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December 3, 2009
Project No. 2007-0057-01

Mr. Jerry Wickham, P.G.
Alameda County Health Care Services
Department of Environmental Health
1131 Harbor Bay Parkway, 2nd Floor
Alameda, California 94502
(via GeoTracker)

Subject: **Results of Soil Gas Investigation and Human Health Risk Assessment**
Former USA Service Station No. 57
10700 MacArthur Boulevard
Oakland, California

Dear Mr. Wickham:

Stratus Environmental, Inc. (Stratus) has prepared this report on behalf of Moller Investment Group, Inc. (MIGI), for Former USA Service Station No. 57 (the Site), located at 10700 MacArthur Boulevard, Oakland, California (Figures 1 and 2). In a meeting held on September 11, 2009, Alameda County Health Care Services Agency (ACHCSA) requested the submittal of a work plan for soil gas investigation (meeting was held following ACHCSA's review of Stratus' *Remedial Alternative Evaluation and Proposed Site-Specific Cleanup Objective Report,* dated August 12, 2009). Stratus prepared and submitted a *Work Plan for Soil Gas Survey,* dated September 17, 2009, proposing the advancement of forty direct-push soil borings and subsequent collection of shallow subsurface soil gas samples from the borings at 4 and 9 feet below ground surface (bgs). In a letter dated September 23, 2009, ACHCSA conditionally approved the scope of work outlined in the work plan. Stratus advanced and sampled soil vapor points SV-1A/B through SV-20A/B during October 2009. This report summarizes details of the soil gas sampling field activities and analytical results, and provides the results of a human health risk assessment (HHRA) for vapor intrusion to indoor air using the soil gas data collected during this investigation.

SITE DESCRIPTION AND BACKGROUND

The subject property is located in a mixed residential and commercial neighborhood in southeast Oakland. The property is bounded to the northeast by Foothill Boulevard, and to the southeast by 108th Avenue, and is situated approximately 500 feet west-southwest of Interstate 580. The site occupies a relatively small portion of the Foothill Square shopping center (Figure 2). This portion of the subject property formerly occupied by

USA Station 57 is currently undeveloped. Areas adjacent to the site (to the southwest and northwest) are used as parking for the shopping center. A residential neighborhood is located south of the Foothill Square shopping center.

The site is situated approximately 80 feet above sea level, immediately west of the Oakland/San Leandro Hills and approximately 4 miles northeast of San Francisco Bay. The property is located on the eastern portion of the East Bay Plain. Topography at the site is relatively flat, with the ground surface typically sloping west-southwest towards San Francisco Bay. The Oakland/San Leandro Hills rise sharply out of the East Bay Plain east of the site and Interstate 580.

The former service station configuration included three 12,000-gallon gasoline and one 8,000-gallon diesel underground storage tanks (USTs) and three dispenser islands. The station was closed, and the USTs, dispensers, and associated product piping were removed, in July 1994. The approximate location of the USTs and fuel dispensers are included on Figure 2.

It is our understanding that Jay-Phares Corporation intends to redevelop the Foothill Square shopping center, including the area formerly occupied by USA Station 57, in the near future. The current property redevelopment plan includes construction of a grocery store at the location of former USA Station 57. A map depicting the tentative redevelopment plan for the property, including the location of the grocery store, is illustrated on Figure 2.

GEOLOGY AND HYDROGEOLOGY

The geology beneath the site predominately consists of fine grained soils (silt/clay mixtures) situated above an undulatory bedrock surface. Clayey sand, silty sand, and clayey gravel soils appear to be interbedded within the fine grained soils. The soil horizon thicknesses above bedrock, encountered during historical subsurface investigations, are variable, ranging from at least 10 feet to more than 44 feet bgs. Based on available information, sedimentary bedrock (siltstone/sandstone or similar) appears to be present beneath the soil strata. The upper portion of the bedrock appears to be significantly weathered, allowing penetration by hollow stem auger drilling equipment and California split-spoon sampling equipment. The soil/bedrock interface appears to generally dip towards the north, at an apparent angle of approximately 25 degrees from horizontal.

Depth to groundwater has ranged from approximately 5 to 24.5 feet bgs in the site monitoring wells between 1995 and 2009. Recent depth to groundwater measurements in the site monitoring wells are near historically low levels. Groundwater flow beneath the site appears to be variable, with north and northeast groundwater flow predominately observed in the southern part of the site, and south and southeast groundwater flow

predominately observed in the northern part of the site (generally convergent groundwater flow pattern).

SOIL GAS INVESTIGATION

The objective of this soil gas investigation was to evaluate total petroleum hydrocarbons as gasoline (TPHg), benzene, toluene, ethylbenzene, and total xylenes (BTEX), methyl tertiary butyl ether (MTBE), and naphthalene concentrations in shallow soil vapor, and to use these results to perform an HHRA to evaluate risks of vapor intrusion to indoor air. To accomplish these objectives, Stratus advanced and sampled 39 soil gas sampling points (SV-1A/B through SV-20A/B [excluding SV-6A which could not be sampled]) at depths of 4 feet bgs and 9 feet bgs at the approximate locations shown on Figure 3. The locations of the soil gas sampling points were selected based on our understanding of the distribution of the petroleum hydrocarbon impact to soil and groundwater, and were situated at a spacing of approximately 30 feet from one other. Modifications to several of the sampling locations, as requested by ACHCSA in their September 23, 2009 letter, were accommodated during field work.

According to Jay-Phares Corporation, the current redevelopment plan at the site will require lowering of surface grade by approximately 5 feet; deeper excavations in other areas will likely be necessary in order to install a foundation for the proposed building to be constructed near the former service station. Given the likelihood of a change in surface grade at the subject property, Stratus collected soil gas samples at 4 feet below the current ground surface, and at 9 feet below the current grade (approximately 4 feet below anticipated future surface grade).

It is notable to mention that this soil gas investigation performed was an active survey where air was artificially moved across the water table under vacuum conditions. The use of active soil gas collection methods, although widely required by regulatory agencies, changes the in-situ equilibrium between (soil pore space) air and groundwater, thereby causing volatilization of contaminants from water to air that may not occur under normal conditions. Therefore, data gathered during an active soil gas survey is inherently conservative.

Prior to implementation of field activities, a drilling permit was secured from Alameda County Public Works Agency (ACPWA). Drilling locations were marked 48 hours prior to fieldwork. Underground Service Alert, ACPWA, ACHCSA, MIGI, and the property owner were notified 48 hours prior to beginning work activities. All work was conducted under the direct supervision of a State of California Professional Geologist or Civil Engineer. The soil gas sampling was generally completed consistent with Department of Toxic Substances Control (DTSC), the California Regional Water Quality Control Board (Los Angeles Region, [LARWQCB]), ACHCSA, ACPWA, and United States

Environmental Protection Agency (USEPA) guidelines. A copy of the drilling permit is provided in Appendix A.

Field Activities

Soil Gas Probe Installation

On October 1 and 2, 2009, a Stratus geologist was on-site to oversee Vironex, Inc. (Vironex), of Pacheco, California (C-57 #705927) complete the installation of the soil gas sampling probes using the direct-push drilling method. Vironex personnel advanced borings SV-1A through SV-20A to approximately 4.2 feet bgs and borings SV-1B through SV-20B to approximately 9.2 feet bgs. The soil gas probes consisted of a polyethylene soil gas implant (model SVP-91, provided by Environmental Service Products, LLC) attached to ¼-inch diameter Teflon tubing, extending from the implant to the ground surface. The soil gas implants were installed to depths of approximately 4 feet bgs in borings SV-1A through SV-20A and 9 feet bgs in borings SV-1B through SV-20B. A filter pack of Lonestar™ #2/12 sand was placed in the annular space around the implant from the base of the boring to approximately 2 inches above the top of the mesh implant. Granular bentonite was subsequently placed on top of the filter pack sand to backfill the annular space to surface grade. A Swagelok™ stainless steel fitting was placed over the end of the Teflon tubing.

Soil Gas Sampling

On October 12, 21, and 22, 2009, Stratus collected soil vapor samples from each of the soil vapor probes. Intermittent rain caused delays in sampling (after installation); Stratus waited until a period of seven days with no precipitation had occurred before sampling. Prior to sampling, an expendable 6-liter SUMMA™ canister was used to purge ambient air situated inside of the sand filter pack and the Teflon tubing connected to the soil gas implant. Following purging of this ambient air, a separate 1-liter SUMMA™ canister was used to collect each soil gas sample. The sample collection SUMMA™ canisters were filled at a regulated maximum flow rate of 200 milliliters per minute (ml/min). Where conditions allowed, the SUMMA™ canisters were filled at a flow rate between 100 and 200 ml/min. However, at some sampling locations, subsurface conditions did not permit filling of canisters above the 100 ml/min flow rate, and thus the canisters filled at a slower rate. Stratus was unable to collect a sample from soil vapor probe SV-6A due to negligible air flow through the soil. During sample collection, a tracer gas of 1,1-difluoroethane (1,1-DFA) was intermittently applied (sprayed from a canister) around the outside of the sample train in order to assess potential leakage during the sample collection procedure. Following retention of the samples, the SUMMA™ canisters were stored at ambient air temperature, using proper chain-of-custody procedures, until delivered to the analytical laboratory for chemical analysis. A schematic diagram of the

soil gas sample collection equipment is presented in Appendix B. Field data sheets documenting the soil gas sampling, and installation of the soil gas probes, are included in Appendix B.

Surveying

Stratus retained Morrow Surveying, Inc. of West Sacramento to survey the horizontal coordinates and elevations of each soil gas sampling boring location, as required by AB 2886 (GeoTracker). The survey was tied to the previous well survey at the site. A copy of the surveyor's map prepared by Morrow Surveying is presented in Appendix C. Survey data was uploaded to the Geotracker database; documentation of this data upload is included in Appendix C.

Decontamination / Soil Probe Point Removal

External probe parts were cleaned of excess dirt and moisture prior to, and between, insertions. In the *Work Plan for Soil Gas Survey,* dated September 17, 2009, Stratus indicated that the soil gas implants would be removed from the subsurface following completion of soil gas sampling. To date, the soil gas implants have not been removed from the subsurface. Stratus intends to have Vironex remove the soil gas implants (and backfill the resultant boreholes with Portland cement grout to the ground surface) following a review of the content this report by ACHCSA, MIGI, and the property owner and their consultant.

Laboratory Analyses

SUMMA™ canisters collected during this investigation were forwarded to Air Toxics, LTD, a California state-certified analytical laboratory (ELAP #2110), for chemical analyses under chain-of-custody procedures. Soil gas samples were analyzed for TPHg, BTEX, MTBE, naphthalene, and 1,1-DFA according to USEPA Method TO-15 (modified). Copies of the laboratory analytical reports with chain-of-custody documentation are included as Appendix D. Analytical data was uploaded to the Geotracker database; confirmation documentation of these data uploads are included in Appendix D.

Soil Gas Analytical Results

Analytical results of the 4 feet bgs soil samples indicated the presence of TPHg in all nineteen of the samples at concentrations ranging from 110 to 260,000 micrograms per cubic meter ($\mu g/m^3$). The highest concentrations of TPHg were reported near the western edge of the former USTs (SV-10A) and the former fuel dispenser area (SV-5A and SV-13A). Benzene was detected in about 70% of the 4 foot bgs soil gas samples, at concentrations ranging from 4.9 to 360 $\mu g/m^3$. The highest concentration of benzene was detected in sample SV-19A located southeast of the former USTs. MTBE was detected

in only one 4 foot bgs soil gas sample (SV-5A, 3,700 $\mu g/m^3$), and naphthalene was detected in only two samples (SV-10A and SV-11A at 77 $\mu g/m^3$ and 45 $\mu g/m^3$, respectively). Analytical results for TPHg and benzene in the 4 feet bgs samples are illustrated on Figure 4. In addition, the approximate extent of known TPHg soil impact (based on historical soil samples collected at depths of ground surface to 7 feet bgs) is shown on Figure 4.

Analytical results of the 9 feet bgs soil samples indicated the presence of TPHg in all twenty of the samples at concentrations ranging from 780 to 8,000,000 $\mu g/m^3$. The highest concentrations of TPHg were reported near the former fuel dispenser area (SV-5B and SV-6B) and near the western edge of the former USTs (SV-10B). Benzene was detected in 85% of the 9 foot bgs soil gas samples, at concentrations ranging from 11 to 7,800 $\mu g/m^3$. The highest concentration of benzene was detected in sample SV-5B located near the former fuel-dispensers. MTBE was detected in six of the 9 feet bgs soil gas samples (highest concentrations reported at SV-5B and SV-6B near former dispensers). Analytical results for TPHg and benzene in the 9 feet bgs samples are illustrated on Figure 5. In addition, the approximate extent of known TPHg soil impact (based on historical soil samples collected at depths of 7 to 12 feet bgs) and the approximate extent of TPHg/benzene impact to groundwater (based on 2009 groundwater data) is shown on Figure 5.

Analytical results of the 4 and 9 feet bgs soil gas samples and the spatial distribution of those samples with detectable levels of petroleum hydrocarbons in soil gas appear generally consistent with previous findings at the site and indicate the source areas to be the former USTs and fuel-dispensers/associated piping. Soil gas concentrations at 9 feet bgs, which were generally higher and distributed over a larger area than those at 4 feet bgs, also appear consistent with Stratus' understanding of the uppermost reaches of the water table/capillary fringe at times of (historically) higher groundwater levels beneath the site.

Data Quality Flags and Leak Detection Discussion

In 10 of the 19 soil vapor samples collected from 4 feet bgs, the laboratory noted that TPHg concentrations in the samples were estimated due to bias in the continuing calibration verification. In discussions between Stratus personnel and Air Toxics, Ltd., the laboratory indicated that the concentrations reported would likely be overestimated, based on their quality control procedures.

Very low levels of 1,1-DFA (14 and 16 $\mu g/m^3$) were reported in 2 of the 39 soil gas samples collected during this investigation. The concentration of 1,1-DFA used for leak detection purposes during sampling was >99.65% by weight (or approximately

2,700,000,000 $\mu g/m^3$). Since 1,1-DFA is not naturally occurring in ambient air, the detection of this chemical in two samples indicates the presence of a leak. However, assuming only 1% (extremely conservative) of the almost pure 1,1-DFA gas was introduced during a leak and given the overall small sample volume (1L), the reported detections of 1,1-DFA appear to indicate the leaks were insignificant (i.e. reported 1,1-DFA concentrations are more than five orders of magnitude less than the already extremely conservative 1% assumption). Thus, we believe that the data collected from these two locations is valid, and resampling of the soil gas probes is not warranted.

ENVIRONMENTAL SCREENING LEVELS (ESLs) COMPARISON

For preliminary screening purposes, Stratus compared analytical results of the soil gas samples to the commercial values listed in RWQCB-SF's *Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater*, Interim Final – November 2007 (revised May 2008); Table E-2, Shallow Soil Gas Screening Levels for Evaluation of Potential Vapor Intrusion Concerns (which are based on an excess cancer risk of 1E-06 and a hazard quotient of 0.2). Under the commercial property scenario, current ESL levels for shallow soil gas contaminants are 29,000 $\mu g/m^3$ for TPHg, 280 $\mu g/m^3$ for benzene, 180,000 $\mu g/m^3$ for toluene, 3,300 $\mu g/m^3$ for ethylbenzene, 58,000 $\mu g/m^3$ for xylenes, 31,000 $\mu g/m^3$ for MTBE, and 240 $\mu g/m^3$ for naphthalene. The ESLs are included in Table 1.

For the soil gas samples collected from 4 feet bgs, TPHg and/or benzene concentrations were reported above commercial ESLs in 4 of the 19 samples (SV-5A, SV-10A, SV-13A, and SV-19A). For the samples collected from 9 feet bgs, TPHg and/or benzene concentrations were reported above commercial ESLs in 10 of the 20 samples (SV-5B, SV-6B, SV-7B, SV-8B, SV-10B, SV-11B, SV-13B, SV-14B, SV-17B, and SV-19B). Ethylbenzene concentrations were only reported above commercial ESLs in 1 of the 39 samples collected (SV-5B). Concentrations of toluene, xylenes, MTBE, and naphthalene were reported below ESLs in each of the samples collected during this phase of investigation; however, laboratory reporting limits for some of the constituents were elevated due to interference and/or required dilution factors (see Table 1 for laboratory reporting limits).

VAPOR INTRUSION HUMAN HEALTH RISK ASSESSMENT

Since vapor intrusion ESLs were exceeded for select contaminants in some of the soil gas samples, Stratus retained a toxicology consultant (Rubik Environmental, Inc.) to conduct an HHRA to estimate the excess cancer risk (ECR) and hazard quotient (HQ) using the 2009 version of the DTSC Human and Ecological Risk Division (HERD) Johnson and Ettinger (J&E) model. The HHRA was conducted to evaluate the vapor intrusion to indoor air risks to commercial receptors based on analytical results of the 4 and 9 feet bgs

soil gas samples. Concentrations in the shallow samples were used to estimate risks to commercial receptors if the site were developed in its current state. Concentrations reported in the deeper (9 feet bgs) samples were used to predict vapor intrusion risks that could result in the future if the upper 5 feet of soil was removed from the site as is currently planned to occur during construction of the proposed building.

The ECR and HQ for the commercial scenario were modeled using the maximum concentrations detected in the 4 feet bgs soil gas samples at a modeled depth of 4 feet bgs (current configuration without excavation). In addition, ECRs and HQs were modeled using both the maximum and mean concentrations detected in the 9 feet bgs soil gas samples at a modeled depth of 4 feet bgs (proposed future configuration assuming the uppermost 5 feet of soil would be removed during construction). Rubik Environmental, Inc.'s report (which includes a discussion of the exposure point concentrations, TPHg fractionation methodology, model inputs [both default and site-specific], and modeling results) is included as Appendix E. Model output ECRs and HQs for the three scenarios are summarized in Table 6 of Appendix E.

For development of the property as-is, the individual and cumulative ECRs and noncarcinogenic hazards due to the current petroleum hydrocarbon impact detected in soil gas samples collected at 4 feet bgs at the site were well below the most stringent Cal-EPA targets of 1.0E-06 and 1.0. Based on the calculations and model assumptions outlined in Appendix E, under the future scenario of construction identified by Jay-Phares Corporation in which the uppermost 5 feet of soil is anticipated to be removed for the construction of a building, the vapor intrusion risks resulting from chemicals of concern (COCs) detected in soil gas samples collected at 9 feet bgs based on the maximum and mean COC concentrations were one to two orders of magnitude, respectively, less than most conservative limits 1.0E-06 and 1.0. The inclusion of risk due to naphthalene (which was not detected at the site during soil gas sampling but was modeled at detection limits which were highly elevated in several samples) indicates some risk exists in some scenarios. This cumulative risk (with naphthalene included) is near, or just exceeding, the acceptable risk levels (see Table 6 of Appendix E for risks specifically associated with naphthalene).

LIMITATIONS

This report was prepared in general accordance with accepted standards of care that existed at the time this work was performed. No other warranty, expressed or implied, is made. Conclusions and recommendations are based on field observations and data obtained from this work and previous investigations. It should be recognized that definition and evaluation of geologic conditions is a difficult and somewhat inexact science. Judgments leading to conclusions and recommendations are generally made with an incomplete knowledge of the subsurface conditions present. More extensive studies may be performed to reduce uncertainties. This report is solely for the use and information of our client unless otherwise noted.

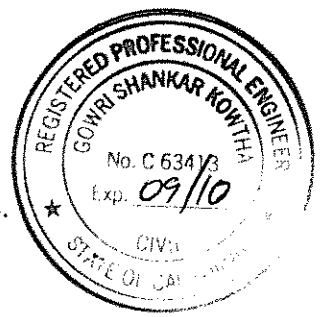
If you have any questions or comments concerning this report, please contact Mr. Scott Bittinger at (530) 676-2062 or Mr. Gowri Kowtha at (530) 676-6001.

Sincerely,

STRATUS ENVIRONMENTAL, INC.

Scott G. Bittinger, P.G.
Project Manager

Gowri S. Kowtha, P.E.
Principal Engineer



Attachments:

	Table 1	Soil Gas Analytical Results
	Figure 1	Site Location Map
	Figure 2	Site Vicinity Map
	Figure 3	Site Plan
	Figure 4	TPHg and Benzene in Soil Gas – 4 feet bgs
	Figure 5	TPHg and Benzene in Soil Gas – 9 feet bgs
	Appendix A	Drilling Permit
	Appendix B	Field Data Sheets and Schematic Diagram of Soil Gas Sampling System
	Appendix C	Surveyor's Map and Survey Data Geotracker Upload Confirmation
	Appendix D	Laboratory Analytical Reports, Chain-of-Custody Documentation, and Geotracker Upload Confirmations
	Appendix E	Vapor Intrusion HHRA – Rubik Environmental, Inc.

cc: Mr. Charles Miller, Moller Investment Group, Inc.
Mr. John Jay, Jay-Phares Corporation
Mr. Peter McIntyre, AEI Consultants
Ms. Kristin Elson, Kroger Foods (via email)

TABLE 1
SOIL GAS ANALYTICAL RESULTS
Former USA Station No. 57
10700 MacArthur Boulevard, Oakland, California

Sample ID	Sample Depth (feet bgs)	Date	TPHg ($\mu g/m^3$)	Benzene ($\mu g/m^3$)	Toluene ($\mu g/m^3$)	Ethylbenzene ($\mu g/m^3$)	Total Xylenes ($\mu g/m^3$)	MTBE ($\mu g/m^3$)	Naphthalene ($\mu g/m^3$)	1,1-DFA ($\mu g/m^3$)
Environmental Screening Level (ESL)[1] (commercial property)			**29,000**	**280**	**180,000**	**3,300**	**58,000**	**31,000**	**240**	-------
SV-1A	4	10/21/09	8,000[3]	<4.1	<4.9	<5.6	<5.6	<4.7	<27	<14
SV-1B	9	10/22/09	1,100	<4.0	<4.7	<5.4	<5.4	<4.5	<26	<13
SV-1B (dup)[2]	---	---	1,100	<4.0	<4.7	<5.4	<5.4	<4.5	<26	<13
SV-2A	4	10/21/09	4,900[3]	<3.7	<4.4	<5.0	<5.0	<4.2	<24	<12
SV-2B	9	10/21/09	21,000	69	130	48	126	<12	<69	<36
SV-3A	4	10/21/09	11,000[3]	30	20	7.6	32	<4.3	<25	<13
SV-3B	9	10/21/09	20,000	96	240	38	111	<18	<100	<53
SV-3B (dup)[2]	---	---	21,000	97	230	38	109	<18	<100	<53
SV-4A	4	10/21/09	140[3]	<3.8	<4.4	<5.1	5.4	<4.2	<25	<13
SV-4B	9	10/22/09	16,000	250	1,200	51	158	170	<27	<14
SV-5A	4	10/21/09	**99,000**[3]	110	2,900	160	440	3,700	<140	<71
SV-5B	9	10/22/09	**7,400,000**	**7,800**	8,300	**39,000**	6,000	5,100	<2,400	<1,200
SV-6A	4	10/21/09	---------- *insufficient airflow through subsurface strata to enable collection of soil gas sample* ----------							
SV-6B	9	10/21/09	**8,000,000**	**5,600**	<25,000	<29,000	<29,000	12,000	<140,000	<73,000
SV-7A	4	10/21/09	11,000[3]	13	140	20	91	<4.3	<25	<13
SV-7B	9	10/22/09	**70,000**	58	500	83	290	<19	<110	<58
SV-8A	4	10/12/09	7,800	46	960	110	308	<4.3	<25	<13
SV-8B	9	10/22/09	12,000	**290**	160	29	93	<16	<91	<47[4]
SV-9A	4	10/12/09	3,300	100	85	10	28.9	<4.3	<25	<13
SV-9B	9	10/22/09	7,000	11	62	14	43	38	<47	<24[4]
SV-10A	4	10/21/09	**260,000**[3]	<4.2	19	30	610	<4.8	77	<14
SV-10B	9	10/22/09	**100,000**	<4.0	6.9	<5.4	53	<4.5	<26	<24[4]

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Environmental Screening Level (ESL)[1] (commercial property)			**29,000**	**280**	**180,000**	**3,300**	**58,000**	**31,000**	**240**	-------
SV-11A	4	10/21/09	26,000[3]	<3.8	5.8	<5.1	18.2	<4.3	45	<13
SV-11B	9	10/22/09	**40,000**	58	88	30	191	42	<26	<13[4]
SV-12A	4	10/21/09	5,500[3]	180	540	140	450	<4.4	<26	<13
SV-12B	9	10/22/09	4,900	120	350	55	166	14	<25	<13[4]
SV-13A	4	10/21/09	**210,000**[3]	20	49	22	141	<5.0	<29	<15
SV-13B	9	10/22/09	**38,000**	32	520	230	1,250	<4.9	<28	<15[4]
SV-14A	4	10/12/09	1,000	31	14	5.6	23.2	<4.6	<26	14
SV-14B	9	10/22/09	**56,000**	**430**	250	70	123	<22	<130	<65
SV-15A	4	10/12/09	390	4.9	6.5	<5.2	<5.2	<4.4	<25	<13
SV-15A (dup)[2]	---	---	330	4.8	6.4	<5.2	<5.2	<4.4	<25	<13
SV-15B	9	10/22/09	7,900	38	52	15	51	<4.5	<26	<13
SV-16A	4	10/12/09	110	<3.8	<4.5	<5.2	<5.2	<4.3	<25	16
SV-16B	9	10/22/09	780	<3.9	<4.6	<5.2	<5.2	<4.4	<25	<13
SV-17A	4	10/12/09	1,700	160	60	5.5	26.5	<4.3	<25	<13
SV-17B	9	10/22/09	**52,000**	**330**	330	49	280	<22	<130	<65
SV-18A	4	10/12/09	3,500	53	350	170	450	<4.4	<25	<13
SV-18B	9	10/22/09	7,600	250	440	96	211	<4.5	<26	<13
SV-19A	4	10/12/09	27,000	**360**	500	83	380	<7.5	<44	<22
SV-19B	9	10/21/09	**30,000**	37	160	42	144	<7.6	<44	<23
SV-20A	4	10/12/09	11,000	77	560	140	351	<4.3	<25	<13
SV-20B	9	10/21/09	25,000	180	250	47	192	<4.5	<26	<13

TABLE 1
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Former USA Station No. 57
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Sample ID	Sample Depth (feet bgs)	Date	TPHg ($\mu g/m^3$)	Benzene ($\mu g/m^3$)	Toluene ($\mu g/m^3$)	Ethylbenzene ($\mu g/m^3$)	Total Xylenes ($\mu g/m^3$)	MTBE ($\mu g/m^3$)	Naphthalene ($\mu g/m^3$)	1,1-DFA ($\mu g/m^3$)

Legend:
TPHg = Total petroleum hydrocarbons as gasoline
MTBE = Methyl tertiary butyl ether
1,1-DFA = 1,1-difluoroethane
ug/m^3 = micrograms per cubic meter

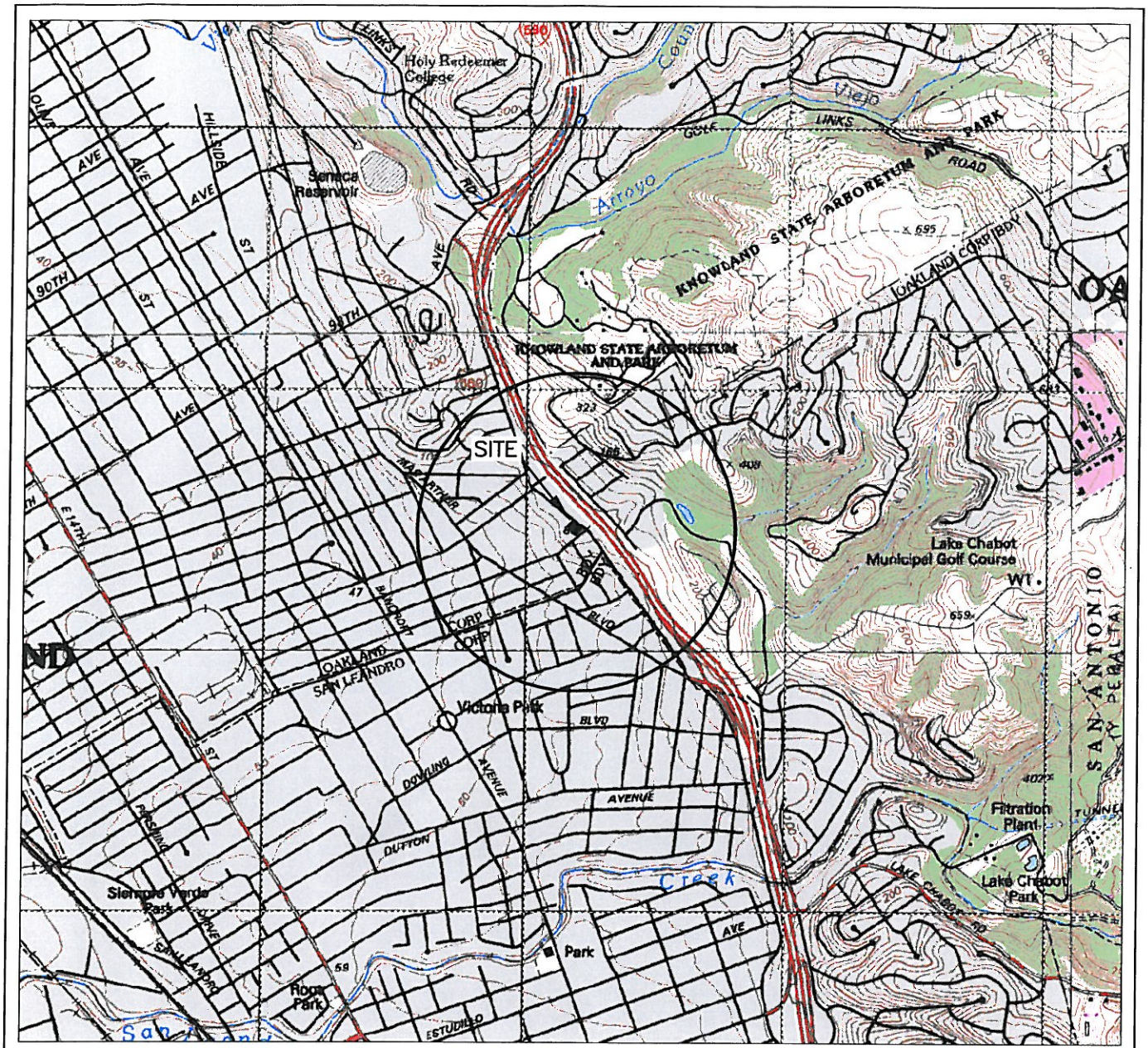
Analytical Laboratory
Air Toxics, LTD. (NELAP 02110CA)

Analytical Methods
TPHg by Modified EPA Method TO-3
BTEX, MTBE, Naphthalene, and 1,1-DFA by Modified EPA Method TO-15

Notes:

[1] = *RWQCB-SF Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater, Interim Final – November 2007 (revised May 2008)* ; Table E-2, Shallow Soil Gas Screening Levels for Evaluation of Potential Vapor Intrusion Concerns (lowest commercial established risk value)

[2] = Duplicate sample analyzed by laboratory for quality control (QC) purposes
[3] = Estimated value due to bias in the continuing calibration verification
[4] = Non-detected compound associated with low bias in the continuing calibration verification
BOLD font indicates analyte exceeds corresponding ESL



GENERAL NOTES:
BASE MAP FROM U.S.G.S.
OAKLAND, CA
7.5 MINUTE TOPOGRAPHIC
PHOTOREVISED 1980

QUADRANGLE LOCATION

North

0 2000 FT

SCALE 1:24,000

STRATUS ENVIRONMENTAL, INC.

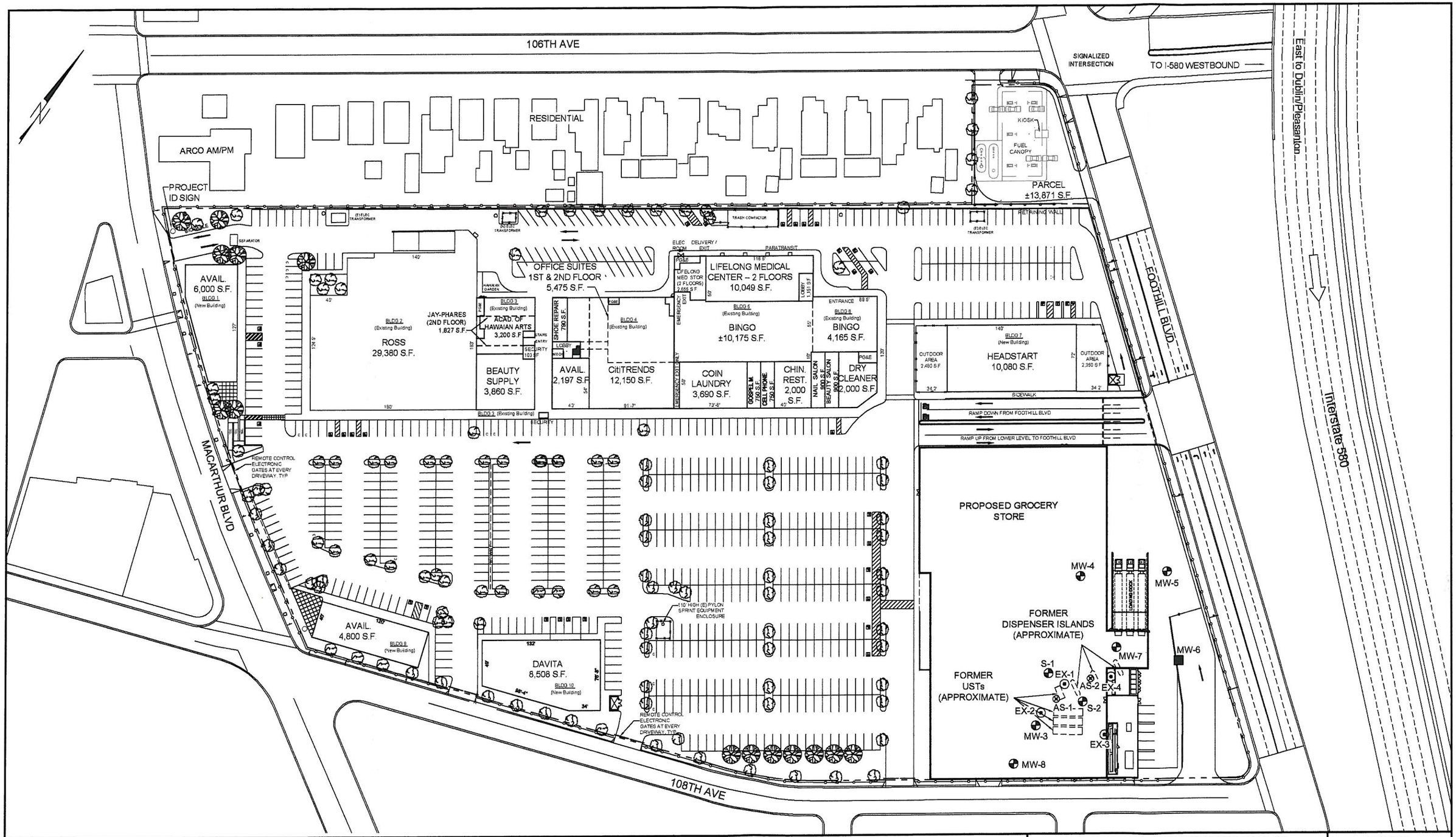
FORMER USA SERVICE STATION NO. 57
10700 MACARTHUR BOULEVARD
OAKLAND, CALIFORNIA

SITE LOCATION MAP

FIGURE
1

PROJECT NO.
2007-0057-01

USA\57\Quarterly JMP REV May 18, 2009 USA 57 Site Location Map



STRATUS ENVIRONMENTAL, INC.

0 1200 FT

SCALE

FORMER USA SERVICE STATION NO. 57
10700 MACARTHUR BOULEVARD
OAKLAND, CALIFORNIA

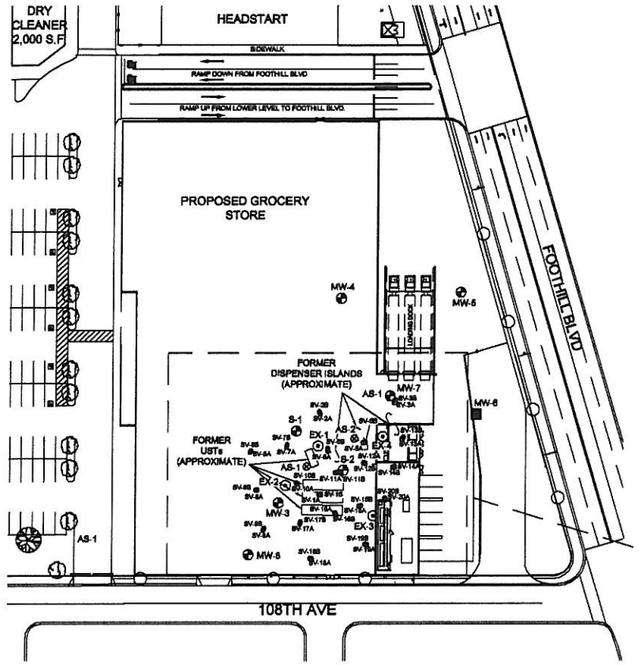
SITE VICINITY MAP

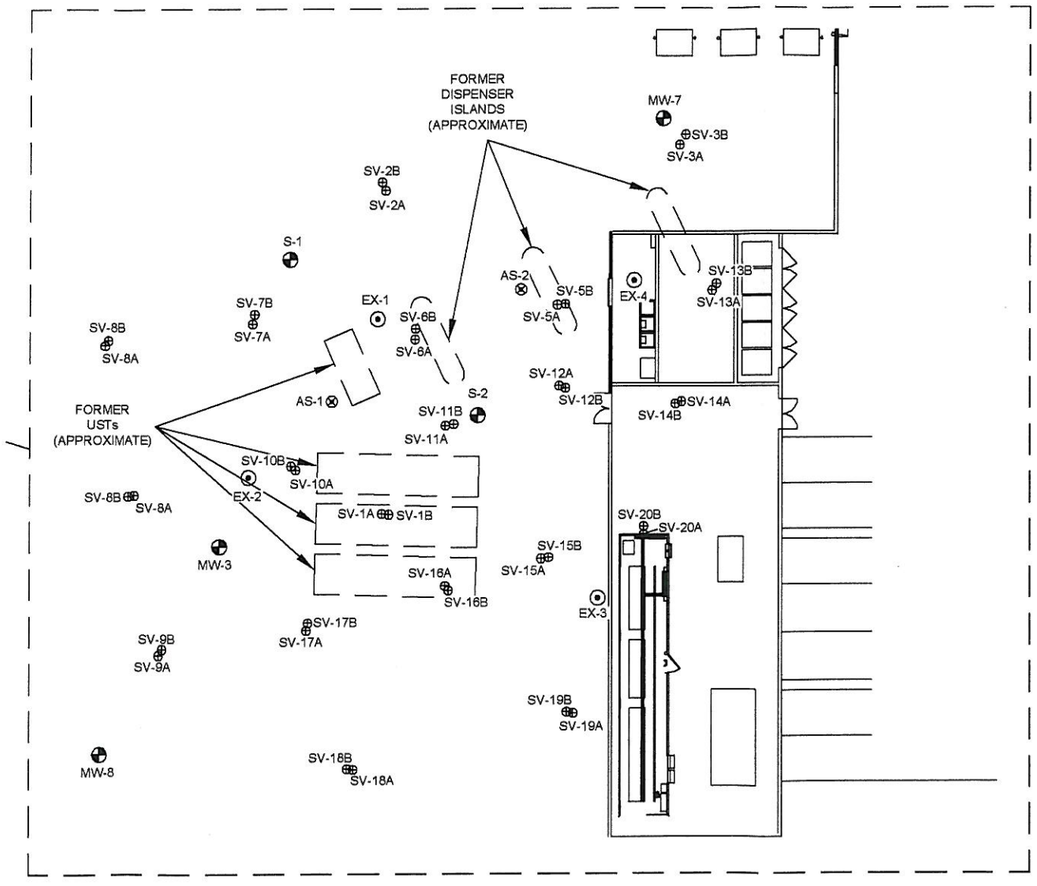
FIGURE
2

PROJECT NO.
2007-0057-01

LEGEND

- MW-3 MONITORING WELL LOCATION
- EX-1 EXTRACTION WELL LOCATION
- AS-1 AIR SPARGE WELL LOCATION
- SV-1A SOIL GAS SAMPLING BORING LOCATION





0 30 FT

SCALE

JMP REV November 23, 2009 NBLDG.Snl

USA\57\SCM

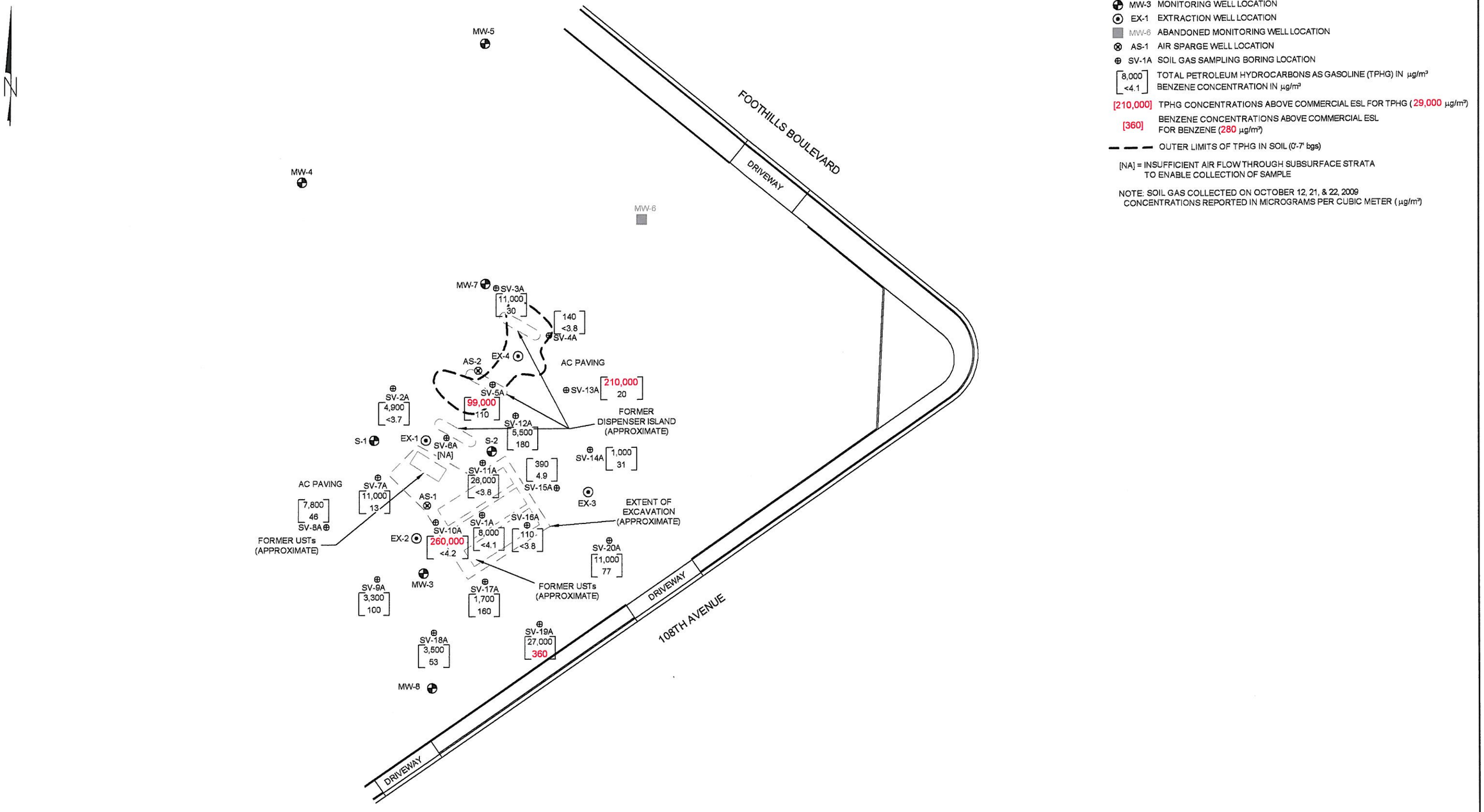
STRATUS ENVIRONMENTAL, INC.

FORMER USA SERVICE STATION NO. 57
10700 MACARTHUR BOULEVARD
OAKLAND, CALIFORNIA

SITE PLAN

FIGURE
3

PROJECT NO.
2007-0057-01



LEGEND

- MW-3 MONITORING WELL LOCATION
- EX-1 EXTRACTION WELL LOCATION
- MW-6 ABANDONED MONITORING WELL LOCATION
- AS-1 AIR SPARGE WELL LOCATION
- SV-1A SOIL GAS SAMPLING BORING LOCATION
- [8,000 / <4.1] TOTAL PETROLEUM HYDROCARBONS AS GASOLINE (TPHG) IN µg/m³ / BENZENE CONCENTRATION IN µg/m³
- [210,000] TPHG CONCENTRATIONS ABOVE COMMERCIAL ESL FOR TPHG (29,000 µg/m³)
- [360] BENZENE CONCENTRATIONS ABOVE COMMERCIAL ESL FOR BENZENE (280 µg/m³)
- OUTER LIMITS OF TPHG IN SOIL (0'-7' bgs)

[NA] = INSUFFICIENT AIR FLOW THROUGH SUBSURFACE STRATA TO ENABLE COLLECTION OF SAMPLE

NOTE: SOIL GAS COLLECTED ON OCTOBER 12, 21, & 22, 2009
CONCENTRATIONS REPORTED IN MICROGRAMS PER CUBIC METER (µg/m³)

JMP REV November 9, 2009 USA 57 NSoil Plan

USA57SCM

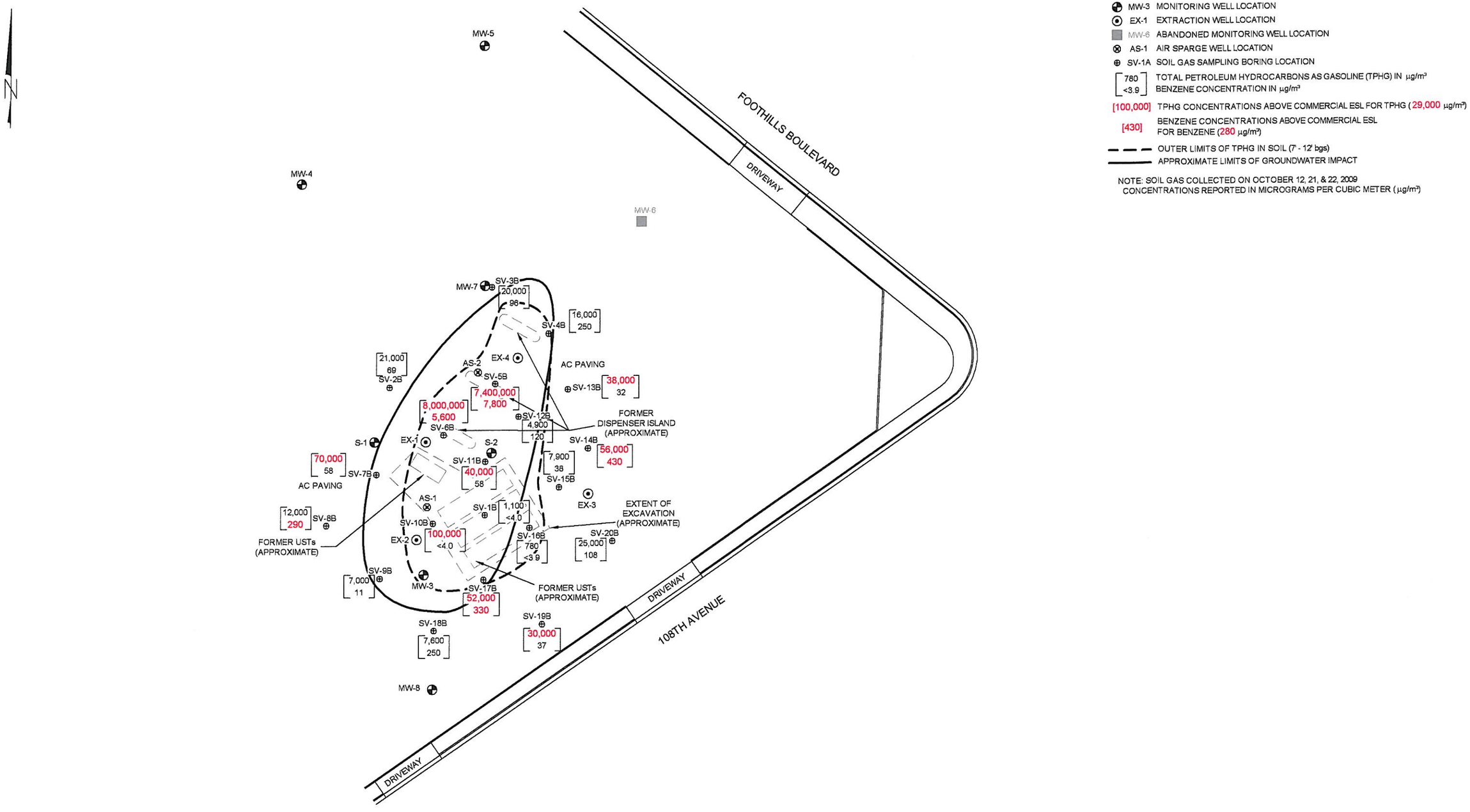
STRATUS ENVIRONMENTAL, INC.

0 40 FT
SCALE

FORMER USA SERVICE STATION NO. 57
10700 MACARTHUR BOULEVARD
OAKLAND, CALIFORNIA

TPHG AND BENZENE IN SOIL GAS CONCENTRATIONS, 4ft bgs

FIGURE
4
PROJECT NO.
2007-0057-01



LEGEND

- MW-3 MONITORING WELL LOCATION
- EX-1 EXTRACTION WELL LOCATION
- MW-6 ABANDONED MONITORING WELL LOCATION
- AS-1 AIR SPARGE WELL LOCATION
- SV-1A SOIL GAS SAMPLING BORING LOCATION
- [780 / <3.9] TOTAL PETROLEUM HYDROCARBONS AS GASOLINE (TPHG) IN µg/m³ / BENZENE CONCENTRATION IN µg/m³
- [100,000] TPHG CONCENTRATIONS ABOVE COMMERCIAL ESL FOR TPHG (29,000 µg/m³)
- [430] BENZENE CONCENTRATIONS ABOVE COMMERCIAL ESL FOR BENZENE (280 µg/m³)
- OUTER LIMITS OF TPHG IN SOIL (7' - 12' bgs)
- APPROXIMATE LIMITS OF GROUNDWATER IMPACT

NOTE: SOIL GAS COLLECTED ON OCTOBER 12, 21, & 22, 2009
CONCENTRATIONS REPORTED IN MICROGRAMS PER CUBIC METER (µg/m³)

JMP REV November 9, 2009 USA 57 NSoil Plan

USA57SCM

STRATUS ENVIRONMENTAL, INC.

0 40 FT
SCALE

FORMER USA SERVICE STATION NO. 57
10700 MACARTHUR BOULEVARD
OAKLAND, CALIFORNIA

TPHG AND BENZENE IN SOIL GAS CONCENTRATIONS, 9ft bgs

FIGURE
5
PROJECT NO.
2007-0057-01

APPENDIX A

DRILLING PERMIT

Alameda County Public Works Agency - Water Resources Well Permit

399 Elmhurst Street
Hayward, CA 94544-1395
Telephone: (510)670-6633 Fax:(510)782-1939

Application Approved on: 10/05/2009 By jamesy

Permit Numbers: W2009-0936
Permits Valid from 10/15/2009 to 11/13/2009

Application Id:	1254265651802 **City** of **Project Site:**Oakland
Site Location:	10700 MacArthur Blvd (Near, Foothill Blvd/108th Ave intersection)
Project Start Date:	10/15/2009 **Completion Date:**11/13/2009
Assigned Inspector:	Contact John Shouldice at (510) 670-5424 or johns@acpwa.org
Applicant:	Stratus Environmental - Scott Bittinger **Phone:** 530-676-2062 3330 Cameron Park Dr.,Ste 550, Cameron Park, CA 95682
Property Owner:	Jay- Phares Corporation **Phone:** 510-562-9500 10700 MacArthur Blvd.,Suite 200, Oakland, CA 94605
Client:	** same as Property Owner **

	Total Due:	$265.00
Receipt Number: WR2009-0367	**Total Amount Paid:**	$265.00
Payer Name : Stratus Environmental	Paid By: CHECK	**PAID IN FULL**

Works Requesting Permits:

Borehole(s) for Geo Probes-Sampling 24 to 72 hours only - 40 Boreholes
Driller: Vironex - Lic #: 705927 - Method: DP **Work Total: $265.00**

Specifications

Permit Number	Issued Dt	Expire Dt	# Boreholes	Hole Diam	Max Depth
W2009-0936	10/05/2009	01/13/2010	40	2.00 in.	12.00 ft

Specific Work Permit Conditions

1. Backfill bore hole by tremie with cement grout or cement grout/sand mixture. Upper two-three feet replaced in kind or with compacted cuttings. All cuttings remaining or unused shall be containerized and hauled off site. The containers shall be clearly labeled to the ownership of the container and labeled hazardous or non-hazardous.

2. Boreholes shall not be left open for a period of more than 24 hours. All boreholes left open more than 24 hours will need approval from Alameda County Public Works Agency, Water Resources Section. All boreholes shall be backfilled according to permit destruction requirements and all concrete material and asphalt material shall be to Caltrans Spec or County/City Codes. No borehole(s) shall be left in a manner to act as a conduit at any time.

3. Permittee shall assume entire responsibility for all activities and uses under this permit and shall indemnify, defend and save the Alameda County Public Works Agency, its officers, agents, and employees free and harmless from any and all expense, cost, liability in connection with or resulting from the exercise of this Permit including, but not limited to, properly damage, personal injury and wrongful death.

4. Applicant shall contact John Shouldice for an inspection time at 510-670-5424 at least five (5) working days prior to starting, once the permit has been approved. Confirm the scheduled date(s) at least 24 hours prior to drilling.

5. Permittee, permittee's contractors, consultants or agents shall be responsible to assure that all material or waters generated during drilling, boring destruction, and/or other activities associated with this Permit will be safely handled, properly managed, and disposed of according to all applicable federal, state, and local statutes regulating such. In no case shall these materials and/or waters be allowed to enter, or potentially enter, on or off-site storm sewers, dry wells, or waterways or be allowed to move off the property where work is being completed.

6. Copy of approved drilling permit must be on site at all times. Failure to present or show proof of the approved permit application on site shall result in a fine of $500.00.

7. Prior to any drilling activities onto any public right-of-ways, it shall be the applicants responsibilities to contact and coordinate a Underground Service Alert (USA), obtain encroachment permit(s), excavation permit(s) or any other permits required for that City or to the County and follow all City or County Ordinances. It shall also be the applicants responsibilities to provide to the Cities or to Alameda County a Traffic Safety Plan for any lane closures or detours planned. No work shall begin until all the permits and requirements have been approved or obtained.

8. Permit is valid only for the purpose specified herein. No changes in construction procedures, as described on this permit application. Boreholes shall not be converted to monitoring wells, without a permit application process.

APPENDIX B

FIELD DATA SHEETS AND SCHEMATIC DIAGRAM OF SOIL GAS SAMPLING SYSTEM

USA 57 – Collins [illegible]
Viking [illegible]

100109
Sunny

0600 → ONSITE, START [illegible] GRID FOR [illegible] [illegible] [illegible] LOCATION SU-13 & [illegible] CONTINUE TO [illegible] [illegible] SU [illegible] TO A LARGE DIRT MOUND.

0700 → CONCRETE CORING SUBCONTRACTOR ONSITE, START CORING
0730 → VIRONEX ONSITE, SET UP ON (SU-5 A|B) & START DRILLING. CONCRETE CORING [illegible] (SU-7 A|B) (SU-8 A|B) (SU-6 A|B) & (SU-2 A|B).

0800 → CONCRETE CORING DONE ONSITE. DRILL RIG DONE @ (SU-5)A|B MOVE TO (SU-12)A|B
0820 → DONE @ (SU-12)A|B, MOVE TO (SU-15)A|B
0920 → DONE @ (SU-15)A|B MOVE TO (SU-20)A|B. 0955 DONE @(SU-20) MOVE TO (SU-16).
1040 → DONE @ (SU-16)A|B MOVE TO (SU-14)A|B
1115 → DONE @(SU-14)A|B MOVE TO (SU-19)A|B
1150 → (SU-19)A|B DONE, LUNCH. 1220 → RESUME WORK
1225 → START ON (SU-11)A|B 1305 → DONE W/ (SU-11)A|B MOVE TO (SU-13)A|B
[illegible] → DONE W/ (SU-13)A|B, MOVE TO (SU-10)A|B. 1405 DONE W/SU-10A|B MOVE TO (SU-7)A|B
1435 → DONE W/(SU-7)A|B, MOVE TO (SU-8)A|B.
1505 → DONE W/(SU-8)A|B, CLEANUP, SECURE AREA
1545 → OFFSITE

(A) A: SHALLOW WELLS   SAMPLE: 4'3" – 2'[illegible]
BENT → 2'9" – 0'
PROBE @ 4'

(B) All DEEP WELLS   SAND: 2' – 3'[illegible]
[illegible] – 0'
[illegible]

[signature]

STRATUS ENV., INC.

100209
Sunny
clear

MSA 57 - Collin Iscaman
Vironex Drilling

0700 → onsite, Label all wells & from yesterday

0730 → Vironex onsite, set up on SU-9 H/B & BEGIN Drilling.

0810 → Done @ (SU-9) A/B, Move to (SU-18) A/B

0835 → Done @ (SU-18) A/B, move to (SU-17) A/B

0905 → Done @ (SU-17) A/B, move to (SU-14) A/B

0928 → Done @ (SU-14) A/B, move to (SU-4) A/B

1002 → Done @ (SU-4) A/B, move to (SU-3) A/B

1025 → Done @ (SU-3) A/B, move to (SU-2) A/B

1050 → Done @ (SU-2) A/B ; move to (SU-6) A/B

1115 → Done @ (SU-6) A/B, Cleanup

→ secure AREA

→ OFFSITE

Collin Iscaman

Stratus Env., Inc.

1518 → 1531 → 1590 (Sample)

1820 · 71

800 222 4352
8096 4208-4

3488
429-005

JAMES G FISH
4/30/2010

0503 17 453
NEW

	Well	LST	LSTOP	PST	PSTP	SST	SSTP	Can#	Date	
5	SV-12A	817 (-30)	827 (-30)	827 (-30)	835 (-24)	835 (-29)	845 (-5)	36529	10/21	
4	SV-13A	[illegible] (-30)	0841 (-30)	0841 (-30)	[illegible]	[illegible]	[illegible] -5	34095	10/21	low flow
6	SV-4A	847 (-30)	[illegible] -30	[illegible] -30	0902 (-24)	0902 (-30)	0911 (-5)	13389	10/21	
7	SV-5A	0915 (-30)	0925 (-30)	[illegible]	0954 [illegible]	[illegible] (-30)	1600 (-27)	36499	10/21	low flow
1	SV-3A	0523 (-30)	0533 (-30)	0533 (-30)	0536 [illegible]	0538 (-30)	0545 (-5)	35659	10/22	
3	SV-2A	0532 (-30)	0642 (-30)	0642 [illegible]	0644 (-24)	0644 (-30)	0658 (-4.5)	24402	10/22	
	SV-6A	1520 (-30)	1530 (-30)	1530 [illegible]	1558 (-21.5)	[illegible]	[illegible]	[illegible]	10/21	low flow — [illegible]
2	SV-1A	0546 (-30)	0556 -30	0556 -30	0611 (-24)	0611 (-30)	0630 (-5)	34667	10/22	
	SV-10A	1240 (-6)	1250 (-6)	1250 (-6)	1315 (-6)	1315 (-29)	1335 (-5)	34183	10/21	
	SV-11A	1335 (-24)	1345 (-24)	1345 (-24)	1353 (-18)	1353 (-29)	1402 (-5)	34116	10/21	
	SV-1A	1120 (-12)	1130 (-12)	1130 (-12)	1210 (-8)	1210 (-29)	1234 (-5)	36535	10/21	low flow
	SV-1B	1257 (-16)	1307 (-16)	1307 (-16)	1320 (-9)	1320 -29	1322 (-5)	36541	10/22	
	SV-2B	1650 (-23)	1700 (-23)	1700 (-23)	1720 (-4)	1720 (-29)	1750 (-21)	34571	10/21	low flow 102109
	SV-3B	1600 (-24)	1610 (-24)	1610 (-24)	1642 (-16)	1642 (-29)	1742 (-24)	14522	10/21	low flow 102109
	SV-4B	1250 (-16)	[illegible] (-16)	[illegible] (-16)	1400 (-12)	1400 (-29)	1429 (-4)	2211	10/22	low flow
	SV-5B	1430 (-16)	1440 (-16)	1440 (-16)	1457 (-8)	1457 (-29)	1557 (-19.5)	36495	10/22	
	SV-6B	1510 (-21.5)	1520 (-21.5)	1520 (-21.5)	1623 (-25.5)	1623 (-30)	1745 (-29)	33646	10/21	low flow 102109
	SV-7B	1050 (-22)	1100 (-22)	1100 (-22)	1200 (-19)	1200 (-24.5)	1300 (-25)	34606	10/22	low flow
	SV-8B	1400 (-22)	1410 (-22)	1410 (-22)	1510 (-19)	1510 (-30)	1610 (-24.5)	21023	10/22	low flow
	SV-9B	1435 (-15)	1445 (-15)	1445 (-15)	1545 (-8)	1545 (-28.9)	1645 (-16.5)	14512	10/22	
	SV-10B	1645 (-24)	1655 (-24)	1655 (-24)	1708 (-10)	1708 (-29)	1717 (-5)	36476	10/22	
	SV-11B	1329 (-23)	1339 (-23)	1339 (-23)	1351 (-15)	1351 (-24.5)	1406 (-5)	35556	10/22	
	SV-12B	545 (-8)	555 (-8)	555 (-8)	623 (0)	623 (-29)	653 (-5)	1470	10/22	
	SV-13B	0917 (-24)	0927 (-24)	0927 (-24)	1031 (-10)	1031 -30	1131 (-8)	35680	10/22	low flow
	SV-14B	0850 (-24)	0900 (-24)	0900 (-24)	[illegible]	1000 (-29)	1115 (-25)	9529	10/22	low flow
	SV-15B	637 (-24)	647 (-35)	647 (-24)	0700 (-16)	0700 (-28.5)	0712 (-5)	36333	10/22	
	SV-[illegible]B	0714 (-24)	0724 [illegible]	0724 (-24)	0736 (-16)	0736 (-29)	0743 (-4.5)	35683	10/22	
	SV-[illegible]B	1141 (-24)	1151 (-24)	1151 (-24)	1251 (-22)	1251 [illegible]	1351 (-27)	14379	10/22	low flow
	SV-[illegible]B	0752 (-16)	0802 [illegible]	0802 (-16)	0858 (-8)	0858 (-30)	0934 (-5)	36540	10/22	low flow
	SV-[illegible]B	1500 (-10)	1510 [illegible]	1510 (-10)	1617 (-8)	1617 (-25)	1649 (-15)	11429	10/21	low flow
	SV-[illegible]	1405 [illegible]	[illegible]	[illegible]	1440 (-15)	1440 [illegible]	1452 (-5)	24[illegible]	10/21	

10209

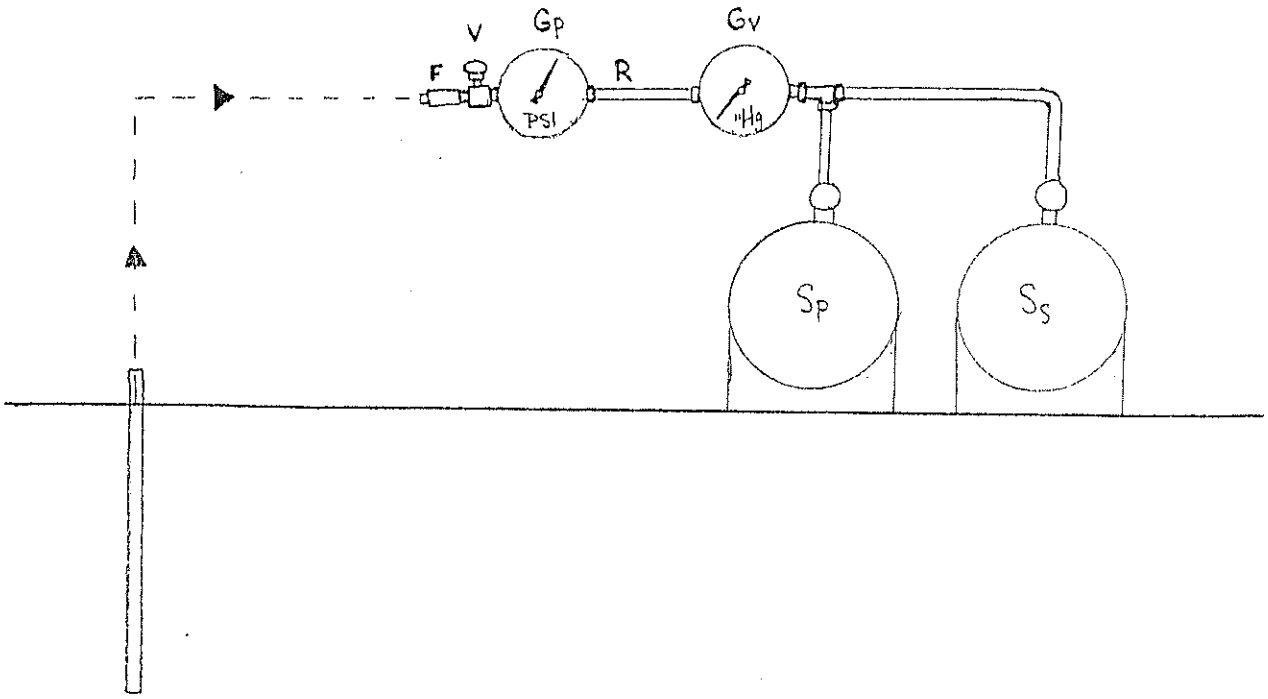
Unit	LST	LSTO	PST	PSTO	SST	SSTO	CANT
SV-8A	0849 (-24)	0905 (-30)	0905 (-30)	0910 (-24)	0910 (-24)	0917 (-5)	35551
SV-9A	0930 (-24)	0930 (-24)	0930 (-24)	0945 (-18)	0945 (-28.5)	0953 (-5)	35595
SV-10A	0954 (-18)	1004 (-10)	1004 (-18)	1017 (-12)	1017 (-28.5)	1024 (-5)	36407
SV-17A	1104 (-30)	1114 (-30)	1114 (-30)	1119 (-24)	1119 (-28.5)	1124 (-5)	21914
SV-14A	1030 (-12)	1040 (-12)	1040 (-12)	1052 (-6)	1052 (-28)	1316 (-15.5)	356321
SV-16A	1135 (-24)	1145 (-24)	1145 (-24)	1151 (-18)	1151 (-29)	1157 (-5)	2111
SV-15A	1209 (-18)	1219 (-18)	1219 (-18)	1226 (-12)	1226 (-28.5)	1235 (-5)	12960
SV-13A	1240 (-12)	1250 (-12)	1250 (-12)	1301 (-6)	1301 (-28.5)	1310 (-4.5)	11440
SV-11A	1315 (-6)	1325 (-6)	1325 (-6)	1336 (0)	1336 (-28)	1348 (-5)	14520
SV-13A							
SV-12A							
SV-1A							

@ AIR TOXICS LTD.

AN ENVIRONMENTAL ANALYTICAL LABORATORY

Schematic of Soil Gas Sampling Manifold

F = Filter
V = Valve
G_P = Pressure Gauge
R = Flow Regulator
G_V = Vacuum Gauge
S_P = Purge Summa Canister
S_S = Sample Summa Canister



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

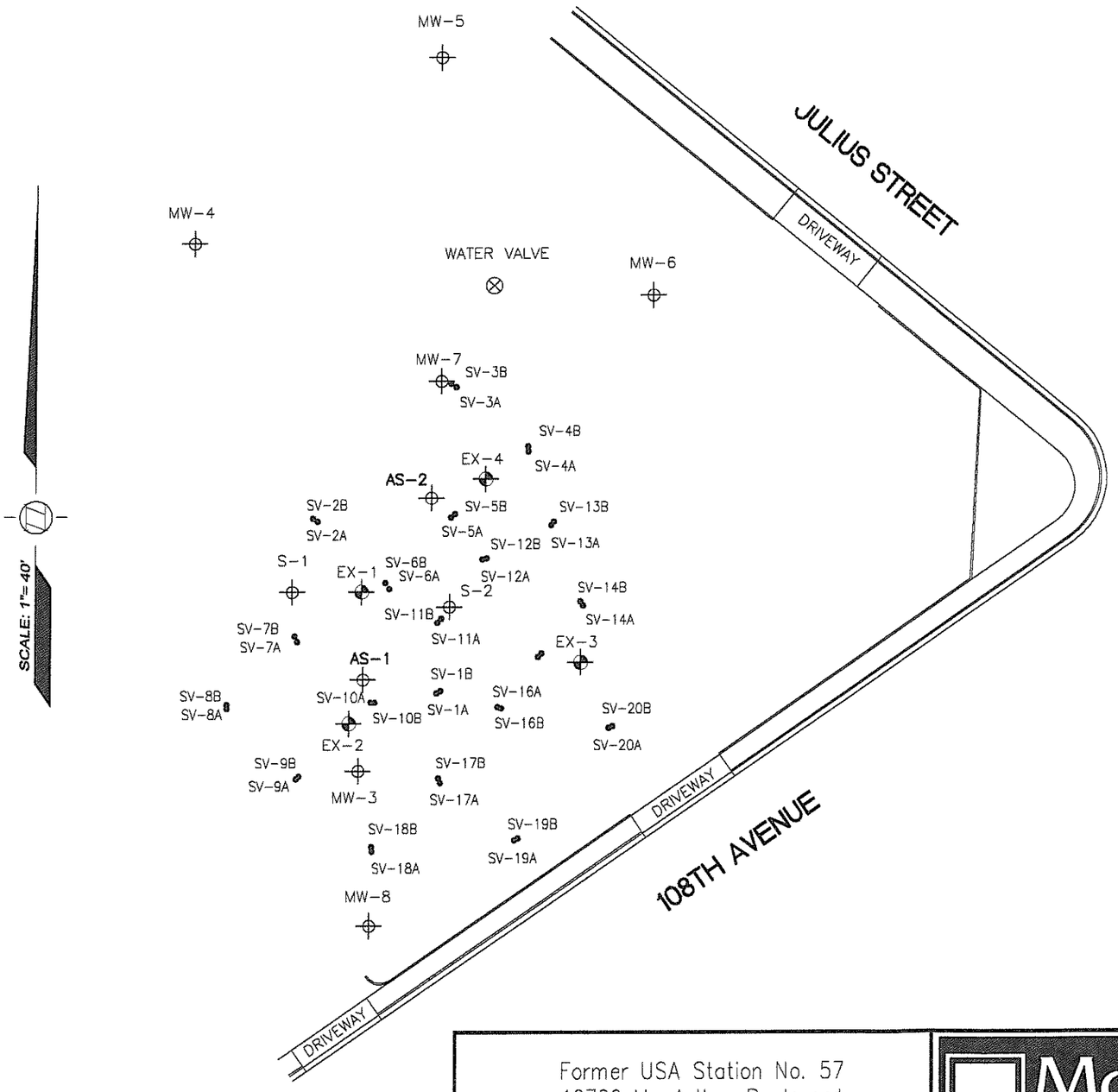
APPENDIX C

SURVEYOR'S MAP AND SURVEY DATA GEOTRACKER UPLOAD CONFIRMATION

Monitoring Well Exhibit

Prepared For:

Stratus Environmental



DESCRIPTION	NORTHING	EASTING	ELEV (PVC)	ELEV (BOX)
S-1	2097235.5	6085103.9	79.66	79.68
S-2	2097230.9	6085152.1	81.90	81.93
MW-3	2097180.7	6085124.3	77.27	77.58
MW-4	2097342.0	6085073.7	76.26	76.71
MW-5	2097398.9	6085148.9	80.78	81.44
MW-6	2097326.2	6085214.0	82.32	82.61
MW-7	2097299.9	6085149.4	79.81	80.30
MW-8	2097133.4	6085127.9	80.50	80.81
EX-1	2097235.5	6085125.1	77.72	78.04
EX-2	2097195.2	6085121.4	76.96	77.24
EX-3	2097213.9	6085192.1	78.87	79.52
EX-4	2097270.0	6085163.0	77.96	78.27

DESCRIPTION	LATITUDE	LONGITUDE
S-1	37.7430921	-122.1482613
S-2	37.7430819	-122.1480942
MW-3	37.7429428	-122.1481871
MW-4	37.7433832	-122.1483722
MW-5	37.7435432	-122.1481154
MW-6	37.7433465	-122.1478859
MW-7	37.7432713	-122.1481078
MW-8	37.7428130	-122.1481720
EX-1	37.7430932	-122.1481877
EX-2	37.7429824	-122.1481982
EX-3	37.7430372	-122.1479549
EX-4	37.7431899	-122.1480590

BASIS OF COORDINATES AND ELEVATIONS:

COORDINATES ARE CALIFORNIA STATE PLANE ZONE 3 COORDINATES FROM GPS OBSERVATIONS USING UNIVERSITY OF CALIFORNIA BAY AREA DEFORMATION CORS STATION OBSERVATION FILES AND BASED ON THE CALIFORNIA SPATIAL REFERENCE CENTER DATUM, REFERENCE EPOCH 2000.35.
COORDINATE DATUM IS NAD 83(1986).
DATUM ELLIPSOID IS GRS80.
REFERENCE GEOID IS NGS96.
CORS STATIONS USED WERE DIAB AND SUTB.
VERTICAL DATUM IS NAVD 88 FROM GPS OBSERVATIONS.

Former USA Station No. 57
10700 MacArthur Boulevard
Oakland
Alameda County
California

Morrow Surveying
LAND SURVEYORS

1255 Starboard Drive
West Sacramento
California 95691
(916) 372-8124
adamz@morrowsurveying.com

Date: 2-10-04
Scale: 1" = 40'
Sheet 1 of 2
Revised: 10-22-09
Field Book: MW-13, 22
Dwg. No. 7502-029 AZ

Monitoring Well Exhibit

Prepared For:

Stratus Environmental

DESCRIPTION	NORTHING	EASTING	LATITUDE	LONGITUDE	ELEV (GND)
SV-1A	2097204.6	6085148.2	37.7430095	-122.1481059	78.05
SV-1B	2097205.3	6085149.5	37.7430114	-122.1481017	78.13
SV-2A	2097257.0	6085111.6	37.7431517	-122.1482358	77.01
SV-2B	2097258.0	6085110.1	37.7431542	-122.1482410	76.93
SV-3A	2097298.1	6085153.8	37.7432666	-122.1480923	78.08
SV-3B	2097299.3	6085152.2	37.7432696	-122.1480978	78.08
SV-4A	2097278.5	6085175.8	37.7432136	-122.1480151	78.79
SV-4B	2097280.0	6085175.7	37.7432179	-122.1480154	78.77
SV-5A	2097258.3	6085152.4	37.7431572	-122.1480947	78.38
SV-5B	2097259.4	6085153.6	37.7431601	-122.1480906	78.43
SV-6A	2097236.5	6085133.6	37.7430963	-122.1481586	78.00
SV-6B	2097238.3	6085132.4	37.7431012	-122.1481627	78.00
SV-7A	2097220.3	6085105.5	37.7430504	-122.1482547	76.16
SV-7B	2097222.1	6085104.7	37.7430553	-122.1482575	76.12
SV-8A	2097199.9	6085084.2	37.7429935	-122.1483272	75.81
SV-8B	2097201.1	6085084.1	37.7429968	-122.1483275	75.73
SV-9A	2097178.3	6085105.3	37.7429353	-122.1482527	76.90
SV-9B	2097179.1	6085106.2	37.7429375	-122.1482498	76.93
SV-10A	2097201.8	6085128.1	37.7430009	-122.1481754	77.49
SV-10B	2097201.7	6085129.3	37.7430007	-122.1481713	77.62
SV-11A	2097226.1	6085148.4	37.7430686	-122.1481066	78.99
SV-11B	2097227.3	6085149.6	37.7430719	-122.1481026	78.96
SV-12A	2097245.5	6085162.0	37.7431224	-122.1480607	78.59
SV-12B	2097245.8	6085163.3	37.7431234	-122.1480564	78.63
SV-13A	2097256.0	6085182.9	37.7431522	-122.1479890	79.02
SV-13B	2097257.0	6085183.7	37.7431551	-122.1479865	79.10
SV-14A	2097231.3	6085192.8	37.7430850	-122.1479535	79.58
SV-14B	2097232.6	6085191.9	37.7430884	-122.1479565	79.60
SV-15A	2097215.6	6085179.1	37.7430412	-122.1479999	79.46
SV-15B	2097216.7	6085180.1	37.7430441	-122.1479964	79.45
SV-16A	2097200.3	6085166.8	37.7429986	-122.1480414	79.03
SV-16B	2097199.9	6085167.9	37.7429976	-122.1480376	79.09
SV-17A	2097177.1	6085149.5	37.7429341	-122.1480999	78.87
SV-17B	2097178.5	6085148.9	37.7429380	-122.1481020	78.72
SV-18A	2097156.2	6085128.6	37.7428756	-122.1481708	78.51
SV-18B	2097157.6	6085128.5	37.7428794	-122.1481714	78.52
SV-19A	2097159.5	6085172.1	37.7428869	-122.1480208	79.21
SV-19B	2097160.1	6085173.1	37.7428886	-122.1480172	79.24
SV-20A	2097193.9	6085200.8	37.7429826	-122.1479235	80.93
SV-20B	2097194.4	6085202.0	37.7429841	-122.1479196	81.02

					ELEV (PVC)	ELEV (BOX
AS-1 RIM	2097208.8	6085125.8	37.7430199	-122.1481839	76.89	77.20
AS-2 RIM	2097264.3	6085146.6	37.7431733	-122.1481154	77.77	78.08

Former USA Station No. 57
10700 MacArthur Boulevard
Oakland
Alameda County
California

Morrow Surveying
LAND SURVEYORS

1255 Starboard Drive
West Sacramento
California 95691
(916) 372-8124
adamz@morrowsurveying.com

Date: 2-10-04
Scale: 1" = 40'
Sheet 2 of 2
Revised: 10-22-09
Field Book: MW-13, 22
Dwg. No. 7502-029 AZ

STATE WATER RESOURCES CONTROL BOARD

GEOTRACKER ESI

UPLOADING A GEO_XY FILE

SUCCESS

Processing is complete. No errors were found!
Your file has been successfully submitted!

Submittal Type:	**GEO_XY**
Submittal Title:	**horizontal coordinates**
Facility Global ID:	**T0600101808**
Facility Name:	**USA PETROLEUM**
File Name:	**GEO_XY.zip**
Organization Name:	**Stratus Environmental, Inc.**
Username:	**STRATUS NOCAL**
IP Address:	**12.186.106.98**
Submittal Date/Time:	**10/26/2009 10:37:58 AM**
Confirmation Number:	2582449674

STATE WATER RESOURCES CONTROL BOARD

GEOTRACKER ESI

UPLOADING A GEO_Z FILE

SUCCESS

Processing is complete. No errors were found!
Your file has been successfully submitted!

Submittal Type:	**GEO_Z**
Submittal Title:	**elevation data**
Facility Global ID:	**T0600101808**
Facility Name:	**USA PETROLEUM**
File Name:	**GEO_Z.zip**
Organization Name:	**Stratus Environmental, Inc.**
Username:	**STRATUS NOCAL**
IP Address:	**12.186.106.98**
Submittal Date/Time:	**10/26/2009 12:44:02 PM**
Confirmation Number:	6896506071

APPENDIX D

LABORATORY ANALYTICAL REPORTS, CHAIN-OF CUSTODY DOCUMENTATION, AND GEOTRACKER UPLOAD CONFIRMATIONS

Air Toxics LTD.
Laboratory Services Since 1989

10/27/2009
Mr. Scott Bittinger
Stratus Environmental, Inc.
3330 Cameron Park Drive
Suite 550
Cameron Park CA 95682-8861

Project Name: USA 57
Project #: 2007-0057-01
Workorder #: 0910313

Dear Mr. Scott Bittinger

The following report includes the data for the above referenced project for sample(s) received on 10/13/2009 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: Kelly Buettner at 916-985-1000 if you have any questions regarding the data in this report.

Regards,

Kelly Buettner
Project Manager

WORK ORDER #: 0910313

Work Order Summary

CLIENT:	Mr. Scott Bittinger Stratus Environmental, Inc. 3330 Cameron Park Drive Suite 550 Cameron Park, CA 95682-8861	**BILL TO:**	Mr. Chuck Miller Moller Investment Group Inc. 6591 Collins Dr. Ste E-11 Moorpark, CA 93021
PHONE:	530-676-2062	**P.O. #**	
FAX:	530-676-6005	**PROJECT #**	2007-0057-01 USA 57
DATE RECEIVED:	10/13/2009	**CONTACT:**	Kelly Buettner
DATE COMPLETED:	10/27/2009		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.	FINAL PRESSURE
01A	SV-8A	Modified TO-15	4.5 "Hg	15 psi
02A	SV-9A	Modified TO-15	4.5 "Hg	15 psi
03A	SV-14A	Modified TO-15	6.0 "Hg	15 psi
04A	SV-15A	Modified TO-15	5.0 "Hg	15 psi
04AA	SV-15A Lab Duplicate	Modified TO-15	5.0 "Hg	15 psi
05A	SV-16A	Modified TO-15	4.5 "Hg	15 psi
06A	SV-17A	Modified TO-15	4.5 "Hg	15 psi
07A	SV-18A	Modified TO-15	5.0 "Hg	15 psi
08A	SV-19A	Modified TO-15	15.5 "Hg	15 psi
09A	SV-20A	Modified TO-15	4.5 "Hg	15 psi
10A	Lab Blank	Modified TO-15	NA	NA
11A	CCV	Modified TO-15	NA	NA
12A	LCS	Modified TO-15	NA	NA

CERTIFIED BY: Linda S. Frumarn DATE: 10/27/09

Laboratory Director

Certfication numbers: CA NELAP - 02110CA, LA NELAP/LELAP- AI 30763, NJ NELAP - CA004
NY NELAP - 11291, UT NELAP - 9166389892, AZ Licensure AZ0719
Name of Accrediting Agency: NELAP/Florida Department of Health, Scope of Application: Clean Air Act,
Accreditation number: E87680, Effective date: 07/01/09, Expiration date: 06/30/10
Air Toxics Ltd. certifies that the test results contained in this report meet all requirements of the NELAC standards

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

LABORATORY NARRATIVE
Modified TO-15
Stratus Environmental, Inc.
Workorder# 0910313

Nine 1 Liter Summa Canister samples were received on October 13, 2009. The laboratory performed analysis via modified 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.

Method modifications taken to run these samples are summarized in the table below. Specific project requirements may over-ride the ATL modifications.

Requirement	*TO-15*	*ATL Modifications*
Daily CCV	</= 30% Difference	</= 30% Difference; Compounds exceeding this criterion and associated data are flagged and narrated.
Sample collection media	Summa canister	ATL recommends use of summa canisters to insure data defensibility, but will report results from Tedlar bags at client request
Method Detection Limit	Follow 40CFR Pt.136 App. B	The MDL met all relevant requirements in Method TO-15 (statistical MDL less than the LOQ). The concentration of the spiked replicate may have exceeded 10X the calculated MDL in some cases

Receiving Notes

The Chain of Custody contained incorrect method information. ATL proceeded with the analysis as per the original contract or verbal agreement.

Sample SV-19A was received with significant vacuum remaining in the canister. The residual canister vacuum resulted in elevated reporting limits.

Analytical Notes

The reported CCV for each daily batch may be derived from more than one analytical file due to the client's request for non-standard compounds.

Non-standard compounds may have different acceptance criteria than the standard TO-14A/TO-15 compound list as per contract or verbal agreement.

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.
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

Air Toxics LTD.
Laboratory Services Since 1989

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

Client Sample ID: SV-8A

Lab ID#: 0910313-01A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	1.2	14	3.8	46
Ethyl Benzene	1.2	26	5.2	110
Toluene	1.2	260	4.5	960
m,p-Xylene	1.2	48	5.2	210
o-Xylene	1.2	23	5.2	98
TPH ref. to Gasoline (MW=100)	24	1900	97	7800

Client Sample ID: SV-9A

Lab ID#: 0910313-02A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	1.2	32	3.8	100
Ethyl Benzene	1.2	2.4	5.2	10
Toluene	1.2	22	4.5	85
m,p-Xylene	1.2	4.4	5.2	19
o-Xylene	1.2	2.3	5.2	9.9
TPH ref. to Gasoline (MW=100)	24	800	97	3300

Client Sample ID: SV-14A

Lab ID#: 0910313-03A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	1.3	9.8	4.0	31
Ethyl Benzene	1.3	1.3	5.5	5.6
Toluene	1.3	3.8	4.8	14
m,p-Xylene	1.3	3.7	5.5	16
o-Xylene	1.3	1.6	5.5	7.2
1,1-Difluoroethane	5.1	5.1	14	14
TPH ref. to Gasoline (MW=100)	25	260	100	1000

Client Sample ID: SV-15A

Lab ID#: 0910313-04A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	1.2	1.5	3.9	4.9

Air Toxics LTD.
Laboratory Services Since 1989

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

Client Sample ID: SV-15A

Lab ID#: 0910313-04A

Toluene	1.2	1.7	4.6	6.5
TPH ref. to Gasoline (MW=100)	24	96	99	390

Client Sample ID: SV-15A Lab Duplicate

Lab ID#: 0910313-04AA

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	1.2	1.5	3.9	4.8
Toluene	1.2	1.7	4.6	6.4
TPH ref. to Gasoline (MW=100)	24	81	99	330

Client Sample ID: SV-16A

Lab ID#: 0910313-05A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1-Difluoroethane	4.8	5.8	13	16
TPH ref. to Gasoline (MW=100)	24	28	97	110

Client Sample ID: SV-17A

Lab ID#: 0910313-06A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	1.2	49	3.8	160
Ethyl Benzene	1.2	1.2	5.2	5.5
Toluene	1.2	16	4.5	60
m,p-Xylene	1.2	4.6	5.2	20
o-Xylene	1.2	1.5	5.2	6.5
TPH ref. to Gasoline (MW=100)	24	420	97	1700

Client Sample ID: SV-18A

Lab ID#: 0910313-07A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	1.2	16	3.9	53
Ethyl Benzene	1.2	40	5.2	170
Toluene	1.2	92	4.6	350

Air Toxics LTD.
Laboratory Services Since 1989

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

Client Sample ID: SV-18A

Lab ID#: 0910313-07A

m,p-Xylene	1.2	78	5.2	340
o-Xylene	1.2	26	5.2	110
TPH ref. to Gasoline (MW=100)	24	860	99	3500

Client Sample ID: SV-19A

Lab ID#: 0910313-08A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	2.1	110	6.7	360
Ethyl Benzene	2.1	19	9.1	83
Toluene	2.1	130	7.9	500
m,p-Xylene	2.1	62	9.1	270
o-Xylene	2.1	25	9.1	110
TPH ref. to Gasoline (MW=100)	42	6600	170	27000

Client Sample ID: SV-20A

Lab ID#: 0910313-09A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	1.2	24	3.8	77
Ethyl Benzene	1.2	32	5.2	140
Toluene	1.2	150	4.5	560
m,p-Xylene	1.2	64	5.2	280
o-Xylene	1.2	16	5.2	71
TPH ref. to Gasoline (MW=100)	24	2700	97	11000

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: SV-8A

Lab ID#: 0910313-01A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**t102510**	**Date of Collection:**	**10/12/09 9:17:00 AM**
Dil. Factor:	**2.38**	**Date of Analysis:**	**10/25/09 02:33 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	1.2	14	3.8	46
Ethyl Benzene	1.2	26	5.2	110
Toluene	1.2	260	4.5	960
m,p-Xylene	1.2	48	5.2	210
o-Xylene	1.2	23	5.2	98
Methyl tert-butyl ether	1.2	Not Detected	4.3	Not Detected
Naphthalene	4.8	Not Detected	25	Not Detected
1,1-Difluoroethane	4.8	Not Detected	13	Not Detected
TPH ref. to Gasoline (MW=100)	24	1900	97	7800

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	91	70-130
Toluene-d8	102	70-130
4-Bromofluorobenzene	100	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: SV-9A

Lab ID#: 0910313-02A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**t102511**	**Date of Collection: 10/12/09 9:53:00 AM**	
Dil. Factor:	**2.38**	**Date of Analysis: 10/25/09 03:11 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	1.2	32	3.8	100
Ethyl Benzene	1.2	2.4	5.2	10
Toluene	1.2	22	4.5	85
m,p-Xylene	1.2	4.4	5.2	19
o-Xylene	1.2	2.3	5.2	9.9
Methyl tert-butyl ether	1.2	Not Detected	4.3	Not Detected
Naphthalene	4.8	Not Detected	25	Not Detected
1,1-Difluoroethane	4.8	Not Detected	13	Not Detected
TPH ref. to Gasoline (MW=100)	24	800	97	3300

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	90	70-130
Toluene-d8	102	70-130
4-Bromofluorobenzene	96	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: SV-14A

Lab ID#: 0910313-03A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**t102512**	**Date of Collection:**	**10/12/09 1:48:00 PM**
Dil. Factor:	**2.53**	**Date of Analysis:**	**10/25/09 03:48 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	1.3	9.8	4.0	31
Ethyl Benzene	1.3	1.3	5.5	5.6
Toluene	1.3	3.8	4.8	14
m,p-Xylene	1.3	3.7	5.5	16
o-Xylene	1.3	1.6	5.5	7.2
Methyl tert-butyl ether	1.3	Not Detected	4.6	Not Detected
Naphthalene	5.1	Not Detected	26	Not Detected
1,1-Difluoroethane	5.1	5.1	14	14
TPH ref. to Gasoline (MW=100)	25	260	100	1000

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	91	70-130
Toluene-d8	104	70-130
4-Bromofluorobenzene	97	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: SV-15A

Lab ID#: 0910313-04A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**t102513**	**Date of Collection:**	**10/12/09 12:35:00 P**
Dil. Factor:	**2.42**	**Date of Analysis:**	**10/25/09 04:31 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	1.2	1.5	3.9	4.9
Ethyl Benzene	1.2	Not Detected	5.2	Not Detected
Toluene	1.2	1.7	4.6	6.5
m,p-Xylene	1.2	Not Detected	5.2	Not Detected
o-Xylene	1.2	Not Detected	5.2	Not Detected
Methyl tert-butyl ether	1.2	Not Detected	4.4	Not Detected
Naphthalene	4.8	Not Detected	25	Not Detected
1,1-Difluoroethane	4.8	Not Detected	13	Not Detected
TPH ref. to Gasoline (MW=100)	24	96	99	390

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	91	70-130
Toluene-d8	102	70-130
4-Bromofluorobenzene	96	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: SV-15A Lab Duplicate

Lab ID#: 0910313-04AA

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**t102516**	**Date of Collection:**	**10/12/09 12:35:00 P**
Dil. Factor:	**2.42**	**Date of Analysis:**	**10/25/09 06:31 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	1.2	1.5	3.9	4.8
Ethyl Benzene	1.2	Not Detected	5.2	Not Detected
Toluene	1.2	1.7	4.6	6.4
m,p-Xylene	1.2	Not Detected	5.2	Not Detected
o-Xylene	1.2	Not Detected	5.2	Not Detected
Methyl tert-butyl ether	1.2	Not Detected	4.4	Not Detected
Naphthalene	4.8	Not Detected	25	Not Detected
1,1-Difluoroethane	4.8	Not Detected	13	Not Detected
TPH ref. to Gasoline (MW=100)	24	81	99	330

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	91	70-130
Toluene-d8	102	70-130
4-Bromofluorobenzene	97	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: SV-16A

Lab ID#: 0910313-05A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**t102514**	**Date of Collection:**	**10/12/09 11:59:00 A**
Dil. Factor:	**2.38**	**Date of Analysis:**	**10/25/09 05:14 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	1.2	Not Detected	3.8	Not Detected
Ethyl Benzene	1.2	Not Detected	5.2	Not Detected
Toluene	1.2	Not Detected	4.5	Not Detected
m,p-Xylene	1.2	Not Detected	5.2	Not Detected
o-Xylene	1.2	Not Detected	5.2	Not Detected
Methyl tert-butyl ether	1.2	Not Detected	4.3	Not Detected
Naphthalene	4.8	Not Detected	25	Not Detected
1,1-Difluoroethane	4.8	5.8	13	16
TPH ref. to Gasoline (MW=100)	24	28	97	110

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	91	70-130
Toluene-d8	102	70-130
4-Bromofluorobenzene	97	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: SV-17A

Lab ID#: 0910313-06A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**t102515**	**Date of Collection:**	**10/12/09 11:29:00 A**
Dil. Factor:	**2.38**	**Date of Analysis:**	**10/25/09 05:51 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	1.2	49	3.8	160
Ethyl Benzene	1.2	1.2	5.2	5.5
Toluene	1.2	16	4.5	60
m,p-Xylene	1.2	4.6	5.2	20
o-Xylene	1.2	1.5	5.2	6.5
Methyl tert-butyl ether	1.2	Not Detected	4.3	Not Detected
Naphthalene	4.8	Not Detected	25	Not Detected
1,1-Difluoroethane	4.8	Not Detected	13	Not Detected
TPH ref. to Gasoline (MW=100)	24	420	97	1700

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	90	70-130
Toluene-d8	102	70-130
4-Bromofluorobenzene	98	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: SV-18A

Lab ID#: 0910313-07A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**t102517**	**Date of Collection:**	**10/12/09 10:24:00 A**
Dil. Factor:	**2.42**	**Date of Analysis:**	**10/25/09 07:09 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	1.2	16	3.9	53
Ethyl Benzene	1.2	40	5.2	170
Toluene	1.2	92	4.6	350
m,p-Xylene	1.2	78	5.2	340
o-Xylene	1.2	26	5.2	110
Methyl tert-butyl ether	1.2	Not Detected	4.4	Not Detected
Naphthalene	4.8	Not Detected	25	Not Detected
1,1-Difluoroethane	4.8	Not Detected	13	Not Detected
TPH ref. to Gasoline (MW=100)	24	860	99	3500

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	92	70-130
Toluene-d8	104	70-130
4-Bromofluorobenzene	97	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: SV-19A

Lab ID#: 0910313-08A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**t102518**	**Date of Collection:**	**10/12/09 1:46:00 PM**
Dil. Factor:	**4.18**	**Date of Analysis:**	**10/25/09 08:26 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	2.1	110	6.7	360
Ethyl Benzene	2.1	19	9.1	83
Toluene	2.1	130	7.9	500
m,p-Xylene	2.1	62	9.1	270
o-Xylene	2.1	25	9.1	110
Methyl tert-butyl ether	2.1	Not Detected	7.5	Not Detected
Naphthalene	8.4	Not Detected	44	Not Detected
1,1-Difluoroethane	8.4	Not Detected	22	Not Detected
TPH ref. to Gasoline (MW=100)	42	6600	170	27000

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	93	70-130
Toluene-d8	102	70-130
4-Bromofluorobenzene	97	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: SV-20A

Lab ID#: 0910313-09A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**t102519**	**Date of Collection:**	**10/12/09 1:10:00 PM**
Dil. Factor:	**2.38**	**Date of Analysis:**	**10/25/09 09:18 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	1.2	24	3.8	77
Ethyl Benzene	1.2	32	5.2	140
Toluene	1.2	150	4.5	560
m,p-Xylene	1.2	64	5.2	280
o-Xylene	1.2	16	5.2	71
Methyl tert-butyl ether	1.2	Not Detected	4.3	Not Detected
Naphthalene	4.8	Not Detected	25	Not Detected
1,1-Difluoroethane	4.8	Not Detected	13	Not Detected
TPH ref. to Gasoline (MW=100)	24	2700	97	11000

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	90	70-130
Toluene-d8	103	70-130
4-Bromofluorobenzene	96	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: Lab Blank

Lab ID#: 0910313-10A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	t102509a	Date of Collection: NA	
Dil. Factor:	1.00	Date of Analysis: 10/25/09 01:36 PM	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	0.50	Not Detected	1.6	Not Detected
Ethyl Benzene	0.50	Not Detected	2.2	Not Detected
Toluene	0.50	Not Detected	1.9	Not Detected
m,p-Xylene	0.50	Not Detected	2.2	Not Detected
o-Xylene	0.50	Not Detected	2.2	Not Detected
Methyl tert-butyl ether	0.50	Not Detected	1.8	Not Detected
Naphthalene	2.0	Not Detected	10	Not Detected
1,1-Difluoroethane	2.0	Not Detected	5.4	Not Detected
TPH ref. to Gasoline (MW=100)	10	Not Detected	41	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	93	70-130
Toluene-d8	101	70-130
4-Bromofluorobenzene	98	70-130

Air Toxics LTD.
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Client Sample ID: CCV

Lab ID#: 0910313-11A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**t102504**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 10/25/09 10:03 AM**	

Compound	%Recovery
Benzene	111
Ethyl Benzene	115
Toluene	111
m,p-Xylene	116
o-Xylene	114
Methyl tert-butyl ether	109
Naphthalene	121
1,1-Difluoroethane	97
TPH ref. to Gasoline (MW=100)	129

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	94	70-130
Toluene-d8	103	70-130
4-Bromofluorobenzene	100	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: LCS

Lab ID#: 0910313-12A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**t102505**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 10/25/09 10:51 AM**	

Compound	%Recovery
Benzene	106
Ethyl Benzene	106
Toluene	110
m,p-Xylene	106
o-Xylene	106
Methyl tert-butyl ether	102
Naphthalene	112
1,1-Difluoroethane	Not Spiked
TPH ref. to Gasoline (MW=100)	Not Spiked

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	94	70-130
Toluene-d8	103	70-130
4-Bromofluorobenzene	98	70-130

Air Toxics LTD.

CHAIN-OF-CUSTODY RECORD

Sample Transportation Notice
Relinquishing signature on this document indicates that sample is being shipped in compliance with all applicable local, State, Federal, national, and international laws, regulations and ordinances of any kind. Air Toxics Limited assumes no liability with respect to the collection, handling or shipping of these samples. Relinquishing signature also indicates agreement to hold harmless, defend, and indemnify Air Toxics Limited against any claim, demand, or action, of any kind, related to the collection, handling, or shipping of samples. D.O.T. Hotline (800) 467-4922

180 BLUE RAVINE ROAD, SUITE B
FOLSOM, CA 95630-4719
(916) 985-1000 FAX (916) 985-1020

Project Manager SCOTT BITTINGER

Collected by: (Print and Sign) COLLIN FISCHER

Company STRATUS Email SBITTINGER@STRATUSINC.NET

Address 2330 CAMERON PARK DR #550 City CAMERON PARK State CA Zip 95682

Phone (530) 676 2062 Fax (530) 676 6005

Project Info:
P.O. #
Project # 2009-0057-01
Project Name USA 57

Turn Around Time:
☒ Normal
☐ Rush
specify

Lab Use Only
Pressurized by:
Date:
Pressurization Gas: N_2 He

Lab I.D.	Field Sample I.D. (Location)	Can #	Date of Collection	Time of Collection	Analyses Requested	Canister Pressure/Vacuum Initial	Final	Receipt	Final (psi)
01A	SV-8A	35551	101209	0917		-29	-5		
02A	SV-9A	35595	101209	0953	TPH(G) (TO-3)	-28.5	-5		
03A	SV-14A	14520	101209	1348	BTEX, MTBE	-28	-5		
04A	SV-15A	12360	101209	1235	1,1 DFA (TO-15)	-28.5	-5		
05A	SV-16A	2111	101209	1159		-29	-5		
06A	SV-17A	2194	101209	1129	NAPHTHALENE	-29.5	-5		
07A	SV-18A	36407	101209	1024	(TO-17)	-28.5	-5		
08A	SV-19A	35634	101209	1346		-28	-15.5		
09A	SV-20A	01440	101209	1310		-28.5	-4.5		

Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/Time
	101309 0700		10/13/09 0700
	101309 1027	Monica Brogen ATL	10/13/09 1025

Notes:

Lab Use Only	Shipper Name	Air Bill #	Temp (°C)	Condition	Custody Seals Intact?	Work Order #
	Drop Off	—	N/A	Good	Yes No (None)	0910313

Form 1293 rev.11

Air Toxics LTD.
Laboratory Services Since 1989

11/6/2009
Mr. Scott Bittinger
Stratus Environmental, Inc.
3330 Cameron Park Drive
Suite 550
Cameron Park CA 95682-8861

Project Name: USA 57
Project #: 2007-0057-01
Workorder #: 0910554A

Dear Mr. Scott Bittinger

The following report includes the data for the above referenced project for sample(s) received on 10/23/2009 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: Kelly Buettner at 916-985-1000 if you have any questions regarding the data in this report.

Regards,

Kelly Buettner
Project Manager

WORK ORDER #: 0910554A

Work Order Summary

CLIENT:	Mr. Scott Bittinger Stratus Environmental, Inc. 3330 Cameron Park Drive Suite 550 Cameron Park, CA 95682-8861	**BILL TO:**	Mr. Chuck Miller Moller Investment Group Inc. 6591 Collins Dr. Ste E-11 Moorpark, CA 93021
PHONE:	530-676-2062	**P.O. #**	
FAX:	530-676-6005	**PROJECT #**	2007-0057-01 USA 57
DATE RECEIVED:	10/23/2009	**CONTACT:**	Kelly Buettner
DATE COMPLETED:	11/06/2009		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.	FINAL PRESSURE
01A	SV-2A	Modified TO-15	4.0 "Hg	15 psi
02A	SV-3A	Modified TO-15	4.4 "Hg	15 psi
03A	SV-4A	Modified TO-15	4.2 "Hg	15 psi
04A	SV-5A	Modified TO-15	25.4 "Hg	15 psi
05A	SV-7A	Modified TO-15	4.8 "Hg	15 psi
06A	SV-10A	Modified TO-15	7.0 "Hg	15 psi
07A	SV-11A	Modified TO-15	4.4 "Hg	15 psi
08A	SV-12A	Modified TO-15	5.2 "Hg	15 psi
09A	SV-13A	Modified TO-15	8.0 "Hg	15 psi
10A	SV-1A	Modified TO-15	6.6 "Hg	15 psi
11A	SV-2B	Modified TO-15	20.8 "Hg	15 psi
12A	SV-3B	Modified TO-15	23.8 "Hg	15 psi
12AA	SV-3B Lab Duplicate	Modified TO-15	23.8 "Hg	15 psi
13A	SV-6B	Modified TO-15	26.4 "Hg	15 psi
14A	SV-19B	Modified TO-15	15.6 "Hg	15 psi
15A	SV-20B	Modified TO-15	5.6 "Hg	15 psi
16A	SV-14B	Modified TO-15	25.0 "Hg	15 psi

Continued on next page

Air Toxics LTD.
Laboratory Services Since 1989

WORK ORDER #: 0910554A

Work Order Summary

CLIENT:	Mr. Scott Bittinger Stratus Environmental, Inc. 3330 Cameron Park Drive Suite 550 Cameron Park, CA 95682-8861	**BILL TO:**	Mr. Chuck Miller Moller Investment Group Inc. 6591 Collins Dr. Ste E-11 Moorpark, CA 93021
PHONE:	530-676-2062	**P.O. #**	
FAX:	530-676-6005	**PROJECT #**	2007-0057-01 USA 57
DATE RECEIVED:	10/23/2009	**CONTACT:**	Kelly Buettner
DATE COMPLETED:	11/06/2009		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.	FINAL PRESSURE
17A	SV-15B	Modified TO-15	5.6 "Hg	15 psi
18A	SV-16B	Modified TO-15	5.0 "Hg	15 psi
19A	SV-17B	Modified TO-15	25.0 "Hg	15 psi
20A	SV-18B	Modified TO-15	5.6 "Hg	15 psi
21A	Lab Blank	Modified TO-15	NA	NA
21B	Lab Blank	Modified TO-15	NA	NA
22A	CCV	Modified TO-15	NA	NA
22B	CCV	Modified TO-15	NA	NA
23A	LCS	Modified TO-15	NA	NA
23B	LCS	Modified TO-15	NA	NA

CERTIFIED BY: Linda D. Turner DATE: 11/06/09

Laboratory Director

Certfication numbers: CA NELAP - 02110CA, LA NELAP/LELAP- AI 30763, NJ NELAP - CA004
NY NELAP - 11291, UT NELAP - 9166389892, AZ Licensure AZ0719
Name of Accrediting Agency: NELAP/Florida Department of Health, Scope of Application: Clean Air Act,
Accreditation number: E87680, Effective date: 07/01/09, Expiration date: 06/30/10
Air Toxics Ltd. certifies that the test results contained in this report meet all requirements of the NELAC standards

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

LABORATORY NARRATIVE
Modified TO-15
Stratus Environmental, Inc.
Workorder# 0910554A

Twenty 1 Liter Summa Canister samples were received on October 23, 2009. The laboratory performed analysis via modified 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.

Method modifications taken to run these samples are summarized in the table below. Specific project requirements may over-ride the ATL modifications.

Requirement	*TO-15*	*ATL Modifications*
Daily CCV	</= 30% Difference	</= 30% Difference; Compounds exceeding this criterion and associated data are flagged and narrated.
Sample collection media	Summa canister	ATL recommends use of summa canisters to insure data defensibility, but will report results from Tedlar bags at client request
Method Detection Limit	Follow 40CFR Pt.136 App. B	The MDL met all relevant requirements in Method TO-15 (statistical MDL less than the LOQ). The concentration of the spiked replicate may have exceeded 10X the calculated MDL in some cases

Receiving Notes

The Chain of Custody (COC) information for sample SV-7A did not match the information on the canister with regard to canister identification. The client was notified of the discrepancy and the information on the canister was used to process and report the sample.

Samples SV-5A, SV-2B, SV-3B, SV-6B, SV-19B, SV-14B and SV-17B were received with significant vacuum remaining in the canister. The residual canister vacuum resulted in elevated reporting limits.

Analytical Notes

All Quality Control Limit failures 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.

Dilution was performed on sample SV-6B due to the presence of high level non-target species.

The reported CCV for each daily batch may be derived from more than one analytical file due to the client's request for non-standard compounds.

Non-standard compounds may have different acceptance criteria than the standard TO-14A/TO-15

compound list as per contract or verbal agreement.

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.

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

Air Toxics LTD.
Laboratory Services Since 1989

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

Client Sample ID: SV-2A

Lab ID#: 0910554A-01A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
TPH ref. to Gasoline (MW=100)	23	1200 J	95	4900 J

Client Sample ID: SV-3A

Lab ID#: 0910554A-02A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	1.2	9.6	3.8	30
Ethyl Benzene	1.2	1.7	5.1	7.6
Toluene	1.2	5.4	4.5	20
m,p-Xylene	1.2	4.6	5.1	20
o-Xylene	1.2	2.8	5.1	12
TPH ref. to Gasoline (MW=100)	24	2600 J	97	11000 J

Client Sample ID: SV-4A

Lab ID#: 0910554A-03A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
m,p-Xylene	1.2	1.2	5.1	5.4
TPH ref. to Gasoline (MW=100)	24	34 J	96	140 J

Client Sample ID: SV-5A

Lab ID#: 0910554A-04A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	6.6	35	21	110
Ethyl Benzene	6.6	37	29	160
Toluene	6.6	770	25	2900
m,p-Xylene	6.6	78	29	340
o-Xylene	6.6	24	29	100
Methyl tert-butyl ether	6.6	1000	24	3700
TPH ref. to Gasoline (MW=100)	130	24000 J	540	99000 J

Client Sample ID: SV-7A

Lab ID#: 0910554A-05A

Air Toxics LTD.
Laboratory Services Since 1989

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

Client Sample ID: SV-7A

Lab ID#: 0910554A-05A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	1.2	4.0	3.8	13
Ethyl Benzene	1.2	4.7	5.2	20
Toluene	1.2	38	4.5	140
m,p-Xylene	1.2	8.3	5.2	36
o-Xylene	1.2	13	5.2	55
TPH ref. to Gasoline (MW=100)	24	2700 J	98	11000 J

Client Sample ID: SV-10A

Lab ID#: 0910554A-06A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Ethyl Benzene	1.3	7.0	5.7	30
Toluene	1.3	5.1	5.0	19
m,p-Xylene	1.3	47	5.7	200
o-Xylene	1.3	95	5.7	410
Naphthalene	5.3	15	28	77
TPH ref. to Gasoline (MW=100)	26	64000 J	110	260000 J

Client Sample ID: SV-11A

Lab ID#: 0910554A-07A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Toluene	1.2	1.5	4.5	5.8
m,p-Xylene	1.2	1.9	5.1	8.2
o-Xylene	1.2	2.4	5.1	10
Naphthalene	4.7	8.6	25	45
TPH ref. to Gasoline (MW=100)	24	6400 J	97	26000 J

Client Sample ID: SV-12A

Lab ID#: 0910554A-08A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	1.2	57	3.9	180
Ethyl Benzene	1.2	32	5.3	140
Toluene	1.2	140	4.6	540

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

Client Sample ID: SV-12A

Lab ID#: 0910554A-08A

m,p-Xylene	1.2	76	5.3	330
o-Xylene	1.2	27	5.3	120
TPH ref. to Gasoline (MW=100)	24	1300 J	100	5500 J

Client Sample ID: SV-13A

Lab ID#: 0910554A-09A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	1.4	6.2	4.4	20
Ethyl Benzene	1.4	5.0	6.0	22
Toluene	1.4	13	5.2	49
m,p-Xylene	1.4	15	6.0	66
o-Xylene	1.4	17	6.0	75
TPH ref. to Gasoline (MW=100)	28	51000 J	110	210000 J

Client Sample ID: SV-1A

Lab ID#: 0910554A-10A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
TPH ref. to Gasoline (MW=100)	26	2000 J	100	8000 J

Client Sample ID: SV-2B

Lab ID#: 0910554A-11A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	3.3	22	10	69
Ethyl Benzene	3.3	11	14	48
Toluene	3.3	34	12	130
m,p-Xylene	3.3	9.1	14	40
o-Xylene	3.3	20	14	86
TPH ref. to Gasoline (MW=100)	66	5000	270	21000

Client Sample ID: SV-3B

Lab ID#: 0910554A-12A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)

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

Client Sample ID: SV-3B

Lab ID#: 0910554A-12A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	4.9	30	16	96
Ethyl Benzene	4.9	8.8	21	38
Toluene	4.9	63	18	240
m,p-Xylene	4.9	14	21	60
o-Xylene	4.9	12	21	51
TPH ref. to Gasoline (MW=100)	98	5000	400	20000

Client Sample ID: SV-3B Lab Duplicate

Lab ID#: 0910554A-12AA

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	4.9	30	16	97
Ethyl Benzene	4.9	8.8	21	38
Toluene	4.9	62	18	230
m,p-Xylene	4.9	14	21	59
o-Xylene	4.9	12	21	50
TPH ref. to Gasoline (MW=100)	98	5100	400	21000

Client Sample ID: SV-6B

Lab ID#: 0910554A-13A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	6800	1800	22000	5600
Methyl tert-butyl ether	6800	3200	24000	12000
TPH ref. to Gasoline (MW=100)	140000	2000000	550000	8000000

Client Sample ID: SV-19B

Lab ID#: 0910554A-14A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	2.1	12	6.7	37
Ethyl Benzene	2.1	9.8	9.1	42
Toluene	2.1	43	7.9	160
m,p-Xylene	2.1	18	9.1	79
o-Xylene	2.1	15	9.1	65

Air Toxics LTD.
Laboratory Services Since 1989

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

Client Sample ID: SV-19B

Lab ID#: 0910554A-14A

TPH ref. to Gasoline (MW=100)	42	7500	170	30000

Client Sample ID: SV-20B

Lab ID#: 0910554A-15A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	1.2	57	4.0	180
Ethyl Benzene	1.2	11	5.4	47
Toluene	1.2	66	4.7	250
m,p-Xylene	1.2	32	5.4	140
o-Xylene	1.2	12	5.4	52
TPH ref. to Gasoline (MW=100)	25	6200	100	25000

Client Sample ID: SV-14B

Lab ID#: 0910554A-16A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	6.0	140	19	430
Ethyl Benzene	6.0	16	26	70
Toluene	6.0	66	23	250
m,p-Xylene	6.0	18	26	80
o-Xylene	6.0	9.8	26	43
TPH ref. to Gasoline (MW=100)	120	14000	490	56000

Client Sample ID: SV-15B

Lab ID#: 0910554A-17A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	1.2	12	4.0	38
Ethyl Benzene	1.2	3.5	5.4	15
Toluene	1.2	14	4.7	52
m,p-Xylene	1.2	8.4	5.4	37
o-Xylene	1.2	3.2	5.4	14
TPH ref. to Gasoline (MW=100)	25	1900	100	7900

Air Toxics LTD.
Laboratory Services Since 1989

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

Client Sample ID: SV-16B

Lab ID#: 0910554A-18A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
TPH ref. to Gasoline (MW=100)	24	190	99	780

Client Sample ID: SV-17B

Lab ID#: 0910554A-19A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	6.0	100	19	330
Ethyl Benzene	6.0	11	26	49
Toluene	6.0	87	23	330
m,p-Xylene	6.0	38	26	160
o-Xylene	6.0	27	26	120
TPH ref. to Gasoline (MW=100)	120	13000	490	52000

Client Sample ID: SV-18B

Lab ID#: 0910554A-20A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	1.2	77	4.0	250
Ethyl Benzene	1.2	22	5.4	96
Toluene	1.2	120	4.7	440
m,p-Xylene	1.2	28	5.4	120
o-Xylene	1.2	21	5.4	91
TPH ref. to Gasoline (MW=100)	25	1900	100	7600

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: SV-2A

Lab ID#: 0910554A-01A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**x110310**	**Date of Collection: 10/21/09 6:58:00 AM**	
Dil. Factor:	**2.33**	**Date of Analysis: 11/3/09 01:19 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	1.2	Not Detected	3.7	Not Detected
Ethyl Benzene	1.2	Not Detected	5.0	Not Detected
Toluene	1.2	Not Detected	4.4	Not Detected
m,p-Xylene	1.2	Not Detected	5.0	Not Detected
o-Xylene	1.2	Not Detected	5.0	Not Detected
Methyl tert-butyl ether	1.2	Not Detected	4.2	Not Detected
Naphthalene	4.7	Not Detected	24	Not Detected
1,1-Difluoroethane	4.7	Not Detected	12	Not Detected
TPH ref. to Gasoline (MW=100)	23	1200 J	95	4900 J

J = Estimated value due to bias in the CCV.

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	78	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	104	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: SV-3A

Lab ID#: 0910554A-02A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**x110311**	**Date of Collection: 10/21/09 5:45:00 AM**	
Dil. Factor:	**2.37**	**Date of Analysis: 11/3/09 01:55 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	1.2	9.6	3.8	30
Ethyl Benzene	1.2	1.7	5.1	7.6
Toluene	1.2	5.4	4.5	20
m,p-Xylene	1.2	4.6	5.1	20
o-Xylene	1.2	2.8	5.1	12
Methyl tert-butyl ether	1.2	Not Detected	4.3	Not Detected
Naphthalene	4.7	Not Detected	25	Not Detected
1,1-Difluoroethane	4.7	Not Detected	13	Not Detected
TPH ref. to Gasoline (MW=100)	24	2600 J	97	11000 J

J = Estimated value due to bias in the CCV.

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	77	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	106	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: SV-4A

Lab ID#: 0910554A-03A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**x110312**	**Date of Collection:**	**10/21/09 9:11:00 AM**
Dil. Factor:	**2.35**	**Date of Analysis:**	**11/3/09 02:39 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	1.2	Not Detected	3.8	Not Detected
Ethyl Benzene	1.2	Not Detected	5.1	Not Detected
Toluene	1.2	Not Detected	4.4	Not Detected
m,p-Xylene	1.2	1.2	5.1	5.4
o-Xylene	1.2	Not Detected	5.1	Not Detected
Methyl tert-butyl ether	1.2	Not Detected	4.2	Not Detected
Naphthalene	4.7	Not Detected	25	Not Detected
1,1-Difluoroethane	4.7	Not Detected	13	Not Detected
TPH ref. to Gasoline (MW=100)	24	34 J	96	140 J

J = Estimated value due to bias in the CCV.

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	74	70-130
Toluene-d8	96	70-130
4-Bromofluorobenzene	99	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: SV-5A

Lab ID#: 0910554A-04A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**x110314**	**Date of Collection: 10/21/09 4:00:00 PM**	
Dil. Factor:	**13.2**	**Date of Analysis: 11/3/09 04:17 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	6.6	35	21	110
Ethyl Benzene	6.6	37	29	160
Toluene	6.6	770	25	2900
m,p-Xylene	6.6	78	29	340
o-Xylene	6.6	24	29	100
Methyl tert-butyl ether	6.6	1000	24	3700
Naphthalene	26	Not Detected	140	Not Detected
1,1-Difluoroethane	26	Not Detected	71	Not Detected
TPH ref. to Gasoline (MW=100)	130	24000 J	540	99000 J

J = Estimated value due to bias in the CCV.

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	77	70-130
Toluene-d8	101	70-130
4-Bromofluorobenzene	104	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: SV-7A

Lab ID#: 0910554A-05A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**x110315**	**Date of Collection:**	**10/21/09 6:30:00 AM**
Dil. Factor:	**2.41**	**Date of Analysis:**	**11/3/09 04:53 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	1.2	4.0	3.8	13
Ethyl Benzene	1.2	4.7	5.2	20
Toluene	1.2	38	4.5	140
m,p-Xylene	1.2	8.3	5.2	36
o-Xylene	1.2	13	5.2	55
Methyl tert-butyl ether	1.2	Not Detected	4.3	Not Detected
Naphthalene	4.8	Not Detected	25	Not Detected
1,1-Difluoroethane	4.8	Not Detected	13	Not Detected
TPH ref. to Gasoline (MW=100)	24	2700 J	98	11000 J

J = Estimated value due to bias in the CCV.

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	74	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	104	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: SV-10A

Lab ID#: 0910554A-06A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**x110316**	**Date of Collection: 10/21/09 1:33:00 PM**	
Dil. Factor:	**2.64**	**Date of Analysis: 11/3/09 05:36 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	1.3	Not Detected	4.2	Not Detected
Ethyl Benzene	1.3	7.0	5.7	30
Toluene	1.3	5.1	5.0	19
m,p-Xylene	1.3	47	5.7	200
o-Xylene	1.3	95	5.7	410
Methyl tert-butyl ether	1.3	Not Detected	4.8	Not Detected
Naphthalene	5.3	15	28	77
1,1-Difluoroethane	5.3	Not Detected	14	Not Detected
TPH ref. to Gasoline (MW=100)	26	64000 J	110	260000 J

J = Estimated value due to bias in the CCV.

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	80	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	111	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: SV-11A

Lab ID#: 0910554A-07A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**x110317**	**Date of Collection: 10/21/09 2:02:00 PM**	
Dil. Factor:	**2.37**	**Date of Analysis: 11/3/09 06:27 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	1.2	Not Detected	3.8	Not Detected
Ethyl Benzene	1.2	Not Detected	5.1	Not Detected
Toluene	1.2	1.5	4.5	5.8
m,p-Xylene	1.2	1.9	5.1	8.2
o-Xylene	1.2	2.4	5.1	10
Methyl tert-butyl ether	1.2	Not Detected	4.3	Not Detected
Naphthalene	4.7	8.6	25	45
1,1-Difluoroethane	4.7	Not Detected	13	Not Detected
TPH ref. to Gasoline (MW=100)	24	6400 J	97	26000 J

J = Estimated value due to bias in the CCV.

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	71	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	105	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: SV-12A

Lab ID#: 0910554A-08A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**x110318**	**Date of Collection: 10/21/09 8:45:00 AM**	
Dil. Factor:	**2.44**	**Date of Analysis: 11/3/09 07:26 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	1.2	57	3.9	180
Ethyl Benzene	1.2	32	5.3	140
Toluene	1.2	140	4.6	540
m,p-Xylene	1.2	76	5.3	330
o-Xylene	1.2	27	5.3	120
Methyl tert-butyl ether	1.2	Not Detected	4.4	Not Detected
Naphthalene	4.9	Not Detected	26	Not Detected
1,1-Difluoroethane	4.9	Not Detected	13	Not Detected
TPH ref. to Gasoline (MW=100)	24	1300 J	100	5500 J

J = Estimated value due to bias in the CCV.

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	73	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	100	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: SV-13A

Lab ID#: 0910554A-09A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**x110319**	**Date of Collection: 10/21/09 8:12:00 AM**	
Dil. Factor:	**2.76**	**Date of Analysis: 11/3/09 08:06 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	1.4	6.2	4.4	20
Ethyl Benzene	1.4	5.0	6.0	22
Toluene	1.4	13	5.2	49
m,p-Xylene	1.4	15	6.0	66
o-Xylene	1.4	17	6.0	75
Methyl tert-butyl ether	1.4	Not Detected	5.0	Not Detected
Naphthalene	5.5	Not Detected	29	Not Detected
1,1-Difluoroethane	5.5	Not Detected	15	Not Detected
TPH ref. to Gasoline (MW=100)	28	51000 J	110	210000 J

J = Estimated value due to bias in the CCV.

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	74	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	108	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: SV-1A

Lab ID#: 0910554A-10A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**x110320**	**Date of Collection:**	**10/21/09 12:34:00 P**
Dil. Factor:	**2.59**	**Date of Analysis:**	**11/3/09 08:42 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	1.3	Not Detected	4.1	Not Detected
Ethyl Benzene	1.3	Not Detected	5.6	Not Detected
Toluene	1.3	Not Detected	4.9	Not Detected
m,p-Xylene	1.3	Not Detected	5.6	Not Detected
o-Xylene	1.3	Not Detected	5.6	Not Detected
Methyl tert-butyl ether	1.3	Not Detected	4.7	Not Detected
Naphthalene	5.2	Not Detected	27	Not Detected
1,1-Difluoroethane	5.2	Not Detected	14	Not Detected
TPH ref. to Gasoline (MW=100)	26	2000 J	100	8000 J

J = Estimated value due to bias in the CCV.

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	77	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	104	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: SV-2B

Lab ID#: 0910554A-11A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**x110412**	**Date of Collection: 10/21/09 5:50:00 PM**	
Dil. Factor:	**6.59**	**Date of Analysis: 11/4/09 03:39 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	3.3	22	10	69
Ethyl Benzene	3.3	11	14	48
Toluene	3.3	34	12	130
m,p-Xylene	3.3	9.1	14	40
o-Xylene	3.3	20	14	86
Methyl tert-butyl ether	3.3	Not Detected	12	Not Detected
Naphthalene	13	Not Detected	69	Not Detected
1,1-Difluoroethane	13	Not Detected	36	Not Detected
TPH ref. to Gasoline (MW=100)	66	5000	270	21000

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	80	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	103	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: SV-3B

Lab ID#: 0910554A-12A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**x110413**	**Date of Collection: 10/21/09 5:42:00 PM**	
Dil. Factor:	**9.78**	**Date of Analysis: 11/4/09 04:33 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	4.9	30	16	96
Ethyl Benzene	4.9	8.8	21	38
Toluene	4.9	63	18	240
m,p-Xylene	4.9	14	21	60
o-Xylene	4.9	12	21	51
Methyl tert-butyl ether	4.9	Not Detected	18	Not Detected
Naphthalene	20	Not Detected	100	Not Detected
1,1-Difluoroethane	20	Not Detected	53	Not Detected
TPH ref. to Gasoline (MW=100)	98	5000	400	20000

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	75	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	99	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: SV-3B Lab Duplicate

Lab ID#: 0910554A-12AA

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**x110414**	**Date of Collection: 10/21/09 5:42:00 PM**	
Dil. Factor:	**9.78**	**Date of Analysis: 11/4/09 05:21 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	4.9	30	16	97
Ethyl Benzene	4.9	8.8	21	38
Toluene	4.9	62	18	230
m,p-Xylene	4.9	14	21	59
o-Xylene	4.9	12	21	50
Methyl tert-butyl ether	4.9	Not Detected	18	Not Detected
Naphthalene	20	Not Detected	100	Not Detected
1,1-Difluoroethane	20	Not Detected	53	Not Detected
TPH ref. to Gasoline (MW=100)	98	5100	400	21000

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	73	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	100	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: SV-6B

Lab ID#: 0910554A-13A

MODIFIED EPA METHOD TO-15 GC/MS

File Name:	**x110415**	**Date of Collection: 10/21/09 5:45:00 PM**	
Dil. Factor:	**1350**	**Date of Analysis: 11/4/09 05:59 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	6800	1800	22000	5600
Toluene	6800	Not Detected	25000	Not Detected
Ethyl Benzene	6800	Not Detected	29000	Not Detected
m,p-Xylene	6800	Not Detected	29000	Not Detected
o-Xylene	6800	Not Detected	29000	Not Detected
Methyl tert-butyl ether	6800	3200	24000	12000
Naphthalene	27000	Not Detected	140000	Not Detected
1,1-Difluoroethane	27000	Not Detected	73000	Not Detected
TPH ref. to Gasoline (MW=100)	140000	2000000	550000	8000000

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	76	70-130
Toluene-d8	96	70-130
4-Bromofluorobenzene	97	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: SV-19B

Lab ID#: 0910554A-14A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**x110416**	**Date of Collection: 10/21/09 4:49:00 PM**	
Dil. Factor:	**4.21**	**Date of Analysis: 11/4/09 06:54 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	2.1	12	6.7	37
Ethyl Benzene	2.1	9.8	9.1	42
Toluene	2.1	43	7.9	160
m,p-Xylene	2.1	18	9.1	79
o-Xylene	2.1	15	9.1	65
Methyl tert-butyl ether	2.1	Not Detected	7.6	Not Detected
Naphthalene	8.4	Not Detected	44	Not Detected
1,1-Difluoroethane	8.4	Not Detected	23	Not Detected
TPH ref. to Gasoline (MW=100)	42	7500	170	30000

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	72	70-130
Toluene-d8	101	70-130
4-Bromofluorobenzene	103	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: SV-20B

Lab ID#: 0910554A-15A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**x110417**	**Date of Collection: 10/21/09 2:52:00 PM**	
Dil. Factor:	**2.48**	**Date of Analysis: 11/4/09 07:57 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	1.2	57	4.0	180
Ethyl Benzene	1.2	11	5.4	47
Toluene	1.2	66	4.7	250
m,p-Xylene	1.2	32	5.4	140
o-Xylene	1.2	12	5.4	52
Methyl tert-butyl ether	1.2	Not Detected	4.5	Not Detected
Naphthalene	5.0	Not Detected	26	Not Detected
1,1-Difluoroethane	5.0	Not Detected	13	Not Detected
TPH ref. to Gasoline (MW=100)	25	6200	100	25000

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	71	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	102	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: SV-14B

Lab ID#: 0910554A-16A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**x110418**	**Date of Collection:**	**10/22/09 11:15:00 A**
Dil. Factor:	**12.1**	**Date of Analysis:**	**11/4/09 08:59 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	6.0	140	19	430
Ethyl Benzene	6.0	16	26	70
Toluene	6.0	66	23	250
m,p-Xylene	6.0	18	26	80
o-Xylene	6.0	9.8	26	43
Methyl tert-butyl ether	6.0	Not Detected	22	Not Detected
Naphthalene	24	Not Detected	130	Not Detected
1,1-Difluoroethane	24	Not Detected	65	Not Detected
TPH ref. to Gasoline (MW=100)	120	14000	490	56000

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	70	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	101	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: SV-15B

Lab ID#: 0910554A-17A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**x110423**	**Date of Collection: 10/22/09 7:12:00 AM**	
Dil. Factor:	**2.48**	**Date of Analysis: 11/5/09 12:33 AM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	1.2	12	4.0	38
Ethyl Benzene	1.2	3.5	5.4	15
Toluene	1.2	14	4.7	52
m,p-Xylene	1.2	8.4	5.4	37
o-Xylene	1.2	3.2	5.4	14
Methyl tert-butyl ether	1.2	Not Detected	4.5	Not Detected
Naphthalene	5.0	Not Detected	26	Not Detected
1,1-Difluoroethane	5.0	Not Detected	13	Not Detected
TPH ref. to Gasoline (MW=100)	25	1900	100	7900

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	76	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	100	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: SV-16B

Lab ID#: 0910554A-18A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**x110420**	**Date of Collection:**	**10/22/09 7:43:00 AM**
Dil. Factor:	**2.42**	**Date of Analysis:**	**11/4/09 10:21 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	1.2	Not Detected	3.9	Not Detected
Ethyl Benzene	1.2	Not Detected	5.2	Not Detected
Toluene	1.2	Not Detected	4.6	Not Detected
m,p-Xylene	1.2	Not Detected	5.2	Not Detected
o-Xylene	1.2	Not Detected	5.2	Not Detected
Methyl tert-butyl ether	1.2	Not Detected	4.4	Not Detected
Naphthalene	4.8	Not Detected	25	Not Detected
1,1-Difluoroethane	4.8	Not Detected	13	Not Detected
TPH ref. to Gasoline (MW=100)	24	190	99	780

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	72	70-130
Toluene-d8	96	70-130
4-Bromofluorobenzene	99	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: SV-17B

Lab ID#: 0910554A-19A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**x110421**	**Date of Collection: 10/22/09 1:51:00 PM**	
Dil. Factor:	**12.1**	**Date of Analysis: 11/4/09 11:19 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	6.0	100	19	330
Ethyl Benzene	6.0	11	26	49
Toluene	6.0	87	23	330
m,p-Xylene	6.0	38	26	160
o-Xylene	6.0	27	26	120
Methyl tert-butyl ether	6.0	Not Detected	22	Not Detected
Naphthalene	24	Not Detected	130	Not Detected
1,1-Difluoroethane	24	Not Detected	65	Not Detected
TPH ref. to Gasoline (MW=100)	120	13000	490	52000

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	72	70-130
Toluene-d8	97	70-130
4-Bromofluorobenzene	101	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: SV-18B

Lab ID#: 0910554A-20A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**x110422**	**Date of Collection: 10/22/09 9:39:00 AM**	
Dil. Factor:	**2.48**	**Date of Analysis: 11/4/09 11:56 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	1.2	77	4.0	250
Ethyl Benzene	1.2	22	5.4	96
Toluene	1.2	120	4.7	440
m,p-Xylene	1.2	28	5.4	120
o-Xylene	1.2	21	5.4	91
Methyl tert-butyl ether	1.2	Not Detected	4.5	Not Detected
Naphthalene	5.0	Not Detected	26	Not Detected
1,1-Difluoroethane	5.0	Not Detected	13	Not Detected
TPH ref. to Gasoline (MW=100)	25	1900	100	7600

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	74	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	104	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: Lab Blank

Lab ID#: 0910554A-21A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**x110308a**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 11/3/09 11:37 AM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	0.50	Not Detected	1.6	Not Detected
Ethyl Benzene	0.50	Not Detected	2.2	Not Detected
Toluene	0.50	Not Detected	1.9	Not Detected
m,p-Xylene	0.50	Not Detected	2.2	Not Detected
o-Xylene	0.50	Not Detected	2.2	Not Detected
Methyl tert-butyl ether	0.50	Not Detected	1.8	Not Detected
Naphthalene	2.0	Not Detected	10	Not Detected
1,1-Difluoroethane	2.0	Not Detected	5.4	Not Detected
TPH ref. to Gasoline (MW=100)	10	Not Detected	41	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	76	70-130
Toluene-d8	95	70-130
4-Bromofluorobenzene	100	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: Lab Blank

Lab ID#: 0910554A-21B

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**x110408**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 11/4/09 11:30 AM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	0.50	Not Detected	1.6	Not Detected
Ethyl Benzene	0.50	Not Detected	2.2	Not Detected
Toluene	0.50	Not Detected	1.9	Not Detected
m,p-Xylene	0.50	Not Detected	2.2	Not Detected
o-Xylene	0.50	Not Detected	2.2	Not Detected
Methyl tert-butyl ether	0.50	Not Detected	1.8	Not Detected
Naphthalene	2.0	Not Detected	10	Not Detected
1,1-Difluoroethane	2.0	Not Detected	5.4	Not Detected
TPH ref. to Gasoline (MW=100)	10	Not Detected	41	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	78	70-130
Toluene-d8	94	70-130
4-Bromofluorobenzene	99	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: CCV

Lab ID#: 0910554A-22A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**x110302**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 11/3/09 07:20 AM**	

Compound	%Recovery
Benzene	101
Ethyl Benzene	106
Toluene	104
m,p-Xylene	108
o-Xylene	107
Methyl tert-butyl ether	104
Naphthalene	77
1,1-Difluoroethane	72
TPH ref. to Gasoline (MW=100)	136 Q

Q = Exceeds Quality Control limits.

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	75	70-130
Toluene-d8	101	70-130
4-Bromofluorobenzene	107	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: CCV

Lab ID#: 0910554A-22B

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**x110402**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 11/4/09 07:41 AM**	

Compound	%Recovery
Benzene	101
Ethyl Benzene	108
Toluene	105
m,p-Xylene	109
o-Xylene	109
Methyl tert-butyl ether	109
Naphthalene	85
1,1-Difluoroethane	73
TPH ref. to Gasoline (MW=100)	121

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	82	70-130
Toluene-d8	102	70-130
4-Bromofluorobenzene	109	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: LCS

Lab ID#: 0910554A-23A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**x110303**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 11/3/09 07:57 AM**	

Compound	%Recovery
Benzene	98
Ethyl Benzene	101
Toluene	105
m,p-Xylene	103
o-Xylene	103
Methyl tert-butyl ether	97
Naphthalene	75
1,1-Difluoroethane	Not Spiked
TPH ref. to Gasoline (MW=100)	Not Spiked

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	72	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	107	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: LCS

Lab ID#: 0910554A-23B

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**x110403**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 11/4/09 08:18 AM**	

Compound	%Recovery
Benzene	98
Ethyl Benzene	101
Toluene	106
m,p-Xylene	102
o-Xylene	103
Methyl tert-butyl ether	102
Naphthalene	79
1,1-Difluoroethane	Not Spiked
TPH ref. to Gasoline (MW=100)	Not Spiked

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	78	70-130
Toluene-d8	101	70-130
4-Bromofluorobenzene	107	70-130

Air Toxics LTD.

CHAIN-OF-CUSTODY RECORD

Sample Transportation Notice
Relinquishing signature on this document indicates that sample is being shipped in compliance with all applicable local, State, Federal, national, and international laws, regulations and ordinances of any kind. Air Toxics Limited assumes no liability with respect to the collection, handling or shipping of these samples. Relinquishing signature also indicates agreement to hold harmless, defend, and indemnify Air Toxics Limited against any claim, demand, or action, of any kind, related to the collection, handling, or shipping of samples. D.O.T. Hotline (800) 467-4922

180 BLUE RAVINE ROAD, SUITE B
FOLSOM, CA 95630-4719
(916) 985-1000 FAX (916) 985-1020

Project Manager SCOTT BITTINGER

Collected by: (Print and Sign) Collin Fischer CF

Company STRATUS Email SBITTINGER@STRATUSENV.NET

Address 3330 CAMERON PARK DR #550 City CAMERON PARK State CA Zip 95682

Phone (530) 676 2062 Fax (530) 676 6005

Project Info:
P.O. #
Project # 2007-0057-01
Project Name USA-57

Turn Around Time:
☑ Normal
☐ Rush
specify

Lab Use Only
Pressurized by:
Date:
Pressurization Gas: N_2 He

Lab I.D.	Field Sample I.D. (Location)	Can #	Date of Collection	Time of Collection	Analyses Requested	Canister Pressure/Vacuum Initial	Final	Receipt	Final (psi)
01A	SV-2A	24402	102109	0658	TPHG, BTEX, MTBE, naphthalene, 1,1- DFA by TO-15	-30	-4.5		
02A	SV-3A	35659	102109	0545		-28.5	-5		
03A	SV-4A	13389	102109	0911		-30	-5		
04A	SV-5A	36499	102109	1600		-30	-7		
05A	SV-7A	34677	102109	0630		-30	-5		
06A	SV-10A	34153	102109	1333		-29	-5		
07A	SV-11A	34116	102109	1402		-28.5	-5		
08A	SV-12A	36529	102109	0845		-29	-5		
09A	SV-13A	34095	102109	0812		-29	-9.5		
10A	SV-1A	36535	102109	1234		-28	-5		

Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/Time
CF	102309 0700		102309 0700
	102309 0925	Monica Gregson ATL	10/23/09 925

Notes:
Direct bill Molloy Investment Group for charges, Lab report units in ug/m^3 & ppbv

Lab Use Only	Shipper Name	Air Bill #	Temp (°C)	Condition	Custody Seals Intact?	Work Order #
	DDP 066	—	NA	Good	Yes No None	0910554

Form 1293 rev.11

Air Toxics LTD.

CHAIN-OF-CUSTODY RECORD

Sample Transportation Notice
Relinquishing signature on this document indicates that sample is being shipped in compliance with all applicable local, State, Federal, national, and international laws, regulations and ordinances of any kind. Air Toxics Limited assumes no liability with respect to the collection, handling or shipping of these samples. Relinquishing signature also indicates agreement to hold harmless, defend, and indemnify Air Toxics Limited against any claim, demand, or action, of any kind, related to the collection, handling, or shipping of samples. D.O.T. Hotline (800) 467-4922

180 BLUE RAVINE ROAD, SUITE B
FOLSOM, CA 95630-4719
(916) 985-1000 FAX (916) 985-1020

Project Manager SCOTT BITTINGER
Collected by: (Print and Sign) COLLIN FISCHER CF
Company STRATUS Email SBITTINGER@STRATUSENV.NET
Address 3330 CAMERON PARK DR. #550 City CAMERON PARK State CA Zip 95682
Phone 530 676 2062 Fax 530 676 6005

Project Info:
P.O. #
Project # 2007-0057-01
Project Name USA 57

Turn Around Time:
☒ Normal
☐ Rush
specify

Lab Use Only
Pressurized by:
Date:
Pressurization Gas: N_2 He

Lab I.D.	Field Sample I.D. (Location)	Can #	Date of Collection	Time of Collection	Analyses Requested	Canister Pressure/Vacuum Initial	Final	Receipt	Final (psi)
11A	SV-2B	34571	102109	1750	TPH6, BTEX, MTBE,	-29	-21		
12A	SV-3B	14522	102109	1749	naphthalene, 1,1-DFA	-29	-24		
13A	SV-6B	33646	102109	~~1745~~	by TO-15	-30	-29		
14A	SV-19B	11429	102109	1649		-28.5	-15		
15A	SV-20B	34093	102109	1452		-30	-5		
16A	SV-14B	9529	102209	1145		-29	-25		
17A	SV-15B	36380	102209	0712		-28.5	-5		
18A	SV-16B	35682	102209	0743		-29	-45		
19A	SV-17B	1479	102209	1351		-30	-27		
20A	SV-18B	36540	102209	0939		-30	-5		

Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/Time
CF	102309 0700		102309 0700
		Monica Gregson AIL	10/23/09 925

Notes:
Direct bill Moller Investment Group for charges. Lab report units in mg/m3 & ppbv.

Lab Use Only	Shipper Name	Air Bill #	Temp (°C)	Condition	Custody Seals Intact?	Work Order #
	Drop Off		NA	Good	Yes No None	0910554

Form 1293 rev.11

Air Toxics LTD.
Laboratory Services Since 1989

11/17/2009
Mr. Scott Bittinger
Stratus Environmental, Inc.
3330 Cameron Park Drive
Suite 550
Cameron Park CA 95682-8861

Project Name: USA 57
Project #: 2007-0057-01
Workorder #: 0910554B

Dear Mr. Scott Bittinger

The following report includes the data for the above referenced project for sample(s) received on 10/23/2009 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: Kelly Buettner at 916-985-1000 if you have any questions regarding the data in this report.

Regards,

Kelly Buettner
Project Manager

WORK ORDER #: 0910554B

Work Order Summary

CLIENT:	Mr. Scott Bittinger Stratus Environmental, Inc. 3330 Cameron Park Drive Suite 550 Cameron Park, CA 95682-8861	**BILL TO:**	Mr. Chuck Miller Moller Investment Group Inc. 6591 Collins Dr. Ste E-11 Moorpark, CA 93021
PHONE:	530-676-2062	**P.O. #**	
FAX:	530-676-6005	**PROJECT #**	2007-0057-01 USA 57
DATE RECEIVED:	10/23/2009	**CONTACT:**	Kelly Buettner
DATE COMPLETED:	11/16/2009		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.	FINAL PRESSURE
21A	SV-1B	Modified TO-15	5.6 "Hg	15 psi
21AA	SV-1B Lab Duplicate	Modified TO-15	5.6 "Hg	15 psi
22A	SV-4B	Modified TO-15	6.2 "Hg	15 psi
23A	SV-5B	Modified TO-15	19.4 "Hg	15 psi
24A	SV-7B	Modified TO-15	24.4 "Hg	15 psi
25A	SV-8B	Modified TO-15	23.0 "Hg	15 psi
26A	SV-9B	Modified TO-15	16.6 "Hg	15 psi
27A	SV-10B	Modified TO-15	5.8 "Hg	15 psi
28A	SV-11B	Modified TO-15	5.4 "Hg	15 psi
29A	SV-12B	Modified TO-15	4.6 "Hg	15 psi
30A	SV-13B	Modified TO-15	7.6 "Hg	15 psi
31A	Lab Blank	Modified TO-15	NA	NA
31B	Lab Blank	Modified TO-15	NA	NA
31C	Lab Blank	Modified TO-15	NA	NA
32A	CCV	Modified TO-15	NA	NA
32B	CCV	Modified TO-15	NA	NA
32C	CCV	Modified TO-15	NA	NA

Continued on next page

Air Toxics LTD.
Laboratory Services Since 1989

WORK ORDER #: 0910554B

Work Order Summary

CLIENT:	Mr. Scott Bittinger Stratus Environmental, Inc. 3330 Cameron Park Drive Suite 550 Cameron Park, CA 95682-8861	**BILL TO:**	Mr. Chuck Miller Moller Investment Group Inc. 6591 Collins Dr. Ste E-11 Moorpark, CA 93021
PHONE:	530-676-2062	**P.O. #**	
FAX:	530-676-6005	**PROJECT #**	2007-0057-01 USA 57
DATE RECEIVED:	10/23/2009	**CONTACT:**	Kelly Buettner
DATE COMPLETED:	11/16/2009		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.	FINAL PRESSURE
33A	LCS	Modified TO-15	NA	NA
33B	LCS	Modified TO-15	NA	NA
33C	LCS	Modified TO-15	NA	NA

CERTIFIED BY: Linda D. Truman DATE: 11/17/09

Laboratory Director

Certfication numbers: CA NELAP - 02110CA, LA NELAP/LELAP- AI 30763, NJ NELAP - CA004
NY NELAP - 11291, UT NELAP - 9166389892, AZ Licensure AZ0719
Name of Accrediting Agency: NELAP/Florida Department of Health, Scope of Application: Clean Air Act,
Accreditation number: E87680, Effective date: 07/01/09, Expiration date: 06/30/10
Air Toxics Ltd. certifies that the test results contained in this report meet all requirements of the NELAC standards

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

LABORATORY NARRATIVE
Modified TO-15
Stratus Environmental, Inc.
Workorder# 0910554B

Ten 1 Liter Summa Canister samples were received on October 23, 2009. The laboratory performed analysis via modified 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.

Method modifications taken to run these samples are summarized in the table below. Specific project requirements may over-ride the ATL modifications.

Requirement	*TO-15*	*ATL Modifications*
Daily CCV	</= 30% Difference	</= 30% Difference; Compounds exceeding this criterion and associated data are flagged and narrated.
Sample collection media	Summa canister	ATL recommends use of summa canisters to insure data defensibility, but will report results from Tedlar bags at client request
Method Detection Limit	Follow 40CFR Pt.136 App. B	The MDL met all relevant requirements in Method TO-15 (statistical MDL less than the LOQ). The concentration of the spiked replicate may have exceeded 10X the calculated MDL in some cases

Receiving Notes

Samples SV-5B, SV-7B, SV-8B and SV-9B were received with significant vacuum remaining in the canister. The residual canister vacuum resulted in elevated reporting limits.

Analytical Notes

The reported CCV for each daily batch may be derived from more than one analytical file due to the client's request for non-standard compounds.

Non-standard compounds may have different acceptance criteria than the standard TO-14A/TO-15 compound list as per contract or verbal agreement.

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 no

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.
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

Air Toxics LTD.
Laboratory Services Since 1989

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

Client Sample ID: SV-1B

Lab ID#: 0910554B-21A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
TPH ref. to Gasoline (MW=100)	25	280	100	1100

Client Sample ID: SV-1B Lab Duplicate

Lab ID#: 0910554B-21AA

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
TPH ref. to Gasoline (MW=100)	25	280	100	1100

Client Sample ID: SV-4B

Lab ID#: 0910554B-22A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	1.3	77	4.1	250
Ethyl Benzene	1.3	12	5.5	51
Toluene	1.3	320	4.8	1200
m,p-Xylene	1.3	21	5.5	90
o-Xylene	1.3	16	5.5	68
Methyl tert-butyl ether	1.3	47	4.6	170
TPH ref. to Gasoline (MW=100)	26	3800	100	16000

Client Sample ID: SV-5B

Lab ID#: 0910554B-23A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	110	2400	360	7800
Toluene	110	2200	430	8300
Ethyl Benzene	110	9000	500	39000
m,p-Xylene	110	1400	500	6000
Methyl tert-butyl ether	110	1400	410	5100
TPH ref. to Gasoline (MW=100)	2300	1800000	9400	7400000

Client Sample ID: SV-7B

Lab ID#: 0910554B-24A

Air Toxics LTD.
Laboratory Services Since 1989

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

Client Sample ID: SV-7B

Lab ID#: 0910554B-24A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	5.4	18	17	58
Ethyl Benzene	5.4	19	23	83
Toluene	5.4	130	20	500
m,p-Xylene	5.4	35	23	150
o-Xylene	5.4	32	23	140
TPH ref. to Gasoline (MW=100)	110	17000	440	70000

Client Sample ID: SV-8B

Lab ID#: 0910554B-25A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	4.3	91	14	290
Ethyl Benzene	4.3	6.8	19	29
Toluene	4.3	42	16	160
m,p-Xylene	4.3	14	19	59
o-Xylene	4.3	7.9	19	34
TPH ref. to Gasoline (MW=100)	87	3000	350	12000

Client Sample ID: SV-9B

Lab ID#: 0910554B-26A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	2.3	3.3	7.2	11
Ethyl Benzene	2.3	3.3	9.8	14
Toluene	2.3	16	8.5	62
m,p-Xylene	2.3	6.1	9.8	27
o-Xylene	2.3	3.7	9.8	16
Methyl tert-butyl ether	2.3	11	8.1	38
TPH ref. to Gasoline (MW=100)	45	1700	180	7000

Client Sample ID: SV-10B

Lab ID#: 0910554B-27A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Toluene	1.2	1.8	4.7	6.9

Air Toxics LTD.
Laboratory Services Since 1989

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

Client Sample ID: SV-10B

Lab ID#: 0910554B-27A

m,p-Xylene	1.2	4.2	5.4	18
o-Xylene	1.2	8.2	5.4	35
TPH ref. to Gasoline (MW=100)	25	25000	100	100000

Client Sample ID: SV-11B

Lab ID#: 0910554B-28A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	1.2	18	3.9	58
Ethyl Benzene	1.2	6.9	5.3	30
Toluene	1.2	23	4.6	88
m,p-Xylene	1.2	30	5.3	130
o-Xylene	1.2	14	5.3	61
Methyl tert-butyl ether	1.2	12	4.4	42
TPH ref. to Gasoline (MW=100)	25	9800	100	40000

Client Sample ID: SV-12B

Lab ID#: 0910554B-29A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	1.2	38	3.8	120
Ethyl Benzene	1.2	13	5.2	55
Toluene	1.2	93	4.5	350
m,p-Xylene	1.2	28	5.2	120
o-Xylene	1.2	11	5.2	46
Methyl tert-butyl ether	1.2	3.8	4.3	14
TPH ref. to Gasoline (MW=100)	24	1200	98	4900

Client Sample ID: SV-13B

Lab ID#: 0910554B-30A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	1.4	10	4.3	32
Ethyl Benzene	1.4	54	5.9	230
Toluene	1.4	140	5.1	520
m,p-Xylene	1.4	180	5.9	770
o-Xylene	1.4	110	5.9	480

Air Toxics LTD.
Laboratory Services Since 1989

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

Client Sample ID: SV-13B

Lab ID#: 0910554B-30A

TPH ref. to Gasoline (MW=100)	27	9300	110	38000

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: SV-1B

Lab ID#: 0910554B-21A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	x110621	Date of Collection:	10/22/09 1:27:00 PM
Dil. Factor:	2.48	Date of Analysis:	11/7/09 12:17 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	1.2	Not Detected	4.0	Not Detected
Ethyl Benzene	1.2	Not Detected	5.4	Not Detected
Toluene	1.2	Not Detected	4.7	Not Detected
m,p-Xylene	1.2	Not Detected	5.4	Not Detected
o-Xylene	1.2	Not Detected	5.4	Not Detected
Methyl tert-butyl ether	1.2	Not Detected	4.5	Not Detected
Naphthalene	5.0	Not Detected	26	Not Detected
1,1-Difluoroethane	5.0	Not Detected	13	Not Detected
TPH ref. to Gasoline (MW=100)	25	280	100	1100

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	75	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	106	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: SV-1B Lab Duplicate

Lab ID#: 0910554B-21AA

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**x110622**	**Date of Collection: 10/22/09 1:27:00 PM**	
Dil. Factor:	**2.48**	**Date of Analysis: 11/7/09 12:53 AM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	1.2	Not Detected	4.0	Not Detected
Ethyl Benzene	1.2	Not Detected	5.4	Not Detected
Toluene	1.2	Not Detected	4.7	Not Detected
m,p-Xylene	1.2	Not Detected	5.4	Not Detected
o-Xylene	1.2	Not Detected	5.4	Not Detected
Methyl tert-butyl ether	1.2	Not Detected	4.5	Not Detected
Naphthalene	5.0	Not Detected	26	Not Detected
1,1-Difluoroethane	5.0	Not Detected	13	Not Detected
TPH ref. to Gasoline (MW=100)	25	280	100	1100

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	75	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	104	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: SV-4B

Lab ID#: 0910554B-22A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**x110625**	**Date of Collection: 10/22/09 2:29:00 PM**	
Dil. Factor:	**2.55**	**Date of Analysis: 11/7/09 08:47 AM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	1.3	77	4.1	250
Ethyl Benzene	1.3	12	5.5	51
Toluene	1.3	320	4.8	1200
m,p-Xylene	1.3	21	5.5	90
o-Xylene	1.3	16	5.5	68
Methyl tert-butyl ether	1.3	47	4.6	170
Naphthalene	5.1	Not Detected	27	Not Detected
1,1-Difluoroethane	5.1	Not Detected	14	Not Detected
TPH ref. to Gasoline (MW=100)	26	3800	100	16000

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	88	70-130
Toluene-d8	102	70-130
4-Bromofluorobenzene	106	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: SV-5B

Lab ID#: 0910554B-23A

MODIFIED EPA METHOD TO-15 GC/MS

File Name:	**w111122**	**Date of Collection: 10/22/09 3:57:00 PM**	
Dil. Factor:	**22.9**	**Date of Analysis: 11/12/09 02:22 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	110	2400	360	7800
Toluene	110	2200	430	8300
Ethyl Benzene	110	9000	500	39000
m,p-Xylene	110	1400	500	6000
o-Xylene	110	Not Detected	500	Not Detected
Methyl tert-butyl ether	110	1400	410	5100
Naphthalene	460	Not Detected	2400	Not Detected
1,1-Difluoroethane	460	Not Detected	1200	Not Detected
TPH ref. to Gasoline (MW=100)	2300	1800000	9400	7400000

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	124	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	97	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: SV-7B

Lab ID#: 0910554B-24A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**x110626**	**Date of Collection: 10/22/09 1:00:00 PM**	
Dil. Factor:	**10.8**	**Date of Analysis: 11/7/09 09:27 AM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	5.4	18	17	58
Ethyl Benzene	5.4	19	23	83
Toluene	5.4	130	20	500
m,p-Xylene	5.4	35	23	150
o-Xylene	5.4	32	23	140
Methyl tert-butyl ether	5.4	Not Detected	19	Not Detected
Naphthalene	22	Not Detected	110	Not Detected
1,1-Difluoroethane	22	Not Detected	58	Not Detected
TPH ref. to Gasoline (MW=100)	110	17000	440	70000

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	81	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	104	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: SV-8B

Lab ID#: 0910554B-25A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**x110712**	**Date of Collection: 10/22/09 4:10:00 PM**	
Dil. Factor:	**8.66**	**Date of Analysis: 11/7/09 06:17 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	4.3	91	14	290
Ethyl Benzene	4.3	6.8	19	29
Toluene	4.3	42	16	160
m,p-Xylene	4.3	14	19	59
o-Xylene	4.3	7.9	19	34
Methyl tert-butyl ether	4.3	Not Detected	16	Not Detected
Naphthalene	17	Not Detected	91	Not Detected
1,1-Difluoroethane	17	Not Detected UJ	47	Not Detected UJ
TPH ref. to Gasoline (MW=100)	87	3000	350	12000

UJ = Non-detected compound associated with low bias in the CCV

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	75	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	102	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: SV-9B

Lab ID#: 0910554B-26A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**x110713**	**Date of Collection: 10/22/09 4:45:00 PM**	
Dil. Factor:	**4.52**	**Date of Analysis: 11/7/09 06:55 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	2.3	3.3	7.2	11
Ethyl Benzene	2.3	3.3	9.8	14
Toluene	2.3	16	8.5	62
m,p-Xylene	2.3	6.1	9.8	27
o-Xylene	2.3	3.7	9.8	16
Methyl tert-butyl ether	2.3	11	8.1	38
Naphthalene	9.0	Not Detected	47	Not Detected
1,1-Difluoroethane	9.0	Not Detected UJ	24	Not Detected UJ
TPH ref. to Gasoline (MW=100)	45	1700	180	7000

UJ = Non-detected compound associated with low bias in the CCV

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	80	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	104	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: SV-10B

Lab ID#: 0910554B-27A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**x110714**	**Date of Collection: 10/22/09 5:17:00 PM**	
Dil. Factor:	**2.50**	**Date of Analysis: 11/7/09 07:31 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	1.2	Not Detected	4.0	Not Detected
Ethyl Benzene	1.2	Not Detected	5.4	Not Detected
Toluene	1.2	1.8	4.7	6.9
m,p-Xylene	1.2	4.2	5.4	18
o-Xylene	1.2	8.2	5.4	35
Methyl tert-butyl ether	1.2	Not Detected	4.5	Not Detected
Naphthalene	5.0	Not Detected	26	Not Detected
1,1-Difluoroethane	5.0	Not Detected UJ	14	Not Detected UJ
TPH ref. to Gasoline (MW=100)	25	25000	100	100000

UJ = Non-detected compound associated with low bias in the CCV

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	81	70-130
Toluene-d8	106	70-130
4-Bromofluorobenzene	107	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: SV-11B

Lab ID#: 0910554B-28A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**x110716**	**Date of Collection: 10/22/09 2:06:00 PM**	
Dil. Factor:	**2.46**	**Date of Analysis: 11/7/09 08:52 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	1.2	18	3.9	58
Ethyl Benzene	1.2	6.9	5.3	30
Toluene	1.2	23	4.6	88
m,p-Xylene	1.2	30	5.3	130
o-Xylene	1.2	14	5.3	61
Methyl tert-butyl ether	1.2	12	4.4	42
Naphthalene	4.9	Not Detected	26	Not Detected
1,1-Difluoroethane	4.9	Not Detected UJ	13	Not Detected UJ
TPH ref. to Gasoline (MW=100)	25	9800	100	40000

UJ = Non-detected compound associated with low bias in the CCV

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	80	70-130
Toluene-d8	101	70-130
4-Bromofluorobenzene	106	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: SV-12B

Lab ID#: 0910554B-29A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	x110717	Date of Collection:	10/22/09 6:32:00 AM
Dil. Factor:	2.39	Date of Analysis:	11/7/09 09:29 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	1.2	38	3.8	120
Ethyl Benzene	1.2	13	5.2	55
Toluene	1.2	93	4.5	350
m,p-Xylene	1.2	28	5.2	120
o-Xylene	1.2	11	5.2	46
Methyl tert-butyl ether	1.2	3.8	4.3	14
Naphthalene	4.8	Not Detected	25	Not Detected
1,1-Difluoroethane	4.8	Not Detected UJ	13	Not Detected UJ
TPH ref. to Gasoline (MW=100)	24	1200	98	4900

UJ = Non-detected compound associated with low bias in the CCV

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	74	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	101	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: SV-13B

Lab ID#: 0910554B-30A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**x110718**	**Date of Collection: 10/22/09 5:31:00 PM**	
Dil. Factor:	**2.71**	**Date of Analysis: 11/7/09 10:09 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	1.4	10	4.3	32
Ethyl Benzene	1.4	54	5.9	230
Toluene	1.4	140	5.1	520
m,p-Xylene	1.4	180	5.9	770
o-Xylene	1.4	110	5.9	480
Methyl tert-butyl ether	1.4	Not Detected	4.9	Not Detected
Naphthalene	5.4	Not Detected	28	Not Detected
1,1-Difluoroethane	5.4	Not Detected UJ	15	Not Detected UJ
TPH ref. to Gasoline (MW=100)	27	9300	110	38000

UJ = Non-detected compound associated with low bias in the CCV

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	72	70-130
Toluene-d8	101	70-130
4-Bromofluorobenzene	104	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: Lab Blank

Lab ID#: 0910554B-31A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**x110620**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 11/6/09 11:29 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	0.50	Not Detected	1.6	Not Detected
Ethyl Benzene	0.50	Not Detected	2.2	Not Detected
Toluene	0.50	Not Detected	1.9	Not Detected
m,p-Xylene	0.50	Not Detected	2.2	Not Detected
o-Xylene	0.50	Not Detected	2.2	Not Detected
Methyl tert-butyl ether	0.50	Not Detected	1.8	Not Detected
Naphthalene	2.0	Not Detected	10	Not Detected
1,1-Difluoroethane	2.0	Not Detected	5.4	Not Detected
TPH ref. to Gasoline (MW=100)	10	Not Detected	41	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	75	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	101	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: Lab Blank

Lab ID#: 0910554B-31B

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**x110711**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 11/7/09 05:27 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	0.50	Not Detected	1.6	Not Detected
Ethyl Benzene	0.50	Not Detected	2.2	Not Detected
Toluene	0.50	Not Detected	1.9	Not Detected
m,p-Xylene	0.50	Not Detected	2.2	Not Detected
o-Xylene	0.50	Not Detected	2.2	Not Detected
Methyl tert-butyl ether	0.50	Not Detected	1.8	Not Detected
Naphthalene	2.0	Not Detected	10	Not Detected
1,1-Difluoroethane	2.0	Not Detected UJ	5.4	Not Detected UJ
TPH ref. to Gasoline (MW=100)	10	Not Detected	41	Not Detected

UJ = Non-detected compound associated with low bias in the CCV

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	74	70-130
Toluene-d8	95	70-130
4-Bromofluorobenzene	99	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: Lab Blank

Lab ID#: 0910554B-31C

MODIFIED EPA METHOD TO-15 GC/MS

File Name:	w111107	Date of Collection: NA	
Dil. Factor:	1.00	Date of Analysis: 11/11/09 10:00 PM	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	5.0	Not Detected	16	Not Detected
Toluene	5.0	Not Detected	19	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
Methyl tert-butyl ether	5.0	Not Detected	18	Not Detected
Naphthalene	20	Not Detected	100	Not Detected
1,1-Difluoroethane	20	Not Detected	54	Not Detected
TPH ref. to Gasoline (MW=100)	100	Not Detected	410	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	103	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	92	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: CCV

Lab ID#: 0910554B-32A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**x110606**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 11/6/09 10:20 AM**	

Compound	%Recovery
Benzene	100
Ethyl Benzene	108
Toluene	106
m,p-Xylene	109
o-Xylene	110
Methyl tert-butyl ether	106
Naphthalene	79
1,1-Difluoroethane	77
TPH ref. to Gasoline (MW=100)	119

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	77	70-130
Toluene-d8	102	70-130
4-Bromofluorobenzene	112	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: CCV

Lab ID#: 0910554B-32B

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**x110705**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 11/7/09 12:43 PM**	

Compound	%Recovery
Benzene	99
Ethyl Benzene	103
Toluene	102
m,p-Xylene	105
o-Xylene	104
Methyl tert-butyl ether	106
Naphthalene	72
1,1-Difluoroethane	69 Q
TPH ref. to Gasoline (MW=100)	120

Q = Exceeds Quality Control limits.

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	75	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	103	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: CCV

Lab ID#: 0910554B-32C

MODIFIED EPA METHOD TO-15 GC/MS

File Name:	**w111103**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 11/11/09 07:21 PM**	

Compound	%Recovery
Benzene	103
Toluene	102
Ethyl Benzene	106
m,p-Xylene	106
o-Xylene	109
Methyl tert-butyl ether	113
Naphthalene	100
1,1-Difluoroethane	112
TPH ref. to Gasoline (MW=100)	108

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	102	70-130
Toluene-d8	101	70-130
4-Bromofluorobenzene	98	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: LCS

Lab ID#: 0910554B-33A

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**x110607**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 11/6/09 11:05 AM**	

Compound	%Recovery
Benzene	96
Ethyl Benzene	100
Toluene	106
m,p-Xylene	103
o-Xylene	103
Methyl tert-butyl ether	99
Naphthalene	79
1,1-Difluoroethane	Not Spiked
TPH ref. to Gasoline (MW=100)	Not Spiked

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	75	70-130
Toluene-d8	102	70-130
4-Bromofluorobenzene	111	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: LCS

Lab ID#: 0910554B-33B

MODIFIED EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**x110706**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 11/7/09 01:19 PM**	

Compound	%Recovery
Benzene	96
Ethyl Benzene	100
Toluene	103
m,p-Xylene	100
o-Xylene	100
Methyl tert-butyl ether	102
Naphthalene	76
1,1-Difluoroethane	Not Spiked
TPH ref. to Gasoline (MW=100)	Not Spiked

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	77	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	105	70-130

Air Toxics LTD.
Laboratory Services Since 1989

Client Sample ID: LCS

Lab ID#: 0910554B-33C

MODIFIED EPA METHOD TO-15 GC/MS

File Name:	**w111104**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 11/11/09 07:48 PM**	

Compound	%Recovery
Benzene	100
Toluene	104
Ethyl Benzene	104
m,p-Xylene	104
o-Xylene	105
Methyl tert-butyl ether	119
Naphthalene	111
1,1-Difluoroethane	Not Spiked
TPH ref. to Gasoline (MW=100)	Not Spiked

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	100	70-130
Toluene-d8	101	70-130
4-Bromofluorobenzene	100	70-130

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Sample Transportation Notice
Relinquishing signature on this document indicates that sample is being shipped in compliance with all applicable local, State, Federal, national, and international laws, regulations and ordinances of any kind. Air Toxics Limited assumes no liability with respect to the collection, handling or shipping of these samples. Relinquishing signature also indicates agreement to hold harmless, defend, and indemnify Air Toxics Limited against any claim, demand, or action, of any kind, related to the collection, handling, or shipping of samples. D.O.T. Hotline (800) 467-4922

180 BLUE RAVINE ROAD, SUITE B
FOLSOM, CA 95630-4719
(916) 985-1000 FAX (916) 985-1020

Project Manager: Scott Bittinger
Collected by: (Print and Sign) Collin Fischer [signature]
Company: Stantec Email:
Address: 3330 Cameron Park Dr. #550 City: Cameron Park State: CA Zip: 95682
Phone: Fax:

Project Info:
P.O. #:
Project #: 207-0057-01
Project Name: USA 57

Turn Around Time: ☒ Normal ☐ Rush ____ specify

Lab Use Only: Pressurized by: Date: Pressurization Gas: N2 He

Lab I.D.	Field Sample I.D. (Location)	Can #	Date of Collection	Time of Collection	Analyses Requested	Canister Pressure/Vacuum Initial	Final	Receipt	Final (psi)
21A	SV-1B	36541	102209	1327	TPHG, BTEX, MtBE, naphthalene, 1,1-DFA by TO-15	-29	-5		
22A	SV-4B	2211	102209	1429	↓	-28	-4		
23A	SV-5B	36495	102209	1557	↓	-29	-19.5		
24A	SV-7B	34606	102209	1300	↓	-29.5	-2.5		
25A	SV-8B	21023	102209	1610	↓	-30	-24.5		
26A	SV-9B	14512	102209	1645	↓	-28.5	-16.5		
27A	SV-10B	36476	102209	1717	↓	-29	-5		
28A	SV-11B	35556	102209	1406	↓	-29.5	-5		
29A	SV-12B	1470	102209	0632	↓	-29	-5		
30A	SV-13B	35680	102209	1131	↓	-30	-8		

Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/Time
[signature] for C.F.	102309 0700	[signature]	102309 0700
[signature]	102309 0925	Monica Gonzalez ATL	10/23/09 925

Notes: direct bill Moller Investment Group for charges
Lab report units in ug/m3 & ppbv

Lab Use Only	Shipper Name	Air Bill #	Temp (°C)	Condition	Custody Seals Intact?	Work Order #
	Drop off	—	NA	Good	Yes No (None)	0910554

Form 1293 rev.11

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Facility Name:	**USA PETROLEUM**
File Name:	**0910313.zip**
Organization Name:	**Stratus Environmental, Inc.**
Username:	**STRATUS NOCAL**
IP Address:	**12.186.106.98**
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Facility Global ID:	**T0600101808**
Facility Name:	**USA PETROLEUM**
File Name:	**0910554A.zip**
Organization Name:	**Stratus Environmental, Inc.**
Username:	**STRATUS NOCAL**
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Submittal Title:	**October 21 & 22, 2009 soil gas sample results, part 2**
Facility Global ID:	**T0600101808**
Facility Name:	**USA PETROLEUM**
File Name:	**0910554B.zip**
Organization Name:	**Stratus Environmental, Inc.**
Username:	**STRATUS NOCAL**
IP Address:	**12.186.106.98**
Submittal Date/Time:	**11/18/2009 10:22:29 AM**
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APPENDIX E

VAPOR INTRUSION HHRA – RUBIK ENVIRONMENTAL, INC.

RUBIK ENVIRONMENTAL

Vapor Intrusion Human Health Risk Assessment
Former USA Service Station No. 57
10700 MacArthur Boulevard
Oakland, California

November 24, 2009

Prepared for:
Stratus Environmental, Incorporated
3330 Cameron Park Drive, Suite 550
Cameron Park, California 95682

Prepared by:
Rubik Environmental, Incorporated
1023 Manor Drive
Reno, Nevada 89509

Rubik Project No.
20098

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TABLES

1.0 INTRODUCTION

Rubik Environmental, Incorporated (Rubik) conducted a vapor intrusion human health risk assessment (HHRA) for Stratus Environmental, Incorporated (Stratus) for the Former USA Service Station No. 57 (site) located at 10700 MacArthur Boulevard in Oakland, California (Figure 1). The HHRA was conducted to determine the vapor intrusion risks to commercial receptors based on the hydrocarbon concentrations in samples collected at the site in October 2009 at depths of four feet below the ground surface (bgs) and nine feet bgs. The hydrocarbon concentrations in the shallow samples were used to estimate risks to commercial receptors if the site were developed in its current state. The concentrations in the 9-foot samples were used to predict the vapor intrusion risks that could result in the future if the top 5 feet of soil was removed from the site.

2.0 SITE BACKGROUND

The site is located in a mixed commercial and residential area of Oakland on the southeast corner of the Foothill Square Parking lot at the intersection of Foothill Boulevard to the east and 108th Avenue to the south. The service station that formerly occupied the site was closed in 1994 and the underground storage tanks (USTs), dispensers and associated product piping were removed. The site is currently vacant. Interstate 580 is located east of Foothill Boulevard, approximately 500 feet east of the site. The adjacent property to the north and west of the site is occupied by the Foothill Square Shopping Center and the associated paved parking lot. Property to the south of 108th Avenue is occupied by residences. The site is currently scheduled to be developed with an approximate 72,000 square feet commercial building (Stratus, 2009). As noted, the plan for the future development is to remove the top 5 feet of soil prior to constructing the building.

3.0 POTENTIAL RECEPTORS

The current potential receptors for the site are both residential and commercial passersbys who would have little to no chance for exposure due to the limited amount of time on site and the lack of a structure in which the vapors could accumulate. The potential future receptors based on the site location and plans for development provided by Stratus, are construction workers, commercial workers and patrons of the business that will be constructed. Of these, commercial workers have the greatest risk of exposure due to the extended amount of time spent onsite. Therefore, this HHRA was conducted for commercial receptors to provide a conservative assessment of risk for all receptors.

4.0 ACCEPTABLE RISK LIMITS

Per the United States Environmental Protection Agency (US EPA, 1991), the acceptable multi-chemical and multi-pathway excess cancer risks (ECRs) range is from one in ten thousand (1.0E-04) to one in a million (1.0E-06), with 1.0E-06 being the point of departure; and the acceptable multi-pathway noncarcinogenic hazard quotient (HQ) for a single chemical or

multi-chemical and multi-pathway hazard index (HI) for all chemicals is 1.0 (the HI is calculated by summing the chemical-specific and/or pathway-specific HQs).

In California, under the Proposition 65 program, the "no significant risk levels" represent the daily intake level calculated to result in a cancer risk not exceeding one excess case of cancer in 100,000 individuals (1.0E-05) exposed over a 70-year lifetime (Cal-EPA, 1994a). As such, the California Environmental Protection Agency (Cal-EPA) uses a target ECR of 1.0E-05 for individual carcinogenic chemicals to warn the public of potential carcinogens in every day products. A cumulative ECR of 1 E-04 must not be exceeded by the exposed populations, including sensitive receptors. Typically, target risk levels and hazard quotients of 1E-06 and 1.0 are used for residential receptors and 1E-05 and 1.0 are used for commercial receptors.

5.0 CHEMICALS OF CONCERN

The chemicals of concern (COCs) include all hydrocarbons that were detected in at least one of the soil gas samples collected from four or nine feet bgs and consist of total petroleum hydrocarbons in the gasoline range (TPHg), benzene, toluene, ethylbenzene and xylenes (BTEX), methyl tertiary butyl ether (MTBE) and naphthalene. A summary of the analytical results for the soil gas samples is presented in Table 1.

6.0 EXPOSURE POINT CONCENTRATIONS

Exposure point concentrations (EPCs) are representative chemical concentrations used to estimate risks at a site. The US EPA recommends using the mean concentration as the EPC for each COC to represent a reasonable estimate of the concentration likely to be contacted over time (US EPA, 1989). When data from greater than 10 samples is available, the uncertainty associated with estimating the true mean concentration can be reduced using the 95 percent upper confidence limit (95% UCL) (US EPA, 1992 and 2002). To provide a conservative estimate of vapor intrusion risk for future buildings, the California Environmental Protection Agency (Cal-EPA) Department of Toxic Substances Control (DTSC) recommends using the maximum soil vapor concentrations as the EPCs for screening purposes (Cal-EPA, 2005b).

The hydrocarbon concentrations were relatively consistent across site with the exception samples collected near the former dispenser islands (samples SV-5 and SV-6), which contained hydrocarbon concentrations up to three orders of magnitude greater than concentrations measured elsewhere at the site. These elevated concentrations were identified as outliers in an analysis performed with the Pro-UCL statistical software (USEPA, 2009). When the elevated concentrations were included attempts to calculate the 95% UCL, that data did not follow a discernible distribution for the majority of the chemicals. Therefore, the maximum and mean concentrations were used to estimate the vapor intrusion risks in this HHRA. When the analytical reporting limit (RL) for a COC exceeded detected concentrations, the RL was used as the maximum EPC. Likewise, when no concentration was detected the RL was used to calculate the mean EPC.

The soil gas EPCs for the samples collected at 4 feet bgs and 9 feet bgs are presented in Tables 2 and 3, respectively.

6.1 Evaluation of TPH as a Mixture

TPH is a broad term used to describe several hundred chemical compounds contained within a mixture of petroleum hydrocarbons with widely varying physical, chemical and toxicological properties, many of which have not been defined (USEPA, 1986). Gasoline or TPHg is defined as a petroleum mixture characterized by a predominance of branched alkanes and aromatic hydrocarbons with carbon ranges of C_6 to C_{12} and lesser amounts of straight-chain alkanes, alkenes and cycloalkanes of the same carbon range (California Regional Water Quality Control Board- San Francisco Region [CRWQCB-SFR], 2008).

Due to the complexity of TPH as a mixture, the HHRA was conducted using the indicator/surrogate approach, which is consistent with what has been used by the Massachusetts Department of Environmental Protection (MADEP, 1994, 1996, and 1997), the Washington State Department of Ecology Cleanup Program (WDECP, 2001) and the Indiana Department of Environmental Management (IDEM, 2006) and the $Risc_4$ risk software (Spence, et al. 2001).

In order to estimate health risks for TPHg, the TPH Criteria Working Group (TPHCWG; 1997) recommended using the following fractions with surrogate reference doses/concentrations (RfDs/RfCs): C_5-C_8 aliphatics, C_9-C_{16} aliphatics, C_7-C_8 aromatics, C_9-C_{12} aromatics, and C_{13}-C_{16} aromatics. Due to the age of the release at the site, the TPH is considered to be weathered, which means that the lighter, more easily degraded constituents are no longer present. Therefore, the noncarcinogenic effects of the TPH were quantified using the concentrations of the aliphatic and aromatic fractions of weathered TPHg developed by the WDECP (2001). The TPHg EPCs are presented in Table 4.

7.0 VAPOR INTRUSION MODELING

The Department of Toxic Substances Control (DTSC) version of the Johnson and Ettinger (J & E) Soil Gas Vapor Intrusion model (Cal-EPA, 2009) was used to estimate the excess cancer risk (ECR) and hazard quotient (HQ) for commercial receptors using the following parameters:

- Depth below grade to bottom of enclosed space floor: 15 centimeters (cm), default for structures without basements (Cal-EPA, 2005b).

- Soil vapor sampling depth below grade: 121.92 cm (4 feet), site-specific sampling depth of the shallow soil vapor samples. This depth was used for analysis of the samples collected at 4 feet bgs to evaluate risks if no soil was removed prior to development of the site, and for the samples collected at nine feet bgs in the event that up to five feet of soil would be removed prior to constructing the proposed building.

- Average soil temperature: 16.67°C (62°F), site-specific for the Oakland, California area (Figure A-1, Cal-EPA, 2005b).

- Soil Thickness: 121.92 cm (4 feet), site-specific based on soil gas sample collection depth and the potential to excavate up to 5 feet of soil for prior to site development.

- SCS soil type: Clay. Site specific based a review of boring and the geologic cross sections and discussions with Stratus geologists.

- Soil dry bulk density: 1.43 grams per cubic centimeter (g/cm^3), model default value for clay (Cal-EPA, 2009).

- Soil total porosity: 0.459 cubic centimeters per cubic centimeter (cm^3/cm^3), model default value for clay (Cal-EPA, 2009).

- Soil water-filled porosity: 0.402 cm^3/cm^3, based on soil type and historical precipitation measurements. See discussion below and in Table 5 (USEPA, 1985, 1996, and 2004b).

- Average vapor flow rate into building (Q_{soil}): 5 liters per minute (L/m), model default value (Cal-EPA, 2005b). This resulted in a $Q_{soil}/Q_{building}$ ratio of 2.46E-03, which is within the reasonable range of 0.0001 to 0.01 (American Petroleum Institute [API], 2002).

- Averaging time for carcinogens: 70 years (Cal-EPA, 2005c);

- Averaging time for non-carcinogens: 25 years for commercial scenario (Cal-EPA, 2005b and 2005d);

- Exposure duration: 25 years for commercial scenario (Cal-EPA, 2005b and 2005d)

- Exposure frequency: 250 days/year for commercial scenario (Cal-EPA, 2005b and 2005d);

- Toxicity values and physical properties for all COCs except TPHg: model default values (Cal-EPA, 2009);

- Toxicity values and physical properties for TPHg: Agency for Toxic Substances and Diseases Registry (ATSDR, 1995 and 1999). TPH Criteria Working Group (TPHCWG, 1997a and 1997b).

7.1.1.1 Soil Water-Filled Porosity

Soil water-filled porosity is a strong contributor to the potential volatilization of chemicals from the subsurface. Therefore, to provide an accurate assessment of risk, it is recommended that site-specific data for this parameter be used (US EPA, 2004b). Although soil water-filled porosity of discrete soil samples can be measured, the US EPA cautions that these measurements should not be used in risk assessments because they are too affected by

antecedent rainfall or dry season events and may not represent annual average conditions (US EPA, 1996 and 2004b). The US EPA recommends that the site-specific yearly average infiltration rate should be used to estimate the soil water-filled porosity at a site for fate and transport modeling (US EPA, 1996).

The soil water-filled porosity calculations, parameters and results are presented in Table 5.

7.1.1.2 Modeling Results

The individual and cumulative ECRs and noncarcinogenic hazards for soil gas samples collected at four feet bgs were less than the most stringent Cal-EPA targets of 1.0E-06 and 1.0. The cumulative ECR and the hazard index for the samples collected at four feet bgs were 9.9E-08 and 0.006.

The individual and cumulative ECRs based on the maximum COC concentrations detected at nine feet bgs and the removal of 5 feet soil above the sampling locations were less than 1.0E-06 for all detected chemicals. The cumulative ECR without naphthalene weas 9.3E-07. When the RL for naphthalene was included, the ECR increased to 5.7E-05. HQs for the maximum concentrations in the 9 feet bgs samples and the HI without naphthalene was 0.15. The HQ based on the RL for naphthalene was 1.5 and the HI when naphthalene was included was 1.7.

The ECRs and HQs for the mean concentrations detected in samples from 9 feet bgs were also less than 1.0E-06 and 1.0 and the mean naphthalene concentration resulting from the RLs resulted in an ECR of 2.9E-06 and 7.9E-02.

The vapor intrusion modeling results are presented in Table 6.

8.0 CONCLUSIONS

The potential vapor intrusion risks resulting from the hydrocarbon concentrations detected at four feet bgs, based on the maximum concentrations, are nearly two order of magnitude less than the most stringent Cal-EPA target risk and hazard limits of 1.0E-06 and 1.0, respectively. This indicates that commercial workers in a building constructed on the current soil would not be exposed to unacceptable risks from inhalation of hydrocarbons migrating into the building from the subsurface.

The vapor intrusion risks resulting from COCs detected in soil gas samples from nine feet bgs based on the maximum and mean COC concentrations were one to two orders of magnitude, respectively, less than most conservative limits 1.0E-06 and 1.0, if 5 feet of soil above the samples were removed prior to development. The risk resulting from the maximum concentrations when the RL for naphthalene is included exceeds the target ECR for commercial properties of 1.0E-05 and an HI of 1.0. It is important to note that no naphthalene was detected in the soil gas samples from 9 feet bgs and naphthalene concentrations were only detected in 2 of the 20 samples collected from 4 feet bgs. Therefore, the actual risk is likely much less than

predicted by analysis of either the maximum or mean naphthalene concentrations based on the nondetected concentrations and RLS.

Because the mean concentrations provide a more accurate depiction of potential risk, the results indicate that even when the naphthalene RLs are included in the calculation, the risk to commercial receptors occupying a structure located approximately four feet above the soil gas samples that were collected at 9 feet bgs are below the acceptable limits of 1.0E-05 and 1.0.

9.0 UNCERTAINTIES

Uncertainties in the risk characterization essentially involve the methodologies used in estimating the health risk results. They are also the products of many factors affecting each component of the risk assessment process; namely data collection/evaluation and selection of COCs, exposure assessment, and toxicity assessment. These factors measurement errors, exposure and modeling assumptions, and uncertainty and variability of the values used in the assessment.

In general, uncertainties associated with the sampling and analysis and COC selection are related to the assumptions that the sampling activities adequately characterized the soil vapor intrusion issues in the locations of the samples, and that the selected COCs were representative of the chemicals occurring in the shallow soil vapor. Exposure and toxicity assessment have been recognized by the USEPA as the largest sources of uncertainties in the health risk assessment process (USEPA, 1992). Uncertainties associated with exposure assessment in this HHRA involve, at a minimum, the use of maximum detected concentrations as EPCs and the use of upper bound exposure parameters in the J&E modeling.

Another uncertainty may include the conservative assumption that COC concentrations do not decrease over time in the environment due to source depletion and biodegradation, but remain at the concentrations detected over the exposure period evaluated. This assumption has a moderate to high effect on the health risk results where risk drivers include biodegradable COCs.

Another source of uncertainty in estimating exposures is the assumption that individuals within a particular receptor population (or subpopulation) will receive the same intake doses. Variability in parameters such as absorption rate, inhalation rate, frequency and duration of exposure, body weight, and activity pattern will exist even in a narrowly defined age group or identified sensitive subpopulation (USEPA, 1992). This range of uncertainty and variability is difficult to assess. In the HHRA, however, many Cal-EPA standard default factors representing the upper limit of these exposure parameters are deemed to have mostly over-estimated the potential health risks.

Other uncertainties are related to the averaging times selected in estimating average daily intakes for potential carcinogenic and noncarcinogenic effects, and the assumption that the same receptor will be exposed daily to low levels of site related contaminants. On the basis of

the information discussed above, the net overall uncertainty associated with the exposure assessment is rated as moderate with a bias toward overestimation of risks.

10.0 LIMITATIONS AND CERTIFICATIONS

This report was prepared in accordance with the scope of work outlined in Rubik's contract and with generally accepted professional engineering and environmental consulting practices existing at the time this report was prepared and applicable to the location of the site. It was prepared for the exclusive use of Stratus and Moller Investment Group, Incorporated for the express purpose stated above. Any re-use of this report for a different purpose or by others not identified above shall be at the user's sole risk without liability to Rubik. To the extent that this report is based on information provided to Rubik by third parties, Rubik may have made efforts to verify this third party information, but Rubik cannot guarantee the completeness or accuracy of this information. The opinions expressed and data collected are based on the conditions of the site existing at the time of the field investigation. No other warranties, expressed or implied are made by Rubik.

Prepared by:

Todd Leonard
Senior Toxicologist

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TABLES

VAPOR INTRUSION HHRA
FORMER USA SERVICE STATION NO. 57
10700 MACARTHUR BOULEVARD
OAKLAND, CALIFORNIA

November 24, 2009

TABLE 1
SOIL GAS ANALYTICAL RESULTS
Former USA Station No. 57
10700 MacArthur Boulevard
Oakland, California

Sample ID	Sample Depth (feet bgs)	Date	TPHg (µg/m3)	Benzene (µg/m3)	Toluene (µg/m3)	Ethylbenzene (µg/m3)	Total Xylenes (µg/m3)	MTBE (µg/m3)	Naphthalene (µg/m3)	1,1-DFA (µg/m3)
Environmental Screening Level (ESL)[1] (commercial property)			**29,000**	**280**	**180,000**	**3,300**	**58,000**	**31,000**	**240**	-----
SV-1A	4	10/21/09	8,000[3]	<4.1	<4.9	<5.6	<5.6	<4.7	<27	<14
SV-1B	9	10/22/09	1,100	<4.0	<4.7	<5.4	<5.4	<4.5	<26	<13
SV-1B (dup)[2]	---	---	1,100	<4.0	<4.7	<5.4	<5.4	<4.5	<26	<13
SV-2A	4	10/21/09	4,900[3]	<3.7	<4.4	<5.0	<5.0	<4.2	<24	<12
SV-2B	9	10/21/09	21,000	69	130	48	126	<12	<69	<36
SV-3A	4	10/21/09	11,000[3]	30	20	7.6	32	<4.3	<25	<13
SV-3B	9	10/21/09	20,000	96	240	38	111	<18	<100	<53
SV-3B (dup)[2]	---	---	21,000	97	230	38	109	<18	<100	<53
SV-4A	4	10/21/09	140[3]	<3.8	<4.4	<5.1	5.4	<4.2	<25	<13
SV-4B	9	10/22/09	16,000	250	1,200	51	158	170	<27	<14
SV-5A	4	10/21/09	**99,000**[3]	110	2,900	160	440	3,700	<140	<71
SV-5B	9	10/22/09	**7,400,000**	**7,800**	8,300	**39,000**	6,000	5,100	<2,400	<1,200
SV-6A	4	10/21/09	*insufficient airflow through subsurface strata to enable collection of soil gas sample*							
SV-6B	9	10/21/09	**8,000,000**	**5,600**	<25,000	<29,000	<29,000	12,000	<140,000	<73,000
SV-7A	4	10/21/09	11,000[3]	13	140	20	91	<4.3	<25	<13
SV-7B	9	10/22/09	**70,000**	58	500	83	290	<19	<110	<58
SV-8A	4	10/12/09	7,800	46	960	110	308	<4.3	<25	<13
SV-8B	9	10/22/09	12,000	**290**	160	29	93	<16	<91	<47[4]
SV-9A	4	10/12/09	3,300	100	85	10	28.9	<4.3	<25	<13
SV-9B	9	10/22/09	7,000	11	62	14	43	38	<47	<24[4]
SV-10A	4	10/21/09	**260,000**[3]	<4.2	19	30	610	<4.8	77	<14
SV-10B	9	10/22/09	**100,000**	<4.0	6.9	<5.4	53	<4.5	<26	<24[4]
SV-11A	4	10/21/09	26,000[3]	<3.8	5.8	<5.1	18.2	<4.3	45	<13
SV-11B	9	10/22/09	**40,000**	58	88	30	191	42	<26	<13[4]

Sample ID	Sample Depth (feet bgs)	Date	TPHg (µg/m3)	Benzene (µg/m3)	Toluene (µg/m3)	Ethylbenzene (µg/m3)	Total Xylenes (µg/m3)	MTBE (µg/m3)	Naphthalene (µg/m3)	1,1-DFA (µg/m3)
Environmental Screening Level (ESL)[1] (commercial property)			**29,000**	**280**	**180,000**	**3,300**	**58,000**	**31,000**	**240**	----
SV-12A	4	10/21/09	5,500[3]	180	540	140	450	<4.4	<26	<13
SV-12B	9	10/22/09	4,900	120	350	55	166	14	<25	<13[4]
SV-13A	4	10/21/09	**210,000**[3]	20	49	22	141	<5.0	<29	<15
SV-13B	9	10/22/09	**38,000**	32	520	230	1,250	<4.9	<28	<15[4]
SV-14A	4	10/12/09	1,000	31	14	5.6	23.2	<4.6	<26	14
SV-14B	9	10/22/09	**56,000**	**430**	250	70	123	<22	<130	<65
SV-15A	4	10/12/09	390	4.9	6.5	<5.2	<5.2	<4.4	<25	<13
SV-15A (dup)[2]	---	---	330	4.8	6.4	<5.2	<5.2	<4.4	<25	<13
SV-15B	9	10/22/09	7,900	38	52	15	51	<4.5	<26	<13
SV-16A	4	10/12/09	110	<3.8	<4.5	<5.2	<5.2	<4.3	<25	16
SV-16B	9	10/22/09	780	<3.9	<4.6	<5.2	<5.2	<4.4	<25	<13
SV-17A	4	10/12/09	1,700	160	60	5.5	26.5	<4.3	<25	<13
SV-17B	9	10/22/09	**52,000**	**330**	330	49	280	<22	<130	<65
SV-18A	4	10/12/09	3,500	53	350	170	450	<4.4	<25	<13
SV-18B	9	10/22/09	7,600	250	440	96	211	<4.5	<26	<13
SV-19A	4	10/12/09	27,000	**360**	500	83	380	<7.5	<44	<22
SV-19B	9	10/21/09	**30,000**	37	160	42	144	<7.6	<44	<23
SV-20A	4	10/12/09	11,000	77	560	140	351	<4.3	<25	<13
SV-20B	9	10/21/09	25,000	180	250	47	192	<4.5	<26	<13

Legend:

TPHg = Total petroleum hydrocarbons as gasoline
MTBE = Methyl tertiary butyl ether
1,1-DFA = 1,1-difluoroethane
ug/m^3 = micrograms per cubic meter

Analytical Laboratory

Air Toxics, LTD. (NELAP 02110CA)

Analytical Methods

TPHg by Modified EPA Method TO-3
BTEX, MTBE, Naphthalene, and 1,1-DFA by Modified EPA Method TO-15

Notes:

[1] = *RWQCB-SF Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater, Interim Final – November 2007 (revised May 2008)*; Table E-2, Shallow Soil Gas Screening Levels for Evaluation of Potential Vapor Intrusion Concerns (based on an excess cancer risk of 1E-06 and a hazard quotient of 0.2)

[2] = Duplicate sample analyzed by laboratory for quality control (QC) purposes
[3] = Estimated value due to bias in the continuing calibration verification
[4] = Non-detected compound associated with low bias in the continuing calibration verification
BOLD font indicates analyte exceeds corresponding ESL

TABLE 2
SOIL GAS EXPOSURE POINT CONCENTRATIONS FROM FOUR FEET BGS
Former USA Station No. 57
10700 MacArthur Boulevard
Oakland, California

Sample ID	Sample Depth (feet bgs)	Date	TPHg ($\mu g/m^3$)	Benzene ($\mu g/m^3$)	Toluene ($\mu g/m^3$)	Ethylbenzene ($\mu g/m^3$)	Total Xylenes ($\mu g/m^3$)	MTBE ($\mu g/m^3$)	Naphthalene ($\mu g/m^3$)
SV-1A	4	10/21/09	8,000	4.1	2,900	5.6	5.6	4.7	27
SV-2A	4	10/21/09	4,900	3.7	4.4	5.0	5.0	4.2	24
SV-3A	4	10/21/09	11,000	30	20	7.6	32	4.3	25
SV-4A	4	10/21/09	140	3.8	4.4	5.1	5.4	4.2	25
SV-5A	4	10/21/09	99,000	110	2,900	160	440	3,700	140
SV-7A	4	10/21/09	11,000	13	140	20	91	4.3	25
SV-8A	4	10/12/09	7,800	46	960	110	308	4.3	25
SV-9A	4	10/12/09	3,300	100	85	10	28.9	4.3	25
SV-10A	4	10/21/09	260,000	4.2	19	30	610	4.8	77
SV-11A	4	10/21/09	26,000	3.8	5.8	5.1	18.2	4.3	45
SV-12A	4	10/21/09	5,500	180	540	140	450	4.4	26
SV-13A	4	10/21/09	210,000	20	49	22	141	5.0	29
SV-14A	4	10/12/09	1,000	31	14	5.6	23.2	4.6	26
SV-15A	4	10/12/09	390	4.9	6.5	5.2	5.2	4.4	25
SV-16A	4	10/12/09	110	3.8	4.5	5.2	5.2	4.3	25
SV-17A	4	10/12/09	1,700	160	60	5.5	26.5	4.3	25
SV-18A	4	10/12/09	3,500	53	350	170	450	4.4	25
SV-19A	4	10/12/09	27,000	360	500	83	380	7.5	44
SV-20A	4	10/12/09	11,000	77	560	140	351	4.3	25
		Maximum	260,000	360	2,900	170	610	3,700	140
		Mean	36,386	64	480	49	178	199	36

Legend:
bgs = below the ground surface
TPHg = Total petroleum hydrocarbons as gasoline
MTBE = Methyl tertiary butyl ether
$\mu g/m^3$ = micrograms per cubic meter
Shaded values are analytical reporting limit and indicate that no concentration was detected

TABLE 3
SOIL GAS EXPOSURE POINT CONCENTRATIONS FROM NINE FEET BGS
Former USA Station No. 57
10700 MacArthur Boulevard
Oakland, California

Sample ID	Sample Depth (feet bgs)	Date	TPHg ($\mu g/m^3$)	Benzene ($\mu g/m^3$)	Toluene ($\mu g/m^3$)	Ethylbenzene ($\mu g/m^3$)	Total Xylenes ($\mu g/m^3$)	MTBE ($\mu g/m^3$)	Naphthalene ($\mu g/m^3$)
SV-1B	9	10/22/09	1,100	4.0	4.7	5.4	5.4	4.5	26
SV-2B	9	10/21/09	21,000	69	130	48	126	12	69
SV-3B	9	10/21/09	20,000	96	240	38	111	18	100
SV-4B	9	10/22/09	16,000	250	1,200	51	158	170	27
SV-5B	9	10/22/09	7,400,000	7,800	8,300	39,000	6,000	5,100	2,400
SV-6B	9	10/21/09	8,000,000	5,600	25,000	29,000	29,000	12,000	140,000
SV-7B	9	10/22/09	70,000	58	500	83	290	19	110
SV-8B	9	10/22/09	12,000	290	160	29	93	16	91
SV-9B	9	10/22/09	7,000	11	62	14	43	38	47
SV-10B	9	10/22/09	100,000	4.0	6.9	5.4	53	4.5	26
SV-11B	9	10/22/09	40,000	58	88	30	191	42	26
SV-12B	9	10/22/09	4,900	120	350	55	166	14	25
SV-13B	9	10/22/09	38,000	32	520	230	1,250	4.9	28
SV-14B	9	10/22/09	56,000	430	250	70	123	22	130
SV-15B	9	10/22/09	7,900	38	52	15	51	4.5	26
SV-16B	9	10/22/09	780	3.9	4.6	5.2	5.2	4.4	25
SV-17B	9	10/22/09	52,000	330	330	49	280	22	130
SV-18B	9	10/22/09	7,600	250	440	96	211	4.5	26
SV-19B	9	10/21/09	30,000	37	160	42	144	7.6	44
SV-20B	9	10/21/09	25,000	180	250	47	192	4.5	26
		Maximum	8,000,000	7,800	25,000	39,000	29,000	12,000	140,000
		Mean	795,464	783	1,902	3,446	1,925	876	7,169

Notes:

BGS = below the ground surface

TPHg = Total petroleum hydrocarbons as gasoline

MTBE = Methyl tertiary butyl ether

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

Shaded values are analytical reporting limit and indicate that no concentration was detected

TABLE 4
TPHg EXPOSURE POINT CONCENTRATIONS IN SOIL GAS
Former USA Station No. 57
10700 MacArthur Boulevard
Oakland, California

Condition	TPH Concentration in Soil Gas ($\mu g/m^3$)	Fraction	Carbon Range	Percent of Weathered TPHg Composition[a]	EPC By Fraction ($\mu g/m^3$)
4 Feet BGS					
Maximum	260,000	Aliphatic	>C5-C8	16.75	4.4E+04
			>C8-C12	23.75	6.2E+04
		Aromatic	>C7-C8[b]	9.70	2.5E+04
			>C8-C12	30.49	7.9E+04
			>C12-C16	19.31	5.0E+04
9 Feet BGS					
Maximum	8,000,000	Aliphatic	>C5-C8	16.75	1.3E+06
			>C8-C12	23.75	1.9E+06
		Aromatic	>C7-C8[b]	9.70	7.8E+05
			>C8-C12	30.49	2.4E+06
			>C12-C16	19.31	1.5E+06
Mean	795,464	Aliphatic	>C5-C8	16.75	1.3E+05
			>C8-C12	23.75	1.9E+05
		Aromatic	>C7-C8[b]	9.70	7.7E+04
			>C8-C12	30.49	2.4E+05
			>C12-C16	19.31	1.5E+05

Definitions:
COC = Chemical of Concern
TPHg = Total petroleum hydrocarbons in the gasoline range
EPC = Exposure point concetration
Notes:
[a]Default fuel composition values from Washington State Department of Ecology Toxic Cleanup Program (WSDETCP, 2001)
[b]Based on % of toluene, ethylbenzene and xylenes in weathered gasoline (WSDETCP, 2001)

TABLE 5
ESTIMATION OF SOIL WATER-FILLED POROSITY USING PRECIPITATION DATA
Former USA Station No. 57
10700 MacArthur Boulevard
Oakland, California

Month	Precipitation (P)		Runoff (Q)	Infiltration (I)		Soil Water-Filled Porosity (θw)
	(in)	(cm)	(cm)	(cm)	(m)	Unitless
Jan	4.46	11.3	9.05	2.3		
Feb	4.36	11.1	8.80	2.3		
Mar	3.4	8.6	6.45	2.2		
Apr	1.39	3.5	1.80	1.7		
May	0.57	1.4	0.31	1.1		
Jun	0.1	0.3	0.00	0.3		
Jul	0.06	0.2	0.00	0.2		
Aug	0.08	0.2	0.00	0.2		
Sep	0.27	0.7	0.02	0.7		
Oct	1.26	3.2	1.53	1.7		
Nov	3.12	7.9	5.78	2.1		
Dec	4.06	10.3	8.07	2.2		
Annual	**23.13**	**58.8**	**41.8**	**16.9**	**0.169**	**0.402**

Notes:
For simplicity purposes, it was assumed that one primary storm/rain event occurs a month.

P =	Precipitation (rain fall + snow melt) (cm) Historical averages for Oakland, CA from the January 1970 through June 2009 (WRCC 2009, http://www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca6336)	
Q =	Runoff (cm) = $(P - 0.2S)^2 / (P + 0.8S)$, for P >= 0.2 0.2S is the initial precipitation abstraction.	
S =	Water retention parameter (cm) = (2540 / CN) - 25.4	2.21
CN =	Curve number, for roads and right-of-ways,	92 (USEPA, 1985)
I =	Infiltration rate (m/y) = P - Q	
θ_w =	Volumetric water content in vadose zone soil (unitless) = **$\theta w = \theta T * (I / Ks)^{1/(2b+3)}$**	
θ_T =	Total soil porosity (unitless) =	0.459 (Cal-EPA, 2009)*
K_s =	Saturated hydraulic conductivity (m/y) =	5 (USEPA, 1996b)*
1/(2b+3) =	Soil-specific exponential parameter (unitless) =	0.039 (USEPA, 1996b)*

*Based on clay

TABLE 6
VAPOR INTRUSION HHRA RESULTS
Former USA Station No. 57
10700 MacArthur Boulevard
Oakland, California

COC			Samples from 4 Feet BGS		Samples from 9 Feet BGS			
			Current Conditions (Max Concentration)		Future Conditions[c] (Max Concentration)		Future Conditions[c] (Mean Concentration)	
			Carcinogenic Risk	Hazard Quotient	Carcinogenic Risk	Hazard Quotient	Carcinogenic Risk	Hazard Quotient
Benzene			3.1E-08	1.0E-04	6.7E-07	2.2E-03	6.8E-08	2.2E-04
Toluene				7.4E-05		6.4E-04		4.9E-05
Ethylbenzene			9.8E-10	1.1E-06	2.3E-07	2.5E-04	2.0E-08	2.2E-05
Xylenes[a]				5.4E-05		2.6E-03		1.7E-04
MTBE			1.1E-08	3.8E-05	3.4E-08	1.2E-04	2.5E-09	8.9E-06
TPHg	Aliphatic	>C5-C8		1.1E-05		3.5E-04		3.5E-05
		>C8-C12		2.6E-04		8.0E-03		7.9E-04
	Aromatic	>C7-C8		4.6E-04		1.4E-02		1.4E-03
		>C8-C12		2.0E-03		6.1E-02		6.0E-03
		>C12-C16		2.1E-03		6.5E-02		6.4E-03
TOTAL RISK (without naphthalene)			**4.3E-08**	**5.1E-03**	**9.3E-07**	**1.5E-01**	**9.0E-08**	**1.5E-02**
Naphthalene[b]			5.6E-08	1.5E-03	5.6E-05	1.5E+00	2.9E-06	7.9E-02
TOTAL RISK (with naphthalene)			**9.9E-08**	**6.6E-03**	**5.7E-05**	**1.7E+00**	**3.0E-06**	**9.4E-02**

Notes:
BGS = Below the ground surface
COC = Chemical of Concern
TPHg = Total petroleum hydrocarbons as gasoline
MTBE = Methyl tertiary butyl ether
Risk and hazard quotient estimated based on commercial exposure scenarios in 2009 version of DTSC HERD J&E model
[a]Based on o-xylene (Cal-EPA, 2005)
[b]No naphthalene was detected in soil gas samples collected from 9 feet bgs. Risk based on analytical reporting limit.
[c]Modeled using EPCs from the 9-ft bgs soil gas samples at a depth of 4-ft bgs (representing future conditions when the uppermost 5 feet of soil is removed during proposed building construction)
Shaded Values based on maximum reporting limit when no concentration detected or when reporting limit exceeded maximum concentration