluene-d8	95	73-121	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

Treadwell & Rollo - A Langan Company
555 Montgomery St., Suite 1300
San Francisco, CA 94111-2554

Date Received: 03/28/15
Work Order: 15-03-2257
Preparation: N/A
Method: EPA TO-15 SIM
Units: ug/m3

Project: TI Off - Property SU3-8

Page 3 of 11

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SU3-8-PS3-2015-03-26	15-03-2257-3-A	03/27/15 12:49	Air	GC/MS DD	N/A	04/01/15 19:42	150401L01

Parameter	Result	RL	DF	Qualifiers
1,1,1-Trichloroethane	ND	0.14	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	0.57	0.19	1.00	
1,1,2-Trichloroethane	ND	0.14	1.00	
1,1-Dichloroethane	ND	0.10	1.00	
1,1-Dichloroethene	ND	0.099	1.00	
1,2,4-Trichlorobenzene	ND	0.19	1.00	
1,2-Dichlorobenzene	ND	0.15	1.00	
1,2-Dichloroethane	ND	0.10	1.00	
1,3-Dichlorobenzene	ND	0.15	1.00	
1,4-Dichlorobenzene	ND	0.15	1.00	
Chlorobenzene	ND	0.12	1.00	
Chloroethane	ND	0.066	1.00	
Chloroform	0.31	0.12	1.00	
Ethylbenzene	0.24	0.11	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	0.090	1.00	
Methylene Chloride	1.1	0.087	1.00	
Tetrachloroethene	ND	0.17	1.00	
Toluene	1.6	0.19	1.00	
Trichloroethene	ND	0.13	1.00	
Trichlorofluoromethane	1.3	0.14	1.00	
Vinyl Chloride	ND	0.026	1.00	
c-1,2-Dichloroethene	ND	0.099	1.00	
o-Xylene	0.32	0.11	1.00	
p/m-Xylene	0.81	0.11	1.00	
t-1,2-Dichloroethene	ND	0.099	1.00	
1,2,3-Trichlorobenzene	ND	0.19	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,2-Dichloroethane-d4	101	37-163	
1,4-Bromofluorobenzene	93	45-153	
Toluene-d8	91	73-121	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Analytical Report

Treadwell & Rollo - A Langan Company
555 Montgomery St., Suite 1300
San Francisco, CA 94111-2554

Date Received: 03/28/15
Work Order: 15-03-2257
Preparation: N/A
Method: EPA TO-15 SIM
Units: ug/m3

Project: TI Off - Property SU3-8

Page 4 of 11

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SU3-8-PS4-2015-03-26	15-03-2257-4-A	03/27/15 14:09	Air	GC/MS DD	N/A	04/01/15 20:34	150401L01

Parameter	Result	RL	DF	Qualifiers
1,1,1-Trichloroethane	ND	0.14	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	0.54	0.19	1.00	
1,1,2-Trichloroethane	ND	0.14	1.00	
1,1-Dichloroethane	ND	0.10	1.00	
1,1-Dichloroethene	ND	0.099	1.00	
1,2,4-Trichlorobenzene	ND	0.19	1.00	
1,2-Dichlorobenzene	ND	0.15	1.00	
1,2-Dichloroethane	ND	0.10	1.00	
1,3-Dichlorobenzene	ND	0.15	1.00	
1,4-Dichlorobenzene	ND	0.15	1.00	
Chlorobenzene	ND	0.12	1.00	
Chloroethane	ND	0.066	1.00	
Chloroform	0.14	0.12	1.00	
Ethylbenzene	0.23	0.11	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	0.090	1.00	
Methylene Chloride	2.2	0.087	1.00	
Tetrachloroethene	0.53	0.17	1.00	
Toluene	1.6	0.19	1.00	
Trichloroethene	ND	0.13	1.00	
Trichlorofluoromethane	1.3	0.14	1.00	
Vinyl Chloride	ND	0.026	1.00	
c-1,2-Dichloroethene	ND	0.099	1.00	
o-Xylene	0.30	0.11	1.00	
p/m-Xylene	0.72	0.11	1.00	
t-1,2-Dichloroethene	ND	0.099	1.00	
1,2,3-Trichlorobenzene	ND	0.19	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,2-Dichloroethane-d4	101	37-163	
1,4-Bromofluorobenzene	93	45-153	
Toluene-d8	90	73-121	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

Treadwell & Rollo - A Langan Company
555 Montgomery St., Suite 1300
San Francisco, CA 94111-2554

Date Received: 03/28/15
Work Order: 15-03-2257
Preparation: N/A
Method: EPA TO-15 SIM
Units: ug/m3

Project: TI Off - Property SU3-8

Page 5 of 11

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SU3-8-PS5-2015-03-26	15-03-2257-5-A	03/27/15 14:12	Air	GC/MS DD	N/A	04/01/15 21:27	150401L01

Parameter	Result	RL	DF	Qualifiers
1,1,1-Trichloroethane	ND	0.14	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	0.56	0.19	1.00	
1,1,2-Trichloroethane	ND	0.14	1.00	
1,1-Dichloroethane	ND	0.10	1.00	
1,1-Dichloroethene	ND	0.099	1.00	
1,2,4-Trichlorobenzene	ND	0.19	1.00	
1,2-Dichlorobenzene	ND	0.15	1.00	
1,2-Dichloroethane	0.11	0.10	1.00	
1,3-Dichlorobenzene	ND	0.15	1.00	
1,4-Dichlorobenzene	ND	0.15	1.00	
Chlorobenzene	ND	0.12	1.00	
Chloroethane	ND	0.066	1.00	
Chloroform	0.15	0.12	1.00	
Ethylbenzene	3.4	0.11	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	0.090	1.00	
Methylene Chloride	0.68	0.087	1.00	
Tetrachloroethene	ND	0.17	1.00	
Toluene	16	0.19	1.00	
Trichloroethene	ND	0.13	1.00	
Trichlorofluoromethane	1.3	0.14	1.00	
Vinyl Chloride	ND	0.026	1.00	
c-1,2-Dichloroethene	ND	0.099	1.00	
o-Xylene	5.0	0.11	1.00	
p/m-Xylene	13	0.11	1.00	
t-1,2-Dichloroethene	ND	0.099	1.00	
1,2,3-Trichlorobenzene	ND	0.19	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,2-Dichloroethane-d4	102	37-163	
1,4-Bromofluorobenzene	98	45-153	
Toluene-d8	112	73-121	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Analytical Report

Treadwell & Rollo - A Langan Company
555 Montgomery St., Suite 1300
San Francisco, CA 94111-2554

Date Received: 03/28/15
Work Order: 15-03-2257
Preparation: N/A
Method: EPA TO-15 SIM
Units: ug/m3

Project: TI Off - Property SU3-8

Page 6 of 11

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SU3-8-PS6-2015-03-26	15-03-2257-6-A	03/27/15 11:47	Air	GC/MS DD	N/A	04/01/15 22:21	150401L01

Parameter	Result	RL	DF	Qualifiers
1,1,1-Trichloroethane	ND	0.14	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	0.53	0.19	1.00	
1,1,2-Trichloroethane	ND	0.14	1.00	
1,1-Dichloroethane	ND	0.10	1.00	
1,1-Dichloroethene	ND	0.099	1.00	
1,2,4-Trichlorobenzene	ND	0.19	1.00	
1,2-Dichlorobenzene	ND	0.15	1.00	
1,2-Dichloroethane	0.85	0.10	1.00	
1,3-Dichlorobenzene	ND	0.15	1.00	
1,4-Dichlorobenzene	ND	0.15	1.00	
Chlorobenzene	ND	0.12	1.00	
Chloroethane	ND	0.066	1.00	
Chloroform	0.77	0.12	1.00	
Ethylbenzene	1.8	0.11	1.00	
Methyl-t-Butyl Ether (MTBE)	0.10	0.090	1.00	
Tetrachloroethene	24	0.17	1.00	
Trichloroethene	ND	0.13	1.00	
Trichlorofluoromethane	1.4	0.14	1.00	
Vinyl Chloride	ND	0.026	1.00	
c-1,2-Dichloroethene	ND	0.099	1.00	
o-Xylene	1.8	0.11	1.00	
p/m-Xylene	4.2	0.11	1.00	
t-1,2-Dichloroethene	ND	0.099	1.00	
1,2,3-Trichlorobenzene	ND	0.19	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,2-Dichloroethane-d4	102	37-163	
1,4-Bromofluorobenzene	100	45-153	
Toluene-d8	101	73-121	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

Treadwell & Rollo - A Langan Company
 555 Montgomery St., Suite 1300
 San Francisco, CA 94111-2554

Date Received: 03/28/15
 Work Order: 15-03-2257
 Preparation: N/A
 Method: EPA TO-15 SIM
 Units: ug/m3

Project: TI Off - Property SU3-8

Page 7 of 11

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SU3-8-PS6-2015-03-26	15-03-2257-6-A	03/27/15 11:47	Air	GC/MS HH	N/A	04/06/15 20:36	150406L01

Parameter	Result	RL	DF	Qualifiers
Toluene	63	1.9	10.0	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,2-Dichloroethane-d4	107	37-163	
1,4-Bromofluorobenzene	104	45-153	
Toluene-d8	102	73-121	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SU3-8-PS6-2015-03-26	15-03-2257-6-A	03/27/15 11:47	Air	GC/MS DD	N/A	04/02/15 20:09	150402L01

Parameter	Result	RL	DF	Qualifiers
Methylene Chloride	1500	8.7	100	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,2-Dichloroethane-d4	106	37-163	
1,4-Bromofluorobenzene	94	45-153	
Toluene-d8	101	73-121	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Analytical Report

Treadwell & Rollo - A Langan Company
555 Montgomery St., Suite 1300
San Francisco, CA 94111-2554

Date Received: 03/28/15
Work Order: 15-03-2257
Preparation: N/A
Method: EPA TO-15 SIM
Units: ug/m3

Project: TI Off - Property SU3-8

Page 8 of 11

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SU3-8-DUP1-2015-03-26	15-03-2257-10-A	03/27/15 11:34	Air	GC/MS DD	N/A	04/01/15 23:15	150401L01

Parameter	Result	RL	DF	Qualifiers
1,1,1-Trichloroethane	ND	0.14	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	0.55	0.19	1.00	
1,1,2-Trichloroethane	ND	0.14	1.00	
1,1-Dichloroethane	ND	0.10	1.00	
1,1-Dichloroethene	ND	0.099	1.00	
1,2,4-Trichlorobenzene	ND	0.19	1.00	
1,2-Dichlorobenzene	ND	0.15	1.00	
1,2-Dichloroethane	ND	0.10	1.00	
1,3-Dichlorobenzene	ND	0.15	1.00	
1,4-Dichlorobenzene	ND	0.15	1.00	
Chlorobenzene	ND	0.12	1.00	
Chloroethane	ND	0.066	1.00	
Chloroform	0.33	0.12	1.00	
Ethylbenzene	0.60	0.11	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	0.090	1.00	
Methylene Chloride	0.92	0.087	1.00	
Tetrachloroethene	ND	0.17	1.00	
Toluene	3.8	0.19	1.00	
Trichloroethene	ND	0.13	1.00	
Trichlorofluoromethane	1.3	0.14	1.00	
Vinyl Chloride	ND	0.026	1.00	
c-1,2-Dichloroethene	ND	0.099	1.00	
o-Xylene	0.80	0.11	1.00	
p/m-Xylene	2.2	0.11	1.00	
t-1,2-Dichloroethene	ND	0.099	1.00	
1,2,3-Trichlorobenzene	ND	0.19	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,2-Dichloroethane-d4	98	37-163	
1,4-Bromofluorobenzene	95	45-153	
Toluene-d8	98	73-121	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

Treadwell & Rollo - A Langan Company
555 Montgomery St., Suite 1300
San Francisco, CA 94111-2554

Date Received: 03/28/15
Work Order: 15-03-2257
Preparation: N/A
Method: EPA TO-15 SIM
Units: ug/m3

Project: TI Off - Property SU3-8

Page 9 of 11

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SU3-8-AA1-2015-03-26	15-03-2257-11-A	03/27/15 14:18	Air	GC/MS DD	N/A	04/02/15 06:02	150401L01

Parameter	Result	RL	DF	Qualifiers
1,1,1-Trichloroethane	ND	0.14	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	0.56	0.19	1.00	
1,1,2-Trichloroethane	ND	0.14	1.00	
1,1-Dichloroethane	ND	0.10	1.00	
1,1-Dichloroethene	ND	0.099	1.00	
1,2,4-Trichlorobenzene	ND	0.19	1.00	
1,2-Dichlorobenzene	ND	0.15	1.00	
1,2-Dichloroethane	ND	0.10	1.00	
1,3-Dichlorobenzene	ND	0.15	1.00	
1,4-Dichlorobenzene	ND	0.15	1.00	
Chlorobenzene	ND	0.12	1.00	
Chloroethane	ND	0.066	1.00	
Chloroform	1.9	0.12	1.00	
Ethylbenzene	2.3	0.11	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	0.090	1.00	
Methylene Chloride	1.2	0.087	1.00	
Tetrachloroethene	ND	0.17	1.00	
Toluene	2.9	0.19	1.00	
Trichloroethene	0.36	0.13	1.00	
Trichlorofluoromethane	1.2	0.14	1.00	
Vinyl Chloride	ND	0.026	1.00	
c-1,2-Dichloroethene	ND	0.099	1.00	
o-Xylene	1.1	0.11	1.00	
p/m-Xylene	4.9	0.11	1.00	
t-1,2-Dichloroethene	ND	0.099	1.00	
1,2,3-Trichlorobenzene	ND	0.19	1.00	
<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>	
1,2-Dichloroethane-d4	97	37-163		
1,4-Bromofluorobenzene	93	45-153		
Toluene-d8	103	73-121		

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

Treadwell & Rollo - A Langan Company
555 Montgomery St., Suite 1300
San Francisco, CA 94111-2554

Date Received: 03/28/15
Work Order: 15-03-2257
Preparation: N/A
Method: EPA TO-15 SIM
Units: ug/m3

Project: TI Off - Property SU3-8

Page 10 of 11

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-15-214-175	N/A	Air	GC/MS DD	N/A	04/01/15 16:59	150401L01

Parameter	Result	RL	DF	Qualifiers
1,1,1-Trichloroethane	ND	0.14	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	0.19	1.00	
1,1,2-Trichloroethane	ND	0.14	1.00	
1,1-Dichloroethane	ND	0.10	1.00	
1,1-Dichloroethene	ND	0.099	1.00	
1,2,4-Trichlorobenzene	ND	0.19	1.00	
1,2-Dichlorobenzene	ND	0.15	1.00	
1,2-Dichloroethane	ND	0.10	1.00	
1,3-Dichlorobenzene	ND	0.15	1.00	
1,4-Dichlorobenzene	ND	0.15	1.00	
Chlorobenzene	ND	0.12	1.00	
Chloroethane	ND	0.066	1.00	
Chloroform	ND	0.12	1.00	
Ethylbenzene	ND	0.11	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	0.090	1.00	
Methylene Chloride	ND	0.087	1.00	
Tetrachloroethene	ND	0.17	1.00	
Toluene	ND	0.19	1.00	
Trichloroethene	ND	0.13	1.00	
Trichlorofluoromethane	ND	0.14	1.00	
Vinyl Chloride	ND	0.026	1.00	
c-1,2-Dichloroethene	ND	0.099	1.00	
o-Xylene	ND	0.11	1.00	
p/m-Xylene	ND	0.11	1.00	
t-1,2-Dichloroethene	ND	0.099	1.00	
1,2,3-Trichlorobenzene	ND	0.19	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,2-Dichloroethane-d4	106	37-163	
1,4-Bromofluorobenzene	87	45-153	
Toluene-d8	100	73-121	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

Treadwell & Rollo - A Langan Company
 555 Montgomery St., Suite 1300
 San Francisco, CA 94111-2554

Date Received: 03/28/15
 Work Order: 15-03-2257
 Preparation: N/A
 Method: EPA TO-15 SIM
 Units: ug/m3

Project: TI Off - Property SU3-8

Page 11 of 11

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-15-214-176	N/A	Air	GC/MS DD	N/A	04/02/15 19:17	150402L01

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
Methylene Chloride	ND	0.087	1.00	

<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>
1,2-Dichloroethane-d4	105	37-163	
1,4-Bromofluorobenzene	85	45-153	
Toluene-d8	92	73-121	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-15-214-177	N/A	Air	GC/MS HH	N/A	04/06/15 19:46	150406L01

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
Toluene	ND	0.19	1.00	

<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>
1,2-Dichloroethane-d4	104	37-163	
1,4-Bromofluorobenzene	95	45-153	
Toluene-d8	108	73-121	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Quality Control - LCS/LCSD

Treadwell & Rollo - A Langan Company
555 Montgomery St., Suite 1300
San Francisco, CA 94111-2554

Date Received: 03/28/15
Work Order: 15-03-2257
Preparation: N/A
Method: EPA TO-15 SIM

Project: TI Off - Property SU3-8

Page 1 of 3

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number				
099-15-214-175	LCS	Air	GC/MS DD	N/A	04/01/15 14:18	150401L01				
099-15-214-175	LCSD	Air	GC/MS DD	N/A	04/01/15 15:08	150401L01				
Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	ME CL	RPD	RPD CL	Qualifiers
1,1,1-Trichloroethane	2.728	2.398	88	2.344	86	50-150	33-167	2	0-30	
1,1,2-Trichloro-1,2,2-Trifluoroethane	3.832	3.517	92	3.456	90	50-150	33-167	2	0-30	
1,1,2-Trichloroethane	2.728	2.412	88	2.310	85	27-171	3-195	4	0-38	
1,1-Dichloroethane	2.024	1.814	90	1.768	87	50-150	33-167	3	0-30	
1,1-Dichloroethene	1.982	1.879	95	1.871	94	50-150	33-167	0	0-30	
1,2,4-Trichlorobenzene	3.711	2.589	70	2.894	78	50-150	33-167	11	0-30	
1,2-Dichlorobenzene	3.006	2.442	81	2.573	86	50-150	33-167	5	0-30	
1,2-Dichloroethane	2.024	1.806	89	1.823	90	28-166	5-189	1	0-40	
1,3-Dichlorobenzene	3.006	2.537	84	2.680	89	50-150	33-167	5	0-30	
1,4-Dichlorobenzene	3.006	2.538	84	2.680	89	50-150	33-167	5	0-30	
Chlorobenzene	2.302	2.008	87	2.027	88	50-150	33-167	1	0-30	
Chloroethane	1.319	1.207	91	1.069	81	50-150	33-167	12	0-30	
Chloroform	2.441	2.242	92	2.158	88	50-150	33-167	4	0-30	
Ethylbenzene	2.171	2.148	99	1.992	92	27-153	6-174	8	0-46	
Methyl-t-Butyl Ether (MTBE)	1.803	1.494	83	1.544	86	50-150	33-167	3	0-30	
Methylene Chloride	1.737	1.575	91	1.533	88	50-150	33-167	3	0-30	
Tetrachloroethene	3.391	2.649	78	2.866	84	34-154	14-174	8	0-33	
Toluene	1.884	1.642	87	1.765	94	28-154	7-175	7	0-42	
Trichloroethene	2.687	2.363	88	2.310	86	43-139	27-155	2	0-31	
Trichlorofluoromethane	2.809	2.483	88	2.455	87	50-150	33-167	1	0-30	
Vinyl Chloride	1.278	1.188	93	1.045	82	44-140	28-156	13	0-33	
c-1,2-Dichloroethene	1.982	1.712	86	1.736	88	35-165	13-187	1	0-35	
o-Xylene	2.171	2.090	96	1.999	92	22-160	0-183	4	0-48	
p/m-Xylene	4.342	4.087	94	4.059	93	21-165	0-189	1	0-51	
t-1,2-Dichloroethene	1.982	1.699	86	1.697	86	50-150	33-167	0	0-30	
1,2,3-Trichlorobenzene	3.711	2.507	68	2.776	75	50-150	33-167	10	0-30	

Total number of LCS compounds: 26

Total number of ME compounds: 0

Total number of ME compounds allowed: 1

LCS ME CL validation result: Pass

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - LCS/LCSD

Treadwell & Rollo - A Langan Company
555 Montgomery St., Suite 1300
San Francisco, CA 94111-2554

Date Received: 03/28/15
Work Order: 15-03-2257
Preparation: N/A
Method: EPA TO-15 SIM

Project: TI Off - Property SU3-8

Page 2 of 3

Quality Control Sample ID	Type	Matrix		Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number			
099-15-214-176	LCS	Air		GC/MS DD	N/A	04/02/15 16:26	150402L01			
099-15-214-176	LCSD	Air		GC/MS DD	N/A	04/02/15 17:14	150402L01			
Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	ME CL	RPD	RPD CL	Qualifiers
1,1,1-Trichloroethane	2.728	2.673	98	2.757	101	50-150	33-167	3	0-30	
1,1,2-Trichloro-1,2,2-Trifluoroethane	3.832	3.841	100	3.914	102	50-150	33-167	2	0-30	
1,1,2-Trichloroethane	2.728	2.597	95	2.719	100	27-171	3-195	5	0-38	
1,1-Dichloroethane	2.024	1.994	99	1.988	98	50-150	33-167	0	0-30	
1,1-Dichloroethene	1.982	2.067	104	2.077	105	50-150	33-167	0	0-30	
1,2,4-Trichlorobenzene	3.711	4.039	109	3.906	105	50-150	33-167	3	0-30	
1,2-Dichlorobenzene	3.006	3.407	113	3.313	110	50-150	33-167	3	0-30	
1,2-Dichloroethane	2.024	1.958	97	2.084	103	28-166	5-189	6	0-40	
1,3-Dichlorobenzene	3.006	3.438	114	3.302	110	50-150	33-167	4	0-30	
1,4-Dichlorobenzene	3.006	3.461	115	3.293	110	50-150	33-167	5	0-30	
Chlorobenzene	2.302	2.332	101	2.297	100	50-150	33-167	1	0-30	
Chloroethane	1.319	1.411	107	1.469	111	50-150	33-167	4	0-30	
Chloroform	2.441	2.502	102	2.570	105	50-150	33-167	3	0-30	
Ethylbenzene	2.171	2.533	117	2.198	101	27-153	6-174	14	0-46	
Methyl-t-Butyl Ether (MTBE)	1.803	1.648	91	1.618	90	50-150	33-167	2	0-30	
Methylene Chloride	1.737	1.744	100	1.742	100	50-150	33-167	0	0-30	
Tetrachloroethene	3.391	3.304	97	3.218	95	34-154	14-174	3	0-33	
Toluene	1.884	1.973	105	1.945	103	28-154	7-175	1	0-42	
Trichloroethene	2.687	2.578	96	2.464	92	43-139	27-155	5	0-31	
Trichlorofluoromethane	2.809	2.872	102	2.936	105	50-150	33-167	2	0-30	
Vinyl Chloride	1.278	1.360	106	1.451	114	44-140	28-156	7	0-33	
c-1,2-Dichloroethene	1.982	1.952	98	1.950	98	35-165	13-187	0	0-35	
o-Xylene	2.171	2.631	121	2.366	109	22-160	0-183	11	0-48	
p/m-Xylene	4.342	5.081	117	4.682	108	21-165	0-189	8	0-51	
t-1,2-Dichloroethene	1.982	1.938	98	1.997	101	50-150	33-167	3	0-30	
1,2,3-Trichlorobenzene	3.711	4.159	112	4.041	109	50-150	33-167	3	0-30	

Total number of LCS compounds: 26

Total number of ME compounds: 0

Total number of ME compounds allowed: 1

LCS ME CL validation result: Pass

RPD: Relative Percent Difference. CL: Control Limits



Calscience

Quality Control - LCS/LCSD

Treadwell & Rollo - A Langan Company
555 Montgomery St., Suite 1300
San Francisco, CA 94111-2554

Date Received: 03/28/15
Work Order: 15-03-2257
Preparation: N/A
Method: EPA TO-15 SIM

Project: TI Off - Property SU3-8

Page 3 of 3

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number				
099-15-214-177	LCS	Air	GC/MS HH	N/A	04/06/15 15:23	150406L01				
099-15-214-177	LCSD	Air	GC/MS HH	N/A	04/06/15 16:11	150406L01				
Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	ME CL	RPD	RPD CL	Qualifiers
1,1,1-Trichloroethane	2.728	3.464	127	3.399	125	50-150	33-167	2	0-30	
1,1,2-Trichloro-1,2,2-Trifluoroethane	3.832	4.575	119	4.455	116	50-150	33-167	3	0-30	
1,1,2-Trichloroethane	2.728	3.061	112	3.021	111	27-171	3-195	1	0-38	
1,1-Dichloroethane	2.024	2.265	112	2.231	110	50-150	33-167	1	0-30	
1,1-Dichloroethene	1.982	2.351	119	2.373	120	50-150	33-167	1	0-30	
1,2,4-Trichlorobenzene	3.711	4.531	122	4.499	121	50-150	33-167	1	0-30	
1,2-Dichlorobenzene	3.006	3.533	118	3.544	118	50-150	33-167	0	0-30	
1,2-Dichloroethane	2.024	2.388	118	2.343	116	28-166	5-189	2	0-40	
1,3-Dichlorobenzene	3.006	3.492	116	3.473	116	50-150	33-167	1	0-30	
1,4-Dichlorobenzene	3.006	3.645	121	3.592	119	50-150	33-167	1	0-30	
Chlorobenzene	2.302	2.473	107	2.490	108	50-150	33-167	1	0-30	
Chloroethane	1.319	1.223	93	1.212	92	50-150	33-167	1	0-30	
Chloroform	2.441	2.813	115	2.759	113	50-150	33-167	2	0-30	
Ethylbenzene	2.171	2.364	109	2.391	110	27-153	6-174	1	0-46	
Methyl-t-Butyl Ether (MTBE)	1.803	2.230	124	2.250	125	50-150	33-167	1	0-30	
Methylene Chloride	1.737	1.965	113	1.923	111	50-150	33-167	2	0-30	
Tetrachloroethene	3.391	3.290	97	3.313	98	34-154	14-174	1	0-33	
Toluene	1.884	1.917	102	1.951	104	28-154	7-175	2	0-42	
Trichloroethene	2.687	3.007	112	3.010	112	43-139	27-155	0	0-31	
Trichlorofluoromethane	2.809	3.095	110	2.996	107	50-150	33-167	3	0-30	
Vinyl Chloride	1.278	1.491	117	1.456	114	44-140	28-156	2	0-33	
c-1,2-Dichloroethene	1.982	2.146	108	2.140	108	35-165	13-187	0	0-35	
o-Xylene	2.171	2.344	108	2.331	107	22-160	0-183	1	0-48	
p/m-Xylene	4.342	4.543	105	4.557	105	21-165	0-189	0	0-51	
t-1,2-Dichloroethene	1.982	2.114	107	2.091	105	50-150	33-167	1	0-30	
1,2,3-Trichlorobenzene	3.711	4.254	115	4.274	115	50-150	33-167	0	0-30	

Total number of LCS compounds: 26

Total number of ME compounds: 0

Total number of ME compounds allowed: 1

LCS ME CL validation result: Pass

RPD: Relative Percent Difference. CL: Control Limits

Summa Canister Vacuum Summary

Work Order: 15-03-2257

Page 1 of 1

Sample Name	Vacuum Out	Vacuum In	Equipment	Description
SU3-8-PS1-2015-03-26	-29.70 in Hg	-4.50 in Hg	D286	Summa Canister 6L
SU3-8-PS2-2015-03-26	-29.70 in Hg	-4.10 in Hg	D642	Summa Canister 6L
SU3-8-PS3-2015-03-26	-29.70 in Hg	-4.20 in Hg	D372	Summa Canister 6L
SU3-8-PS4-2015-03-26	-29.70 in Hg	0.20 psi	D924	Summa Canister 6L
SU3-8-PS5-2015-03-26	-29.80 in Hg	0.30 psi	D877	Summa Canister 6L
SU3-8-PS6-2015-03-26	-29.70 in Hg	0.00 in Hg	D884	Summa Canister 6L
SU3-8-PS7-2015-03-26	-29.70 in Hg	-2.80 in Hg	D105	Summa Canister 6L
SU3-8-PS8-2015-03-26	-29.70 in Hg	-3.90 in Hg	SIM066	Summa Canister 6L
SU3-8-PS9-2015-03-26	-29.70 in Hg	-3.60 in Hg	D869	Summa Canister 6L
SU3-8-DUP1-2015-03-26	-29.70 in Hg	-4.70 in Hg	D493	Summa Canister 6L
SU3-8-AA1-2015-03-26	-29.70 in Hg	-3.50 in Hg	D698	Summa Canister 6L

Sample Analysis Summary Report

Work Order: 15-03-2257

Page 1 of 1

<u>Method</u>	<u>Extraction</u>	<u>Chemist ID</u>	<u>Instrument</u>	<u>Analytical Location</u>
EPA TO-15 SIM	N/A	326	GC/MS DD	2
EPA TO-15 SIM	N/A	866	GC/MS HH	2

Glossary of Terms and Qualifiers

Work Order: 15-03-2257

Page 1 of 1

<u>Qualifiers</u>	<u>Definition</u>
*	See applicable analysis comment.
<	Less than the indicated value.
>	Greater than the indicated value.
1	Surrogate compound recovery was out of control due to a required sample dilution. Therefore, the sample data was reported without further clarification.
2	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
3	Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to suspected matrix interference. The associated LCS recovery was in control.
4	The MS/MSD RPD was out of control due to suspected matrix interference.
5	The PDS/PDSO or PES/PESO associated with this batch of samples was out of control due to suspected matrix interference.
6	Surrogate recovery below the acceptance limit.
7	Surrogate recovery above the acceptance limit.
B	Analyte was present in the associated method blank.
BU	Sample analyzed after holding time expired.
BV	Sample received after holding time expired.
E	Concentration exceeds the calibration range.
ET	Sample was extracted past end of recommended max. holding time.
HD	The chromatographic pattern was inconsistent with the profile of the reference fuel standard.
HDH	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but heavier hydrocarbons were also present (or detected).
HDL	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but lighter hydrocarbons were also present (or detected).
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
JA	Analyte positively identified but quantitation is an estimate.
ME	LCS Recovery Percentage is within Marginal Exceedance (ME) Control Limit range (+/- 4 SD from the mean).
ND	Parameter not detected at the indicated reporting limit.
Q	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
SG	The sample extract was subjected to Silica Gel treatment prior to analysis.
X	% Recovery and/or RPD out-of-range.
Z	Analyte presence was not confirmed by second column or GC/MS analysis.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of ≤ 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

A calculated total result (Example: Total Pesticides) is the summation of each component concentration and/or, if "J" flags are reported, estimated concentration. Component concentrations showing not detected (ND) are summed into the calculated total result as zero concentrations.



Calscience

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

AIR CHAIN-OF-CUSTODY RECORD

W/O NO. / LAB USE ONLY

15-03-2257

DATE: 3/26/15

PAGE: 1 OF 2

LABORATORY CLIENT: Langan Treadwell Rolfe
 ADDRESS: 555 Montgomery St. CITY: San Francisco STATE: CA ZIP: 94111
 TEL: (510) 874-7086 E-MAIL: jgrabber@langan.com
 TURNAROUND TIME (Rush surcharges may apply to any TAT not "STANDARD"):
 SAME DAY 24 HR 48 HR 72 HR 5 DAYS STANDARD
 EDD: COELT EDF OTHER
 SPECIAL INSTRUCTIONS: See Table 3 (page 3 of 3)

LAB USE ONLY	SAMPLE ID	FIELD ID / POINT OF COLLECTION	MATRIX		SAMPLING EQUIPMENT			START SAMPLING INFORMATION			STOP SAMPLING INFORMATION		
			Indoor (I)	Soil Vap. (SV)	Media ID	Canister Size 6L or 1L	Flow Controller ID	Date	Time (24 hr clock)	Canister Pressure (in Hg)	Date	Time (24 hr clock)	Canister Pressure (in Hg)
1	SU3-8-PS1-2015-03-26		I		D866	6L	FC286	3/26/15	12:47	-30	3/27/15	11:34	-5
2	SU3-8-PS2-2015-03-26		I		D642	6L	FC192	3/26/15	12:40	-30	3/27/15	12:41	-5
3	SU3-8-PS3-2015-03-26		I		D372	6L	FC663	3/26/15	12:49	-30	3/27/15	12:49	-5
4	SU3-8-PS4-2015-03-26		I		D124	6L	FC37	3/26/15	13:42	-30	3/27/15	14:09	-3
5	SU3-8-PS5-2015-03-26		I		D877	6L	FC351	3/26/15	14:25	-30	3/27/15	14:25	-3
6	SU3-8-PS6-2015-03-26		I		D884	6L	FC289	3/26/15	13:01	-30	3/27/15	11:47	-1
7	SU3-8-PS7-2015-03-26		I		D105	6L	FC154	3/26/15	15:41	-30	3/27/15	13:45	-5
8	SU3-8-PS8-2015-03-26		I		SIM066	6L	FC246	3/26/15	13:37	-30	3/27/15	13:00	-5
9	SU3-8-PS9-2015-03-26		I		D869	6L	FC36	3/26/15	13:32	-30	3/27/15	13:02	-5
10	SU3-8-DUP1-2015-03-26		I		D493	6L	FC243	3/26/15	12:47	-30	3/27/15	11:34	-6

Requested by: (Signature) Wendy Kwong Date: 3/27/15 Time: 1600
 Relinquished by: (Signature) [Signature] Date: 3/28/15 Time: 10:10
 Relinquished by: (Signature) [Signature] Date: [] Time: []

CLIENT PROJECT NAME / NO.: T1 Off-Property, SU3-8
 P.O. NO.: 750620726
 PROJECT CONTACT: Josh Grabber
 PROJECT ADDRESS: SU3-8
 CITY: Sunnyvale STATE: CA ZIP: []
 LAB CONTACT OR QUOTE NO.: Vikas Patel
 SAMPLER(S): (PRINT) Wendy Kwong

REQUESTED ANALYSES: TO-15 (See attached list)



2257



800-322-5555 www.gso.com

Ship From

LANGAN TREADWELL ROLLO
WENDY KWONG
555 MONTGOMERY ST
SUITE 1300
SAN FRANCISCO, CA 94111

Tracking #: 527395589

PDS



Ship To

CAL SCIENCE
VIKAS PATEL
7440 LINCOLN WAY
GARDEN GROVE, CA 92841

ORC
GARDEN GROVE

A

COD: \$0.00

Weight: 0 lb(s)

Reference:

750620726

Delivery Instructions:

D92845A



Signature Type: REQUIRED

35827434

Print Date: 3/27/2015 4:09 PM

Package 1 of 3

LABEL INSTRUCTIONS:

Do not copy or reprint this label for additional shipments - each package must have a unique barcode.

Use the "Print Label" button on this page to print the shipping label on a laser or inkjet printer. Securely attach this label to your package, do not cover the barcode.

Return to Contents

2257



800-322-5555 www.gso.com

Ship From

LANGAN TREADWELL ROLLO
WENDY KWONG
555 MONTGOMERY ST
SUITE 1300
SAN FRANCISCO, CA 94111

Tracking #: 527395590

PDS



Ship To

CAL SCIENCE
VIKAS PATEL
7440 LINCOLN WAY
GARDEN GROVE, CA 92841

ORC
GARDEN GROVE

A

COD: \$0.00

Weight: 0 lb(s)

Reference:

750620726

Delivery Instructions:

D92845A



Signature Type: REQUIRED

35827435

Print Date: 3/27/2015 4:09 PM

Package 2 of 3

LABEL INSTRUCTIONS:

Do not copy or reprint this label for additional shipments - each package must have a unique barcode.

Use the "Print Label" button on this page to print the shipping label on a laser or inkjet printer. Securely attach this label to your package, do not cover the barcode.

Return to Contents

2257



800-322-5555 www.gso.com

Ship From

LANGAN TREADWELL ROLLO
WENDY KWONG
555 MONTGOMERY ST
SUITE 1300
SAN FRANCISCO, CA 94111

Tracking #: 527395591

PDS



Ship To

CAL SCIENCE
VIKAS PATEL
7440 LINCOLN WAY
GARDEN GROVE, CA 92841

ORC
GARDEN GROVE

A

COD: \$0.00

Weight: 0 lb(s)

Reference:

750620726

Delivery Instructions:

D92845A



Signature Type: REQUIRED

35827436

Print Date: 3/27/2015 4:09 PM

Package 3 of 3

LABEL INSTRUCTIONS:

Do not copy or reprint this label for additional shipments - each package must have a unique barcode.

Use the "Print Label" button on this page to print the shipping label on a laser or inkjet printer. Securely attach this label to your package, do not cover the barcode.





Calscience

WORK ORDER NUMBER: 15-03- 2257

SAMPLE RECEIPT CHECKLIST

COOLER 1 OF 3

CLIENT: Langan Treadwell Rollo

DATE: 03 / 28 / 2015

TEMPERATURE: (Criteria: 0.0°C – 6.0°C, not frozen except sediment/tissue)
 Thermometer ID: SC4 (CF: +0.2°C) Temperature (w/o CF): _____ °C (w/ CF): _____ °C Blank Sample
 Sample(s) outside temperature criteria (PM/APM contacted by: _____)
 Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling
 Sample(s) received at ambient temperature; placed on ice for transport by courier
 Ambient Temperature: Air Filter Checked by: 862

CUSTODY SEAL:
~~Cooler~~ Present and Intact Not Intact Not Present N/A Checked by: 862
 Sample(s) Present and Intact Not Intact Not Present N/A Checked by: 862

SAMPLE CONDITION:	Yes	No	N/A
Chain-of-Custody (COC) document(s) received with samples	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
COC document(s) received complete.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Sampling date <input type="checkbox"/> Sampling time <input type="checkbox"/> Matrix <input type="checkbox"/> Number of containers			
<input type="checkbox"/> No analysis requested <input type="checkbox"/> Not relinquished <input type="checkbox"/> No relinquished date <input type="checkbox"/> No relinquished time			
Sampler's name indicated on COC.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sample container label(s) consistent with COC.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sample container(s) intact and in good condition.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Proper containers for analyses requested.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sufficient volume/mass for analyses requested.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Samples received within holding time.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Aqueous samples for certain analyses received within 15-minute holding time			
<input type="checkbox"/> pH <input type="checkbox"/> Residual Chlorine <input type="checkbox"/> Dissolved Sulfide <input type="checkbox"/> Dissolved Oxygen	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Proper preservation chemical(s) noted on COC and/or sample container	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Unpreserved aqueous sample(s) received for certain analyses			
<input type="checkbox"/> Volatile Organics <input type="checkbox"/> Total Metals <input type="checkbox"/> Dissolved Metals			
Container(s) for certain analysis free of headspace.....	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> Volatile Organics <input type="checkbox"/> Dissolved Gases (RSK-175) <input type="checkbox"/> Dissolved Oxygen (SM 4500)			
<input type="checkbox"/> Carbon Dioxide (SM 4500) <input type="checkbox"/> Ferrous Iron (SM 3500) <input type="checkbox"/> Hydrogen Sulfide (Hach)			
Tedlar™ bag(s) free of condensation.....	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

CONTAINER TYPE: (Trip Blank Lot Number: _____)
Aqueous: VOA VOAh VOAna₂ 100PJ 100PJna₂ 125AGB 125AGBh 125AGBp 125PB
125PBz_{na} 250AGB 250CGB 250CGBs 250PB 250PBn 500AGB 500AGJ 500AGJs
500PB 1AGB 1AGBna₂ 1AGBs 1PB 1PBna _____ _____ _____ _____
Solid: 4ozCGJ 8ozCGJ 16ozCGJ 16ozPJ Sleeve (_____) EnCores® (_____) TerraCores® (_____) _____
Air: Tedlar® Canister Sorbent Tube PUF _____ **Other Matrix** (____): _____ _____
 Container: A=Amber, B=Bottle, C=Clear, E=Envelope, G=Glass, J=Jar, P=Plastic, and Z= Ziploc/Resealable Bag
 Preservative: f=filtered, h=HCl, n=HNO₃, na=NaOH, na₂=Na₂S₂O₃, p=H₃PO₄,
 s=H₂SO₄, u=ultra-pure, z_{na}=Zn(CH₃CO₂)₂ + NaOH Labeled/Checked by: 862
Reviewed by: 716

Return to Contents



Calscience

WORK ORDER NUMBER: **15-03-2257**

SAMPLE RECEIPT CHECKLIST

Box COOLER 2 OF 3

CLIENT: Langan Treadwell Pello

DATE: 03/28/2015

TEMPERATURE: (Criteria: 0.0°C – 6.0°C, not frozen except sediment/tissue)
 Thermometer ID: SC4 (CF: +0.2°C) Temperature (w/o CF): _____ °C (w/ CF): _____ °C Blank Sample
 Sample(s) outside temperature criteria (PM/APM contacted by: _____)
 Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling
 Sample(s) received at ambient temperature; placed on ice for transport by courier
 Ambient Temperature: Air Filter Checked by: Boz

CUSTODY SEAL:
~~Box~~ Cooler Present and Intact Not Intact Not Present N/A Checked by: Boz
 Sample(s) Present and Intact Not Intact Not Present N/A Checked by: Boz

SAMPLE CONDITION:	Yes	No	N/A
Chain-of-Custody (COC) document(s) received with samples	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
COC document(s) received complete.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Sampling date <input type="checkbox"/> Sampling time <input type="checkbox"/> Matrix <input type="checkbox"/> Number of containers <input type="checkbox"/> No analysis requested <input type="checkbox"/> Not relinquished <input type="checkbox"/> No relinquished date <input type="checkbox"/> No relinquished time			
Sampler's name indicated on COC.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sample container label(s) consistent with COC.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sample container(s) intact and in good condition.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Proper containers for analyses requested.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sufficient volume/mass for analyses requested.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Samples received within holding time.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Aqueous samples for certain analyses received within 15-minute holding time			
<input type="checkbox"/> pH <input type="checkbox"/> Residual Chlorine <input type="checkbox"/> Dissolved Sulfide <input type="checkbox"/> Dissolved Oxygen	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Proper preservation chemical(s) noted on COC and/or sample container	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Unpreserved aqueous sample(s) received for certain analyses			
<input type="checkbox"/> Volatile Organics <input type="checkbox"/> Total Metals <input type="checkbox"/> Dissolved Metals			
Container(s) for certain analysis free of headspace.....	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> Volatile Organics <input type="checkbox"/> Dissolved Gases (RSK-175) <input type="checkbox"/> Dissolved Oxygen (SM 4500)			
<input type="checkbox"/> Carbon Dioxide (SM 4500) <input type="checkbox"/> Ferrous Iron (SM 3500) <input type="checkbox"/> Hydrogen Sulfide (Hach)			
Tedlar™ bag(s) free of condensation.....	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

CONTAINER TYPE: (Trip Blank Lot Number: _____)
Aqueous: VOA VOAh VOAna₂ 100PJ 100PJna₂ 125AGB 125AGBh 125AGBp 125PB
125PBz₂na 250AGB 250CGB 250CGBs 250PB 250PBn 500AGB 500AGJ 500AGJs
500PB 1AGB 1AGBna₂ 1AGBs 1PB 1PBna _____ _____ _____ _____
Solid: 4ozCGJ 8ozCGJ 16ozCGJ 16ozPJ Sleeve () EnCores® () TerraCores® () _____
Air: Tedlar® Canister Sorbent Tube PUF _____ **Other Matrix** (): _____ _____
 Container: A=Amber, B=Bottle, C=Clear, E=Envelope, G=Glass, J=Jar, P=Plastic, and Z= Ziploc/Resealable Bag
 Preservative: f=filtered, h=HCl, n=HNO₃, na=NaOH, na₂=Na₂S₂O₃, p=H₃PO₄,
 s=H₂SO₄, u=ultra-pure, z₂na=Zn(CH₃CO₂)₂ + NaOH Labeled/Checked by: Boz
Reviewed by: DE

Return to Contents



Calscience

WORK ORDER NUMBER: **15-03-** 2257

SAMPLE RECEIPT CHECKLIST

^{Box} COOLER 3 OF 3

CLIENT: Langan Treadwell Rello

DATE: 03 / 28 / 2015

TEMPERATURE: (Criteria: 0.0°C – 6.0°C, not frozen except sediment/tissue)
 Thermometer ID: SC4 (CF: +0.2°C) Temperature (w/o CF): _____ °C (w/ CF): _____ °C Blank Sample
 Sample(s) outside temperature criteria (PM/APM contacted by: _____)
 Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling
 Sample(s) received at ambient temperature; placed on ice for transport by courier
 Ambient Temperature: Air Filter Checked by: 802

CUSTODY SEAL:
~~Box~~ Present and Intact Not Intact Not Present N/A Checked by: 802
 Sample(s) Present and Intact Not Intact Not Present N/A Checked by: 802

SAMPLE CONDITION:

	Yes	No	N/A
Chain-of-Custody (COC) document(s) received with samples	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
COC document(s) received complete.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Sampling date <input type="checkbox"/> Sampling time <input type="checkbox"/> Matrix <input type="checkbox"/> Number of containers <input type="checkbox"/> No analysis requested <input type="checkbox"/> Not relinquished <input type="checkbox"/> No relinquished date <input type="checkbox"/> No relinquished time			
Sampler's name indicated on COC.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sample container label(s) consistent with COC.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sample container(s) intact and in good condition.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Proper containers for analyses requested.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sufficient volume/mass for analyses requested.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Samples received within holding time.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Aqueous samples for certain analyses received within 15-minute holding time			
<input type="checkbox"/> pH <input type="checkbox"/> Residual Chlorine <input type="checkbox"/> Dissolved Sulfide <input type="checkbox"/> Dissolved Oxygen	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Proper preservation chemical(s) noted on COC and/or sample container	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Unpreserved aqueous sample(s) received for certain analyses			
<input type="checkbox"/> Volatile Organics <input type="checkbox"/> Total Metals <input type="checkbox"/> Dissolved Metals			
Container(s) for certain analysis free of headspace.....	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> Volatile Organics <input type="checkbox"/> Dissolved Gases (RSK-175) <input type="checkbox"/> Dissolved Oxygen (SM 4500)			
<input type="checkbox"/> Carbon Dioxide (SM 4500) <input type="checkbox"/> Ferrous Iron (SM 3500) <input type="checkbox"/> Hydrogen Sulfide (Hach)			
Tedlar™ bag(s) free of condensation.....	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

CONTAINER TYPE: (Trip Blank Lot Number: _____)

Aqueous: VOA VOAh VOAna₂ 100PJ 100PJna₂ 125AGB 125AGBh 125AGBp 125PB
125PBz₂na 250AGB 250CGB 250CGBs 250PB 250PBn 500AGB 500AGJ 500AGJs
500PB 1AGB 1AGBna₂ 1AGBs 1PB 1PBna _____ _____ _____ _____

Solid: 4ozCGJ 8ozCGJ 16ozCGJ 16ozPJ Sleeve (____) EnCores® () TerraCores® () _____

Air: Tedlar® Canister Sorbent Tube PUF _____ **Other Matrix** (_____): _____ _____

Container: **A**=Amber, **B**=Bottle, **C**=Clear, **E**=Envelope, **G**=Glass, **J**=Jar, **P**=Plastic, and **Z**= Ziploc/Resealable Bag
 Preservative: f=filtered, h=HCl, n=HNO₃, na=NaOH, na₂=Na₂S₂O₃, p=H₃PO₄,
 s=H₂SO₄, u=ultra-pure, z₂na=Zn(CH₃CO₂)₂ + NaOH Labeled/Checked by: 802
Reviewed by: 776

Return to Contents

Vikas Patel

From: Wendy Kwong [wkwong@Langan.com]
Sent: Friday, March 27, 2015 5:49 PM
To: Vikas Patel
Cc: Joshua Graber
Subject: Off-Property TI, SU3-8/ 750620724

Hi Vikas,

I have some samples for TI coming your way via GSO; see attached COC. Just wanted to let you know that this would be standard TAT. Also, we wanted to place a hold on the following three samples:

-SU3-8-**PS7**-2015-03-26
 -SU3-8-**PS8**-2015-03-26
 -SU3-8-**PS9**-2015-03-26

Let me know if you have any questions. Have a good weekend!

Wendy Kwong
Staff Scientist
 Direct: 415.955.5224
 Mobile: 415.608.0271
[File Sharing Link](#)

LANGAN TREADWELL ROLLO

Phone: 415.955.5200 Fax: 415.955.5201
 555 Montgomery Street, Suite 1300
 San Francisco, CA 94111-2554
www.langan.com

CALIFORNIA NEW JERSEY NEW YORK CONNECTICUT PENNSYLVANIA OHIO WASHINGTON, DC FLORIDA TEXAS NORTH DAKOTA
 ABU DHABI ATHENS DOHA DUBAI ISTANBUL PANAMA

Langan's goal is to be SAFE (Stay Accident Free Everyday)

Electronic communication provided by "Langan" encompasses "Langan Engineering, Environmental, Surveying and Landscape Architecture, D.P.C.," "Langan Engineering and Environmental Services, Inc.," "Langan International LLC," "Langan Treadwell Rollo," "Langan CT, Inc." and "Langan Engineering and Environmental Services, Inc., PC." This electronic transmission may contain confidential, proprietary or privileged information. No confidentiality or privilege is intended to be waived or lost by erroneous transmission of this message. If you receive this message in error, please notify the sender immediately by return email and delete this message from your system. Disclosure, use, distribution or copying of this message, any attachments thereto or their contents is strictly prohibited.

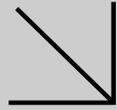
Notify us [here](#) to report this email as spam.



Environmental
Calscience

Supplemental Report 1

Additional requested analyses are reported as a stand-alone report.



WORK ORDER NUMBER: 15-03-2257

The difference is service



AIR | SOIL | WATER | MARINE CHEMISTRY

Analytical Report For

Client: Treadwell & Rollo - A Langan Company

Client Project Name: TI Off - Property SU3-8

Attention: Joshua Graber
555 Montgomery St., Suite 1300
San Francisco, CA 94111-2554

Vikas Patel

Approved for release on 04/14/2015 by:
Vikas Patel
Project Manager

ResultLink ▶

Email your PM ▶



Eurofins Calscience, Inc. (Calscience) certifies that the test results provided in this report meet all NELAC requirements for parameters for which accreditation is required or available. Any exceptions to NELAC requirements are noted in the case narrative. The original report of subcontracted analyses, if any, is attached to this report. The results in this report are limited to the sample(s) tested and any reproduction thereof must be made in its entirety. The client or recipient of this report is specifically prohibited from making material changes to said report and, to the extent that such changes are made, Calscience is not responsible, legally or otherwise. The client or recipient agrees to indemnify Calscience for any defense to any litigation which may arise.



Contents

Client Project Name: TI Off - Property SU3-8
Work Order Number: 15-03-2257

1	Work Order Narrative.	3
2	Sample Summary.	4
3	Detections Summary.	5
4	Client Sample Data.	6
	4.1 EPA TO-15 SIM (Air).	6
5	Quality Control Sample Data.	11
	5.1 LCS/LCSD.	11
6	Summa Canister Vacuum Summary.	12
7	Sample Analysis Summary.	13
8	Glossary of Terms and Qualifiers.	14
9	Chain-of-Custody/Sample Receipt Form.	15

Condition Upon Receipt:

Samples were received under Chain-of-Custody (COC) on 03/28/15. They were assigned to Work Order 15-03-2257.

Unless otherwise noted on the Sample Receiving forms all samples were received in good condition and within the recommended EPA temperature criteria for the methods noted on the COC. The COC and Sample Receiving Documents are integral elements of the analytical report and are presented at the back of the report.

Holding Times:

All samples were analyzed within prescribed holding times (HT) and/or in accordance with the Calscience Sample Acceptance Policy unless otherwise noted in the analytical report and/or comprehensive case narrative, if required.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of ≤ 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

Quality Control:

All quality control parameters (QC) were within established control limits except where noted in the QC summary forms or described further within this report.

Subcontractor Information:

Unless otherwise noted below (or on the subcontract form), no samples were subcontracted.

Additional Comments:

Air - Sorbent-extracted air methods (EPA TO-4A, EPA TO-10, EPA TO-13A, EPA TO-17): Analytical results are converted from mass/sample basis to mass/volume basis using client-supplied air volumes.

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are always reported on a wet weight basis.



Calscience

Sample Summary

Client: Treadwell & Rollo - A Langan Company	Work Order: 15-03-2257
555 Montgomery St., Suite 1300	Project Name: TI Off - Property SU3-8
San Francisco, CA 94111-2554	PO Number:
	Date/Time Received: 03/28/15 10:10
	Number of Containers: 11

Attn: Joshua Graber

Sample Identification	Lab Number	Collection Date and Time	Number of Containers	Matrix
SU3-8-PS7-2015-03-26	15-03-2257-7	03/27/15 13:45	1	Air
SU3-8-PS8-2015-03-26	15-03-2257-8	03/27/15 13:06	1	Air
SU3-8-PS9-2015-03-26	15-03-2257-9	03/27/15 13:02	1	Air



Return to Contents



Calscience

Detections Summary

Client: Treadwell & Rollo - A Langan Company
555 Montgomery St., Suite 1300
San Francisco, CA 94111-2554

Work Order: 15-03-2257
Project Name: TI Off - Property SU3-8
Received: 03/28/15

Attn: Joshua Graber

Page 1 of 1

Client SampleID

Analyte	Result	Qualifiers	RL	Units	Method	Extraction
SU3-8-PS7-2015-03-26 (15-03-2257-7)						
1,1,2-Trichloro-1,2,2-Trifluoroethane	0.57		0.19	ug/m3	EPA TO-15 SIM	N/A
1,2-Dichloroethane	0.14		0.10	ug/m3	EPA TO-15 SIM	N/A
Chloroform	8.7		0.12	ug/m3	EPA TO-15 SIM	N/A
Ethylbenzene	1.0		0.11	ug/m3	EPA TO-15 SIM	N/A
Methylene Chloride	41		0.35	ug/m3	EPA TO-15 SIM	N/A
Tetrachloroethene	0.98		0.17	ug/m3	EPA TO-15 SIM	N/A
Toluene	7.2		0.19	ug/m3	EPA TO-15 SIM	N/A
Trichlorofluoromethane	1.3		0.14	ug/m3	EPA TO-15 SIM	N/A
o-Xylene	1.2		0.11	ug/m3	EPA TO-15 SIM	N/A
p/m-Xylene	3.1		0.11	ug/m3	EPA TO-15 SIM	N/A
SU3-8-PS8-2015-03-26 (15-03-2257-8)						
1,1,2-Trichloro-1,2,2-Trifluoroethane	0.61		0.19	ug/m3	EPA TO-15 SIM	N/A
1,2-Dichloroethane	0.10		0.10	ug/m3	EPA TO-15 SIM	N/A
Chloroform	0.44		0.12	ug/m3	EPA TO-15 SIM	N/A
Ethylbenzene	0.64		0.11	ug/m3	EPA TO-15 SIM	N/A
Methylene Chloride	1.1		0.087	ug/m3	EPA TO-15 SIM	N/A
Toluene	3.7		0.19	ug/m3	EPA TO-15 SIM	N/A
Trichlorofluoromethane	1.4		0.14	ug/m3	EPA TO-15 SIM	N/A
o-Xylene	0.82		0.11	ug/m3	EPA TO-15 SIM	N/A
p/m-Xylene	2.1		0.11	ug/m3	EPA TO-15 SIM	N/A
SU3-8-PS9-2015-03-26 (15-03-2257-9)						
1,1,2-Trichloro-1,2,2-Trifluoroethane	0.59		0.19	ug/m3	EPA TO-15 SIM	N/A
1,2-Dichloroethane	0.21		0.10	ug/m3	EPA TO-15 SIM	N/A
1,4-Dichlorobenzene	0.16		0.15	ug/m3	EPA TO-15 SIM	N/A
Chloroform	1.8		0.12	ug/m3	EPA TO-15 SIM	N/A
Ethylbenzene	0.31		0.11	ug/m3	EPA TO-15 SIM	N/A
Methylene Chloride	0.86		0.087	ug/m3	EPA TO-15 SIM	N/A
Tetrachloroethene	0.18		0.17	ug/m3	EPA TO-15 SIM	N/A
Toluene	1.8		0.19	ug/m3	EPA TO-15 SIM	N/A
Trichloroethene	0.23		0.13	ug/m3	EPA TO-15 SIM	N/A
Trichlorofluoromethane	1.4		0.14	ug/m3	EPA TO-15 SIM	N/A
o-Xylene	0.37		0.11	ug/m3	EPA TO-15 SIM	N/A
p/m-Xylene	0.91		0.11	ug/m3	EPA TO-15 SIM	N/A

Subcontracted analyses, if any, are not included in this summary.

* MDL is shown



Calscience

Analytical Report

Treadwell & Rollo - A Langan Company
555 Montgomery St., Suite 1300
San Francisco, CA 94111-2554

Date Received: 03/28/15
Work Order: 15-03-2257
Preparation: N/A
Method: EPA TO-15 SIM
Units: ug/m3

Project: TI Off - Property SU3-8

Page 1 of 5

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SU3-8-PS7-2015-03-26	15-03-2257-7-A	03/27/15 13:45	Air	GC/MS HH	N/A	04/07/15 21:43	150407L01

Parameter	Result	RL	DF	Qualifiers
1,1,1-Trichloroethane	ND	0.14	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	0.57	0.19	1.00	
1,1,2-Trichloroethane	ND	0.14	1.00	
1,1-Dichloroethane	ND	0.10	1.00	
1,1-Dichloroethene	ND	0.099	1.00	
1,2,4-Trichlorobenzene	ND	0.19	1.00	
1,2-Dichlorobenzene	ND	0.15	1.00	
1,2-Dichloroethane	0.14	0.10	1.00	
1,3-Dichlorobenzene	ND	0.15	1.00	
1,4-Dichlorobenzene	ND	0.15	1.00	
Chlorobenzene	ND	0.12	1.00	
Chloroethane	ND	0.066	1.00	
Chloroform	8.7	0.12	1.00	
Ethylbenzene	1.0	0.11	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	0.090	1.00	
Tetrachloroethene	0.98	0.17	1.00	
Toluene	7.2	0.19	1.00	
Trichloroethene	ND	0.13	1.00	
Trichlorofluoromethane	1.3	0.14	1.00	
Vinyl Chloride	ND	0.026	1.00	
c-1,2-Dichloroethene	ND	0.099	1.00	
o-Xylene	1.2	0.11	1.00	
p/m-Xylene	3.1	0.11	1.00	
t-1,2-Dichloroethene	ND	0.099	1.00	
1,2,3-Trichlorobenzene	ND	0.19	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,2-Dichloroethane-d4	102	37-163	
1,4-Bromofluorobenzene	110	45-153	
Toluene-d8	108	73-121	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

Treadwell & Rollo - A Langan Company
 555 Montgomery St., Suite 1300
 San Francisco, CA 94111-2554

Date Received: 03/28/15
 Work Order: 15-03-2257
 Preparation: N/A
 Method: EPA TO-15 SIM
 Units: ug/m3

Project: TI Off - Property SU3-8

Page 2 of 5

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SU3-8-PS7-2015-03-26	15-03-2257-7-A	03/27/15 13:45	Air	GC/MS HH	N/A	04/08/15 08:30	150407L01

<u>Parameter</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Qualifiers</u>
Methylene Chloride	41	0.35	4.00	

<u>Surrogate</u>	<u>Rec. (%)</u>	<u>Control Limits</u>	<u>Qualifiers</u>
1,2-Dichloroethane-d4	108	37-163	
1,4-Bromofluorobenzene	109	45-153	
Toluene-d8	102	73-121	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Analytical Report

Treadwell & Rollo - A Langan Company
555 Montgomery St., Suite 1300
San Francisco, CA 94111-2554

Date Received: 03/28/15
Work Order: 15-03-2257
Preparation: N/A
Method: EPA TO-15 SIM
Units: ug/m3

Project: TI Off - Property SU3-8

Page 3 of 5

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SU3-8-PS8-2015-03-26	15-03-2257-8-A	03/27/15 13:06	Air	GC/MS HH	N/A	04/07/15 22:38	150407L01

Parameter	Result	RL	DF	Qualifiers
1,1,1-Trichloroethane	ND	0.14	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	0.61	0.19	1.00	
1,1,2-Trichloroethane	ND	0.14	1.00	
1,1-Dichloroethane	ND	0.10	1.00	
1,1-Dichloroethene	ND	0.099	1.00	
1,2,4-Trichlorobenzene	ND	0.19	1.00	
1,2-Dichlorobenzene	ND	0.15	1.00	
1,2-Dichloroethane	0.10	0.10	1.00	
1,3-Dichlorobenzene	ND	0.15	1.00	
1,4-Dichlorobenzene	ND	0.15	1.00	
Chlorobenzene	ND	0.12	1.00	
Chloroethane	ND	0.066	1.00	
Chloroform	0.44	0.12	1.00	
Ethylbenzene	0.64	0.11	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	0.090	1.00	
Methylene Chloride	1.1	0.087	1.00	
Tetrachloroethene	ND	0.17	1.00	
Toluene	3.7	0.19	1.00	
Trichloroethene	ND	0.13	1.00	
Trichlorofluoromethane	1.4	0.14	1.00	
Vinyl Chloride	ND	0.026	1.00	
c-1,2-Dichloroethene	ND	0.099	1.00	
o-Xylene	0.82	0.11	1.00	
p/m-Xylene	2.1	0.11	1.00	
t-1,2-Dichloroethene	ND	0.099	1.00	
1,2,3-Trichlorobenzene	ND	0.19	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,2-Dichloroethane-d4	98	37-163	
1,4-Bromofluorobenzene	110	45-153	
Toluene-d8	101	73-121	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Analytical Report

Treadwell & Rollo - A Langan Company
555 Montgomery St., Suite 1300
San Francisco, CA 94111-2554

Date Received: 03/28/15
Work Order: 15-03-2257
Preparation: N/A
Method: EPA TO-15 SIM
Units: ug/m3

Project: TI Off - Property SU3-8

Page 4 of 5

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
SU3-8-PS9-2015-03-26	15-03-2257-9-A	03/27/15 13:02	Air	GC/MS HH	N/A	04/07/15 23:32	150407L01

Parameter	Result	RL	DF	Qualifiers
1,1,1-Trichloroethane	ND	0.14	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	0.59	0.19	1.00	
1,1,2-Trichloroethane	ND	0.14	1.00	
1,1-Dichloroethane	ND	0.10	1.00	
1,1-Dichloroethene	ND	0.099	1.00	
1,2,4-Trichlorobenzene	ND	0.19	1.00	
1,2-Dichlorobenzene	ND	0.15	1.00	
1,2-Dichloroethane	0.21	0.10	1.00	
1,3-Dichlorobenzene	ND	0.15	1.00	
1,4-Dichlorobenzene	0.16	0.15	1.00	
Chlorobenzene	ND	0.12	1.00	
Chloroethane	ND	0.066	1.00	
Chloroform	1.8	0.12	1.00	
Ethylbenzene	0.31	0.11	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	0.090	1.00	
Methylene Chloride	0.86	0.087	1.00	
Tetrachloroethene	0.18	0.17	1.00	
Toluene	1.8	0.19	1.00	
Trichloroethene	0.23	0.13	1.00	
Trichlorofluoromethane	1.4	0.14	1.00	
Vinyl Chloride	ND	0.026	1.00	
c-1,2-Dichloroethene	ND	0.099	1.00	
o-Xylene	0.37	0.11	1.00	
p/m-Xylene	0.91	0.11	1.00	
t-1,2-Dichloroethene	ND	0.099	1.00	
1,2,3-Trichlorobenzene	ND	0.19	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,2-Dichloroethane-d4	100	37-163	
1,4-Bromofluorobenzene	103	45-153	
Toluene-d8	99	73-121	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Analytical Report

Treadwell & Rollo - A Langan Company
555 Montgomery St., Suite 1300
San Francisco, CA 94111-2554

Date Received: 03/28/15
Work Order: 15-03-2257
Preparation: N/A
Method: EPA TO-15 SIM
Units: ug/m3

Project: TI Off - Property SU3-8

Page 5 of 5

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-15-214-181	N/A	Air	GC/MS HH	N/A	04/07/15 20:48	150407L01

Parameter	Result	RL	DF	Qualifiers
1,1,1-Trichloroethane	ND	0.14	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	0.19	1.00	
1,1,2-Trichloroethane	ND	0.14	1.00	
1,1-Dichloroethane	ND	0.10	1.00	
1,1-Dichloroethene	ND	0.099	1.00	
1,2,4-Trichlorobenzene	ND	0.19	1.00	
1,2-Dichlorobenzene	ND	0.15	1.00	
1,2-Dichloroethane	ND	0.10	1.00	
1,3-Dichlorobenzene	ND	0.15	1.00	
1,4-Dichlorobenzene	ND	0.15	1.00	
Chlorobenzene	ND	0.12	1.00	
Chloroethane	ND	0.066	1.00	
Chloroform	ND	0.12	1.00	
Ethylbenzene	ND	0.11	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	0.090	1.00	
Methylene Chloride	ND	0.087	1.00	
Tetrachloroethene	ND	0.17	1.00	
Toluene	ND	0.19	1.00	
Trichloroethene	ND	0.13	1.00	
Trichlorofluoromethane	ND	0.14	1.00	
Vinyl Chloride	ND	0.026	1.00	
c-1,2-Dichloroethene	ND	0.099	1.00	
o-Xylene	ND	0.11	1.00	
p/m-Xylene	ND	0.11	1.00	
t-1,2-Dichloroethene	ND	0.099	1.00	
1,2,3-Trichlorobenzene	ND	0.19	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,2-Dichloroethane-d4	101	37-163	
1,4-Bromofluorobenzene	100	45-153	
Toluene-d8	106	73-121	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



Calscience

Quality Control - LCS/LCSD

Treadwell & Rollo - A Langan Company
555 Montgomery St., Suite 1300
San Francisco, CA 94111-2554

Date Received: 03/28/15
Work Order: 15-03-2257
Preparation: N/A
Method: EPA TO-15 SIM

Project: TI Off - Property SU3-8

Page 1 of 1

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number				
099-15-214-181	LCS	Air	GC/MS HH	N/A	04/07/15 18:17	150407L01				
099-15-214-181	LCSD	Air	GC/MS HH	N/A	04/07/15 19:07	150407L01				
Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	ME CL	RPD	RPD CL	Qualifiers
1,1,1-Trichloroethane	2.728	3.231	118	3.186	117	50-150	33-167	1	0-30	
1,1,2-Trichloro-1,2,2-Trifluoroethane	3.832	4.181	109	4.283	112	50-150	33-167	2	0-30	
1,1,2-Trichloroethane	2.728	2.858	105	2.842	104	27-171	3-195	1	0-38	
1,1-Dichloroethane	2.024	2.087	103	2.149	106	50-150	33-167	3	0-30	
1,1-Dichloroethene	1.982	2.219	112	2.288	115	50-150	33-167	3	0-30	
1,2,4-Trichlorobenzene	3.711	4.300	116	4.183	113	50-150	33-167	3	0-30	
1,2-Dichlorobenzene	3.006	3.426	114	3.307	110	50-150	33-167	4	0-30	
1,2-Dichloroethane	2.024	2.209	109	2.232	110	28-166	5-189	1	0-40	
1,3-Dichlorobenzene	3.006	3.374	112	3.267	109	50-150	33-167	3	0-30	
1,4-Dichlorobenzene	3.006	3.485	116	3.356	112	50-150	33-167	4	0-30	
Chlorobenzene	2.302	2.429	106	2.376	103	50-150	33-167	2	0-30	
Chloroethane	1.319	1.379	104	1.524	116	50-150	33-167	10	0-30	
Chloroform	2.441	2.583	106	2.644	108	50-150	33-167	2	0-30	
Ethylbenzene	2.171	2.330	107	2.278	105	27-153	6-174	2	0-46	
Methyl-t-Butyl Ether (MTBE)	1.803	2.091	116	2.163	120	50-150	33-167	3	0-30	
Methylene Chloride	1.737	1.821	105	1.879	108	50-150	33-167	3	0-30	
Tetrachloroethene	3.391	3.193	94	3.142	93	34-154	14-174	2	0-33	
Toluene	1.884	1.880	100	1.842	98	28-154	7-175	2	0-42	
Trichloroethene	2.687	2.860	106	2.880	107	43-139	27-155	1	0-31	
Trichlorofluoromethane	2.809	2.823	100	2.880	103	50-150	33-167	2	0-30	
Vinyl Chloride	1.278	1.332	104	1.406	110	44-140	28-156	5	0-33	
c-1,2-Dichloroethene	1.982	2.015	102	2.059	104	35-165	13-187	2	0-35	
o-Xylene	2.171	2.294	106	2.231	103	22-160	0-183	3	0-48	
p/m-Xylene	4.342	4.444	102	4.323	100	21-165	0-189	3	0-51	
t-1,2-Dichloroethene	1.982	1.965	99	2.011	101	50-150	33-167	2	0-30	
1,2,3-Trichlorobenzene	3.711	4.059	109	3.835	103	50-150	33-167	6	0-30	

Total number of LCS compounds: 26

Total number of ME compounds: 0

Total number of ME compounds allowed: 1

LCS ME CL validation result: Pass

RPD: Relative Percent Difference. CL: Control Limits

Summa Canister Vacuum Summary

Work Order: 15-03-2257

Page 1 of 1

Sample Name	Vacuum Out	Vacuum In	Equipment	Description
SU3-8-PS1-2015-03-26	-29.70 in Hg	-4.50 in Hg	D286	Summa Canister 6L
SU3-8-PS2-2015-03-26	-29.70 in Hg	-4.10 in Hg	D642	Summa Canister 6L
SU3-8-PS3-2015-03-26	-29.70 in Hg	-4.20 in Hg	D372	Summa Canister 6L
SU3-8-PS4-2015-03-26	-29.70 in Hg	0.20 psi	D924	Summa Canister 6L
SU3-8-PS5-2015-03-26	-29.80 in Hg	0.30 psi	D877	Summa Canister 6L
SU3-8-PS6-2015-03-26	-29.70 in Hg	0.00 in Hg	D884	Summa Canister 6L
SU3-8-PS7-2015-03-26	-29.70 in Hg	-2.80 in Hg	D105	Summa Canister 6L
SU3-8-PS8-2015-03-26	-29.70 in Hg	-3.90 in Hg	SIM066	Summa Canister 6L
SU3-8-PS9-2015-03-26	-29.70 in Hg	-3.60 in Hg	D869	Summa Canister 6L
SU3-8-DUP1-2015-03-26	-29.70 in Hg	-4.70 in Hg	D493	Summa Canister 6L
SU3-8-AA1-2015-03-26	-29.70 in Hg	-3.50 in Hg	D698	Summa Canister 6L



Calscience

Sample Analysis Summary Report

Work Order: 15-03-2257

Page 1 of 1

<u>Method</u>	<u>Extraction</u>	<u>Chemist ID</u>	<u>Instrument</u>	<u>Analytical Location</u>
EPA TO-15 SIM	N/A	460	GC/MS HH	2


Return to Contents

Location 2: 7445 Lampson Avenue, Garden Grove, CA 92841

Glossary of Terms and Qualifiers

Work Order: 15-03-2257

Page 1 of 1

<u>Qualifiers</u>	<u>Definition</u>
*	See applicable analysis comment.
<	Less than the indicated value.
>	Greater than the indicated value.
1	Surrogate compound recovery was out of control due to a required sample dilution. Therefore, the sample data was reported without further clarification.
2	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
3	Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to suspected matrix interference. The associated LCS recovery was in control.
4	The MS/MSD RPD was out of control due to suspected matrix interference.
5	The PDS/PDSO or PES/PESO associated with this batch of samples was out of control due to suspected matrix interference.
6	Surrogate recovery below the acceptance limit.
7	Surrogate recovery above the acceptance limit.
B	Analyte was present in the associated method blank.
BU	Sample analyzed after holding time expired.
BV	Sample received after holding time expired.
E	Concentration exceeds the calibration range.
ET	Sample was extracted past end of recommended max. holding time.
HD	The chromatographic pattern was inconsistent with the profile of the reference fuel standard.
HDH	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but heavier hydrocarbons were also present (or detected).
HDL	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but lighter hydrocarbons were also present (or detected).
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
JA	Analyte positively identified but quantitation is an estimate.
ME	LCS Recovery Percentage is within Marginal Exceedance (ME) Control Limit range (+/- 4 SD from the mean).
ND	Parameter not detected at the indicated reporting limit.
Q	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
SG	The sample extract was subjected to Silica Gel treatment prior to analysis.
X	% Recovery and/or RPD out-of-range.
Z	Analyte presence was not confirmed by second column or GC/MS analysis.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of ≤ 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

A calculated total result (Example: Total Pesticides) is the summation of each component concentration and/or, if "J" flags are reported, estimated concentration. Component concentrations showing not detected (ND) are summed into the calculated total result as zero concentrations.



Calscience

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

AIR CHAIN-OF-CUSTODY RECORD

W/O NO. / LAB USE ONLY

15-03-2257

DATE: 3/26/15

PAGE: 1 OF 2

LABORATORY CLIENT: Langan Treadwell Rolfe
 ADDRESS: 555 Montgomery St.
 CITY: San Francisco STATE: CA ZIP: 94111
 TEL: (510) 874-7086 E-MAIL: jgrabber@langan.com
 TURNAROUND TIME (Rush surcharges may apply to any TAT not 'STANDARD'):
 SAME DAY 24 HR 48 HR 72 HR 5 DAYS STANDARD
 EDD: COELT EDF OTHER
 SPECIAL INSTRUCTIONS: See Table 3 (page 3 of 3)

LAB USE ONLY	SAMPLE ID	FIELD ID / POINT OF COLLECTION	MATRIX	SAMPLING EQUIPMENT			START SAMPLING INFORMATION			STOP SAMPLING INFORMATION			REQUESTED ANALYSES
				Canister Size 6L or 1L	Media ID	Flow Controller ID	Date	Time (24 hr clock)	Canister Pressure (in Hg)	Date	Time (24 hr clock)	Canister Pressure (in Hg)	
1	SU3-8-PS1-2015-03-26		I	D866	FC286	3/26/15 12:47	3/27/15 11:34	-5					TO-15 (See attached list)
2	SU3-8-PS2-2015-03-26		I	D642	FC192	3/26/15 12:40	3/27/15 12:41	-5					
3	SU3-8-PS3-2015-03-26		I	D372	FC163	3/26/15 12:49	3/27/15 12:49	-5					
4	SU3-8-PS4-2015-03-26		I	D124	FC37	3/26/15 13:42	3/27/15 14:09	-3					
5	SU3-8-PS5-2015-03-26		I	D877	FC351	3/26/15 14:25	3/27/15 14:02	-3					
6	SU3-8-PS6-2015-03-26		I	D884	FC289	3/26/15 13:01	3/27/15 11:47	-1					
7	SU3-8-PS7-2015-03-26		I	D105	FC154	3/26/15 15:41	3/27/15 13:45	-5					
8	SU3-8-PS8-2015-03-26		I	SIM066	FC246	3/26/15 13:37	3/27/15 13:00	-5					
9	SU3-8-PS9-2015-03-26		I	D869	FC36	3/26/15 13:32	3/27/15 13:02	-5					
10	SU3-8-DUP1-2015-03-26		I	D493	FC243	3/26/15 12:47	3/27/15 11:34	-6					

CLIENT PROJECT NAME / NO.: T1 Off-Property, SU3-8
 P.O. NO.: 750620726
 PROJECT CONTACT: Josh Grabber
 PROJECT ADDRESS: SU3-8
 CITY: Sunnyvale STATE: CA ZIP: CA
 LAB CONTACT OR QUOTE NO.: Vikas Patel
 SAMPLER(S): (PRINT) Wendy Kwong

Relinquished by: (Signature) Wendy Kwong Date: 3/27/15 Time: 1600
 Relinquished by: (Signature) [Signature] Date: 3/28/15 Time: 10:10
 Relinquished by: (Signature) [Signature] Date: [] Time: []

Table 3
Screening Criteria for Comparison of Indoor Air Results
Operable Unit 1
Texas Instruments Incorporated
Santa Clara, California

Chemical of Concern	PCE	TCE ³	cis-1,2-DCE	trans-1,2-DCE	Vinyl Chloride	1,1,1-TCA	1,1,2-TCA	1,1-DCA	1,2-DCA	Chloroethane	1,1-DCE	Methylene Chloride	Chloroform	1,2,3-TCB	1,2,4-TCB	1,2-DCB	1,3-DCB	1,4-DCB	MTBE	Chlorobenzene	Toluene	Ethylbenzene	Total Xylenes	Trichlorofluoromethane	Freon 113
Laboratory Reporting Limit	0.17	0.13	0.099	0.099	0.026	0.14	0.14	0.10	0.10	0.066	0.069	0.087	0.12	0.19	0.19	0.15	0.15	0.15	0.08	0.12	0.19	0.11	0.11	0.14	0.19
Background (Outdoor Ambient)																									
Short-Term Health Based Screening Criteria¹																									
Acute Exposure MRL ²	1,357	NE	810	810	1,278	10,914	NE	NE	NE	39,583	NE	NE	488	NE	NE	NE	NE	12,025	7,211	NE	3,768	21,710	8,685	NE	NE
Intermediate Exposure MRL ³	NE	NE	810	810	77	3,820	NE	NE	NE	NE	79	NE	244	NE	NE	NE	NE	1,203	2,524	NE	NE	8,684	2,605	NE	NE
USEPA Regional Screening Levels⁴																									
Residential Screening Level ⁵	11	0.48	NE	NE	0.17	5,200	0.18	1.8	0.11	10,000	210	100	0.12	NE	2.1	210	NE	0.26	9.4	52	5,200	1.1	100	730	31,000
Industrial/Commercial Screening Level ⁶	47	3	NE	NE	2.8	22,000	0.77	7.7	0.47	44,000	880	1,200	0.53	NE	8.8	880	NE	1.1	47	220	22,000	4.9	440	3,100	130,000
RWQCB Environmental Screening Level⁷																									
Residential	0.41	0.59	7.3	63	0.031	5,200	0.15	1.5	0.12	31,000	210	5.2	0.46	NE	4.2	210	NE	0.22	9.4	1,000	310	0.97	100	NE	NE
Commercial or Industrial	2.1	3.0	31	260	0.16	22,000	0.77	7.7	0.58	130,000	880	26	2.3	NE	18	880	NE	1.1	47	4,400	1,300	4.9	440	NE	NE

Notes:
Units in micrograms per cubic meter (µg/m³) at 25° Celsius and 1 atmosphere.
PCE - tetrachloroethene
TCE - trichloroethene
cis-1,2-DCE - cis-1,2-dichloroethene
trans-1,2-DCE - trans-1,2-dichloroethene
1,1,1-TCA - 1,1,1-trichloroethane
1,1,2-TCA - 1,1,2-trichloroethane
1,2,3-TCB - 1,2,3-trichlorobenzene
1,2,4-TCB - 1,2,4-trichlorobenzene
1,2-DCB - 1,2-dichlorobenzene
1,3-DCB - 1,3-dichlorobenzene
1,4-DCB - 1,4-dichlorobenzene
Freon 11 - trichlorofluoroethane
Freon 113 - trichlorotrifluoroethane

NE - Not established
RSL - Regional Screening Level
ESL - Environmental Screening Level

1 - Short-term health risk based screening criteria obtained from the Agency for Toxic Substances & Disease Registry (ATSDR), Minimal Risk Levels (MRLs) for hazardous substances (July 2013) available at <http://www.atsdr.cdc.gov/mrls/index.html>
2 - Acute screening levels (Acute MRLs) are derived for exposure durations of 1 to 14 days.
3 - Intermediate MRLs are derived for exposure durations of 14 to 364 days
4 - Long-term health risk based screening criteria obtained from the United States Environmental Protection Agency (USEPA), Regional Screening (RSLs) for chemical contaminants, THQ = 1.0 (May 2014). http://www.epa.gov/reg3hurd/risk/human/tb-concentration_table/Generic_Tables/docs/master_sl_table_run_MAY2014.pdf
5 - Residential screening levels (Residential Air RSLs) are derived for exposure durations of 360 days per year and 30 years.
6 - Commercial/Industrial screening levels (Industrial Air RSLs) are derived for exposure durations of 8 hours per day, 260 days per year and 25 years.
7 - Regional Water Quality Control Board (RWQCB) Environmental Screening Level (ESL) indoor air from table E-3, December 2013.
8 - USEPA recommends the use of Interim TCE Indoor Air Short-Term Response Action Levels for TCE Inhalation exposure from subsurface vapor intrusion at South Bay National Priority List Sites. Commercial/Industrial prompt response action levels are calculated as the time-weighted average from the RIC - 9 µg/m³ for an 8-hour workday, 7 µg/m³ for a 10-hour workday. Based on input from commercial building owners and tenants, EPA Region 9 recommends use of the 10-hour workday for determining the appropriate response action levels for Commercial/Industrial buildings at the South Bay Sites. Time-weighted adjustments can be made as needed for workplaces with longer work schedules.

2257



800-322-5555 www.gso.com

Ship From
LANGAN TREADWELL ROLLO
WENDY KWONG
555 MONTGOMERY ST
SUITE 1300
SAN FRANCISCO, CA 94111

Tracking #: 527395589

PDS



Ship To
CAL SCIENCE
VIKAS PATEL
7440 LINCOLN WAY
GARDEN GROVE, CA 92841

ORC
GARDEN GROVE

A

COD: \$0.00
Weight: 0 lb(s)
Reference:
750620726
Delivery Instructions:

D92845A



Signature Type: REQUIRED

35827434

Print Date: 3/27/2015 4:09 PM

Package 1 of 3

LABEL INSTRUCTIONS:

Do not copy or reprint this label for additional shipments - each package must have a unique barcode.

Use the "Print Label" button on this page to print the shipping label on a laser or inkjet printer. Securely attach this label to your package, do not cover the barcode.

Return to Contents

2257



800-322-5555 www.gso.com

Ship From

LANGAN TREADWELL ROLLO
WENDY KWONG
555 MONTGOMERY ST
SUITE 1300
SAN FRANCISCO, CA 94111

Tracking #: 527395590

PDS



Ship To

CAL SCIENCE
VIKAS PATEL
7440 LINCOLN WAY
GARDEN GROVE, CA 92841

ORC
GARDEN GROVE

A

COD: \$0.00

Weight: 0 lb(s)

Reference:

750620726

Delivery Instructions:

D92845A



Signature Type: REQUIRED

35827435

Print Date: 3/27/2015 4:09 PM

Package 2 of 3

LABEL INSTRUCTIONS:

Do not copy or reprint this label for additional shipments - each package must have a unique barcode.

Use the "Print Label" button on this page to print the shipping label on a laser or inkjet printer. Securely attach this label to your package, do not cover the barcode.

Return to Contents

2257



800-322-5555 www.gso.com

Ship From

LANGAN TREADWELL ROLLO
WENDY KWONG
555 MONTGOMERY ST
SUITE 1300
SAN FRANCISCO, CA 94111

Tracking #: 527395591

PDS



Ship To

CAL SCIENCE
VIKAS PATEL
7440 LINCOLN WAY
GARDEN GROVE, CA 92841

ORC
GARDEN GROVE

A

COD: \$0.00

Weight: 0 lb(s)

Reference:

750620726

Delivery Instructions:

D92845A



Signature Type: REQUIRED

35827436

Print Date: 3/27/2015 4:09 PM

Package 3 of 3

LABEL INSTRUCTIONS:

Do not copy or reprint this label for additional shipments - each package must have a unique barcode.

Use the "Print Label" button on this page to print the shipping label on a laser or inkjet printer. Securely attach this label to your package, do not cover the barcode.

Return to Contents



Calscience

WORK ORDER NUMBER: 15-03- 2257

SAMPLE RECEIPT CHECKLIST

COOLER 1 OF 3

CLIENT: Langan Treadwell Rollo

DATE: 03 / 28 / 2015

TEMPERATURE: (Criteria: 0.0°C – 6.0°C, not frozen except sediment/tissue)
 Thermometer ID: SC4 (CF: +0.2°C) Temperature (w/o CF): _____°C (w/ CF): _____°C Blank Sample
 Sample(s) outside temperature criteria (PM/APM contacted by: _____)
 Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling
 Sample(s) received at ambient temperature; placed on ice for transport by courier
 Ambient Temperature: Air Filter Checked by: 862

CUSTODY SEAL:
~~Cooler~~ Present and Intact Not Intact Not Present N/A Checked by: 862
 Sample(s) Present and Intact Not Intact Not Present N/A Checked by: 862

SAMPLE CONDITION:	Yes	No	N/A
Chain-of-Custody (COC) document(s) received with samples	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
COC document(s) received complete.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Sampling date <input type="checkbox"/> Sampling time <input type="checkbox"/> Matrix <input type="checkbox"/> Number of containers			
<input type="checkbox"/> No analysis requested <input type="checkbox"/> Not relinquished <input type="checkbox"/> No relinquished date <input type="checkbox"/> No relinquished time			
Sampler's name indicated on COC.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sample container label(s) consistent with COC.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sample container(s) intact and in good condition.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Proper containers for analyses requested.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sufficient volume/mass for analyses requested.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Samples received within holding time.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Aqueous samples for certain analyses received within 15-minute holding time			
<input type="checkbox"/> pH <input type="checkbox"/> Residual Chlorine <input type="checkbox"/> Dissolved Sulfide <input type="checkbox"/> Dissolved Oxygen	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Proper preservation chemical(s) noted on COC and/or sample container	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Unpreserved aqueous sample(s) received for certain analyses			
<input type="checkbox"/> Volatile Organics <input type="checkbox"/> Total Metals <input type="checkbox"/> Dissolved Metals			
Container(s) for certain analysis free of headspace.....	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> Volatile Organics <input type="checkbox"/> Dissolved Gases (RSK-175) <input type="checkbox"/> Dissolved Oxygen (SM 4500)			
<input type="checkbox"/> Carbon Dioxide (SM 4500) <input type="checkbox"/> Ferrous Iron (SM 3500) <input type="checkbox"/> Hydrogen Sulfide (Hach)			
Tedlar™ bag(s) free of condensation.....	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

CONTAINER TYPE: (Trip Blank Lot Number: _____)
Aqueous: VOA VOAh VOAna₂ 100PJ 100PJna₂ 125AGB 125AGBh 125AGBp 125PB
125PBz_{na} 250AGB 250CGB 250CGBs 250PB 250PBn 500AGB 500AGJ 500AGJs
500PB 1AGB 1AGBna₂ 1AGBs 1PB 1PBna _____ _____ _____ _____
Solid: 4ozCGJ 8ozCGJ 16ozCGJ 16ozPJ Sleeve (_____) EnCores® (_____) TerraCores® (_____) _____
Air: Tedlar® Canister Sorbent Tube PUF _____ **Other Matrix** (____): _____ _____
 Container: A=Amber, B=Bottle, C=Clear, E=Envelope, G=Glass, J=Jar, P=Plastic, and Z= Ziploc/Resealable Bag
 Preservative: f=filtered, h=HCl, n=HNO₃, na=NaOH, na₂=Na₂S₂O₃, p=H₃PO₄,
 s=H₂SO₄, u=ultra-pure, z_{na}=Zn(CH₃CO₂)₂ + NaOH Labeled/Checked by: 862
Reviewed by: 716

Return to Contents



Calscience

WORK ORDER NUMBER: 15-03-2257

SAMPLE RECEIPT CHECKLIST

Box COOLER 2 OF 3

CLIENT: Langan Treadwell Pollo

DATE: 03/28/2015

TEMPERATURE: (Criteria: 0.0°C – 6.0°C, not frozen except sediment/tissue)
 Thermometer ID: SC4 (CF: +0.2°C) Temperature (w/o CF): _____ °C (w/ CF): _____ °C Blank Sample
 Sample(s) outside temperature criteria (PM/APM contacted by: _____)
 Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling
 Sample(s) received at ambient temperature; placed on ice for transport by courier
 Ambient Temperature: Air Filter Checked by: Boz

CUSTODY SEAL:
~~Box~~ Cooler Present and Intact Not Intact Not Present N/A Checked by: Boz
 Sample(s) Present and Intact Not Intact Not Present N/A Checked by: Boz

SAMPLE CONDITION:	Yes	No	N/A
Chain-of-Custody (COC) document(s) received with samples	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
COC document(s) received complete.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Sampling date <input type="checkbox"/> Sampling time <input type="checkbox"/> Matrix <input type="checkbox"/> Number of containers <input type="checkbox"/> No analysis requested <input type="checkbox"/> Not relinquished <input type="checkbox"/> No relinquished date <input type="checkbox"/> No relinquished time			
Sampler's name indicated on COC.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sample container label(s) consistent with COC.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sample container(s) intact and in good condition.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Proper containers for analyses requested.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sufficient volume/mass for analyses requested.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Samples received within holding time.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Aqueous samples for certain analyses received within 15-minute holding time			
<input type="checkbox"/> pH <input type="checkbox"/> Residual Chlorine <input type="checkbox"/> Dissolved Sulfide <input type="checkbox"/> Dissolved Oxygen	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Proper preservation chemical(s) noted on COC and/or sample container	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Unpreserved aqueous sample(s) received for certain analyses			
<input type="checkbox"/> Volatile Organics <input type="checkbox"/> Total Metals <input type="checkbox"/> Dissolved Metals			
Container(s) for certain analysis free of headspace.....	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> Volatile Organics <input type="checkbox"/> Dissolved Gases (RSK-175) <input type="checkbox"/> Dissolved Oxygen (SM 4500)			
<input type="checkbox"/> Carbon Dioxide (SM 4500) <input type="checkbox"/> Ferrous Iron (SM 3500) <input type="checkbox"/> Hydrogen Sulfide (Hach)			
Tedlar™ bag(s) free of condensation.....	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

CONTAINER TYPE: (Trip Blank Lot Number: _____)
Aqueous: VOA VOAh VOAna₂ 100PJ 100PJna₂ 125AGB 125AGBh 125AGBp 125PB
125PBz₂na 250AGB 250CGB 250CGBs 250PB 250PBn 500AGB 500AGJ 500AGJs
500PB 1AGB 1AGBna₂ 1AGBs 1PB 1PBna _____ _____ _____ _____
Solid: 4ozCGJ 8ozCGJ 16ozCGJ 16ozPJ Sleeve () EnCores® () TerraCores® () _____
Air: Tedlar® Canister Sorbent Tube PUF _____ **Other Matrix** (): _____ _____
 Container: A=Amber, B=Bottle, C=Clear, E=Envelope, G=Glass, J=Jar, P=Plastic, and Z= Ziploc/Resealable Bag
 Preservative: f=filtered, h=HCl, n=HNO₃, na=NaOH, na₂=Na₂S₂O₃, p=H₃PO₄,
 s=H₂SO₄, u=ultra-pure, z₂na=Zn(CH₃CO₂)₂ + NaOH Labeled/Checked by: Boz
Reviewed by: DE

Return to Contents



Calscience

WORK ORDER NUMBER: 15-03- 2257

SAMPLE RECEIPT CHECKLIST

COOLER 3 OF 3

CLIENT: Langan Treadwell Rello

DATE: 03 / 28 / 2015

TEMPERATURE: (Criteria: 0.0°C – 6.0°C, not frozen except sediment/tissue)
 Thermometer ID: SC4 (CF: +0.2°C) Temperature (w/o CF): _____ °C (w/ CF): _____ °C Blank Sample
 Sample(s) outside temperature criteria (PM/APM contacted by: _____)
 Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling
 Sample(s) received at ambient temperature; placed on ice for transport by courier
 Ambient Temperature: Air Filter Checked by: 802

CUSTODY SEAL:
~~Cooler~~ Present and Intact Not Intact Not Present N/A Checked by: 802
 Sample(s) Present and Intact Not Intact Not Present N/A Checked by: 802

SAMPLE CONDITION:

	Yes	No	N/A
Chain-of-Custody (COC) document(s) received with samples	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
COC document(s) received complete.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Sampling date <input type="checkbox"/> Sampling time <input type="checkbox"/> Matrix <input type="checkbox"/> Number of containers <input type="checkbox"/> No analysis requested <input type="checkbox"/> Not relinquished <input type="checkbox"/> No relinquished date <input type="checkbox"/> No relinquished time			
Sampler's name indicated on COC.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sample container label(s) consistent with COC.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sample container(s) intact and in good condition.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Proper containers for analyses requested.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sufficient volume/mass for analyses requested.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Samples received within holding time.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Aqueous samples for certain analyses received within 15-minute holding time			
<input type="checkbox"/> pH <input type="checkbox"/> Residual Chlorine <input type="checkbox"/> Dissolved Sulfide <input type="checkbox"/> Dissolved Oxygen	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Proper preservation chemical(s) noted on COC and/or sample container	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Unpreserved aqueous sample(s) received for certain analyses			
<input type="checkbox"/> Volatile Organics <input type="checkbox"/> Total Metals <input type="checkbox"/> Dissolved Metals			
Container(s) for certain analysis free of headspace.....	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> Volatile Organics <input type="checkbox"/> Dissolved Gases (RSK-175) <input type="checkbox"/> Dissolved Oxygen (SM 4500) <input type="checkbox"/> Carbon Dioxide (SM 4500) <input type="checkbox"/> Ferrous Iron (SM 3500) <input type="checkbox"/> Hydrogen Sulfide (Hach)			
Tedlar™ bag(s) free of condensation.....	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

CONTAINER TYPE: (Trip Blank Lot Number: _____)

Aqueous: VOA VOAh VOAna₂ 100PJ 100PJna₂ 125AGB 125AGBh 125AGBp 125PB
125PBz₂na 250AGB 250CGB 250CGBs 250PB 250PBn 500AGB 500AGJ 500AGJs
500PB 1AGB 1AGBna₂ 1AGBs 1PB 1PBna _____ _____ _____

Solid: 4ozCGJ 8ozCGJ 16ozCGJ 16ozPJ Sleeve (____) EnCores® () TerraCores® () _____

Air: Tedlar® Canister Sorbent Tube PUF _____ **Other Matrix** (_____): _____ _____

Container: A=Amber, B=Bottle, C=Clear, E=Envelope, G=Glass, J=Jar, P=Plastic, and Z= Ziploc/Resealable Bag
 Preservative: f=filtered, h=HCl, n=HNO₃, na=NaOH, na₂=Na₂S₂O₃, p=H₃PO₄,
 s=H₂SO₄, u=ultra-pure, z₂na=Zn(CH₃CO₂)₂ + NaOH Labeled/Checked by: 802
Reviewed by: 776

Return to Contents

Vikas Patel

From: Wendy Kwong [wkwong@Langan.com]
Sent: Friday, March 27, 2015 5:49 PM
To: Vikas Patel
Cc: Joshua Graber
Subject: Off-Property TI, SU3-8/ 750620724

Hi Vikas,

I have some samples for TI coming your way via GSO; see attached COC. Just wanted to let you know that this would be standard TAT. Also, we wanted to place a hold on the following three samples:

-SU3-8-**PS7**-2015-03-26
 -SU3-8-**PS8**-2015-03-26
 -SU3-8-**PS9**-2015-03-26

Let me know if you have any questions. Have a good weekend!

Wendy Kwong
Staff Scientist
 Direct: 415.955.5224
 Mobile: 415.608.0271
[File Sharing Link](#)

LANGAN TREADWELL ROLLO

Phone: 415.955.5200 Fax: 415.955.5201
 555 Montgomery Street, Suite 1300
 San Francisco, CA 94111-2554
www.langan.com

CALIFORNIA NEW JERSEY NEW YORK CONNECTICUT PENNSYLVANIA OHIO WASHINGTON, DC FLORIDA TEXAS NORTH DAKOTA
 ABU DHABI ATHENS DOHA DUBAI ISTANBUL PANAMA

Langan's goal is to be SAFE (Stay Accident Free Everyday)

Electronic communication provided by "Langan" encompasses "Langan Engineering, Environmental, Surveying and Landscape Architecture, D.P.C.," "Langan Engineering and Environmental Services, Inc.," "Langan International LLC," "Langan Treadwell Rollo," "Langan CT, Inc." and "Langan Engineering and Environmental Services, Inc., PC." This electronic transmission may contain confidential, proprietary or privileged information. No confidentiality or privilege is intended to be waived or lost by erroneous transmission of this message. If you receive this message in error, please notify the sender immediately by return email and delete this message from your system. Disclosure, use, distribution or copying of this message, any attachments thereto or their contents is strictly prohibited.

Notify us [here](#) to report this email as spam.

Vikas Patel

From: Joshua Graber [jgrab@Langan.com]
Sent: Tuesday, April 07, 2015 2:12 PM
To: Vikas Patel
Cc: Wendy Kwong; Kristen Ward; Mukta Patil; Annie Lee
Subject: RE: TI Off - Property SU3-8 / CEL 15-03-2257

Thanks Vikas.

Your email reminds me. Please run the 3 samples on hold for this project on standard TAT.

Also, could you look into the PCE and methylene chloride detections in SU3-8-PS6-2015-03-26? They are much higher than expected. Can you tell us anything about those results in particular? Was the summa individually certified prior to shipment?

Thanks.

Joshua Graber
Senior Project Manager
Direct: 510.874.7086
Mobile: 415.254.8774
[File Sharing Link](#)

LANGAN TREADWELL ROLLO

www.langan.com

CALIFORNIA NEW JERSEY NEW YORK CONNECTICUT PENNSYLVANIA OHIO WASHINGTON, DC FLORIDA TEXAS NORTH DAKOTA
ABU DHABI ATHENS DOHA DUBAI ISTANBUL PANAMA

Langan's goal is to be SAFE (Stay Accident Free Everyday)

From: Vikas Patel [<mailto:VikasPatel@eurofinsUS.com>]
Sent: Tuesday, April 07, 2015 2:03 PM
To: Joshua Graber
Cc: Wendy Kwong; Kristen Ward; Vikas Patel
Subject: TI Off - Property SU3-8 / CEL 15-03-2257

Joshua – Final report and EDD attached.

Regards,

Vik Patel
Project Manager

Eurofins Calscience, Inc
7440 Lincoln Way
Garden Grove, CA 92841-1427
USA

Phone +1 714 895 5494
Fax +1 714 894 7501

Email: vikaspatel@eurofinsUS.com
Website: www.calscience.com

