

Limited Subsurface Investigation (LSI)

Commissioned by:

Edward Wong
Vice President
Cathay Bank
9650 Flair Drive, El Monte, CA 91731



Subject Site:

Commercial Property
964 A Street, Hayward, CA 94541
Alameda County

Project Number:

7371

Date of Engagement:

August 10, 2017

Date of Report:

September 6, 2017

eScreenLogic

Dallas – Fort Worth – Sacramento

www.escreenlogic.com



Limited Subsurface Investigation (LSI) – Project #7371
Commercial Property
964 A Street, Hayward CA
September 6, 2017

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Vice President
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9650 Flair Drive, El Monte, CA 91731

SUBJECT: Limited Subsurface Investigation (LSI) – Project #7371

PROPERTY: 964 A Street, Hayward, CA

(Herein after referred to as "subject site")

Dear Edward Wong,

eScreenLogic was contracted to perform a Limited Subsurface Investigation (LSI) at the above referenced subject site. The assessment was performed in general accordance with eScreenLogic's proposal #7371.

PURPOSE:

This LSI is not intended to define or delineate any contamination plume, but to identify the possible presence of Chemicals of Concern (*herein referred to as COCs*). This LSI is limited in scope and not intended to satisfy the level of assessment necessary to provide remedial solutions or determine migration pathways related to a release of COCs.

BACKGROUND INFORMATION

Per information provided by you and additional information gathered during a previous All Appropriate Inquiry (AAI) report conducted by Basics Environmental on August 2, 2017, the subject site consists of a rectangular-shaped tract of land with an area totaling approximately +/- 18,807-square feet, improved with approximately 9,642-square feet of business unit space across two subject buildings. At the time of the AAI, the subject site had one building on the western edge and the second building on the eastern edge. The remaining portion of the subject site property consisted of asphalt parking.

During the AAI investigation (by others), the historical research identified a past land use of the subject site as 'Salvatore Campo Auto Repair' and 'Comet Auto Supply' through a city directory search. On October 1, 1997 a permit was filed to close an abandoned underground storage tank (UST) in place and replace by back filling with sand cement slurry. The permit was filed by Aqua Science Engineers, Inc. Subsequent inspections and testing did not list violations or a release. According to the associated site plan, the UST was located adjacent to the western of the two subject buildings, located east of the northwestern entryway, within the associated paved parking lot. According to ASE, in letter to the City of Hayward dated September 30, 1997, the UST was located approximately three-feet from the western edge of the subject building and foundation, approximately six feet underground, and removal would have threatened the structural integrity of the subject building."

"As part of previous auto repair business activities, various quantities of paints/lacquers/thinners, petroleum-based products including oils/lubricants/greases, potentially antifreeze/coolant, and potentially halogenated/chlorinated solvents were likely utilized in this region of the site."

This Recognized Environmental Conditions (RECs) identified within the AAI resulted in the recommendation of this LSI.





UTILITY CLEARANCE

Because this LSI involved sub-slab vapor sampling with no additional depth needed below the existing concrete and/or asphalt slabs, no utility clearance or Underground Service Alert (USA) were required as part of this investigation.

HEALTH AND SAFETY PLAN

A site-specific Health and Safety Plan was not required as part of this LSI; however, eScreenLogic utilizes Occupational Health and Safety protocol under Hazardous Waste Operations & Emergency Response 29 CFR 1910.120 when performing LSIs. This protocol is designed to reduce the risk of physical or chemical exposures that may affect on-site workers within the work area. The Health and Safety protocols include information about anticipated COCs on the subject property, health and safety procedures for working on-site, and emergency response procedures.

WORK PLAN

Due to the shallow depth of the sample locations, a work plan and regulatory boring permit were not required for this LSI. Work was conducted pursuant to the eScreenLogic's proposal #7371

SUBSURFACE INVESTIGATION

August 17, 2017

- eScreenLogic mobilized to the subject site to install four (4) sub-slab soil vapor points (SSV1 to SSV4) beneath existing asphalt parking lot (Figure 1).
- The sample locations were chosen to give adequate coverage across the site, to target suspected areas, as well as avoiding poor concrete conditions which could reduce sample recovery;
- SSV1 was located along the sanitary sewer alignment and representative of the display area in the western portion of the investigation area. SSV2 was located near the abandoned in-place UST as well as sewer alignment. SSV3 was located near a floor drain which ties into the main sewer alignment. SSV4 was located within the back room of the northeast portion of the investigation area. This back room had evidence of a wall vent, three ceiling vents, an 220volt ACV outlet and significant oil staining on the wall.
- At each sample location, a roto-hammer drill was used to drill through the concrete slab and just into the aggregate base beneath this surface. The concrete thickness varied, but averaged about 6 inches;
- A screened soil vapor port was installed through each hole into the aggregate base, and was bedded with a clean sand. Hydrated bentonite was used at the surface as an air-tight seal with the slab;
- Once the sample point was installed and bentonite seal completed, the sample point was allowed to equilibrate for approximately 30 to 60-minutes prior to sample collection;
- A vacuum hand pump was used to purge the sample line and evaluate subsurface flow conditions. Good flow conditions was observed in all the samples;
- The vacuum hand pump was also used to perform a vacuum leak check of the sample train (flow regulator and tubing connected to the suma canister) prior to connection of the sample point;
- The samples (SSV1 to SSV4) were collected within a leak-check shroud using isopropyl alcohol (2-propanol) as the leak-check chemical; and,
- Upon completion of the sample collection, the hydrated bentonite was used to plug the hole at each test location.



Figure 1 - Sub-Slab Soil Vapor Sample Location Map



Note: Not to scale.

SAMPLING AND ANALYTICAL METHODS

Four (4) sub-slab soil vapor samples were collected from beneath the subject site to characterize sub-slab soil vapor conditions. These locations were chosen to provide spatial coverage of vapor conditions across the subject site. The samples were collected within evacuated 1-Liter summa canisters provided by the analytical laboratory (Eurofins, Air Toxics). Flow controllers were used to meter the flow in to each evacuated canister and prevent stripping of COCs from the sub-slab media. Isopropyl alcohol (2-propanol) was used as the leak-check chemical. Upon sample collection, the samples were logged onto chain of custody and shipped to the laboratory for analysis by Method TO-15 (for COCs).





The soil vapor samples were collected per industry standards and in general accordance with established State of California, Environmental Protection Agency (EPA) and/or ASTM standards. Soil vapor samples were collected using a methodology based on the Department of Toxic Substances Control (DTSC) Advisory for Active Soil Gas investigations (DTSC, 2012, updated and finalized July 2015).

CONCLUSION

The following conclusions are based on the results of an LSI performed at the subject site in accordance with eScreenLogic's proposal #7371 engaged on August 10, 2017. This LSI is intended to further investigate the possible presence of COCs, and was performed in general conformance with ASTM and DTSC standards. It is not intended to satisfy the level of assessment necessary to propose remedial solutions and/or assess migration pathways related to a release of COCs. Sampling procedures and analytical methods are based on State of California standard practices and regulatory guidelines; however, were not meant to provide site characterization and/or other reporting requirements necessary to meet any specific state program. Testing results and professional evaluation of this LSI are for the use of the client only.

Interpretation of the contaminant concentrations identified in the laboratory analysis are based on Environmental Screening Levels (ESL) established by the San Francisco Bay Regional Water Quality Control Board (RWQCB) and are summarized in Table 1 (Sub-Slab Soil Vapor Sample Results). The established ESLs referenced in this LSI are for screening purposes and are not intended to constitute cleanup levels; however, provide conservative estimates of potential risk to human health as compared against the current commercial standard.

2-Propanol (leak-check chemical) was detected in the samples. Acetone was also detected in the samples and is believed to be attributed to a cross contaminant of 2-Propanol. Perchloroethylene (PCE) and TPH as gasoline ranged organics (TPH-GRO) were reported in sample SSV4 (Table 1). The PCE detect was above the established ESL for commercial land use and warrants additional investigation. The reported concentration of TPH-GRO may be influenced by the detection of PCE; however, is lower than the ESL. The detection of the leak check chemical raised the analytical reporting limits for the COCs. None of the COCs analytical reporting limits, except for naphthalene, were above the ESLs (Table 1). The actual naphthalene concentrations are likely lower than the reporting limits.

As mentioned, detection of 2-propanol (leak check chemical) was reported in each soil vapor sample collected. The leak check is performed to evaluate if there are "gross" leaks within the sample train of the sampling apparatus during the vapor collection process. Due to the sensitivity of air and soil vapor sampling and analysis, it is not unexpected to see detections of the leak check compound in the vapor samples. In a worst-case scenario, if the concentration of the leak check exceeds 0.005 % volume (50 parts per million or PPMV) the sample integrity is considered compromised and sample results should be considered qualitative. 50 PPMV of 2-propanol equates to a vapor concentration of 122,883 µg/m³ which is about 1.6 times above the greatest concentration reported (75,000 µg/m³) which was observed in SSV3. The presence of the leak check compound resulted in elevated reporting limits of COCs in the vapor samples analyzed. The reporting limits for the COCs (apart from naphthalene) are below the ESLs for commercial land use. The analytical laboratory report is attached to this Report and the results are summarized in Table 1 on the following page.





Table 1 - Sub-Slab Soil Vapor Results

Soil Vapor ($\mu\text{g}/\text{m}^3$)					
ANALYTE	SFBRWQCB ESL Soil Vapor	SSV1	SSV2	SSV3	SSV4
Acetone	140,000,000	730	320	1,000	1,100
Ethanol	NE	<180	<180	<180	<180
Benzene ¹	420	<76	<75	<75	<76
Toluene ¹	1,300,000	<89	<89	<88	<90
Naphthalene ¹	360	<500	<490	<490	<500
TPH-Gasoline Range ¹	2,500,000	<3900	<3900	<3800	26,000
Trichloroethene (TCE) ²	3,000	<130	<130	<120	<130
Tetrachloroethene (PCE) ²	2,100	<160	<160	<160	2,400
2-Propanol (isopropyl alcohol) *	NE	64,000	68,000	75,000	64,000
Sample Date		8/17/17	8/17/17	8/17/17	8/17/17
ESL – Environmental Screening Levels (SFBRWQCB) Commercial land use standard.					
1 – Petroleum-Related COC 2 – Degreasing-Related Chemicals COC					
PCE slightly exceeded the commercial Environmental Screening Level (ESLs) in sample SSV4. The reporting levels for naphthalene slightly exceed the ESL for this compound in the soil vapor samples.					
*Note: Leak check chemical (2-propanol) was detected (reporting limits raised). If 2-Propanol concentrations exceed 122,883 $\mu\text{g}/\text{m}^3$, the sample result should be considered qualitative in nature and used with caution.					

RECOMMENDATIONS

The detection of PCE at a reportable concentration above the commercial ESL in sample SSV4 represents a potential risk to the subject site which warrants further investigation. The elevated reporting limit for naphthalene, although above the ESLs, is not likely a risk as the actual concentration is likely much lower.

An additional subsurface investigation to determine the vertical and lateral extent of PCE in the vicinity of SSV4 is recommended. Additionally, groundwater in the vicinity of SSV4 is recommended to be sampled and analyzed to determine if an impact to shallow groundwater has occurred. The additional information will be incorporated into a site conceptual model which will allow a better understanding of the extent of the impact and if site remediation is necessary.

QUALITY ASSURANCE/QUALITY CONTROL

Soil vapor samples were collected according to standard industry practices and in compliance with established State of California, Environmental Protection Agency (EPA) and/or ASTM standards. Separate soil vapor sample screens, new sample tubing, and pre-cleaned vapor flow regulators were used at each sample collection location. Samples were collected within individual evacuated 1-Liter summa canisters. At completion of sample collection, each summa was logged onto chain of custody and stored in cool dry conditions until they could be shipped to the custody of the analytical laboratory.





STANDARD OF CARE AND LIMITATIONS

This LSI investigation was performed in general accordance with eScreenLogic's proposal #7371. No other warranties, either expressed or implied, apply to the services herein.

To accurately represent the services performed, eScreenLogic notes that it does not and cannot represent that the subject site contains no hazardous material, products, underground storage tanks (USTs), and/or other latent conditions beyond the Scope of Work for this LSI.

eScreenLogic cannot warrant the accuracy of prior reports and/or services performed by other firms at the subject site. Findings and Conclusions conveyed herein are based upon the limited and included data obtained on a specific date; such conditions are subject to change.

The clauses of eScreenLogic's General Terms & Conditions (T&C) are incorporated herein by reference in this proposal with the same force and effect as though set forth in full text. A copy of the T&C is available upon written request. **ESCREENLOGIC'S LIABILITY, IF ANY, FOR ANY CLAIM, COSTS, LOSS OR DAMAGE RESULTING FROM ESCREENLOGIC'S NEGLIGENCE, IF ANY, RELATING TO THIS AGREEMENT OR THE WORK PERFORMED PURSUANT HERETO SHALL NOT EXCEED THE AMOUNT OF THE PAYMENT(S) ACTUALLY RECEIVED BY ESCREENLOGIC HEREUNDER; PROVIDED, HOWEVER, ESCREENLOGIC'S LIABILITY, IF ANY, FOR CLAIMS INVOLVING ACTS, ERRORS, OR OMISSIONS IN THE RENDERING OF PROFESSIONAL SERVICES ("PROFESSIONAL LIABILITY") SHALL NOT EXCEED THE AMOUNT OF INSURANCE MAINTAINED BY ESCREENLOGIC. I/WE HAVE BEEN ADVISED THAT ESCREENLOGIC CURRENTLY MAINTAINS PROFESSIONAL LIABILITY INSURANCE IN THE AMOUNT OF \$2,000,000.** This agreement shall be governed by and construed in accordance with the laws of the State of Texas (without regard to its conflicts of laws provisions). The parties hereto hereby agree that venue of any action under this agreement shall be exclusively in Tarrant County, Texas, and that this agreement is performable in part in Tarrant County, Texas. Information, estimates and opinions furnished to EScreenLogic during the course of the assessment, and contained in the report, will be obtained from sources considered reliable and believed to be true and correct. However, eScreenLogic makes no independent investigation as to such matters and undertakes no responsibility for the accuracy of such items. All facsimile transmissions, accompanying documents, and signatures shall be treated as original documents and shall bind and inure the parties involved in this agreement. The Parties agree to make good-faith efforts to settle any dispute or claim that arises under this Agreement or the work performed pursuant hereto through discussion and negotiation. The dispute resolution process will be initiated by either party giving the other party written notice that a dispute exists ("Notice of Dispute"), setting forth the facts and circumstances surrounding the dispute. Within fifteen (15) days of the delivery of the Notice of Dispute, the Parties shall meet at a mutually acceptable date, time and place, attempting to informally resolve the dispute. If the dispute has not been resolved through negotiations, the Parties agree that any claim or action relating in any way to this Agreement or the work performed pursuant hereto, shall be resolved through binding arbitration pursuant to the rules of the American Arbitration Association. The site of any arbitration proceedings shall be Tarrant County, Texas, unless otherwise agreed to by the Parties.





RELIANCE

This LSI report has been prepared for the exclusive use and reliance of the Client. Use or reliance by any other party is prohibited without the written authorization of eScreenLogic. Reliance on the LSI by the Client shall be subject to the engagement agreement/scope of work executed by the Client.

If you have any questions about the report, or if we can be of any further service to you please do not hesitate to contact us at (916) 288-8177 or www.escreenlogic.com.

Handwritten signature/initials

Chad Cadenhead, P.G. (Lic #11462), CAPM (Lic #0000553), CESCO (Cert #356667150)
Principal & Senior Geologist

Handwritten signature: Rob S. Fagerness



Robert S. Fagerness, PE (Lic #C053220)
Senior Engineer





ACCREDITED LABORATORY RESULTS

Additional appendices vary by LSI scope and purpose- but include and are not limited to: accredited laboratory certifications, full analytical details, supporting documentation and evidence of insurance.



8/25/2017

Mr. Rob Fagerness
eScreenLogic, Inc.
11249 Gold Country Blvd
Suite 165
Gold River CA 95670

Project Name: HAYWARD
Project #: 7371
Workorder #: 1708328

Dear Mr. Rob Fagerness

The following report includes the data for the above referenced project for sample(s) received on 8/17/2017 at Air Toxics Ltd.

The data and associated QC analyzed by 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 Eurofins Air Toxics Inc. for your air analysis needs. Eurofins Air Toxics Inc. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Kelly Buettner at 916-985-1000 if you have any questions regarding the data in this report.

Regards,



Kelly Buettner
Project Manager

WORK ORDER #: 1708328

Work Order Summary

CLIENT:	Mr. Rob Fagerness eScreenLogic, Inc. 11249 Gold Country Blvd Suite 165 Gold River, CA 95670	BILL TO:	Mr. Rob Fagerness eScreenLogic, Inc. 11249 Gold Country Blvd Suite 165 Gold River, CA 95670
PHONE:	(916) 288-8176	P.O. #	
FAX:		PROJECT #	7371 HAYWARD
DATE RECEIVED:	08/17/2017	CONTACT:	Kelly Buettner
DATE COMPLETED:	08/25/2017		

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC./PRES.</u>	<u>FINAL PRESSURE</u>
01A	SSV1	TO-15	4.9 "Hg	14.5 psi
02A	SSV2	TO-15	4.3 "Hg	15 psi
03A	SSV3	TO-15	4.5 "Hg	14.5 psi
04A	SSV4	TO-15	4.9 "Hg	14.6 psi
05A	Lab Blank	TO-15	NA	NA
06A	CCV	TO-15	NA	NA
07A	LCS	TO-15	NA	NA
07AA	LCSD	TO-15	NA	NA

CERTIFIED BY: 
 Technical Director

DATE: 08/25/17

Certification numbers: AZ Licensure AZ0775, NJ NELAP - CA016, NY NELAP - 11291,
 TX NELAP - T104704434-16-11, UT NELAP CA0093332016-7, VA NELAP - 8113, WA NELAP - C935
 Name of Accreditation Body: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program)
 Accreditation number: CA300005, Effective date: 10/18/2016, Expiration date: 10/17/2017.

Eurofins Air Toxics Inc. certifies that the test results contained in this report meet all requirements of the NELAC standards

This report shall not be reproduced, except in full, without the written approval of Eurofins Air Toxics, Inc.

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630
 (916) 985-1000 . (800) 985-5955 . FAX (916) 985-1020

LABORATORY NARRATIVE
EPA Method TO-15
eScreenLogic, Inc.
Workorder# 1708328

Four 1 Liter Summa Canister samples were received on August 17, 2017. 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

All Quality Control Limit exceedances and affected sample results are noted by flags. Each flag is defined at the bottom of this Case Narrative and on each Sample Result Summary page. Target compound non-detects in the samples that are associated with high bias in QC analyses have not been flagged.

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 samples SSV1, SSV2, SSV3 and SSV4 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

Client Sample ID: SSV1

Lab ID#: 1708328-01A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Acetone	95	300	220	730
2-Propanol	95	26000	230	64000

Client Sample ID: SSV2

Lab ID#: 1708328-02A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Acetone	94	260	220	620
2-Propanol	94	28000	230	68000

Client Sample ID: SSV3

Lab ID#: 1708328-03A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Acetone	94	420	220	1000
2-Propanol	94	31000	230	75000

Client Sample ID: SSV4

Lab ID#: 1708328-04A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Acetone	95	470	230	1100
2-Propanol	95	26000	230	64000
Tetrachloroethene	24	350	160	2400
TPH ref. to Gasoline (MW=100)	950	6500	3900	26000



Air Toxics

Client Sample ID: SSV1

Lab ID#: 1708328-01A

EPA METHOD TO-15 GC/MS

File Name:	14082208	Date of Collection:	8/17/17 11:09:00 AM
Dil. Factor:	4.74	Date of Analysis:	8/22/17 01:43 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	24	Not Detected	120	Not Detected
Freon 114	24	Not Detected	160	Not Detected
Chloromethane	95	Not Detected UJ	200	Not Detected UJ
Vinyl Chloride	24	Not Detected	60	Not Detected
1,3-Butadiene	24	Not Detected	52	Not Detected
Bromomethane	95	Not Detected	370	Not Detected
Chloroethane	95	Not Detected	250	Not Detected
Freon 11	24	Not Detected	130	Not Detected
Ethanol	95	Not Detected	180	Not Detected
Freon 113	24	Not Detected	180	Not Detected
1,1-Dichloroethene	24	Not Detected	94	Not Detected
Acetone	95	300	220	730
2-Propanol	95	26000	230	64000
Carbon Disulfide	95	Not Detected	300	Not Detected
3-Chloropropene	95	Not Detected	300	Not Detected
Methylene Chloride	95	Not Detected	330	Not Detected
Methyl tert-butyl ether	24	Not Detected	85	Not Detected
trans-1,2-Dichloroethene	24	Not Detected	94	Not Detected
Hexane	24	Not Detected	84	Not Detected
1,1-Dichloroethane	24	Not Detected	96	Not Detected
2-Butanone (Methyl Ethyl Ketone)	95	Not Detected	280	Not Detected
cis-1,2-Dichloroethene	24	Not Detected	94	Not Detected
Tetrahydrofuran	24	Not Detected	70	Not Detected
Chloroform	24	Not Detected	120	Not Detected
1,1,1-Trichloroethane	24	Not Detected	130	Not Detected
Cyclohexane	24	Not Detected	82	Not Detected
Carbon Tetrachloride	24	Not Detected	150	Not Detected
2,2,4-Trimethylpentane	24	Not Detected	110	Not Detected
Benzene	24	Not Detected	76	Not Detected
1,2-Dichloroethane	24	Not Detected	96	Not Detected
Heptane	24	Not Detected	97	Not Detected
Trichloroethene	24	Not Detected	130	Not Detected
1,2-Dichloropropane	24	Not Detected	110	Not Detected
1,4-Dioxane	95	Not Detected	340	Not Detected
Bromodichloromethane	24	Not Detected	160	Not Detected
cis-1,3-Dichloropropene	24	Not Detected	110	Not Detected
4-Methyl-2-pentanone	24	Not Detected	97	Not Detected
Toluene	24	Not Detected	89	Not Detected
trans-1,3-Dichloropropene	24	Not Detected	110	Not Detected
1,1,2-Trichloroethane	24	Not Detected	130	Not Detected
Tetrachloroethene	24	Not Detected	160	Not Detected
2-Hexanone	95	Not Detected	390	Not Detected



Air Toxics

Client Sample ID: SSV1

Lab ID#: 1708328-01A

EPA METHOD TO-15 GC/MS

File Name:	14082208	Date of Collection:	8/17/17 11:09:00 AM
Dil. Factor:	4.74	Date of Analysis:	8/22/17 01:43 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	24	Not Detected	200	Not Detected
1,2-Dibromoethane (EDB)	24	Not Detected	180	Not Detected
Chlorobenzene	24	Not Detected	110	Not Detected
Ethyl Benzene	24	Not Detected	100	Not Detected
m,p-Xylene	24	Not Detected	100	Not Detected
o-Xylene	24	Not Detected	100	Not Detected
Styrene	24	Not Detected	100	Not Detected
Bromoform	24	Not Detected	240	Not Detected
Cumene	24	Not Detected	120	Not Detected
1,1,2,2-Tetrachloroethane	24	Not Detected	160	Not Detected
Propylbenzene	24	Not Detected	120	Not Detected
4-Ethyltoluene	24	Not Detected	120	Not Detected
1,3,5-Trimethylbenzene	24	Not Detected	120	Not Detected
1,2,4-Trimethylbenzene	24	Not Detected	120	Not Detected
1,3-Dichlorobenzene	24	Not Detected	140	Not Detected
1,4-Dichlorobenzene	24	Not Detected	140	Not Detected
alpha-Chlorotoluene	24	Not Detected	120	Not Detected
1,2-Dichlorobenzene	24	Not Detected	140	Not Detected
1,2,4-Trichlorobenzene	95	Not Detected	700	Not Detected
Hexachlorobutadiene	95	Not Detected	1000	Not Detected
Naphthalene	95	Not Detected	500	Not Detected
TPH ref. to Gasoline (MW=100)	950	Not Detected	3900	Not Detected

UJ = Analyte associated with low bias in the CCV.

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	108	70-130
Toluene-d8	97	70-130
4-Bromofluorobenzene	109	70-130



Air Toxics

Client Sample ID: SSV2

Lab ID#: 1708328-02A

EPA METHOD TO-15 GC/MS

File Name:	14082209	Date of Collection:	8/17/17 11:19:00 AM
Dil. Factor:	4.72	Date of Analysis:	8/22/17 02:05 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	24	Not Detected	120	Not Detected
Freon 114	24	Not Detected	160	Not Detected
Chloromethane	94	Not Detected UJ	190	Not Detected UJ
Vinyl Chloride	24	Not Detected	60	Not Detected
1,3-Butadiene	24	Not Detected	52	Not Detected
Bromomethane	94	Not Detected	370	Not Detected
Chloroethane	94	Not Detected	250	Not Detected
Freon 11	24	Not Detected	130	Not Detected
Ethanol	94	Not Detected	180	Not Detected
Freon 113	24	Not Detected	180	Not Detected
1,1-Dichloroethene	24	Not Detected	94	Not Detected
Acetone	94	260	220	620
2-Propanol	94	28000	230	68000
Carbon Disulfide	94	Not Detected	290	Not Detected
3-Chloropropene	94	Not Detected	300	Not Detected
Methylene Chloride	94	Not Detected	330	Not Detected
Methyl tert-butyl ether	24	Not Detected	85	Not Detected
trans-1,2-Dichloroethene	24	Not Detected	94	Not Detected
Hexane	24	Not Detected	83	Not Detected
1,1-Dichloroethane	24	Not Detected	96	Not Detected
2-Butanone (Methyl Ethyl Ketone)	94	Not Detected	280	Not Detected
cis-1,2-Dichloroethene	24	Not Detected	94	Not Detected
Tetrahydrofuran	24	Not Detected	70	Not Detected
Chloroform	24	Not Detected	120	Not Detected
1,1,1-Trichloroethane	24	Not Detected	130	Not Detected
Cyclohexane	24	Not Detected	81	Not Detected
Carbon Tetrachloride	24	Not Detected	150	Not Detected
2,2,4-Trimethylpentane	24	Not Detected	110	Not Detected
Benzene	24	Not Detected	75	Not Detected
1,2-Dichloroethane	24	Not Detected	96	Not Detected
Heptane	24	Not Detected	97	Not Detected
Trichloroethene	24	Not Detected	130	Not Detected
1,2-Dichloropropane	24	Not Detected	110	Not Detected
1,4-Dioxane	94	Not Detected	340	Not Detected
Bromodichloromethane	24	Not Detected	160	Not Detected
cis-1,3-Dichloropropene	24	Not Detected	110	Not Detected
4-Methyl-2-pentanone	24	Not Detected	97	Not Detected
Toluene	24	Not Detected	89	Not Detected
trans-1,3-Dichloropropene	24	Not Detected	110	Not Detected
1,1,2-Trichloroethane	24	Not Detected	130	Not Detected
Tetrachloroethene	24	Not Detected	160	Not Detected
2-Hexanone	94	Not Detected	390	Not Detected



Air Toxics

Client Sample ID: SSV2

Lab ID#: 1708328-02A

EPA METHOD TO-15 GC/MS

File Name:	14082209	Date of Collection:	8/17/17 11:19:00 AM
Dil. Factor:	4.72	Date of Analysis:	8/22/17 02:05 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	24	Not Detected	200	Not Detected
1,2-Dibromoethane (EDB)	24	Not Detected	180	Not Detected
Chlorobenzene	24	Not Detected	110	Not Detected
Ethyl Benzene	24	Not Detected	100	Not Detected
m,p-Xylene	24	Not Detected	100	Not Detected
o-Xylene	24	Not Detected	100	Not Detected
Styrene	24	Not Detected	100	Not Detected
Bromoform	24	Not Detected	240	Not Detected
Cumene	24	Not Detected	120	Not Detected
1,1,2,2-Tetrachloroethane	24	Not Detected	160	Not Detected
Propylbenzene	24	Not Detected	120	Not Detected
4-Ethyltoluene	24	Not Detected	120	Not Detected
1,3,5-Trimethylbenzene	24	Not Detected	120	Not Detected
1,2,4-Trimethylbenzene	24	Not Detected	120	Not Detected
1,3-Dichlorobenzene	24	Not Detected	140	Not Detected
1,4-Dichlorobenzene	24	Not Detected	140	Not Detected
alpha-Chlorotoluene	24	Not Detected	120	Not Detected
1,2-Dichlorobenzene	24	Not Detected	140	Not Detected
1,2,4-Trichlorobenzene	94	Not Detected	700	Not Detected
Hexachlorobutadiene	94	Not Detected	1000	Not Detected
Naphthalene	94	Not Detected	490	Not Detected
TPH ref. to Gasoline (MW=100)	940	Not Detected	3900	Not Detected

UJ = Analyte associated with low bias in the CCV.

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	108	70-130
Toluene-d8	93	70-130
4-Bromofluorobenzene	102	70-130



Air Toxics

Client Sample ID: SSV3

Lab ID#: 1708328-03A

EPA METHOD TO-15 GC/MS

File Name:	14082210	Date of Collection:	8/17/17 11:28:00 AM
Dil. Factor:	4.68	Date of Analysis:	8/22/17 02:28 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	23	Not Detected	120	Not Detected
Freon 114	23	Not Detected	160	Not Detected
Chloromethane	94	Not Detected UJ	190	Not Detected UJ
Vinyl Chloride	23	Not Detected	60	Not Detected
1,3-Butadiene	23	Not Detected	52	Not Detected
Bromomethane	94	Not Detected	360	Not Detected
Chloroethane	94	Not Detected	250	Not Detected
Freon 11	23	Not Detected	130	Not Detected
Ethanol	94	Not Detected	180	Not Detected
Freon 113	23	Not Detected	180	Not Detected
1,1-Dichloroethene	23	Not Detected	93	Not Detected
Acetone	94	420	220	1000
2-Propanol	94	31000	230	75000
Carbon Disulfide	94	Not Detected	290	Not Detected
3-Chloropropene	94	Not Detected	290	Not Detected
Methylene Chloride	94	Not Detected	320	Not Detected
Methyl tert-butyl ether	23	Not Detected	84	Not Detected
trans-1,2-Dichloroethene	23	Not Detected	93	Not Detected
Hexane	23	Not Detected	82	Not Detected
1,1-Dichloroethane	23	Not Detected	95	Not Detected
2-Butanone (Methyl Ethyl Ketone)	94	Not Detected	280	Not Detected
cis-1,2-Dichloroethene	23	Not Detected	93	Not Detected
Tetrahydrofuran	23	Not Detected	69	Not Detected
Chloroform	23	Not Detected	110	Not Detected
1,1,1-Trichloroethane	23	Not Detected	130	Not Detected
Cyclohexane	23	Not Detected	80	Not Detected
Carbon Tetrachloride	23	Not Detected	150	Not Detected
2,2,4-Trimethylpentane	23	Not Detected	110	Not Detected
Benzene	23	Not Detected	75	Not Detected
1,2-Dichloroethane	23	Not Detected	95	Not Detected
Heptane	23	Not Detected	96	Not Detected
Trichloroethene	23	Not Detected	120	Not Detected
1,2-Dichloropropane	23	Not Detected	110	Not Detected
1,4-Dioxane	94	Not Detected	340	Not Detected
Bromodichloromethane	23	Not Detected	160	Not Detected
cis-1,3-Dichloropropene	23	Not Detected	110	Not Detected
4-Methyl-2-pentanone	23	Not Detected	96	Not Detected
Toluene	23	Not Detected	88	Not Detected
trans-1,3-Dichloropropene	23	Not Detected	110	Not Detected
1,1,2-Trichloroethane	23	Not Detected	130	Not Detected
Tetrachloroethene	23	Not Detected	160	Not Detected
2-Hexanone	94	Not Detected	380	Not Detected



Air Toxics

Client Sample ID: SSV3

Lab ID#: 1708328-03A

EPA METHOD TO-15 GC/MS

File Name:	14082210	Date of Collection: 8/17/17 11:28:00 AM
Dil. Factor:	4.68	Date of Analysis: 8/22/17 02:28 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	23	Not Detected	200	Not Detected
1,2-Dibromoethane (EDB)	23	Not Detected	180	Not Detected
Chlorobenzene	23	Not Detected	110	Not Detected
Ethyl Benzene	23	Not Detected	100	Not Detected
m,p-Xylene	23	Not Detected	100	Not Detected
o-Xylene	23	Not Detected	100	Not Detected
Styrene	23	Not Detected	100	Not Detected
Bromoform	23	Not Detected	240	Not Detected
Cumene	23	Not Detected	120	Not Detected
1,1,2,2-Tetrachloroethane	23	Not Detected	160	Not Detected
Propylbenzene	23	Not Detected	120	Not Detected
4-Ethyltoluene	23	Not Detected	120	Not Detected
1,3,5-Trimethylbenzene	23	Not Detected	120	Not Detected
1,2,4-Trimethylbenzene	23	Not Detected	120	Not Detected
1,3-Dichlorobenzene	23	Not Detected	140	Not Detected
1,4-Dichlorobenzene	23	Not Detected	140	Not Detected
alpha-Chlorotoluene	23	Not Detected	120	Not Detected
1,2-Dichlorobenzene	23	Not Detected	140	Not Detected
1,2,4-Trichlorobenzene	94	Not Detected	690	Not Detected
Hexachlorobutadiene	94	Not Detected	1000	Not Detected
Naphthalene	94	Not Detected	490	Not Detected
TPH ref. to Gasoline (MW=100)	940	Not Detected	3800	Not Detected

UJ = Analyte associated with low bias in the CCV.

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	114	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	109	70-130



Air Toxics

Client Sample ID: SSV4

Lab ID#: 1708328-04A

EPA METHOD TO-15 GC/MS

File Name:	14082211	Date of Collection:	8/17/17 11:37:00 AM
Dil. Factor:	4.76	Date of Analysis:	8/22/17 02:49 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	24	Not Detected	120	Not Detected
Freon 114	24	Not Detected	170	Not Detected
Chloromethane	95	Not Detected UJ	200	Not Detected UJ
Vinyl Chloride	24	Not Detected	61	Not Detected
1,3-Butadiene	24	Not Detected	53	Not Detected
Bromomethane	95	Not Detected	370	Not Detected
Chloroethane	95	Not Detected	250	Not Detected
Freon 11	24	Not Detected	130	Not Detected
Ethanol	95	Not Detected	180	Not Detected
Freon 113	24	Not Detected	180	Not Detected
1,1-Dichloroethene	24	Not Detected	94	Not Detected
Acetone	95	470	230	1100
2-Propanol	95	26000	230	64000
Carbon Disulfide	95	Not Detected	300	Not Detected
3-Chloropropene	95	Not Detected	300	Not Detected
Methylene Chloride	95	Not Detected	330	Not Detected
Methyl tert-butyl ether	24	Not Detected	86	Not Detected
trans-1,2-Dichloroethene	24	Not Detected	94	Not Detected
Hexane	24	Not Detected	84	Not Detected
1,1-Dichloroethane	24	Not Detected	96	Not Detected
2-Butanone (Methyl Ethyl Ketone)	95	Not Detected	280	Not Detected
cis-1,2-Dichloroethene	24	Not Detected	94	Not Detected
Tetrahydrofuran	24	Not Detected	70	Not Detected
Chloroform	24	Not Detected	120	Not Detected
1,1,1-Trichloroethane	24	Not Detected	130	Not Detected
Cyclohexane	24	Not Detected	82	Not Detected
Carbon Tetrachloride	24	Not Detected	150	Not Detected
2,2,4-Trimethylpentane	24	Not Detected	110	Not Detected
Benzene	24	Not Detected	76	Not Detected
1,2-Dichloroethane	24	Not Detected	96	Not Detected
Heptane	24	Not Detected	98	Not Detected
Trichloroethene	24	Not Detected	130	Not Detected
1,2-Dichloropropane	24	Not Detected	110	Not Detected
1,4-Dioxane	95	Not Detected	340	Not Detected
Bromodichloromethane	24	Not Detected	160	Not Detected
cis-1,3-Dichloropropene	24	Not Detected	110	Not Detected
4-Methyl-2-pentanone	24	Not Detected	97	Not Detected
Toluene	24	Not Detected	90	Not Detected
trans-1,3-Dichloropropene	24	Not Detected	110	Not Detected
1,1,2-Trichloroethane	24	Not Detected	130	Not Detected
Tetrachloroethene	24	350	160	2400
2-Hexanone	95	Not Detected	390	Not Detected



Air Toxics

Client Sample ID: SSV4

Lab ID#: 1708328-04A

EPA METHOD TO-15 GC/MS

File Name:	14082211	Date of Collection: 8/17/17 11:37:00 AM
Dil. Factor:	4.76	Date of Analysis: 8/22/17 02:49 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	24	Not Detected	200	Not Detected
1,2-Dibromoethane (EDB)	24	Not Detected	180	Not Detected
Chlorobenzene	24	Not Detected	110	Not Detected
Ethyl Benzene	24	Not Detected	100	Not Detected
m,p-Xylene	24	Not Detected	100	Not Detected
o-Xylene	24	Not Detected	100	Not Detected
Styrene	24	Not Detected	100	Not Detected
Bromoform	24	Not Detected	250	Not Detected
Cumene	24	Not Detected	120	Not Detected
1,1,2,2-Tetrachloroethane	24	Not Detected	160	Not Detected
Propylbenzene	24	Not Detected	120	Not Detected
4-Ethyltoluene	24	Not Detected	120	Not Detected
1,3,5-Trimethylbenzene	24	Not Detected	120	Not Detected
1,2,4-Trimethylbenzene	24	Not Detected	120	Not Detected
1,3-Dichlorobenzene	24	Not Detected	140	Not Detected
1,4-Dichlorobenzene	24	Not Detected	140	Not Detected
alpha-Chlorotoluene	24	Not Detected	120	Not Detected
1,2-Dichlorobenzene	24	Not Detected	140	Not Detected
1,2,4-Trichlorobenzene	95	Not Detected	710	Not Detected
Hexachlorobutadiene	95	Not Detected	1000	Not Detected
Naphthalene	95	Not Detected	500	Not Detected
TPH ref. to Gasoline (MW=100)	950	6500	3900	26000

UJ = Analyte associated with low bias in the CCV.

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	118	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	110	70-130



Air Toxics

Client Sample ID: Lab Blank

Lab ID#: 1708328-05A

EPA METHOD TO-15 GC/MS

File Name:	14082207	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	8/22/17 12:55 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	5.0	Not Detected	25	Not Detected
Freon 114	5.0	Not Detected	35	Not Detected
Chloromethane	20	Not Detected UJ	41	Not Detected UJ
Vinyl Chloride	5.0	Not Detected	13	Not Detected
1,3-Butadiene	5.0	Not Detected	11	Not Detected
Bromomethane	20	Not Detected	78	Not Detected
Chloroethane	20	Not Detected	53	Not Detected
Freon 11	5.0	Not Detected	28	Not Detected
Ethanol	20	Not Detected	38	Not Detected
Freon 113	5.0	Not Detected	38	Not Detected
1,1-Dichloroethene	5.0	Not Detected	20	Not Detected
Acetone	20	Not Detected	48	Not Detected
2-Propanol	20	Not Detected	49	Not Detected
Carbon Disulfide	20	Not Detected	62	Not Detected
3-Chloropropene	20	Not Detected	63	Not Detected
Methylene Chloride	20	Not Detected	69	Not Detected
Methyl tert-butyl ether	5.0	Not Detected	18	Not Detected
trans-1,2-Dichloroethene	5.0	Not Detected	20	Not Detected
Hexane	5.0	Not Detected	18	Not Detected
1,1-Dichloroethane	5.0	Not Detected	20	Not Detected
2-Butanone (Methyl Ethyl Ketone)	20	Not Detected	59	Not Detected
cis-1,2-Dichloroethene	5.0	Not Detected	20	Not Detected
Tetrahydrofuran	5.0	Not Detected	15	Not Detected
Chloroform	5.0	Not Detected	24	Not Detected
1,1,1-Trichloroethane	5.0	Not Detected	27	Not Detected
Cyclohexane	5.0	Not Detected	17	Not Detected
Carbon Tetrachloride	5.0	Not Detected	31	Not Detected
2,2,4-Trimethylpentane	5.0	Not Detected	23	Not Detected
Benzene	5.0	Not Detected	16	Not Detected
1,2-Dichloroethane	5.0	Not Detected	20	Not Detected
Heptane	5.0	Not Detected	20	Not Detected
Trichloroethene	5.0	Not Detected	27	Not Detected
1,2-Dichloropropane	5.0	Not Detected	23	Not Detected
1,4-Dioxane	20	Not Detected	72	Not Detected
Bromodichloromethane	5.0	Not Detected	34	Not Detected
cis-1,3-Dichloropropene	5.0	Not Detected	23	Not Detected
4-Methyl-2-pentanone	5.0	Not Detected	20	Not Detected
Toluene	5.0	Not Detected	19	Not Detected
trans-1,3-Dichloropropene	5.0	Not Detected	23	Not Detected
1,1,2-Trichloroethane	5.0	Not Detected	27	Not Detected
Tetrachloroethene	5.0	Not Detected	34	Not Detected
2-Hexanone	20	Not Detected	82	Not Detected



Air Toxics

Client Sample ID: Lab Blank

Lab ID#: 1708328-05A

EPA METHOD TO-15 GC/MS

File Name:	14082207	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 8/22/17 12:55 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	5.0	Not Detected	42	Not Detected
1,2-Dibromoethane (EDB)	5.0	Not Detected	38	Not Detected
Chlorobenzene	5.0	Not Detected	23	Not Detected
Ethyl Benzene	5.0	Not Detected	22	Not Detected
m,p-Xylene	5.0	Not Detected	22	Not Detected
o-Xylene	5.0	Not Detected	22	Not Detected
Styrene	5.0	Not Detected	21	Not Detected
Bromoform	5.0	Not Detected	52	Not Detected
Cumene	5.0	Not Detected	24	Not Detected
1,1,2,2-Tetrachloroethane	5.0	Not Detected	34	Not Detected
Propylbenzene	5.0	Not Detected	24	Not Detected
4-Ethyltoluene	5.0	Not Detected	24	Not Detected
1,3,5-Trimethylbenzene	5.0	Not Detected	24	Not Detected
1,2,4-Trimethylbenzene	5.0	Not Detected	24	Not Detected
1,3-Dichlorobenzene	5.0	Not Detected	30	Not Detected
1,4-Dichlorobenzene	5.0	Not Detected	30	Not Detected
alpha-Chlorotoluene	5.0	Not Detected	26	Not Detected
1,2-Dichlorobenzene	5.0	Not Detected	30	Not Detected
1,2,4-Trichlorobenzene	20	Not Detected	150	Not Detected
Hexachlorobutadiene	20	Not Detected	210	Not Detected
Naphthalene	20	Not Detected	100	Not Detected
TPH ref. to Gasoline (MW=100)	200	Not Detected	820	Not Detected

UJ = Analyte associated with low bias in the CCV.

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	118	70-130
Toluene-d8	94	70-130
4-Bromofluorobenzene	107	70-130

Client Sample ID: CCV

Lab ID#: 1708328-06A

EPA METHOD TO-15 GC/MS

File Name:	14082205	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 8/22/17 11:46 AM

Compound	%Recovery
Freon 12	108
Freon 114	100
Chloromethane	69 Q
Vinyl Chloride	79
1,3-Butadiene	72
Bromomethane	95
Chloroethane	76
Freon 11	118
Ethanol	80
Freon 113	110
1,1-Dichloroethene	99
Acetone	90
2-Propanol	87
Carbon Disulfide	90
3-Chloropropene	85
Methylene Chloride	82
Methyl tert-butyl ether	103
trans-1,2-Dichloroethene	97
Hexane	82
1,1-Dichloroethane	90
2-Butanone (Methyl Ethyl Ketone)	93
cis-1,2-Dichloroethene	97
Tetrahydrofuran	77
Chloroform	104
1,1,1-Trichloroethane	118
Cyclohexane	94
Carbon Tetrachloride	117
2,2,4-Trimethylpentane	79
Benzene	90
1,2-Dichloroethane	109
Heptane	90
Trichloroethene	93
1,2-Dichloropropane	76
1,4-Dioxane	89
Bromodichloromethane	110
cis-1,3-Dichloropropene	95
4-Methyl-2-pentanone	117
Toluene	92
trans-1,3-Dichloropropene	109
1,1,2-Trichloroethane	92
Tetrachloroethene	106
2-Hexanone	87



Air Toxics

Client Sample ID: CCV

Lab ID#: 1708328-06A

EPA METHOD TO-15 GC/MS

File Name:	14082205	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 8/22/17 11:46 AM

Compound	%Recovery
Dibromochloromethane	109
1,2-Dibromoethane (EDB)	99
Chlorobenzene	97
Ethyl Benzene	98
m,p-Xylene	104
o-Xylene	102
Styrene	103
Bromoform	115
Cumene	112
1,1,1,2-Tetrachloroethane	93
Propylbenzene	105
4-Ethyltoluene	112
1,3,5-Trimethylbenzene	110
1,2,4-Trimethylbenzene	105
1,3-Dichlorobenzene	112
1,4-Dichlorobenzene	113
alpha-Chlorotoluene	113
1,2-Dichlorobenzene	109
1,2,4-Trichlorobenzene	108
Hexachlorobutadiene	137 Q
Naphthalene	128
TPH ref. to Gasoline (MW=100)	100

Q = Exceeds Quality Control limits.

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	113	70-130
Toluene-d8	94	70-130
4-Bromofluorobenzene	113	70-130



Air Toxics

Client Sample ID: LCS

Lab ID#: 1708328-07A

EPA METHOD TO-15 GC/MS

File Name:	14082203	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	8/22/17 10:47 AM

Compound	%Recovery	Method Limits
Freon 12	119	70-130
Freon 114	110	70-130
Chloromethane	78	70-130
Vinyl Chloride	89	70-130
1,3-Butadiene	75	70-130
Bromomethane	105	70-130
Chloroethane	90	70-130
Freon 11	132 Q	70-130
Ethanol	89	70-130
Freon 113	114	70-130
1,1-Dichloroethene	104	70-130
Acetone	87	70-130
2-Propanol	95	70-130
Carbon Disulfide	81	70-130
3-Chloropropene	86	70-130
Methylene Chloride	91	70-130
Methyl tert-butyl ether	108	70-130
trans-1,2-Dichloroethene	86	70-130
Hexane	88	70-130
1,1-Dichloroethane	100	70-130
2-Butanone (Methyl Ethyl Ketone)	90	70-130
cis-1,2-Dichloroethene	110	70-130
Tetrahydrofuran	82	70-130
Chloroform	115	70-130
1,1,1-Trichloroethane	126	70-130
Cyclohexane	96	70-130
Carbon Tetrachloride	126	70-130
2,2,4-Trimethylpentane	88	70-130
Benzene	94	70-130
1,2-Dichloroethane	110	70-130
Heptane	85	70-130
Trichloroethene	104	70-130
1,2-Dichloropropane	77	70-130
1,4-Dioxane	95	70-130
Bromodichloromethane	115	70-130
cis-1,3-Dichloropropene	96	70-130
4-Methyl-2-pentanone	125	70-130
Toluene	96	70-130
trans-1,3-Dichloropropene	110	70-130
1,1,2-Trichloroethane	95	70-130
Tetrachloroethene	112	70-130
2-Hexanone	94	70-130



Air Toxics

Client Sample ID: LCS

Lab ID#: 1708328-07A

EPA METHOD TO-15 GC/MS

File Name:	14082203	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 8/22/17 10:47 AM

Compound	%Recovery	Method Limits
Dibromochloromethane	111	70-130
1,2-Dibromoethane (EDB)	102	70-130
Chlorobenzene	97	70-130
Ethyl Benzene	100	70-130
m,p-Xylene	100	70-130
o-Xylene	102	70-130
Styrene	106	70-130
Bromoform	121	70-130
Cumene	113	70-130
1,1,2,2-Tetrachloroethane	92	70-130
Propylbenzene	106	70-130
4-Ethyltoluene	113	70-130
1,3,5-Trimethylbenzene	109	70-130
1,2,4-Trimethylbenzene	102	70-130
1,3-Dichlorobenzene	114	70-130
1,4-Dichlorobenzene	110	70-130
alpha-Chlorotoluene	123	70-130
1,2-Dichlorobenzene	113	70-130
1,2,4-Trichlorobenzene	105	70-130
Hexachlorobutadiene	129	70-130
Naphthalene	119	60-140
TPH ref. to Gasoline (MW=100)	Not Spiked	

Q = Exceeds Quality Control limits.

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	118	70-130
Toluene-d8	95	70-130
4-Bromofluorobenzene	112	70-130



Air Toxics

Client Sample ID: LCSD

Lab ID#: 1708328-07AA

EPA METHOD TO-15 GC/MS

File Name:	14082204	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 8/22/17 11:15 AM

Compound	%Recovery	Method Limits
Freon 12	122	70-130
Freon 114	112	70-130
Chloromethane	77	70-130
Vinyl Chloride	88	70-130
1,3-Butadiene	77	70-130
Bromomethane	108	70-130
Chloroethane	93	70-130
Freon 11	134 Q	70-130
Ethanol	91	70-130
Freon 113	122	70-130
1,1-Dichloroethene	108	70-130
Acetone	86	70-130
2-Propanol	97	70-130
Carbon Disulfide	85	70-130
3-Chloropropene	86	70-130
Methylene Chloride	90	70-130
Methyl tert-butyl ether	113	70-130
trans-1,2-Dichloroethene	79	70-130
Hexane	86	70-130
1,1-Dichloroethane	96	70-130
2-Butanone (Methyl Ethyl Ketone)	92	70-130
cis-1,2-Dichloroethene	109	70-130
Tetrahydrofuran	84	70-130
Chloroform	114	70-130
1,1,1-Trichloroethane	126	70-130
Cyclohexane	100	70-130
Carbon Tetrachloride	126	70-130
2,2,4-Trimethylpentane	87	70-130
Benzene	98	70-130
1,2-Dichloroethane	112	70-130
Heptane	97	70-130
Trichloroethene	99	70-130
1,2-Dichloropropane	84	70-130
1,4-Dioxane	104	70-130
Bromodichloromethane	115	70-130
cis-1,3-Dichloropropene	97	70-130
4-Methyl-2-pentanone	122	70-130
Toluene	95	70-130
trans-1,3-Dichloropropene	113	70-130
1,1,2-Trichloroethane	95	70-130
Tetrachloroethene	111	70-130
2-Hexanone	86	70-130



Air Toxics

Client Sample ID: LCSD

Lab ID#: 1708328-07AA

EPA METHOD TO-15 GC/MS

File Name:	14082204	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 8/22/17 11:15 AM

Compound	%Recovery	Method Limits
Dibromochloromethane	113	70-130
1,2-Dibromoethane (EDB)	99	70-130
Chlorobenzene	96	70-130
Ethyl Benzene	101	70-130
m,p-Xylene	100	70-130
o-Xylene	100	70-130
Styrene	103	70-130
Bromoform	120	70-130
Cumene	112	70-130
1,1,1,2-Tetrachloroethane	92	70-130
Propylbenzene	106	70-130
4-Ethyltoluene	111	70-130
1,3,5-Trimethylbenzene	110	70-130
1,2,4-Trimethylbenzene	99	70-130
1,3-Dichlorobenzene	114	70-130
1,4-Dichlorobenzene	106	70-130
alpha-Chlorotoluene	123	70-130
1,2-Dichlorobenzene	117	70-130
1,2,4-Trichlorobenzene	114	70-130
Hexachlorobutadiene	143 Q	70-130
Naphthalene	118	60-140
TPH ref. to Gasoline (MW=100)	Not Spiked	

Q = Exceeds Quality Control limits.

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	118	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	115	70-130

