



Project No. E8707-04-01 September 13, 2013

FF Realty, LLC 5510 Morehouse Drive, Suite 200 San Diego, California 92121

Attention: Mr. Ed McCoy

Subject: SOIL VAPOR SURVEY REPORT

SAN CARLOS APARTMENTS

SOUTHEAST CORNER OF SAN CARLOS STREET AND SUNOL STREET

SAN JOSE, CALIFORNIA

Dear Mr. McCoy:

In accordance with our proposal dated July 12, 2013, we have performed a soil vapor survey (SVS) for the 4¼-acre parcel located at the southeast corner of San Carlos Street and Sunol Street (the Site) in the Sunol-Midtown area of San Jose, California (Figure 1). The SVS included the collection of soil vapor samples from two temporary soil vapor sampling wells and laboratory analysis for potential contaminants of concern. Due to historic use of the Site as a lumber yard that had an underground storage tank (UST), petroleum-related volatile organic compounds (VOCs) may remain in soil which could pose an unacceptable health risk to site occupants in indoor air of the proposed residential development.

PURPOSE AND OBJECTIVES

The purpose of the SVS was to assess VOC concentrations in soil vapor beneath areas where residential units will be constructed on the Site and to determine if they might pose a threat to human health via vapor intrusion into indoor air. The objective of the survey was to collect representative soil vapor samples from the area of a former UST on the Site in accordance with California Environmental Protection Agency (Cal-EPA), Department of Toxic Substances Control (DTSC) protocol, have them analyzed for VOCs, and compare the detected concentrations to regulatory screening levels for soil vapor in a residential land use scenario.

SCOPE OF SERVICES

This section describes the activities performed for the SVS including pre-field and field activities and laboratory analysis.

Pre-field Activities

Pre-field activities included the following:

• Provided the required 48-hour notification to the Underground Service Alert prior to mobilization to the Site.

 Retained the services of Eurofins/Air Toxics Ltd. of Folsom, California, a California-certified analytical laboratory, to provide vapor sampling equipment and perform chemical analysis of soil vapor samples.

Field Activities

Field activities consisted of advancing two borings, constructing temporary soil vapor sampling wells in the borings, and collection of soil vapor samples. These activities are described further in the following sections. The approximate SVS sampling locations are depicted on the Site Plan, Figure 2.

Well Construction

On August 23, 2013, we advanced two 2.25-inch-diameter borings utilizing our truck-mounted Geoprobe 5400 direct-push rig to facilitate the installation of two temporary 0.25-inch-diameter soil vapor sampling wells (SV1 and SV2, Figure 2). Each boring was advanced to a depth of 5.5 feet.

We constructed soil vapor sampling wells SV1 and SV2 using 0.25-inch-diameter Teflon® tubing fitted with a 1.75-inch-long, stainless steel vapor probe tip with a 0.0057-inch, wire-wrapped screen. In each of the wells, the vapor probe tip was placed at a depth of approximately 5 feet and a filter pack consisting of #30 silica sand was placed around it and the tubing from the bottom of the boring (5.5 feet) to a depth of approximately 4.5 feet. Dry granular bentonite clay was placed above the filter pack from approximately 4.5 to 3.5 feet, then hydrated granular bentonite clay was placed from above that to the ground surface to create a seal to separate the soil vapor probe from atmospheric air. The Teflon® tubing extended approximately 2 feet above the ground surface to accommodate sample collection. Figure 3 shows the details of the temporary soil vapor sampling wells.

Sampling Equipment

After allowing the bentonite seal to hydrate for over two hours to ensure its sealing capacity, we assembled the soil vapor sampling equipment ("manifold") for each of the soil vapor sampling wells. The laboratory provided the manifolds which were comprised of an air filter, flow restrictor, 3-way valve and pressure gauge all to be enclosed within a hard plastic shroud over the well head (Figure 4). We attached a manifold to each well using SwagelokTM compression fittings.

Well Purging

In order to remove atmospheric air that may have made its way into the wells during construction, we purged a DTSC-recommended three well volumes of vapor (approximately 1-liter [L]) prior to collecting a sample. To purge a well, we used a 6L Summa canister that was attached to the manifold using micro Quick Connect fittings. Summa canisters are stainless steel containers of various volumes that have had their contents evacuated creating a vacuum of typically 30 inches of mercury (in-Hg).

Sample Collection

After purging three well volumes of air/vapor from each well, we began collecting a soil vapor sample into a 1L Summa canister at a flow rate of 167 millimeters per minute. When less than 8 in-Hg remained in the 1L Summa canister, we ceased sampling by closing the sampling train at the 3-way valve. The Summa canisters were then detached from the manifold, labeled and submitted to Eurofins/Air Toxics under chain-of-custody protocol.

Additional measures were conducted to confirm that each manifold was free of leaks and the samples were not diluted by atmospheric air. To confirm the integrity of the connections in a manifold was free of leaks, Eurofins/Air Toxics shipped the manifolds with a vacuum of 30 in-Hg within them. Because the vacuum had not dissipated since leaving the lab, this validated that the manifolds were free of leaks. To test the effectiveness of the hydrated granular bentonite clay seal in preventing atmospheric air from being drawn into the subsurface, we encompassed the manifold, the 1L Summa canister for sampling collection, and well head with a hard plastic shroud which we then filled with helium. We placed a helium detector within the shroud to monitor the helium concentrations and maintained a minimum helium concentration of 20% throughout purging and sample collection. We attached a second helium detector to the purging train between the well and the 6L purge canister which allowed us to monitor helium concentrations within the purged vapor. A detection of greater than 1% helium by this helium detector would have signified a leak in our set up and additional steps would have been taken to eliminate leaks prior to sampling. However, we did not detect any helium in the purged vapor for each of the two wells.

Upon completion of vapor sampling, we destroyed wells SV1 and SV2 by pulling up and removing the tubing and well screen by hand and capping the surface of the borings with soil.

Laboratory Analysis

Eurofins/Air Toxics analyzed the soil vapor samples for VOCs following United States Environmental Protection Agency Test Method TO 15 including total petroleum hydrocarbons (TPH) and benzene, toluene, ethylbenzene and xylenes (BTEX) and for helium under American Society for Testing and Materials Method D1946-90.

RESULTS

TPH, BTEX, and other VOCs

As shown on Table 1, TPH (ref. to gasoline) was detected in soil vapor samples SV1 and SV2 at respective concentrations of 12,000 and 35,000 micrograms per cubic meter ($\mu g/m^3$). Benzene was detected in soil vapor samples SV1 and SV2 at concentrations of 15 and 17 $\mu g/m^3$, respectively. Toluene was detected in soil vapor samples SV1 and SV2 at concentrations of 42 and 68 $\mu g/m^3$, respectively. Ethylbenzene was detected in soil vapor samples SV1 and SV2 at concentrations of 190 and 710 $\mu g/m^3$, respectively. Total xylenes were also detected in soil vapor samples SV1 and SV2 at respective concentrations of 1,260 and 4,100 $\mu g/m^3$, respectively.

Oxygen and Helium

Oxygen was detected in soil vapor samples SV1 and SV2 at 19% and 13%, respectively. Helium was not detected in the two soil vapor samples which indicates that our sample collection train was free of atmospheric leaks and that each sample was a valid representative soil vapor sample for the location tested. A more detailed summary of the soil vapor analytical data is in Table 1.

Comparison to Regulatory Screening Levels

With the exception of ethylbenzene, none of the analytes were detected at concentrations that exceed either the Cal-EPA's California Human Health Screening Levels (CHHSLs) for shallow soil gas or the San Francisco Bay Regional Water Quality Control Board's Environmental Screening Levels (ESLs) for

shallow soil gas in residential and/or commercial land use scenarios.

Quality Assurance/Quality Control (QA/QC)

We reviewed the laboratory QA/QC provided with the laboratory reports. As noted in the laboratory report, sample SV2 required dilution due to the presence of high level target species. The data show acceptable non-detect results for the laboratory blank and acceptable recoveries for the laboratory control samples and duplicates. Based on the laboratory QA/QC data, no additional qualification of the data presented herein is necessary, and the data are of sufficient quality for the purposes of this report.

CONCLUSIONS AND RECOMMENDATIONS

The soil vapor analytical results show that ethylbenzene was detected in sample SV2 at 710 μ g/m³, greater than the residential CHHSL of 420 μ g/m³ and residential ESL of 490 μ g/m³. However, oxygen was detected in the soil vapor samples at 13% and 19%, which suggests that a "bioattenuation zone" exists in the upper 5 feet of the subsurface in the vicinity of borings SV1 and SV2. Per the State Water Resources Control Board's (SWRCB) Low-Threat UST Case Closure Policy, a bioattenuation zone with oxygen greater than or equal to 4% must have an ethylbenzene concentration of less than 1,100,000 μ g/m³ for residential land use scenario. Thus, the reported ethylbenzene concentration for soil vapor sample SV2 meets the SWRCB's UST closure criteria for soil gas concentration for residential land use. The remaining soil vapor analysis results are less than the residential CHSSLs and residential ESLs, as applicable. Therefore, our findings suggest that there is not an increased risk to human health from the presence of residual contamination beneath the Site and that mitigation of potential vapor intrusion to indoor air of the new development is not warranted.

According to the CHHSLs guidelines, "Under most circumstances, and within the limitations described in this document, the presence of a chemical in soil, soil gas or indoor air at concentrations below the corresponding screening level can be assumed to not pose a significant health risk to people who may live (residential CHHSLs) or work (commercial/industrial CHHSLs) at the site." According to ESL guidelines, "within noted limits, risks to human health and the environment can be considered to be insignificant at sites where concentrations of chemicals of concern do not exceed the respective ESLs."

This assessment is only representative of the conditions in the two sample locations at the time of sampling and do not represent conditions in other locations or at other times on the Site. While we selected the sampling locations to be representative of possible "worst case" conditions near the former UST on the Site, other conditions/contaminant concentrations could exist in other locations and in the future. Therefore, you may wish to consider the use of vapor intrusion mitigation for new site development, such as vapor barriers and/or venting systems, to further decrease the possibility of vapor intrusion into future site structures.

We appreciate the opportunity to assist you in this matter. Please contact us if you have any questions concerning this report or if we may be of further service.

Sincerely,

GEOCON CONSULTANTS, INC.

DRAFT DRAFT

Gemma G. Reblando Jim Brake, PG

Project Geologist Senior Geologist/Associate

(2) Addressee

Attachments: Figure 1, Site Location Map

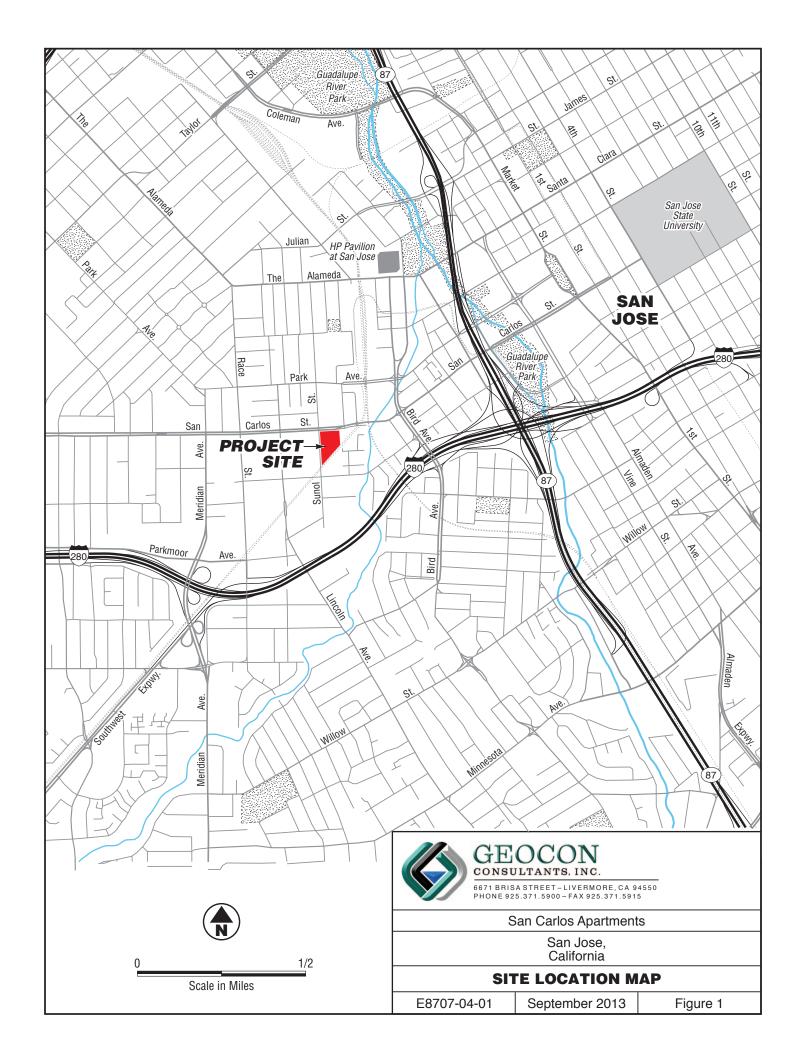
Figure 2, Site Plan

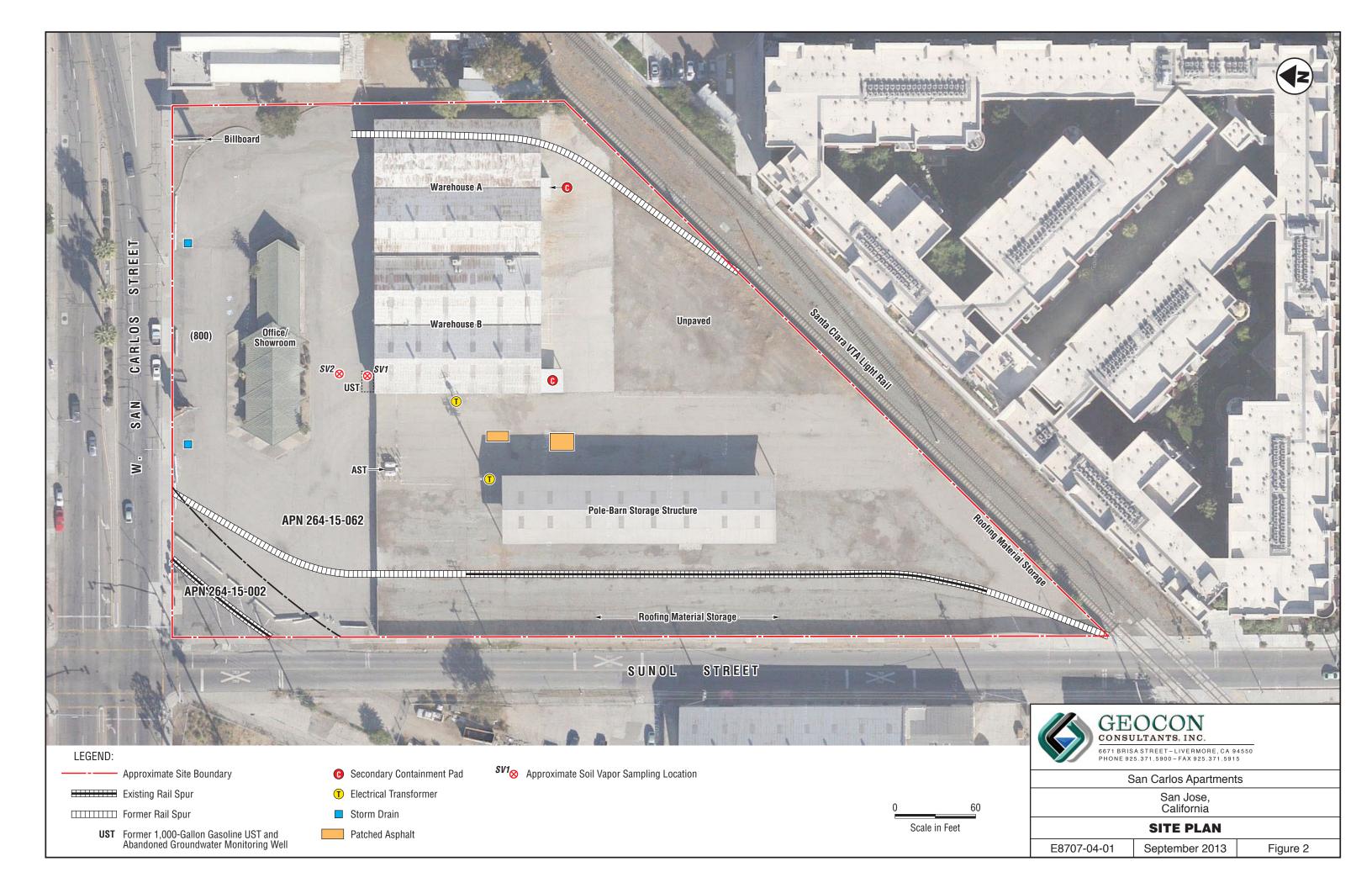
Figure 3, Typical Temporary Soil Vapor Sampling Well Detail

Figure 4, Soil Vapor Sampling Manifold

Table 1, Summary of Soil Vapor Analytical Data

Appendix A, Analytical Laboratory Results and Chain-of-custody Documentation





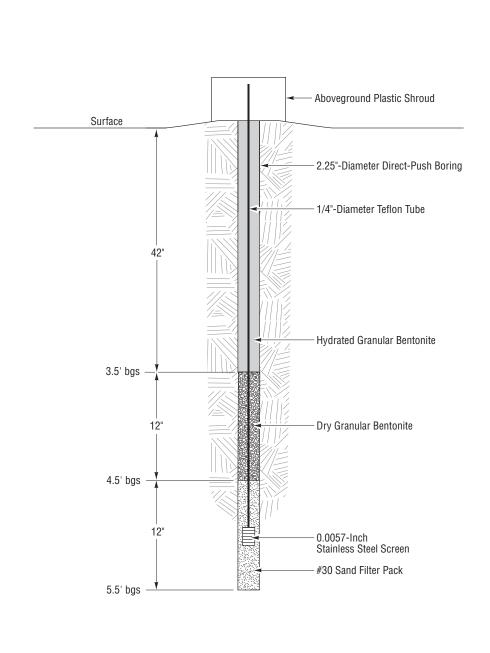
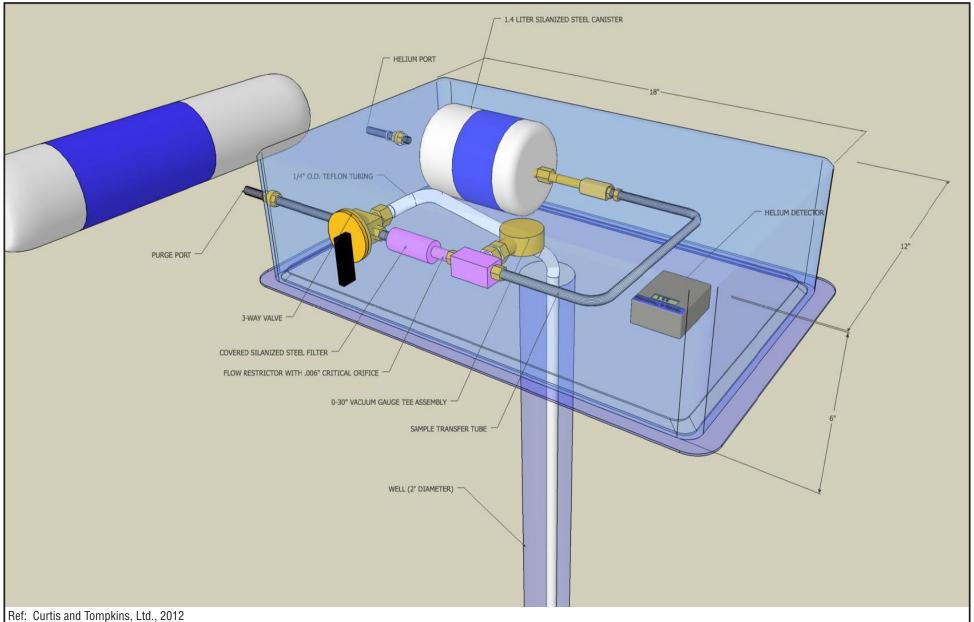


DIAGRAM NOT TO SCALE







Soil Vapor Sampling Manifold

ı	San Carlos Apartments					
	San Jose, California					
	E8707-04-01 September 2013 Figure 4					

Project No. E8707-04-01 September , 2013 Page 1 of 1

TABLE 1

SUMMARY OF SOIL VAPOR ANALYTICAL DATA SAN CARLOS APARTMENTS

SOUTHEAST CORNER OF SAN CARLOS STREET AND SUNOL STREET

SAN JOSE, CALIFORNIA

Sample ID	Sample Depth (feet)	TPH (μg/m ³)	Benzene (μg/m³)	Toluene (μg/m³)	Ethylbenzene (μg/m³)	Total Xylenes (μg/m³)	Acetone (μg/m³)	2-Propanol (μg/m³)	Hexane (μg/m³)	2-Butanone ¹ (μg/m ³)	Cyclohexane (μg/m³)	Heptane (μg/m3)	4-Methyl-2- Pentanone ² (μg/m ³)	4-Ethyltoluene (μg/m³)	1,2,4-Trimethylbenzene (µg/m³)	Helium (%)	Oxygen (%)
SV1	5	12,000	15	42	190	1,260	380	98	72	<55	35	74	20	<23	<23	<0.24	19
SV2	5	35,000	17	68	710	4,100	610	62	22	100	16	42	47	39	36	< 0.12	13
CHHSLs (Re	esidential)		36.2	135,000	420	315,000 ³											
CHHSLs (Co	ommercial)		122	378,000	1,400	879,000 ³											
ESLs (Resid	ential)	370,000	42	160,000	490	52,000	16,000,000			2,600,000			1,600,000				
ESLs (Comr	mercial)	3,100,000	420	1,300,000	4,900	440,000	140,000,000			22,000,000			13,000,000				

Notes: TPH = Total petroleum hydrocarbons (ref. to gasoline)

 $\mu g/m^3 = Micrograms per cubic meter$

% = Results in percent

< = Less than the laboratory test method reporting limit

CHHSLs = California Human Health Screening Levels for shallow soil gas (Cal EPA, January 2005, Revised 2010)

ESLs = Environmental Screening Levels for shallow soil gas (February 2013)

--- = A screening level has not been developed for this analyte

¹ = Also known as methyl ethyl ketone

² = Also known as methyl isobutyl ketone

³ = Representative screening value for mixed xylenes. The representative value for mixed xylenes is based on the calculated lowest value among the three isomers

APPENDIX A



9/9/2013 Mr. Josh Ewert Geocon Consultants, Inc. 3160 Gold Valley Drive Suite 800 Rancho Cordova CA 95742-7207

Project Name: San Carlos Apartments

Project #: E8707-04-01 Workorder #: 1308566A

Dear Mr. Josh Ewert

The following report includes the data for the above referenced project for sample(s) received on 8/23/2013 at Air Toxics Ltd.

The data and associated QC analyzed by Modified TO-15 are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Air Toxics Ltd. for your air analysis needs. Air Toxics Ltd. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Kyle Vagadori at 916-985-1000 if you have any questions regarding the data in this report.

Regards,

Kyle Vagadori

Project Manager

Kya Vych



WORK ORDER #: 1308566A

Work Order Summary

CLIENT: Mr. Josh Ewert BILL TO: Accounts Payable

Geocon Consultants, Inc.

Geocon Consultants, Inc.

Geocon Consultants, Inc.

3160 Gold Valley Drive

3160 Gold Valley Drive

Suite 800 Suite 800

Rancho Cordova, CA 95742-7207 Rancho Cordova, CA 95742-7207

PHONE: 916-852-5870 **P.O.** #

FAX: 916-852-9132 **PROJECT** # E8707-04-01 San Carlos Apartments

DATE RECEIVED: 08/23/2013 **CONTACT:** Kyle Vagadori 09/09/2013

			RECEIPT	FINAL
FRACTION #	<u>NAME</u>	<u>TEST</u>	VAC./PRES.	PRESSURE
01A	SV1	Modified TO-15	4.6 "Hg	15 psi
02A	SV2	Modified TO-15	4.0 "Hg	15 psi
03A	Lab Blank	Modified TO-15	NA	NA
04A	CCV	Modified TO-15	NA	NA
05A	LCS	Modified TO-15	NA	NA
05AA	LCSD	Modified TO-15	NA	NA

	Heide Jayes	
CERTIFIED BY:	0 00	DATE: 09/09/13
CERTIFIED DIT		211121

Technical Director

Certification numbers: AZ Licensure AZ0775, CA NELAP - 12282CA, NJ NELAP - CA016, NY NELAP - 11291, TX NELAP - T104704434-12-5, UT NELAP CA009332012-3, VA NELAP - 460197, WA NELAP - C935 Name of Accrediting Agency: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program) Accreditation number: CA300005, Effective date: 10/18/2012, Expiration date: 10/17/2013. Eurofins Air Toxics Inc.. certifies that the test results contained in this report meet all requirements of the NELAC standards







LABORATORY NARRATIVE EPA Method TO-15 Geocon Consultants, Inc. Workorder# 1308566A

Two 1 Liter Summa Canister samples were received on August 23, 2013. The laboratory performed analysis via EPA Method TO-15 using GC/MS in the full scan mode.

This workorder was independently validated prior to submittal using 'USEPA National Functional Guidelines' as generally applied to the analysis of volatile organic compounds in air. A rules-based, logic driven, independent validation engine was employed to assess completeness, evaluate pass/fail of relevant project quality control requirements and verification of all quantified amounts.

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

A single point calibration for TPH referenced to Gasoline was performed for each daily analytical batch. Recovery is reported as 100% in the associated results for each CCV.

Dilution was performed on sample SV2 due to the presence of high level target species.

Definition of Data Qualifying Flags

Eight qualifiers may have been used on the data analysis sheets and indicates as follows:

- B Compound present in laboratory blank greater than reporting limit (background subtraction not performed).
 - J Estimated value.
 - E Exceeds instrument calibration range.
 - S Saturated peak.
 - Q Exceeds quality control limits.
- U Compound analyzed for but not detected above the reporting limit, LOD, or MDL value. See data page for project specific U-flag definition.
 - UJ- Non-detected compound associated with low bias in the CCV
 - N The identification is based on presumptive evidence.

File extensions may have been used on the data analysis sheets and indicates as follows:

a-File was requantified

b-File was quantified by a second column and detector

r1-File was requantified for the purpose of reissue



Summary of Detected Compounds EPA METHOD TO-15 GC/MS FULL SCAN

Client Sample ID: SV1 Lab ID#: 1308566A-01A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Acetone	47	160	110	380
2-Propanol	19	40	46	98
Hexane	4.7	20	16	72
Cyclohexane	4.7	10	16	35
Benzene	4.7	4.8	15	15
Heptane	4.7	18	19	74
4-Methyl-2-pentanone	4.7	4.9	19	20
Toluene	4.7	11	18	42
Ethyl Benzene	4.7	43	20	190
m,p-Xylene	4.7	210	20	900
o-Xylene	4.7	83	20	360
TPH ref. to Gasoline (MW=100)	240	2900	960	12000

Client Sample ID: SV2 Lab ID#: 1308566A-02A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Acetone	29	260	69	610
2-Propanol	12	25	29	62
Hexane	2.9	6.1	10	22
2-Butanone (Methyl Ethyl Ketone)	12	34	34	100
Cyclohexane	2.9	4.5	10	16
Benzene	2.9	5.4	9.3	17
Heptane	2.9	10	12	42
4-Methyl-2-pentanone	2.9	11	12	47
Toluene	2.9	18	11	68
Ethyl Benzene	2.9	160	13	710
m,p-Xylene	2.9	710	13	3100
o-Xylene	2.9	240	13	1000
4-Ethyltoluene	2.9	7.9	14	39
1,2,4-Trimethylbenzene	2.9	7.3	14	36
TPH ref. to Gasoline (MW=100)	140	8600	600	35000



Client Sample ID: SV1 Lab ID#: 1308566A-01A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	17090409	Da	te of Collection: 8/23	8/13 11:13:00 AM
Dil. Factor:	9.41	Dat	te of Analysis: 9/4/13	3 12:13 PM
Compound	Rpt. Limit	Amount (ppby)	Rpt. Limit	Amount

DII. Factor.	9.41	Date Of Affaiysis. 9/4/13 12.13 PW			
Compound	Rpt. Limit	Amount	Rpt. Limit (ug/m3)	Amount	
Compound	(ppbv)	(ppbv)		(ug/m3)	
Freon 12	4.7	Not Detected	23	Not Detected	
Freon 114	4.7	Not Detected	33	Not Detected	
Chloromethane	47	Not Detected	97	Not Detected	
Vinyl Chloride	4.7	Not Detected	12	Not Detected	
1,3-Butadiene	4.7	Not Detected	10	Not Detected	
Bromomethane	47	Not Detected	180	Not Detected	
Chloroethane	19	Not Detected	50	Not Detected	
Freon 11	4.7	Not Detected	26	Not Detected	
Ethanol	19	Not Detected	35	Not Detected	
Freon 113	4.7	Not Detected	36	Not Detected	
1,1-Dichloroethene	4.7	Not Detected	19	Not Detected	
Acetone	47	160	110	380	
2-Propanol	19	40	46	98	
Carbon Disulfide	19	Not Detected	59	Not Detected	
3-Chloropropene	19	Not Detected	59	Not Detected	
Methylene Chloride	47	Not Detected	160	Not Detected	
Methyl tert-butyl ether	4.7	Not Detected	17	Not Detected	
trans-1,2-Dichloroethene	4.7	Not Detected	19	Not Detected	
Hexane	4.7	20	16	72	
1,1-Dichloroethane	4.7	Not Detected	19	Not Detected	
2-Butanone (Methyl Ethyl Ketone)	19	Not Detected	55	Not Detected	
cis-1,2-Dichloroethene	4.7	Not Detected	19	Not Detected	
Tetrahydrofuran	4.7	Not Detected	14	Not Detected	
Chloroform	4.7	Not Detected	23	Not Detected	
1,1,1-Trichloroethane	4.7	Not Detected	26	Not Detected	
Cyclohexane	4.7	10	16	35	
Carbon Tetrachloride	4.7	Not Detected	30	Not Detected	
2,2,4-Trimethylpentane	4.7	Not Detected	22	Not Detected	
Benzene	4.7	4.8	15	15	
1,2-Dichloroethane	4.7	Not Detected	19	Not Detected	
Heptane	4.7	18	19	74	
Trichloroethene	4.7	Not Detected	25	Not Detected	
1,2-Dichloropropane	4.7	Not Detected	22	Not Detected	
1,4-Dioxane	19	Not Detected	68	Not Detected	
Bromodichloromethane	4.7	Not Detected	32	Not Detected	
cis-1,3-Dichloropropene	4.7	Not Detected	21	Not Detected	
• •	4.7	4.9	19	20	
4-Methyl-2-pentanone Toluene	4.7	11	18	42	
	4.7	Not Detected	21	Not Detected	
trans-1,3-Dichloropropene	4.7	Not Detected	21 26	Not Detected	
1,1,2-Trichloroethane					
Tetrachloroethene	4.7	Not Detected	32	Not Detected	
2-Hexanone	19	Not Detected	77	Not Detected	



Client Sample ID: SV1 Lab ID#: 1308566A-01A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	17090409	Date of Collection: 8/23/13 11:13:00 AM
Dil. Factor:	9.41	Date of Analysis: 9/4/13 12:13 PM

	****			•
Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	4.7	Not Detected	40	Not Detected
1,2-Dibromoethane (EDB)	4.7	Not Detected	36	Not Detected
Chlorobenzene	4.7	Not Detected	22	Not Detected
Ethyl Benzene	4.7	43	20	190
m,p-Xylene	4.7	210	20	900
o-Xylene	4.7	83	20	360
Styrene	4.7	Not Detected	20	Not Detected
Bromoform	4.7	Not Detected	49	Not Detected
Cumene	4.7	Not Detected	23	Not Detected
1,1,2,2-Tetrachloroethane	4.7	Not Detected	32	Not Detected
Propylbenzene	4.7	Not Detected	23	Not Detected
4-Ethyltoluene	4.7	Not Detected	23	Not Detected
1,3,5-Trimethylbenzene	4.7	Not Detected	23	Not Detected
1,2,4-Trimethylbenzene	4.7	Not Detected	23	Not Detected
1,3-Dichlorobenzene	4.7	Not Detected	28	Not Detected
1,4-Dichlorobenzene	4.7	Not Detected	28	Not Detected
alpha-Chlorotoluene	4.7	Not Detected	24	Not Detected
1,2-Dichlorobenzene	4.7	Not Detected	28	Not Detected
1,2,4-Trichlorobenzene	19	Not Detected	140	Not Detected
Hexachlorobutadiene	19	Not Detected	200	Not Detected
TPH ref. to Gasoline (MW=100)	240	2900	960	12000

Container Type: 1 Liter Summa Canister

,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		Method	
Surrogates	%Recovery	Limits	
Toluene-d8	99	70-130	
1,2-Dichloroethane-d4	86	70-130	
4-Bromofluorobenzene	102	70-130	



Client Sample ID: SV2 Lab ID#: 1308566A-02A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	17090408	Date of Collection: 8/23/13 11:43:00 AM
Dil. Factor:	5.83	Date of Analysis: 9/4/13 11:51 AM

Dil. Factor:	5.83	Date of Analysis: 9/4/13 11:51 AM		13 11:51 AM
	Rpt. Limit	Amount	Rpt. Limit	Amount
Compound	(ppbv)	(ppbv)	(ug/m3)	(ug/m3)
Freon 12	2.9	Not Detected	14	Not Detected
Freon 114	2.9	Not Detected	20	Not Detected
Chloromethane	29	Not Detected	60	Not Detected
Vinyl Chloride	2.9	Not Detected	7.4	Not Detected
1,3-Butadiene	2.9	Not Detected	6.4	Not Detected
Bromomethane	29	Not Detected	110	Not Detected
Chloroethane	12	Not Detected	31	Not Detected
Freon 11	2.9	Not Detected	16	Not Detected
Ethanol	12	Not Detected	22	Not Detected
Freon 113	2.9	Not Detected	22	Not Detected
1,1-Dichloroethene	2.9	Not Detected	12	Not Detected
Acetone	29	260	69	610
2-Propanol	12	25	29	62
Carbon Disulfide	12	Not Detected	36	Not Detected
3-Chloropropene	12	Not Detected	36	Not Detected
Methylene Chloride	29	Not Detected	100	Not Detected
Methyl tert-butyl ether	2.9	Not Detected	10	Not Detected
trans-1,2-Dichloroethene	2.9	Not Detected	12	Not Detected
Hexane	2.9	6.1	10	22
1,1-Dichloroethane	2.9	Not Detected	12	Not Detected
2-Butanone (Methyl Ethyl Ketone)	12	34	34	100
cis-1,2-Dichloroethene	2.9	Not Detected	12	Not Detected
Tetrahydrofuran	2.9	Not Detected	8.6	Not Detected
Chloroform	2.9	Not Detected	14	Not Detected
1,1,1-Trichloroethane	2.9	Not Detected	16	Not Detected
Cyclohexane	2.9	4.5	10	16
Carbon Tetrachloride	2.9	Not Detected	18	Not Detected
2,2,4-Trimethylpentane	2.9	Not Detected	14	Not Detected
Benzene	2.9	5.4	9.3	17
1,2-Dichloroethane	2.9	Not Detected	12	Not Detected
Heptane	2.9	10	12	42
Trichloroethene	2.9	Not Detected	16	Not Detected
1,2-Dichloropropane	2.9	Not Detected	13	Not Detected
1,4-Dioxane	12	Not Detected	42	Not Detected
Bromodichloromethane	2.9	Not Detected	20	Not Detected
cis-1,3-Dichloropropene	2.9	Not Detected	13	Not Detected
4-Methyl-2-pentanone	2.9	11	12	47
Toluene	2.9	18	11	68
trans-1,3-Dichloropropene	2.9	Not Detected	13	Not Detected
1,1,2-Trichloroethane	2.9	Not Detected	16	Not Detected
Tetrachloroethene	2.9	Not Detected	20	Not Detected
2-Hexanone	12	Not Detected	48	Not Detected



Client Sample ID: SV2 Lab ID#: 1308566A-02A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	17090408	Date of Collection: 8/23/13 11:43:00 AM
Dil. Factor:	5.83	Date of Analysis: 9/4/13 11:51 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	2.9	Not Detected	25	Not Detected
1,2-Dibromoethane (EDB)	2.9	Not Detected	22	Not Detected
Chlorobenzene	2.9	Not Detected	13	Not Detected
Ethyl Benzene	2.9	160	13	710
m,p-Xylene	2.9	710	13	3100
o-Xylene	2.9	240	13	1000
Styrene	2.9	Not Detected	12	Not Detected
Bromoform	2.9	Not Detected	30	Not Detected
Cumene	2.9	Not Detected	14	Not Detected
1,1,2,2-Tetrachloroethane	2.9	Not Detected	20	Not Detected
Propylbenzene	2.9	Not Detected	14	Not Detected
4-Ethyltoluene	2.9	7.9	14	39
1,3,5-Trimethylbenzene	2.9	Not Detected	14	Not Detected
1,2,4-Trimethylbenzene	2.9	7.3	14	36
1,3-Dichlorobenzene	2.9	Not Detected	18	Not Detected
1,4-Dichlorobenzene	2.9	Not Detected	18	Not Detected
alpha-Chlorotoluene	2.9	Not Detected	15	Not Detected
1,2-Dichlorobenzene	2.9	Not Detected	18	Not Detected
1,2,4-Trichlorobenzene	12	Not Detected	86	Not Detected
Hexachlorobutadiene	12	Not Detected	120	Not Detected
TPH ref. to Gasoline (MW=100)	140	8600	600	35000

Container Type: 1 Liter Summa Canister

		Method	
Surrogates	%Recovery	Limits	
Toluene-d8	101	70-130	
1,2-Dichloroethane-d4	87	70-130	
4-Bromofluorobenzene	103	70-130	



Client Sample ID: Lab Blank Lab ID#: 1308566A-03A

EPA METHOD TO-15 GC/MS FULL SCAN

EPA METHOD TO-15 GC/MS FULL SCAN				
File Name:	17090407		of Collection: NA	
Dil. Factor:	1.00		of Analysis: 9/4/1	3 11:14 AM
	Rpt. Limit	Amount	Rpt. Limit	Amount
Compound	(ppbv)	(ppbv)	(ug/m3)	(ug/m3)
Freon 12	0.50	Not Detected	2.5	Not Detected
Freon 114	0.50	Not Detected	3.5	Not Detected
Chloromethane	5.0	Not Detected	10	Not Detected
Vinyl Chloride	0.50	Not Detected	1.3	Not Detected
1,3-Butadiene	0.50	Not Detected	1.1	Not Detected
Bromomethane	5.0	Not Detected	19	Not Detected
Chloroethane	2.0	Not Detected	5.3	Not Detected
Freon 11	0.50	Not Detected	2.8	Not Detected
Ethanol	2.0	Not Detected	3.8	Not Detected
Freon 113	0.50	Not Detected	3.8	Not Detected
1,1-Dichloroethene	0.50	Not Detected	2.0	Not Detected
Acetone	5.0	Not Detected	12	Not Detected
2-Propanol	2.0	Not Detected	4.9	Not Detected
Carbon Disulfide	2.0	Not Detected	6.2	Not Detected
3-Chloropropene	2.0	Not Detected	6.3	Not Detected
Methylene Chloride	5.0	Not Detected	17	Not Detected
Methyl tert-butyl ether	0.50	Not Detected	1.8	Not Detected
trans-1,2-Dichloroethene	0.50	Not Detected	2.0	Not Detected
Hexane	0.50	Not Detected	1.8	Not Detected
1,1-Dichloroethane	0.50	Not Detected	2.0	Not Detected
2-Butanone (Methyl Ethyl Ketone)	2.0	Not Detected	5.9	Not Detected
cis-1,2-Dichloroethene	0.50	Not Detected	2.0	Not Detected
Tetrahydrofuran	0.50	Not Detected	1.5	Not Detected
Chloroform	0.50	Not Detected	2.4	Not Detected
1,1,1-Trichloroethane	0.50	Not Detected	2.7	Not Detected
Cyclohexane	0.50	Not Detected	1.7	Not Detected
Carbon Tetrachloride	0.50	Not Detected	3.1	Not Detected
2,2,4-Trimethylpentane	0.50	Not Detected	2.3	Not Detected
Benzene	0.50	Not Detected	1.6	Not Detected
1,2-Dichloroethane	0.50	Not Detected	2.0	Not Detected
Heptane	0.50	Not Detected	2.0	Not Detected
Trichloroethene	0.50	Not Detected	2.7	Not Detected
1,2-Dichloropropane	0.50	Not Detected	2.3	Not Detected
1,4-Dioxane	2.0	Not Detected	7.2	Not Detected
Bromodichloromethane	0.50	Not Detected	3.4	Not Detected
cis-1,3-Dichloropropene	0.50	Not Detected	2.3	Not Detected
4-Methyl-2-pentanone	0.50	Not Detected	2.0	Not Detected
Toluene	0.50	Not Detected	1.9	Not Detected
trans-1,3-Dichloropropene	0.50	Not Detected	2.3	Not Detected
1,1,2-Trichloroethane	0.50	Not Detected	2.7	Not Detected
Tetrachloroethene	0.50	Not Detected	3.4	Not Detected
2-Hexanone	2.0	Not Detected	8.2	Not Detected



Client Sample ID: Lab Blank Lab ID#: 1308566A-03A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	17090407	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 9/4/13 11:14 AM

Dili. i dotoi.	1.00	Date of Allarysis. 3/4/13 11:14 Alli		J II.IT AN
Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	0.50	Not Detected	4.2	Not Detected
1,2-Dibromoethane (EDB)	0.50	Not Detected	3.8	Not Detected
Chlorobenzene	0.50	Not Detected	2.3	Not Detected
Ethyl Benzene	0.50	Not Detected	2.2	Not Detected
m,p-Xylene	0.50	Not Detected	2.2	Not Detected
o-Xylene	0.50	Not Detected	2.2	Not Detected
Styrene	0.50	Not Detected	2.1	Not Detected
Bromoform	0.50	Not Detected	5.2	Not Detected
Cumene	0.50	Not Detected	2.4	Not Detected
1,1,2,2-Tetrachloroethane	0.50	Not Detected	3.4	Not Detected
Propylbenzene	0.50	Not Detected	2.4	Not Detected
4-Ethyltoluene	0.50	Not Detected	2.4	Not Detected
1,3,5-Trimethylbenzene	0.50	Not Detected	2.4	Not Detected
1,2,4-Trimethylbenzene	0.50	Not Detected	2.4	Not Detected
1,3-Dichlorobenzene	0.50	Not Detected	3.0	Not Detected
1,4-Dichlorobenzene	0.50	Not Detected	3.0	Not Detected
alpha-Chlorotoluene	0.50	Not Detected	2.6	Not Detected
1,2-Dichlorobenzene	0.50	Not Detected	3.0	Not Detected
1,2,4-Trichlorobenzene	2.0	Not Detected	15	Not Detected
Hexachlorobutadiene	2.0	Not Detected	21	Not Detected
TPH ref. to Gasoline (MW=100)	25	Not Detected	100	Not Detected

Container Type: NA - Not Applicable

		Method	
Surrogates	%Recovery	Limits	
Toluene-d8	100	70-130	
1,2-Dichloroethane-d4	86	70-130	
4-Bromofluorobenzene	104	70-130	



Client Sample ID: CCV Lab ID#: 1308566A-04A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name: 17090402 Date of Collection: NA
Dil. Factor: 1.00 Date of Analysis: 9/4/13 09:05 AM

Freon 12 92 Freon 114 98 Chloromethane 94 Vinyl Chloride 87 1,3-Butadiene 82 Bromomethane 89 Chloroethane 92 Freon 11 97 Ethanol 83 Freon 113 98 Acetone 84 2-Propanol 85 Carbon Disulfide 93 3-Chloropropene 92 Methylene Chloride 87 Methylene Chloride 87 Methylene Chloride 87 Methylene Chloride 91 trans-1,2-Dichloroethene 91 texane 98 1,1-Dichloroethane 93 2-Butanone (Methyl Ethyl Ketone) 91 cis-1,2-Dichloroethene 89 2-Butanone (Methyl Ethyl Ketone) 91 cis-1,2-Dichloroethene 95 Cyclohexane 92 Cyclohexane 92 Cyclohexane 92 Cyclohexane </th <th>Compound</th> <th>%Recovery</th>	Compound	%Recovery
Chloromethane 94 Vinyl Chloride 87 1,3-Butadiene 82 Bromomethane 89 Chloroethane 92 Freon 11 97 Ethanol 83 Freon 113 98 1,1-Dichloroethene 95 Acetone 84 2-Propanol 85 Carbon Disulfide 93 3-Chloropropene 92 Methylene Chloride 87 Methyler-butyl ether 91 trans-1,2-Dichloroethene 97 Hexane 88 1,1-Dichloroethane 93 2-Butanone (Methyl Ethyl Ketone) 91 cis-1,2-Dichloroethene 89 Tetrahydrofuran 84 Chloroform 96 1,1-1-Trichloroethane 95 Cyclohexane 92 Carbon Tetrachloride 96 2,2,4-Trimethylpentane 88 Benzene 93 1,2-Dichloroethane 94 1,2-Dichl	Freon 12	92
Vinyl Chloride 87 1,3-Butadiene 82 Bromomethane 89 Chloroethane 92 Freon 11 97 Ethanol 83 Freon 113 98 1,1-Dichloroethene 84 2-Propanol 85 Carbon Disulfide 93 3-Chloropropene 92 Methylene Chloride 87 Methyl tert-butyl ether 91 trans-1,2-Dichloroethene 97 Hexane 88 1,1-Dichloroethane 93 2-Butanone (Methyl Ethyl Ketone) 91 cis-1,2-Dichloroethane 93 2-Butanone (Methyl Ethyl Ketone) 91 cis-1,2-Dichloroethane 99 Tetrahydrofuran 84 Chloroform 96 1,1-1-Tichloroethane 95 Cyclohexane 92 Cyclohexane 92 Cyclohoroethane 91 1,2-Dichloroethane 91 1,4-Dioxane 95 <t< td=""><td>Freon 114</td><td>98</td></t<>	Freon 114	98
1,3-Butadiene 82 Brommethane 89 Chloroethane 92 Freon 11 97 Ethanol 83 Freon 113 98 1,1-Dichloroethene 95 Acetone 84 2-Propanol 85 Carbon Disulfide 93 3-Chloropropene 92 Methyler Chloride 87 Methyle ret-butyl ether 91 trans-1,2-Dichloroethene 97 Hexane 88 1,1-Dichloroethane 93 2-Butanone (Methyl Ethyl Ketone) 91 cis-1,2-Dichloroethene 89 Tetrahydrofuran 84 Chloroform 96 Tetrahydrofuran 84 Chloroform 96 Cyclohexane 95 Cyclohexane 92 Carbon Tetrachloride 96 2,4-Trimethylpentane 88 Benzene 93 1,2-Dichloroethene 91 Trichloroethene	Chloromethane	94
1,3-Butadiene 82 Brommethane 89 Chloroethane 92 Freon 11 97 Ethanol 83 Freon 113 98 1,1-Dichloroethene 95 Acetone 84 2-Propanol 85 Carbon Disulfide 93 3-Chloropropene 92 Methyle Chloride 87 Methyle Er-Chloride 87 Methyle Er-Chloride 97 Hexane 88 1,1-Dichloroethane 93 2-Butanone (Methyl Ethyl Ketone) 91 cis-1,2-Dichloroethane 93 2-Butanone (Methyl Ethyl Ketone) 91 cis-1,2-Dichloroethane 95 Cyclohexane 95 Cyclohexane 95 Cyclohexane 92 Carbon Tetrachloride 96 2,2-4-Trimethylpentane 88 Benzene 91 1,2-Dichloroethane 91 Trichloroethane 95	Vinyl Chloride	87
Chloroethane 92 Freon 11 97 Ethanol 83 Freon 113 98 1,1-Dichloroethene 95 Acetone 84 2-Propanol 85 Carbon Disulfide 93 3-Chloropropene 92 Methylene Chloride 87 Methylene Chloride 97 Metnee 91 Hexane 88 1,1-Dichloroethane 93 2-Butanone (Methyl Ethyl Ketone) 91 cis-1,2-Dichloroethene 89 Tetrahydroftran 84 Chloroform 96 1,1,1-Tinchloroethane 95 Cyclohexane 92 Cyclohexane 92 Cyclohexane 92 Cyclohexane 92 Ly-Dichloroethane 93 Benzene 93 1,2-Dichloroethane 94 1,2-Dichloroptopane 91 1,4-Dioxane 95 Bromodichloromethane 97 <td>•</td> <td>82</td>	•	82
Freon 11 97 Ethanol 83 Freon 113 98 1,1-Dichloroethene 95 Acetone 84 2-Propanol 85 Carbon Disulfide 93 3-Chloropropene 92 Methylene Chloride 87 Methyl tert-butyl ether 91 trans-1,2-Dichloroethene 97 Hexane 88 1,1-Dichloroethane 93 2-Butanone (Methyl Ethyl Ketone) 91 cis-1,2-Dichloroethene 89 Tetrahydrofuran 84 Chloroform 96 1,1,1-Tichloroethane 95 Cyclohexane 92 Cyclohexane 92 Cyclohexane 93 Benzene 93 1,2-Dichloroethane 96 2,2,4-Trimethylpentane 88 Benzene 93 1,2-Dichloropropane 91 1,4-Dioxane 95 Bromodichloromethane 97 cis-1,3-Dich	Bromomethane	89
Ethanol 83 Freon 113 98 1,1-Dichloroethene 84 Acetone 84 2-Propanol 85 Carbon Disulfide 93 3-Chloropropene 92 Methyl tert-butyl ether 87 Methyl tert-butyl ether 91 trans-1,2-Dichloroethene 97 Hexane 88 1,1-Dichloroethane 93 2-Butanone (Methyl Ethyl Ketone) 91 cis-1,2-Dichloroethene 89 Tetrahydrofuran 84 Chloroform 96 1,1,1-Trichloroethane 95 Cyclohexane 92 Carbon Tetrachloride 96 2,2,4-Trimethylpentane 88 Benzene 93 1,2-Dichloroethane 91 1,2-Dichloroptopane 91 1,2-Dichloroptopane 91 1,4-Dioxane 95 Bromodichloromethane 97 cis-1,3-Dichloropropene 96 4-Methyl-2-pentanone	Chloroethane	92
Freon 113 98 1,1-Dichloroethene 95 Acetone 84 2-Propanol 85 Carbon Disulfide 93 3-Chloropropene 92 Methylene Chloride 87 Methyl tert-buryl ether 91 trans-1,2-Dichloroethene 97 Hexane 88 1,1-Dichloroethane 93 2-Butanone (Methyl Ethyl Ketone) 91 cis-1,2-Dichloroethene 89 Tetrahydrofuran 84 Chloroform 96 1,1,1-Tirchloroethane 95 Cyclohexane 92 Carbon Tetrachloride 96 2,2,4-Trimethylpentane 88 Benzene 93 1,2-Dichloroethane 92 Heptane 91 Trichloroethene 94 1,2-Dichloropropane 91 1,4-Dioxane 95 Bromodichloromethane 97 cis-1,3-Dichloropropene 96 4-Methyl-2-pentanone 84	Freon 11	97
1,1-Dichloroethene 95 Acetone 84 2-Propanol 85 Carbon Disulfide 93 3-Chloropropene 92 Methylene Chloride 87 Methyl tert-butyl ether 91 trans-1,2-Dichloroethene 97 Hexane 88 1,1-Dichloroethane 93 2-Butanone (Methyl Ethyl Ketone) 91 cis-1,2-Dichloroethene 89 Tetrahydrofuran 84 Chloroform 96 1,1,1-Trichloroethane 95 Cyclohexane 92 Carbon Tetrachloride 96 2,2,4-Trimethylpentane 88 Benzene 93 1,2-Dichloroethane 92 Heptane 91 Trichloroethene 94 1,2-Dichloropropane 91 1,4-Dioxane 95 Bromodichloromethane 97 Sci-1,3-Dichloropropene 96 4-Methyl-2-pentanone 84 4-Methyl-2-pentanone <t< td=""><td>Ethanol</td><td>83</td></t<>	Ethanol	83
Acetone 84 2-Propanol 85 Carbon Disulfide 93 3-Chloropropene 92 Methylene Chloride 87 Methyl tert-butyl ether 91 trans-1,2-Dichloroethene 97 Hexane 88 1,1-Dichloroethane 93 2-Butanone (Methyl Ethyl Ketone) 91 cis-1,2-Dichloroethene 89 Tetrahydrofuran 84 Chloroform 96 1,1,1-Trichloroethane 95 Cyclohexane 92 Cyclohexane 92 Cyclohexane 96 2,2,4-Trimethylpentane 88 Benzene 93 1,2-Dichloroethane 92 Heptane 91 Trichloroethene 94 1,2-Dichloropropane 91 1,4-Dioxane 95 Bromodichloromethane 97 cis-1,3-Dichloropropene 96 4-Methyl-2-pentanone 96 4-Methyl-2-pentanone 98 </td <td>Freon 113</td> <td>98</td>	Freon 113	98
Acetone 84 2-Propanol 85 Carbon Disulfide 93 3-Chloropropene 92 Methylene Chloride 87 Methyl tert-butyl ether 91 trans-1,2-Dichloroethene 97 Hexane 88 1,1-Dichloroethane 93 2-Butanone (Methyl Ethyl Ketone) 91 cis-1,2-Dichloroethene 89 Tetrahydrofuran 84 Chloroform 96 1,1,1-Trichloroethane 95 Cyclohexane 92 Cyclohexane 92 Cyclohexane 96 2,2,4-Trimethylpentane 88 Benzene 93 1,2-Dichloroethane 92 Heptane 91 Trichloroethene 94 1,2-Dichloropropane 91 1,4-Dioxane 95 Bromodichloromethane 97 cis-1,3-Dichloropropene 96 4-Methyl-2-pentanone 96 4-Methyl-2-pentanone 98 </td <td>1,1-Dichloroethene</td> <td>95</td>	1,1-Dichloroethene	95
Carbon Disulfide 93 3-Chloropropene 92 Methylene Chloride 87 Methyl tert-butyl ether 91 trans-1,2-Dichloroethene 97 Hexane 88 1,1-Dichloroethane 93 2-Butanone (Methyl Ethyl Ketone) 91 cis-1,2-Dichloroethene 89 Tetrahydrofuran 84 Chloroform 96 1,1,1-Trichloroethane 95 Cyclohexane 92 Carbon Tetrachloride 96 2,2,4-Trimethylpentane 88 Benzene 93 1,2-Dichloroethane 92 Heptane 91 Trichloroethene 94 1,2-Dichloropropane 91 1,4-Dioxane 95 Bromodichloromethane 97 cis-1,3-Dichloropropene 96 4-Methyl-2-pentanone 84 Toluene 98 trans-1,3-Dichloropropene 99 1,1,2-Trichloroethane 94 1-ttrachloroethane		84
Carbon Disulfide 93 3-Chloropropene 92 Methylene Chloride 87 Methyl tert-butyl ether 91 trans-1,2-Dichloroethene 97 Hexane 88 1,1-Dichloroethane 93 2-Butanone (Methyl Ethyl Ketone) 91 cis-1,2-Dichloroethene 89 Tetrahydrofuran 84 Chloroform 96 1,1,1-Trichloroethane 95 Cyclohexane 92 Carbon Tetrachloride 96 2,2,4-Trimethylpentane 88 Benzene 93 1,2-Dichloroethane 92 Heptane 91 Trichloroethene 94 1,2-Dichloropropane 91 1,4-Dioxane 95 Bromodichloromethane 97 cis-1,3-Dichloropropene 96 4-Methyl-2-pentanone 84 Toluene 98 trans-1,3-Dichloropropene 99 1,1,2-Trichloroethane 94 1-ttrachloroethane	2-Propanol	85
Methylene Chloride 87 Methyl tert-butyl ether 91 trans-1,2-Dichloroethene 97 Hexane 88 1,1-Dichloroethane 93 2-Butanone (Methyl Ethyl Ketone) 91 cis-1,2-Dichloroethene 89 Tetrahydrofuran 84 Chloroform 96 1,1,1-Trichloroethane 95 Cyclohexane 92 Carbon Tetrachloride 96 2,2,4-Trimethylpentane 88 Benzene 93 1,2-Dichloroethane 92 Heptane 91 Trichloroethene 94 1,2-Dichloropropane 91 1,4-Dioxane 95 Bromodichloromethane 97 cis-1,3-Dichloropropene 96 4-Methyl-2-pentanone 84 Toluene 98 trans-1,3-Dichloropropene 92 1,1,2-Trichloroethane 94 Tetrachloroethene 94		93
Methylene Chloride 87 Methyl tert-butyl ether 91 trans-1,2-Dichloroethene 97 Hexane 88 1,1-Dichloroethane 93 2-Butanone (Methyl Ethyl Ketone) 91 cis-1,2-Dichloroethene 89 Tetrahydrofuran 84 Chloroform 96 1,1,1-Trichloroethane 95 Cyclohexane 92 Carbon Tetrachloride 96 2,2,4-Trimethylpentane 88 Benzene 93 1,2-Dichloroethane 92 Heptane 91 Trichloroethene 94 1,2-Dichloropropane 91 1,4-Dioxane 95 Bromodichloromethane 97 cis-1,3-Dichloropropene 96 4-Methyl-2-pentanone 84 Toluene 98 trans-1,3-Dichloropropene 96 1,2-Trichloroethane 92 1,1,2-Trichloroethane 92 1,1,2-Trichloroethane 94	3-Chloropropene	92
Methyl tert-butyl ether 91 trans-1,2-Dichloroethene 97 Hexane 88 1,1-Dichloroethane 93 2-Butanone (Methyl Ethyl Ketone) 91 cis-1,2-Dichloroethene 89 Tetrahydrofuran 84 Chloroform 96 1,1,1-Trichloroethane 95 Cyclohexane 92 Carbon Tetrachloride 96 2,2,4-Trimethylpentane 88 Benzene 93 1,2-Dichloroethane 92 Heptane 91 Trichloroethene 94 1,2-Dichloropropane 91 1,4-Dioxane 95 Bromodichloromethane 97 cis-1,3-Dichloropropene 96 4-Methyl-2-pentanone 96 4-Methyl-2-pentanone 98 trans-1,3-Dichloropropene 98 trans-1,3-Dichloropropene 99 1,2-Trichloroethane 94 Tetrachloroethene 92		87
trans-1,2-Dichloroethene 97 Hexane 88 1,1-Dichloroethane 93 2-Butanone (Methyl Ethyl Ketone) 91 cis-1,2-Dichloroethene 89 Tetrahydrofuran 84 Chloroform 96 1,1,1-Trichloroethane 95 Cyclohexane 92 Carbon Tetrachloride 96 2,2,4-Trimethylpentane 88 Benzene 93 1,2-Dichloroethane 92 Heptane 91 Trichloroethene 94 1,2-Dichloropropane 91 1,4-Dioxane 95 Bromodichloromethane 97 cis-1,3-Dichloropropene 96 4-Methyl-2-pentanone 96 4-Methyl-2-pentanone 96 Toluene 98 trans-1,3-Dichloropropene 92 1,1,2-Trichloroethane 92 1,1,2-Trichloroethane 94		91
1,1-Dichloroethane 93 2-Butanone (Methyl Ethyl Ketone) 91 cis-1,2-Dichloroethene 89 Tetrahydrofuran 84 Chloroform 96 1,1,1-Trichloroethane 95 Cyclohexane 92 Carbon Tetrachloride 96 2,2,4-Trimethylpentane 88 Benzene 93 1,2-Dichloroethane 92 Heptane 91 Trichloroethene 94 1,2-Dichloropropane 91 1,4-Dioxane 95 Bromodichloromethane 97 cis-1,3-Dichloropropene 96 4-Methyl-2-pentanone 96 Toluene 98 trans-1,3-Dichloropropene 92 1,1,2-Trichloroethane 94 Tetrachloroethene 92		97
2-Butanone (Methyl Ethyl Ketone) cis-1,2-Dichloroethene 89 Tetrahydrofuran 84 Chloroform 96 1,1,1-Trichloroethane 95 Cyclohexane 92 Carbon Tetrachloride 2,2,4-Trimethylpentane 88 Benzene 93 1,2-Dichloroethane 99 Heptane 91 Trichloroethene 94 1,2-Dichloropropane 1,4-Dioxane 95 Bromodichloromethane 97 cis-1,3-Dichloropropene 4-Methyl-2-pentanone 10luene 98 trans-1,3-Dichloropropene 1,2-Trichloroethane 99 40 1,2-Trichloroethane 99 60 4-Methyl-2-pentanone 99 1,1,2-Trichloroethane 99 1,1,2-Trichloroethane 99 1,1,2-Trichloroethane 99 1 Tetrachloroethene	•	88
2-Butanone (Methyl Ethyl Ketone) 91 cis-1,2-Dichloroethene 89 Tetrahydrofuran 84 Chloroform 96 1,1,1-Trichloroethane 95 Cyclohexane 92 Carbon Tetrachloride 96 2,2,4-Trimethylpentane 88 Benzene 93 1,2-Dichloroethane 92 Heptane 91 Trichloroethene 94 1,2-Dichloropropane 91 1,4-Dioxane 95 Bromodichloromethane 97 cis-1,3-Dichloropropene 96 4-Methyl-2-pentanone 84 Toluene 98 trans-1,3-Dichloropropene 92 1,1,2-Trichloroethane 94 Tetrachloroethene 92	1,1-Dichloroethane	93
cis-1,2-Dichloroethene 89 Tetrahydrofuran 84 Chloroform 96 1,1,1-Trichloroethane 95 Cyclohexane 92 Carbon Tetrachloride 96 2,2,4-Trimethylpentane 88 Benzene 93 1,2-Dichloroethane 92 Heptane 91 Trichloroethene 94 1,2-Dichloropropane 91 1,4-Dioxane 95 Bromodichloromethane 97 cis-1,3-Dichloropropene 96 4-Methyl-2-pentanone 84 Toluene 98 trans-1,3-Dichloropropene 92 1,1,2-Trichloroethane 94 Tetrachloroethene 92	2-Butanone (Methyl Ethyl Ketone)	91
Chloroform 96 1,1,1-Trichloroethane 95 Cyclohexane 92 Carbon Tetrachloride 96 2,2,4-Trimethylpentane 88 Benzene 93 1,2-Dichloroethane 92 Heptane 91 Trichloroethene 94 1,2-Dichloropropane 91 1,4-Dioxane 95 Bromodichloromethane 97 cis-1,3-Dichloropropene 96 4-Methyl-2-pentanone 84 Toluene 98 trans-1,3-Dichloropropene 92 1,1,2-Trichloroethane 94 Tetrachloroethene 92		89
Chloroform 96 1,1,1-Trichloroethane 95 Cyclohexane 92 Carbon Tetrachloride 96 2,2,4-Trimethylpentane 88 Benzene 93 1,2-Dichloroethane 92 Heptane 91 Trichloroethene 94 1,2-Dichloropropane 91 1,4-Dioxane 95 Bromodichloromethane 97 cis-1,3-Dichloropropene 96 4-Methyl-2-pentanone 84 Toluene 98 trans-1,3-Dichloropropene 92 1,1,2-Trichloroethane 94 Tetrachloroethene 92	Tetrahydrofuran	84
Cyclohexane 92 Carbon Tetrachloride 96 2,2,4-Trimethylpentane 88 Benzene 93 1,2-Dichloroethane 92 Heptane 91 Trichloroethene 94 1,2-Dichloropropane 91 1,4-Dioxane 95 Bromodichloromethane 97 cis-1,3-Dichloropropene 96 4-Methyl-2-pentanone 84 Toluene 98 trans-1,3-Dichloropropene 92 1,1,2-Trichloroethane 94 Tetrachloroethene 92		96
Carbon Tetrachloride 96 2,2,4-Trimethylpentane 88 Benzene 93 1,2-Dichloroethane 92 Heptane 91 Trichloroethene 94 1,2-Dichloropropane 91 1,4-Dioxane 95 Bromodichloromethane 97 cis-1,3-Dichloropropene 96 4-Methyl-2-pentanone 84 Toluene 98 trans-1,3-Dichloropropene 92 1,1,2-Trichloroethane 94 Tetrachloroethene 92	1,1,1-Trichloroethane	95
2,2,4-Trimethylpentane 88 Benzene 93 1,2-Dichloroethane 92 Heptane 91 Trichloroethene 94 1,2-Dichloropropane 91 1,4-Dioxane 95 Bromodichloromethane 97 cis-1,3-Dichloropropene 96 4-Methyl-2-pentanone 84 Toluene 98 trans-1,3-Dichloropropene 92 1,1,2-Trichloroethane 94 Tetrachloroethene 92	Cyclohexane	92
Benzene 93 1,2-Dichloroethane 92 Heptane 91 Trichloroethene 94 1,2-Dichloropropane 91 1,4-Dioxane 95 Bromodichloromethane 97 cis-1,3-Dichloropropene 96 4-Methyl-2-pentanone 84 Toluene 98 trans-1,3-Dichloropropene 92 1,1,2-Trichloroethane 94 Tetrachloroethene 92	Carbon Tetrachloride	96
1,2-Dichloroethane 92 Heptane 91 Trichloroethene 94 1,2-Dichloropropane 91 1,4-Dioxane 95 Bromodichloromethane 97 cis-1,3-Dichloropropene 96 4-Methyl-2-pentanone 84 Toluene 98 trans-1,3-Dichloropropene 92 1,1,2-Trichloroethane 94 Tetrachloroethene 92	2,2,4-Trimethylpentane	88
Heptane 91 Trichloroethene 94 1,2-Dichloropropane 91 1,4-Dioxane 95 Bromodichloromethane 97 cis-1,3-Dichloropropene 96 4-Methyl-2-pentanone 84 Toluene 98 trans-1,3-Dichloropropene 92 1,1,2-Trichloroethane 94 Tetrachloroethene 92	Benzene	93
Trichloroethene 94 1,2-Dichloropropane 91 1,4-Dioxane 95 Bromodichloromethane 97 cis-1,3-Dichloropropene 96 4-Methyl-2-pentanone 84 Toluene 98 trans-1,3-Dichloropropene 92 1,1,2-Trichloroethane 94 Tetrachloroethene 92	1,2-Dichloroethane	92
1,2-Dichloropropane 91 1,4-Dioxane 95 Bromodichloromethane 97 cis-1,3-Dichloropropene 96 4-Methyl-2-pentanone 84 Toluene 98 trans-1,3-Dichloropropene 92 1,1,2-Trichloroethane 94 Tetrachloroethene 92	Heptane	91
1,4-Dioxane 95 Bromodichloromethane 97 cis-1,3-Dichloropropene 96 4-Methyl-2-pentanone 84 Toluene 98 trans-1,3-Dichloropropene 92 1,1,2-Trichloroethane 94 Tetrachloroethene 92	Trichloroethene	94
Bromodichloromethane 97 cis-1,3-Dichloropropene 96 4-Methyl-2-pentanone 84 Toluene 98 trans-1,3-Dichloropropene 92 1,1,2-Trichloroethane 94 Tetrachloroethene 92	1,2-Dichloropropane	91
cis-1,3-Dichloropropene 96 4-Methyl-2-pentanone 84 Toluene 98 trans-1,3-Dichloropropene 92 1,1,2-Trichloroethane 94 Tetrachloroethene 92		95
4-Methyl-2-pentanone84Toluene98trans-1,3-Dichloropropene921,1,2-Trichloroethane94Tetrachloroethene92	Bromodichloromethane	97
4-Methyl-2-pentanone 84 Toluene 98 trans-1,3-Dichloropropene 92 1,1,2-Trichloroethane 94 Tetrachloroethene 92	cis-1,3-Dichloropropene	96
Toluene 98 trans-1,3-Dichloropropene 92 1,1,2-Trichloroethane 94 Tetrachloroethene 92		
1,1,2-Trichloroethane94Tetrachloroethene92		98
1,1,2-Trichloroethane94Tetrachloroethene92	trans-1,3-Dichloropropene	92
Tetrachloroethene 92		94
		92
	2-Hexanone	86



Client Sample ID: CCV Lab ID#: 1308566A-04A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name: 17090402 Date of Collection: NA
Dil. Factor: 1.00 Date of Analysis: 9/4/13 09:05 AM

Compound	%Recovery	
Dibromochloromethane	95	
1,2-Dibromoethane (EDB)	93	
Chlorobenzene	97	
Ethyl Benzene	96	
m,p-Xylene	94	
o-Xylene	93	
Styrene	98	
Bromoform	94	
Cumene	94	
1,1,2,2-Tetrachloroethane	93	
Propylbenzene	94	
4-Ethyltoluene	94	
1,3,5-Trimethylbenzene	94	
1,2,4-Trimethylbenzene	96	
1,3-Dichlorobenzene	94	
1,4-Dichlorobenzene	94	
alpha-Chlorotoluene	88	
1,2-Dichlorobenzene	93	
1,2,4-Trichlorobenzene	92	
Hexachlorobutadiene	88	
TPH ref. to Gasoline (MW=100)	100	

Container Type: NA - Not Applicable

		Method	
Surrogates	%Recovery	Limits	
Toluene-d8	100	70-130	
1,2-Dichloroethane-d4	94	70-130	
4-Bromofluorobenzene	100	70-130	



Client Sample ID: LCS Lab ID#: 1308566A-05A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name: 17090403 Date of Collection: NA
Dil. Factor: 1.00 Date of Analysis: 9/4/13 09:26 AM

Commound	%Recovery	Method Limits
Compound	•	
Freon 12	92	70-130
Freon 114	97	70-130
Chloromethane	95	70-130
Vinyl Chloride	88	70-130
1,3-Butadiene	81	70-130
Bromomethane	86	70-130
Chloroethane	90	70-130
Freon 11	94	70-130
Ethanol	82	70-130
Freon 113	97	70-130
1,1-Dichloroethene	98	70-130
Acetone	81	70-130
2-Propanol	84	70-130
Carbon Disulfide	112	70-130
3-Chloropropene	103	70-130
Methylene Chloride	85	70-130
Methyl tert-butyl ether	91	70-130
trans-1,2-Dichloroethene	106	70-130
Hexane	86	70-130
1,1-Dichloroethane	91	70-130
2-Butanone (Methyl Ethyl Ketone)	89	70-130
cis-1,2-Dichloroethene	87	70-130
Tetrahydrofuran	81	70-130
Chloroform	96	70-130
1,1,1-Trichloroethane	95	70-130
Cyclohexane	90	70-130
Carbon Tetrachloride	95	70-130
2,2,4-Trimethylpentane	86	70-130
Benzene	92	70-130
1,2-Dichloroethane	90	70-130
Heptane	90	70-130
Trichloroethene	94	70-130
1,2-Dichloropropane	91	70-130
1,4-Dioxane	90	70-130
Bromodichloromethane	96	70-130
cis-1,3-Dichloropropene	94	70-130
4-Methyl-2-pentanone	80	70-130
Toluene	95	70-130
trans-1,3-Dichloropropene	96	70-130
1,1,2-Trichloroethane	97	70-130
Tetrachloroethene	95	70-130
	95 85	70-130 70-130
2-Hexanone	00	70-130



Client Sample ID: LCS Lab ID#: 1308566A-05A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name: 17090403 Date of Collection: NA
Dil. Factor: 1.00 Date of Analysis: 9/4/13 09:26 AM

		Method		
Compound	%Recovery	Limits		
Dibromochloromethane	95	70-130		
1,2-Dibromoethane (EDB)	97	70-130		
Chlorobenzene	101	70-130		
Ethyl Benzene	98	70-130		
m,p-Xylene	98	70-130		
o-Xylene	96	70-130		
Styrene	99	70-130		
Bromoform	95	70-130		
Cumene	98	70-130		
1,1,2,2-Tetrachloroethane	98	70-130		
Propylbenzene	98	70-130		
4-Ethyltoluene	94	70-130		
1,3,5-Trimethylbenzene	95	70-130		
1,2,4-Trimethylbenzene	97	70-130		
1,3-Dichlorobenzene	99	70-130		
1,4-Dichlorobenzene	96	70-130		
alpha-Chlorotoluene	86	70-130		
1,2-Dichlorobenzene	96	70-130		
1,2,4-Trichlorobenzene	97	70-130		
Hexachlorobutadiene	90	70-130		
TPH ref. to Gasoline (MW=100)	Not Spiked			

Container Type: NA - Not Applicable

		Method Limits		
Surrogates	%Recovery			
Toluene-d8	101	70-130		
1,2-Dichloroethane-d4	93	70-130		
4-Bromofluorobenzene	96	70-130		



Client Sample ID: LCSD Lab ID#: 1308566A-05AA

EPA METHOD TO-15 GC/MS FULL SCAN

File Name: 17090404 Date of Collection: NA
Dil. Factor: 1.00 Date of Analysis: 9/4/13 09:47 AM

		Method		
Compound	%Recovery	Limits		
Freon 12	93	70-130		
Freon 114	99	70-130		
Chloromethane	96	70-130		
Vinyl Chloride	88	70-130		
1,3-Butadiene	83	70-130		
Bromomethane	87	70-130		
Chloroethane	92	70-130		
Freon 11	96	70-130		
Ethanol	80	70-130		
Freon 113	98	70-130		
1,1-Dichloroethene	98	70-130		
Acetone	84	70-130		
2-Propanol	84	70-130		
Carbon Disulfide	114	70-130		
3-Chloropropene	104	70-130		
Methylene Chloride	87	70-130		
Methyl tert-butyl ether	92	70-130		
trans-1,2-Dichloroethene	107	70-130		
Hexane	87	70-130		
1,1-Dichloroethane	93	70-130		
2-Butanone (Methyl Ethyl Ketone)	90	70-130		
cis-1,2-Dichloroethene	89	70-130		
Tetrahydrofuran	80	70-130		
Chloroform	97	70-130		
1,1,1-Trichloroethane	97	70-130		
Cyclohexane	92	70-130		
Carbon Tetrachloride	97	70-130		
2,2,4-Trimethylpentane	88	70-130		
Benzene	94	70-130		
1,2-Dichloroethane	91	70-130		
Heptane	89	70-130		
Trichloroethene	95	70-130		
1,2-Dichloropropane	91	70-130		
1,4-Dioxane	93	70-130		
Bromodichloromethane	95	70-130		
cis-1,3-Dichloropropene	94	70-130		
4-Methyl-2-pentanone	81	70-130		
Toluene	96	70-130		
trans-1,3-Dichloropropene	94	70-130		
1,1,2-Trichloroethane	97	70-130		
Tetrachloroethene	93	70-130		
2-Hexanone	84	70-130		



Client Sample ID: LCSD Lab ID#: 1308566A-05AA

EPA METHOD TO-15 GC/MS FULL SCAN

File Name: 17090404 Date of Collection: NA
Dil. Factor: 1.00 Date of Analysis: 9/4/13 09:47 AM

		Method		
Compound	%Recovery	Limits		
Dibromochloromethane	95	70-130		
1,2-Dibromoethane (EDB)	95	70-130		
Chlorobenzene	100	70-130		
Ethyl Benzene	97	70-130		
m,p-Xylene	98	70-130		
o-Xylene	96	70-130		
Styrene	99	70-130		
Bromoform	94	70-130		
Cumene	96	70-130		
1,1,2,2-Tetrachloroethane	98	70-130		
Propylbenzene	97	70-130		
4-Ethyltoluene	94	70-130		
1,3,5-Trimethylbenzene	94	70-130		
1,2,4-Trimethylbenzene	97	70-130		
1,3-Dichlorobenzene	98	70-130		
1,4-Dichlorobenzene	96	70-130		
alpha-Chlorotoluene	85	70-130		
1,2-Dichlorobenzene	99	70-130		
1,2,4-Trichlorobenzene	97	70-130		
Hexachlorobutadiene	92	70-130		
TPH ref. to Gasoline (MW=100)	Not Spiked			

Container Type: NA - Not Applicable

		Method Limits		
Surrogates	%Recovery			
Toluene-d8	100	70-130		
1,2-Dichloroethane-d4	93	70-130		
4-Bromofluorobenzene	97	70-130		



CHAIN-OF-CUSTODY RECORD

Sample Transportation Notice

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Page _ of _ i

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