# LEATHERCARE GROUNDWATER INVESTIGATION DATA SUMMARY REPORT

Prepared for:

WESTFARM FOODS 635 ELLIOTT AVENUE Seattle, WA

Prepared by:

**ENTRIX, INC.** Seattle, WA

Project No. 4067301

August 31, 2005



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### WESTFARM FOODS

635 Elliott Avenue West Seattle, Washington 98119

Prepared by:

**ENTRIX, INC.** 2701 First Avenue, Suite 500 Seattle, Washington 98121

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#### **1.1 OBJECTIVES**

This report summarizes the results of the December 2004 field investigation conducted to define the extent of dissolved chlorinated organic compounds in groundwater beneath West Roy Street and the adjacent WestFarm Foods (WestFarm) property. LeatherCare Inc. (LeatherCare) leases West Roy Street from the City of Seattle and uses it as a parking lot. LeatherCare operates a drycleaning facility on property adjacent to West Roy Street to the north at 901 Elliott Avenue West (LeatherCare Site). LeatherCare leases the LeatherCare Site from Steven Ritt, who has owned the LeatherCare Site since approximately January 1985. The LeatherCare Site is located upgradient of the WestFarm property. Figure 1 shows these locations, which are somewhat more than a mile from downtown Seattle, near the intersection of Mercer Road and Elliott Avenue West.

Push probes were drilled at 121 locations in West Roy Street and portions of the WestFarm property shown in Figure 2 using a standard rig and a limited access rig (LAR) GeoProbe<sup>®</sup>. Analyses of groundwater samples from the push probes were used to provide a comprehensive survey of the distribution of chlorinated compound concentrations throughout most of the WestFarm property and all of West Roy Street to the wall of the building on the LeatherCare Site. In addition, these concentrations were compared to Washington Model Toxics Control Act (MTCA) Method A groundwater standards.

This report was prepared under contract with WestFarm. No expressed or implied representation or warranty is included or intended in this report except that our work was performed, within the limits prescribed by WestFarm, with the customary thoroughness and competence of our profession.

#### **1.2** SCOPE OF WORK

The WestFarm property consists of the North Parking Area, Central Yard (with parking areas, and a main office/warehouse building), and South Parking Area. Push-probe groundwater sampling in the North Parking Area in May 2004 confirmed the existence of a plume of vinyl chloride and other chlorinated compounds. At that time, the plume extent was undefined to the northeast toward Elliott Avenue West, to the northwest under West Roy Street, to the southeast under the WestFarm building and Central Yard, and to the southwest toward the railroad tracks.

Accordingly, ENTRIX developed the following scope of work (SOW):

- Define the extent, shape and concentrations of the groundwater plume of chlorinated compounds under the North Parking Area and Central Yard of the WestFarm property, and under West Roy Street;
- Conduct the sampling investigation over a short time window (approximately one to two weeks) to minimize the effect of potential groundwater transport on the delineation of plume characteristics;
- Determine whether groundwater under the Central Yard had been unaffected from the migration and dispersion of solvent contamination evident in groundwater under the North Parking Area, which could enable portions of the WestFarm property to progress to closure through the Voluntary Cleanup Program;
- Provide interim briefings and prepare a summary report.

To accomplish the investigation objectives, the following sampling strategies were used:

- Conduct a widespread and comprehensive GeoProbe® investigation using a 30 to 40 foot spaced sampling grid;
- Extend the sampling grid as needed to define a buffer zone that bounded detectable quantities of chlorinated compounds.

The initial SOW called for advancing GeoProbes<sup>®</sup> on 30-foot centers for a grid not to exceed 6 x 17 probes (102 samples), including 18 optional locations. As noted above, however, the grid was extended because chlorinated compounds were detected in groundwater at the furthest southeastern extent of the initial grid (in the Central Yard). In addition, at the time the SOW was first developed in August 2004, it was unknown whether a contaminant plume extended to Elliott Avenue West. Monitoring well data collected in November 2004 indicated that contamination might have advanced in that direction because chlorinated organic compounds were detected for the first time at MW-5 and MW-9 as shown on Figure 2. Those two wells are near the boundary between the WestFarm property and Elliott Avenue West. Therefore, all the push-probe samples that initially were considered optional along Elliott Avenue West were collected.

#### **1.3** SAMPLING LOCATION AND PHYSICAL SETTING

The investigation was limited to one contiguous area consisting of the 180 feet long by 100 feet wide West Roy Street/LeatherCare parking area and over three-fourths of the WestFarm property (located at 635 Elliott Avenue West), which is approximately 700 feet long and 150 to 200 feet wide. The sampling area was bounded on the northwest by the building on the LeatherCare Site, on the southwest by the Burlington Northern/Santa Fe (BNSF) railroad right-of-way, and on the northeast by Elliott Avenue West. The sampling vicinity is located approximately 400 feet inland of the southeast–northwest trending shoreline of Elliott Bay and near the southwest base of Queen Anne Hill.

Although topography varies somewhat across the sampling area, in general the land in the vicinity slopes gently towards the bay.

Overall, relief in the area is relatively high to the northeast, extending from sea level to greater than 100 feet on Queen Anne Hill, which is only 500 feet away, but is gentler to the south and southwest towards the bay. As a result, in general natural surface drainage and shallow groundwater movement are to the southwest towards Elliott Bay. Local perturbations in topographic and hydrogeologic character in the area associated with artificial fill and natural lithologic heterogeneity cause variations to the general direction of surface and groundwater movement. Tidal flats formerly occupied the entire sampling area. During the course of development over the last 100 years, the entire waterfront area, including the area of investigation and the railroad, was successively filled. The WestFarm and LeatherCare buildings and parking lots were then subsequently built on this foundation. Groundwater elevation data from monitoring wells at the WestFarm property indicate that, on that small scale, groundwater gradients are low to nearly flat and the overall groundwater flow direction trends southeast to southwest.

#### **2.1** SAMPLE COLLECTION

ENTRIX collected groundwater samples from 121 exploratory push probes located along a grid defined by six northwest-southeast trending transects (numbered 1 through 6) and 22 northeast-southwest trending transects (labeled A through  $Z^1$ ). Each sample location was furthered defined by whether it was located in the LeatherCare parking lot (denoted LC), the North Parking Lot (denoted NP), the Central Yard (denoted CY), or the South Parking Lot (denoted SP). Figure 2 shows these locations, which ENTRIX sampled between December 8 and December 17, 2004.

ESN Northwest of Bellevue, Washington operated the GeoProbe® units, consisting of either a van-mounted or an LAR unit. Either a 4-foot or 3-foot screen was used when collecting groundwater samples, depending on local conditions. Groundwater was typically encountered between 2 and 9 feet below ground surface (bgs). The variations were due largely to changes in topography associated with fill thickness and modifications for structures across the sampling area.

Decisions were made in the field to expand the sampling grid based on the results of fast turn-around analyses of probe samples taken at the furthest east, southeast, and southern extent of the initially planned grid in the Central Yard. The intent was to bound the contaminant plumes by at least one or two grid locations where all chlorinated organic compounds were undetected. The furthest southeast extent of the grid was initially defined by Central Yard transect CYS1-CYS6 as shown on Figure 2.

Because chlorinated organic compounds were detected in some samples collected from transect CYS, additional transects CYT through CYZ were added incrementally to the sample grid. Chlorinated compounds continued to be detected in fast turn-around samples under the WestFarm building in areas where drilling was increasingly difficult. As a result, rather than continue to sample under the building, a decision was made to sample transect SPZ in the South Parking Area along the southeast side of the WestFarm building to determine if that transect could be used to bound the leading edge of the contaminant plume. However, both *cis*-1,2-dichloroethene and vinyl chloride were detected in two of the four samples along that transect. Additional sampling to the southeast was not attempted. The final sampling area, excluding the railroad right-of-way samples, encompassed approximately 110,550 square feet, or about 2.5 acres.

<sup>&</sup>lt;sup>1</sup> There were no transects at W, X and Y. Transects L and M were along the same line but were differentiated based on location: L in the North Parking Area and M in the Central Yard.

#### **2.2** SAMPLE ANALYSIS

Groundwater samples were analyzed for chlorinated solvents using EPA Method 8260B. The typical "reporting limit" for this analysis is 0.2  $\mu$ g/L, but the laboratory was requested to provide results for all compounds down to the instrument's detection limit of 0.1  $\mu$ g/L. Values from 0.1  $\mu$ g/L to the reporting limit are considered estimated concentrations (denoted by a "J") and are valid, but have a higher degree of uncertainty than concentrations above the reporting limit. In all cases, the analyst is confident that the compound has been detected.

Appendix A contains chain-of-custody records for all samples. Appendix B provides the original laboratory reports for these analyses. Only the laboratory cover letter, case narrative, summary quality control data sheets, and summary sample data sheets for each data package are provided in Appendix B because of the large volume of the data packages. A complete package includes substantial backup for the summary data in the form of instrument output for quality control samples, submitted samples, and laboratory calibration standards. ENTRIX retains a complete copy of each data package, as does the laboratory.

The emphasis of the December 2004 push-probe grid investigation was to define the extent of chlorinated compound plumes that were confirmed over the length of the North Parking Area in probe sampling conducted in May 2004. The results from an earlier probe investigation conducted in May 2003 established that plumes of chlorinated compounds existed in the vicinity of MW-6 (ENTRIX 2003<sup>2</sup>).

The May 2003 plumes were consistent with an offsite source located northwest of the WestFarm property, but the design of the probe investigation was premised on defining the boundary of potentially localized contamination near MW-6. Therefore, it did not establish whether the plumes had advanced southeast across the North Parking Area or primarily across the northernmost corner of the WestFarm property.

The results of laboratory analyses of the December 2004 groundwater samples are summarized in Table 1 and presented as isoconcentration maps of each compound in Figure 2 through Figure 7. Overall, these results show an extensive distribution of chlorinated compounds in groundwater at concentrations exceeding MTCA Method A cleanup standards.

#### 3.1 Uses and Degradation of Chlorinated Ethene Compounds

The most common industrial use of tetrachlorethene is as a dry cleaning solvent. In groundwater, tetrachloroethene commonly undergoes microbial degradation under anaerobic conditions into trichloroethene. It does not biodegrade in groundwater under aerobic conditions.<sup>3</sup>

If trichloroethene forms, it can degrade under both anaerobic and aerobic conditions, although anaerobic degradation is typically more rapid. Besides degradation from tetrachloroethene, trichloroethene can also be released as a result of its own industrial, commercial, and consumer uses as a solvent. Further degradation of trichloroethene to various isomers<sup>4</sup> of dichloroethene, vinyl chloride, and simpler compounds occurs depending on site conditions.

The cis-1,2-dichloroethene isomer dominates over other dichloroethenes at West Roy Street and the WestFarm property. This particular dichloroethene isomer has industrial uses in the manufacture of other chlorinated chemicals, one limited commercial

<sup>&</sup>lt;sup>2</sup> ENTRIX, 2003. WestFarm Foods 2003 Phase III Field Investigation Data Summary Report, prepared for WestFarm Foods, 635 Elliott Avenue West, by ENTRIX, Inc., November 6, 2003.

<sup>&</sup>lt;sup>3</sup> There is a report of an aerobic bacterium that can degrade tetrachloroethene under laboratory conditions with a test that suggests it may be possible in the natural environment (Sharma and McCarty. 1996. Appl. & Environ Micro. 62:761-765)

<sup>&</sup>lt;sup>4</sup> Dichloroethene isomers differ only in the position of the two chlorine atoms attached to the two carbon atoms that comprise ethene.

application, and no consumer uses. All dichloroethene isomers can be degraded to vinyl chloride under anaerobic conditions, but the rates at which they degrade differ depending on physical, chemical, and microbial conditions. The *cis*-1,2-dichloroethene isomer degrades to vinyl chloride slower than the other dichloroethenes under anaerobic conditions; however, there are aerobic microbes that can efficiently degrade *cis*-1,2-dichloroethene.

Vinyl chloride, which contains only one chlorine atom, is used in industry almost exclusively for the manufacture of polyvinyl chloride (PVC). It has no commercial or consumer uses. Degradation of vinyl chloride to ethene and ultimately carbon dioxide and water is possible but only under aerobic (oxygenated) conditions.

Under anaerobic conditions, both *cis*-1,2-dichloroethene and vinyl chloride will tend to accumulate as tetrachloroethene degrades. These conditions likely exist in groundwater under West Roy Street and the WestFarm property.

#### **3.2 TETRACHLOROETHENE DISTRIBUTION**

The MTCA Method A cleanup level for tetrachlorethene in groundwater is 5  $\mu$ g/L. As a result of its physical properties and the influence of mobile groundwater, the detection frequency and concentration of tetrachlorethene is commonly greater closer to the source of a release than its degradation products.

Based on the results of the December 2004 survey, tetrachloroethene was detected in 34 of the 121 sample locations, ranging in concentration from 0.1 to 100  $\mu$ g/L (exceeding the cleanup level by a factor of 20). The distribution of tetrachloroethene was essentially limited to one contiguous area that included 22 of the 24 samples from under West Roy Street, and 9 samples from the North Parking Area. Tetrachloroethene was also detected at the reporting limit (2  $\mu$ g/L) in 3 additional samples from the Central Yard and near the Elliott Avenue West sidewalk.

Only the southeastern plume boundary was well defined. The plume centroid (zone of highest concentration) could not be defined because the maximum detected concentration (100  $\mu$ g/L) was observed at location LCD-1, shown on Figure 3. This sampling point is at the fenceline boundary between West Roy Street and the railroad right-of-way. Therefore, the extent to which this plume has migrated to the southwest, including under the railroad, is unknown. In addition, it is unknown whether the railroad bed construction material has affected the direction of the plume migration.

Five additional probe locations on West Roy Street also exceeded the MTCA Method A cleanup level, ranging from 5.7 to 35  $\mu$ g/L (exceedances of a factor of 1.1 to 7). Three of the additional locations exceeding the groundwater standard were on transects LCA and LCB adjacent to the building on the LeatherCare Site, and two were on transect LCD along the fenceline on the WestFarm property.

No samples from probe locations on the WestFarm property contained tetrachloroethene concentrations that exceeded the MTCA Method A cleanup standard for groundwater.

Based on the concentration data available from West Roy Street and the WestFarm property, the plume shape and concentration distribution are consistent with a source of tetrachloroethene from the LeatherCare Site and subsequent transport (via advection and dispersion) across West Roy Street and onto the WestFarm property and railroad.

As a related finding, the very low concentrations of tetrachloroethene detected in the isolated area of the Central Yard adjacent to the Elliott Avenue West sidewalk are consistent with transport along a preferential pathway from the area of high concentrations to the northwest. The preferential pathway is likely associated with sand/gravel drain rock used when installing the storm sewer and other utility lines in proximity to fluctuating shallow groundwater zones.

#### **3.3 TRICHLOROETHENE DISTRIBUTION**

The MTCA Method A groundwater cleanup standard for trichloroethene is also  $5 \mu g/L$ . Its presence across the investigation area was more widespread than tetrachloroethene, as it was detected at 45 of the 121 probe locations sampled in December 2004. Similar to tetrachloroethene, three of these detections were very low concentrations of trichloroethene in the same isolated area of the Central Yard and adjacent to the Elliott Avenue West sidewalk. The MTCA Method A groundwater cleanup standard was exceeded at only one location (LCD-3) on West Roy Street.

Figure 4 shows that the distribution of trichloroethene extended as far as transect K within the North Parking Area. As with tetrachloroethene, the plume boundary was defined only along its southeastern edge, and remained undefined under the railroad to the southwest, the building on the LeatherCare Site to the northwest, and to the northeast of West Roy Street/LeatherCare parking area.

The pattern of the plume and range of concentrations are consistent with trichloroethene as a breakdown product of tetrachloroethene. The more dispersed plume evident in Figure 4, compared to that in Figure 3, is consistent with the breakdown of tetrachloroethene and greater solubility of trichloroethene in groundwater.

#### **3.4 DICHLOROETHENE ISOMER DISTRIBUTION**

There is no MTCA Method A groundwater cleanup standard<sup>5</sup> for either of the 1,2dichloroethene isomers, but both were detected across the investigation area. Because of site-specific conditions, 1,1-dichloroethene may be rapidly degraded or the trichloroethene degradation may proceed without producing this isomer. 1,1-Dichloroethene was also analyzed for but was not detected in any of the samples.

In the investigation area, the distribution of *cis*-1,2-dichloroethene was widespread, detected at 85 of the 121 probe locations. In contrast, *trans*-1,2-dichloroethene was

<sup>&</sup>lt;sup>5</sup> Although there is no Washington State standard, the U.S.EPA Maximum Contaminant Level (MCL) in drinking water for these compounds is 70  $\mu$ g/l for *cis*-dichloroethene and 100  $\mu$ g/L for *trans*-dichloroethene.

detected at only 28 of these locations, and over a lower and smaller concentration range than *cis*-1,2-dichloroethene (0.1 to 1.9  $\mu$ g/L versus 0.1 to 30  $\mu$ g/L, respectively). This distribution is consistent with two factors: (1) *trans*-1,2-dichloroethene degrades to vinyl chloride faster than *cis*-1,2-dichloroethene; and (2) the trichloroethene can degrade more than an order-of-magnitude faster to *cis*- than to *trans*-1,2-dichloroethene. Figures 5 and 6 shows the distribution of *trans*- and *cis*-1,2-dichloroethene, respectively.

The dichloroethene plume is much more extensive than either the trichloroethene and tetrachloroethene plumes, consistent with the approximate one order-of-magnitude higher solubility of dichloroethenes compared with that of tetrachloroethene. They are also several times more soluble in water than trichloroethene. In addition, the wide diffusion of dichloroethenes under West Roy Street to the wall of the building on the LeatherCare Site, near or at a release area, is consistent with a slow-moving groundwater system.

#### **3.5 VINYL CHLORIDE DISTRIBUTION**

The reporting limit and MTCA Method A groundwater cleanup standard for vinyl chloride are  $0.2 \mu g/L$ . Vinyl chloride was detected at 56 of the 121 sampling locations and exceeded the standard in all but 5 of the samples. It also exceeded the standard by at least an order of magnitude at 13 of those locations. Figure 7 shows that the extent of vinyl chloride is better defined than for the other compounds. It is bounded both by downgradient (to the southeast) and cross-gradient limits with no detections along most of transect 1 (i.e., throughout the WestFarm property adjacent to the railway right-of-way), and transect 5 (to the northeast), and by transect T (to the southeast). There are two detections of vinyl chloride further to the southeast along transect Z, but also detection of 1,2-*cis*-dichloroethene along that area. The possibility of preferential transport of chlorinated compounds under the WestFarm building cannot be ruled out.

The vinyl chloride plume has nearly as broad of a distribution as that of *cis*-1,2dichloroethene, consistent with diffusion through a slow-moving groundwater system. Its distribution is also still undefined under the railroad lines southwest of West Roy Street. The highest concentrations of vinyl chloride were observed in West Roy Street at location LCA-4 adjacent to the building wall on the LeatherCare Site. Other high concentration samples are also found under West Roy Street. The higher concentrations under this area are consistent with degradation over a longer period of time.

Figure 7 also shows barely detectable levels of vinyl chloride along portions of the Elliott Avenue West sidewalk at transects Q, P, and N on the WestFarm property and transect D on West Roy Street. As with tetra-, tri-, and 1,2-*cis*-dichloroethene, these low concentrations are consistent with a potential preferential pathway along City of Seattle utility lines.

Vinyl chloride is less soluble in water and takes a longer period of time to accumulate to detectable levels than dichloroethenes, consistent with this somewhat smaller plume.

A plume of chlorinated organic compounds in groundwater beneath the North Parking area of the WestFarm property was confirmed in May 2004 following exploratory push probes radiating from MW-6 in 2003. Since then, continued sampling from on-site monitoring wells indicated an increasing presence across the property into the Central Yard.

The December 2004 investigation defined the extent of chlorinated compounds in groundwater over a broad area using a comprehensive study design. Water samples were collected from shallow unconfined groundwater zones at 121 GeoProbe<sup>®</sup> locations spaced regularly over a 2.5-acre contiguous area on the West Roy Street/LeatherCare parking lot (which immediately adjoins the southwestern boundary of the LeatherCare Site) and the WestFarm property. The samples were analyzed for the presence of chlorinated organic compounds using EPA Method 8260B. The following findings are based on the results of this field sampling and analytical program:

- The highest concentrations of all detected chlorinated ethenes were in samples of groundwater collected from under West Roy Street adjacent to the building on the LeatherCare Site.
- The zone of highest concentrations, orientation, and shape of each plume of chlorinated compounds were consistent with the flow of groundwater from approximately north and northwest to south and southeast. In addition, the mixed presence of multiple degradation products of tetrachloroethene, including vinyl chloride, was consistent with a relatively low groundwater flux.
- Concentrations declined in the North Parking Area from the West Roy Street boundary southeast toward the Central Yard of the WestFarm property, which was consistent with migration and dispersion of contamination onto the WestFarm property from the LeatherCare Site.
- In general, the plume boundaries for each compound were better defined along their northeast boundaries (towards Elliott Avenue West), but were not well defined along the railroad line to the southwest.
- Although all of the chlorinated ethenes were detected on the WestFarm property, the predominant contaminants were *cis*-1,2-dichloroethene and vinyl chloride, which are breakdown products of tetrachloroethene that accumulate under anaerobic conditions.
- The breakdown products were detected at low levels in samples near the Central Yard loading dock, as well as under the WestFarm building and in two samples outside the southeast wall of the WestFarm building (i.e., the edge of the South

Parking Area). Although low, these vinyl chloride concentrations still exceeded the MTCA Method A groundwater cleanup standard.

- Low concentrations of all of the chlorinated ethenes observed in the Central Yard adjacent to the sidewalk along Elliott Avenue West suggest transport along a preferential pathway, such as a utility line from the area of high concentrations to the northwest.
- The finding of chlorinated solvents in the Central Yard may preclude establishing it as a separate operable unit from the North Parking Area under Washington Department of Ecology's Voluntary Cleanup Program.
- Further, when the results of previous groundwater monitoring results are compared to and taken into context with this comprehensive December 2004 investigation, it is now evident that the chlorinated compound plume sizes are slowly increasing and expanding under the WestFarm property.

**FIGURES** 





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# TABLES

Sampling L	ocation			Tetrachlor	nethene	•				Trichlor	nethen	2			1	,1-Dichlo	roether	IA I	
Revised MTCA				5	Cellen	• ······				5									
		-1	-2	-3	-4	-5	-6	-1	-2	-3	-4	-5	-6	-1	-2	-3	-4	-5	-6
Leathercare	LCA	8.4	$3.9/3.9^{1}$	$0.2J^{2}$	0.2	0.2.J	0.6	1.4	1.9/1.9	0.1	0.2	0.9	0.3	ND3	ND/ND	ND	ND	ND	ND
(LC)	LCB	1.6	0.8	6.0	5.7	0.1.3	0.5	1.3	1.4	1.2	3.0	0.4	0.3	ND	ND	ND	ND	ND	ND
	LCC	2.7	4.4	0.6	0.4	0.3	0.2	0.3	1.7	0.5	0.8	0.3	0.4	ND	ND	ND	ND	ND	ND
	LCD	100*	6.2/5.2	35	ND	ND	0.1J	4.9	1.7/1.6	9.6	0.5	ND	0.2	ND	ND/ND	ND	ND	ND	ND
North Parking	NPE	2.9	0.6	3.1/2.9	ND	ND	ND	0.9	1.0	1.3/1.2	0.2	ND	ND	ND	ND	ND/ND	ND	ND	ND
(NP)	NPF	1.5	0.6	1.3	ND	ND	ND	1.0	1.7	1.8	ND	ND	ND	ND	ND	ND	ND	ND	NÐ
	NPG	1.2	ND	ND	ND	ND	ND	1.8	0.4	1.4	0.3	ND	ND	ND	ND	ND	ND	ND	ND
	NPH	0.2	0.1J	ND	ND .	ND	ND	0.3	8.0	0.6	0.1J	ND	ND	ND	ND	ND	ND	ND	ND
	NPI	ND	ND	ND	NÐ	ND	ND	0.2	0.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	NÐ
	NPJ	ND	ND	ND	ND	ND	ND	ND	0.3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	NPK	ND	ND	ND	ND	ND		ND	0.2	ND	ND	ND	NS	ND	ND	ND	ND	ND	NS
	NPL/CYM	ND	ND	ND	ND	0.2	0.2	ND	20 J.	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Central Yard	CYN	ND		ND	ND	ND	ND/ND	ND	NS	ND	ND	ND	ND/0.1J	ND	NS	ND	ND	ND	ND/NC
(CY)	CYO	ND		ND	ND	ND	0.2J	ND	MS	ND	ND	ND	0.3	ND	NS	ND	ND	ND	ND
	CYP	ND	ND	ND/ND	ND	ND	ND	ND		ND/ND	ND	ND	ND	ND ND	ND	ND/ND	ND	ND	. ND
	CYQ	ND	ND ND	ND	ND	ND	ND	ND N	D ND	ND	ND	ND	0.2J	ND	ND ND	ND	ND	ND	ND
	CYR	ND	ND ND	ND	ND	NÐ	ND	ND N	ID ND	ND	ND	NÐ	ND	ND	ND ND	ND	ND	ND	ND
	CYS	ND	ND ND	ND	ND	ND		ND N	ID ND	ND	ND	ND	NS	ND	ND ND	ND	ND	ND	NS
	СҮТ	ND	ND	ND	ND	ND		ND	ND	ND	ND	ND	NS	ND	ND	ND	ND	ND	NS
	CYU	ND	ND					ND	ND	NS	NS	MS	NS	ND	ND	NS	NS	NS	NS
	CYV	ND	ND	ND				ND	ND	ND	NS	NS	NS	ND	ND	ND	NS	NS	NS
South Lot	Z	ND	ND	ND	ND			ND	ND	ND	ND	NS	ALS	ND	ND	ND	ND	NS	NS

Table 1. Concentrations of Chlorinated Compounds from December 2004 LeatherCare GeoProbe Investigation (ppb)

#### NOTES:

Shaded cells indicate values that exceed applicable MTCA standards

<sup>1</sup>Duplicate results indicate a duplicate sample was analyzed, unless otherwise noted (see \*below)

<sup>2</sup>J: The value is an appropriate estimate between the instrument detection limit and the routine reporting limit (0.2 ppb), or at the reporting limit.

<sup>3</sup>ND: Concentration was below the instrument detection limit of approximately 0.1 ppb.

<sup>4</sup>NS: No sample was collected for this location.

\* CYS-1.5 Dup results were the same as CYS-1.5 (no compounds were detected above the laboratory detection limit)

Sampling I	Location		cis	-1,2-Dichl	oroethe	ne			tran	s-1,2-Dic	hloroe	thene				Vinyl	Chlorid	e	
Revised MTCA	Method A									-						0.2	2		
		-1	-2	-3	-4	-5	-6	-1	-2	-3	-4	-5	-6	-1	-2	-3	-4	-5	-6
Leathercare	LCA	1.9	4.4/4.3	5.6	6.0	13	0.8	ND	0.3/0.3	0.4	0.4	0.2	ND	0.4	1.4/1.4	7.6	47	2.0	ND
(LC)	LCB	3.7	12	3.6	5.8	2.8	0.6	0.8	0.6	0.2	0.3	0.1J	ND	0.2	6.4	0.7	3.1	1.1	ND
	LCC	0.3	4.3	5.4	4.2	0.7	0.8	ND	ND	0.6	0.2J	ND	ND	ND	1.0	10	4.4	ND	ND
	LCD	8.4	5.1/5.2	30	3.1	0.5	1.2	0.2	0.3/0.3	1.9	ND	ND	ND	1.1	1.5/1.6	1.6	1.8	ND	0.3
North Parking	NPE	1.1	2.4	5.4/5.2	2.4	0.6	0.2J	ND	0.2J	0.3/0.2	ND	ND	ND	ND	2.0	1.5/1.6	1.2	0.3	ND
(NP)	NPF	1.5	2.8	5.4	1.5	ND	ND	0.1J	0.3	0.4	ND	ND	ND	ND	0.9	3.8	1.4	ND	ND
	NPG	5.2	8.2	5.5	2.8	ND	ND	0.2	0.5	0.4	0.1J	ND	ND	ND	1.2	5.2	2.5	ND	ND
	NPH	1.2	6.5	3.4	1.6	ND	ND	ND	0.3	0.2	ND	ND	ND	ND	1.2	4.0	1.4	ND	ND
	NPI	1.6	6.6	2.7	1.1	ND	ND	ND	0.2	ND	ND	ND	ND	ND	0.8	1.8	0.7	ND	ND
	NPJ	ND	6.7	1.2	1.1	ND	0.3	ND	0.2	ND	ND	ND	ND	ND	2.4	0.4	1.6	ND	ND
	NPK	ND	5.6	3.7	1.7	ND	NS	ND	0.2J	ND	ND	ND	NS	ND	1.8	1.7	1.2	ND	NS
-	NPL/CYM	0.3	0.9	2.6	1.4	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.7	0.7	ND	ND
Central Yard	CYN	ND	NS	1.4	1.0	ND	ND/ND	ND	14	ND	ND	ND	ND/ND	ND	NS	0.3	0.6	ND	0.1J/0.2MJ*
(CY)	CYO	0.1J	NS	0.8	0.4	ND	0.6	ND	NS	ND	ND	ND	ND	ND	NS	0.3	0.3	ND	ND
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South Lot	Z	ND	0.3	ND	0.2	NS	NS	ND	ND	ND	ND	NS	NS	ND	0.2J	ND	0.4	NS	NS

Table 1 (Continued). Concentrations of Chlorinated Compounds from December 2004 LeatherCare GeoProbe Investigation (ppb)

#### NOTES:

ه.

Shaded cells indicate values that exceed applicable MTCA standards

<sup>1</sup>Duplicate results indicate a duplicate sample was analyzed, unless otherwise noted (see \*below)

<sup>2</sup>J: The value is an appropriate estimate between the instrument detection limit and the routine reporting limit (0.2 ppb), or at the reporting limit.

<sup>3</sup>ND: Concentration was below the instrument detection limit of approximately 0.1 ppb.

<sup>4</sup>NS: No sample was collected for this location.

<sup>5</sup>M: Manual identification due to low concentration and partial mass spectrum.

\* CYS-1.5 Dup results were the same as CYS-1.5 (no compounds were detected above the laboratory detection limit)

### **APPENDIX A**

### **CHAIN-OF-CUSTODY RECORDS**

**DECEMBER 2004** 

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ARI Assigned Number: HL28	Turn-around 24-	HOUR!		_	Page:	)	of	2	<u>.</u>			Analyt Analyti	ical Resour	ces, Incorpora ts and Consul	ated
ARI Client Company: ENTRI		206.260	1.0104	00 (Rub)	8 DEC	2004	lce Prese	ent?	Į			4611 S		Place, Suite 1	
Client Contact: ROB BARRI	CK 206.1	418 1260	cunnin =field 9	3ham 07 360 93.25	No. of Coolers:	$\lambda$	Coole Temp	s: 3,7	2			206-69	95-6200 20	6-695-6201 (	(fax)
Client Project Name: WESTFAUM   UEATHER	LARE		•		<b></b>	<u>г</u> г		Analysis	Requested	T	1	1	Note	s/Comments	
Client Project #: 4067301	Samplers:	I CUNNI	NGHA	M	<b>A</b> Q										
Sample ID	Date	Time	Matrix	No. Containers	୦୨୯୫										
CYR-1-rr	8 DEC 04	11:35	W	3	X										
CYTT-1-rr		11:20	W	3	X									-	
CYV-1-rr		10:45	W	3	X										
CYR-6		8:45	W	3	X										
CYR-5		9:05	W	3	X										
CYR-5 ms/ms DO2		9:05	W	6											
CYR-4		10=00	W	3	X										
CYQ-2-cp		12:10	W	4	X								1=small t.	bubble, colle	uk
CYQ-1.5- cp		12:40	W	3	X										
CYP-2 - cp	4	13:05	W	3	ert	<		per	RBn	b	ANA		HOLD	DO NUT	THE
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	Company: ENTRIX							Company:				Company:			
	Date & Time: 9 DEC 2004 14:20 Date				04	1420		Date & Tim	e:			Date & Tirr	e:		

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ARI Assigned Number:	Turn-around			na n	Page	: James	of	2	n maariike a vooret kan a soore			Analyti Analyti	cal Resources, Incorporated cal Chemists and Consultants
ARI Client Company: ENTRIX 206-269	0104;	Phone: BARRICK	418.12	60	Date B DE	C 2004	Ice Prese	ent?	2443358887888078889888888888888888888			4611 Sc	outh 134th Place, Suite 100 , WA 98168
Client Contact:	CUNNIN GE	AWI IN F	ield TC	1.360 <u>1325</u>	No. o Coolers	f	Coole Temp	80044400400000000000000000000000000000					5-6200 206-695-6201 (fax)
Client Project Name: WEATHARM LEATH	ERIALE			10.00			INCLUS CONTRACTOR	Analysis I	Requested				Notes/Comments
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# 27-21736

**Chain of Custody Record & Laboratory Analysis Request** 

	Turn-around Re				Page:	1	of 4	2			cal Resources, Incorporated
ARI Client Company:		Phone:	· · · · · · · · · · · · · · · · · · ·		Date: 9 DEC	c 2004	lce Presei	nt?		4611 Sc Tukwila	outh 134th Place, Suite 100 , WA 98168
Client Contact: ROB BARKICK (PM) 20.	6.418.126	60			No. of Coolers:		Cooler Temps	<u> </u>		206-695	5-6200 206-695-6201 (fax)
Client Project Name: WESTF4KM / LE47	HERCAR	E GED	PROBE	<b>?</b> S				Analysis Re	quested	 1	Notes/Comments
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	Printed Name: ERIN CA	iAN V	R. Bu	5524	Printed Name:		Printed Nam	ne:			
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ARI Assigned Number:	Turn-around	Requested:	trush l	ine 142.	Page:		2	<u></u>		Analytic	c <b>al Resources, Incorporated</b> cal Chemists and Consultants
ARI Client Company:		Phone: Vo 249.010			IO DEC		ent?	ł		Tukwila	outh 134th Place, Suite 100 , WA 98168
Client Contact:	418.1260				No. of Coolers:	Coole Temp	er s: 5.2	5		206-69	5-6200 206-695-6201 (fax)
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## **APPENDIX B**

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## PUSH-PROBE LABORATORY RESULTS

## **DECEMBER 2004**



December 22, 2004

DEC 2 7 2004

Robert Barrick Entrix 2701 First Avenue Suite 500 Seattle, WA 98121

## RE: Client Project: 4067301 Westfarm/Leathercare ARI Job No. HL28

Dear Rob:

Please find enclosed the original chain of custody documentation and the final data package for samples from the project referenced above.

Problems associated with these analyses are discussed in the Case Narrative.

An electronic copy of this package will remain on file with ARI. Should you have any questions or problems, please feel free to contact me at your convenience.

Sincerely,

ANALY TICAL RESOURCES, INC. 1/m

Susan Dunnihoo Client Service Manager sue@arilabs.com 206/695-6207

Enclosures

cc: eFileRef HL28

SD/sdrd

**Case Narrative** 

Prepared for

Entrix

Project Number: 4067301 Project: Westfarm / Leathercare

ARI Job No. HL28

Prepared By

Analytical Resources, Inc.





## Case Narrative

Client: Entrix, Inc. Project: 4067301 – Westfarm / Leathercare Matrix: Water ARI Job No. HL28

### Sample receipt

Eleven water samples were accepted by Analytical Resources, Inc. on 12/08/2004. The samples were received with a cooler temperature of 3.2 °C measured by IR thermometer following ARI SOP. The samples were in good condition with no discrepancies in paperwork. Ten samples were submitted for rush analysis and sample **CYP-2-cp** was received on hold.

# Chlorinated Volatile Analysis by 8260B

Samples were analyzed 12/08/2004 within recommended holding times. As the COC specified MS/MSD, the replicate analysis was run as a spiked sample. The LCS (Blank Spike) was also run in duplicate.

Initial and continuing calibrations were within requirements of the method and ARI SOP.

The method blank was clean at the reporting limit.

LCS/LCSD recoveries and RPDs were within ARI control limits.

Surrogates recoveries were within ARI control limits.

MS/MSD recoveries and RPDs were within ARI control limits.

Internal standard areas were within requirements.

There were no incidents of note.

# Volatile Organic Compound Analysis QC Summary Data

Prepared for

### Entrix

Project Number: 4067301 Project: Westfarm / Leathercare

## ARI Job No. HL28

Prepared By

# Analytical Resources, Inc.



# WATER VOLATILE SYSTEM MONITORING COMPOUND SUMMARY

Matrix: Water (Low Level)

QC Report No: HL28

Lab ID	Client ID	DCE	TOL	BFB	DCB	TOT OUT
HL28A HL28B HL28C HL28D 120804MB HL28LCS HL28LCD HL28E HL28EMS HL28EMS HL28F HL28G HL28H HL28J HL28J HL28K	CYR-1-rr CYT-1-rr CYV-1-rr CYR-6 Method Blank Lab Control LCDuplicate CYR-5 CYR-5 CYR-5 CYR-5 CYR-5 CYR-4 CYQ-2-cp CYQ-1.5-cp CYP-6 CYR-3	90.5% 104% 96.2% 99.2% 104% 107% 82.3% 104% 105% 105% 105% 104% 108% 105% 108%	106% 108% 106% 113% 109% 99.8% 87.6% 115% 106% 105% 108% 110% 110% 110%	88.5% 93.8% 91.5% 91.8% 91.9% 96.9% 88.6% 92.2% 98.5% 98.9% 90.5% 89.2% 89.8% 95.0% 91.0%	106% 101% 114% 102% 109% 100% 90.7% 110% 98.8% 95.6% 112% 106% 109% 112% 116%	

<b>SW8260B</b> (DCE) = 1,2-Dichloroethane-d4 (TOL) = Toluene-d8 (BFB) = Bromofluorobenzene	LCS/MB LIMITS (68-126) (59-121) (62-117) (77-122)	QC LIMITS (62-138) (66-124) (60-111) (77-127)
(DCB) = 1,2-Dichlorobenzene-d4	(77-122)	(77-127)

# Column to be used to flag recovery values

Values outside of required QC limits

D System Monitoring Compound diluted out



MS/MSD

Lab Sample ID: HL28E LIMS ID: 04-21569 Matrix: Water Data Release Authorized: Reported: 12/14/04

QC Report No: HL28-Entrix Project: WESTFARM/LEATHERCARE 4067301 Date Sampled: 12/08/04 Date Received: 12/08/04

Instrument/Analyst MS: FINN1/PAB MSD: FINN1/PAB Date Analyzed MS: 12/08/04 18:28 MSD: 12/08/04 18:58

Sample Amount MS: 20.0 mL MSD: 20.0 mL Purge Volume MS: 20.0 mL MSD: 20.0 mL

Analyte	Sample	MS	Spike Added-MS	MS Recovery	MSD	Spike Added-MSD	MSD Recovery	RPD
Vinyl Chloride 1,1-Dichloroethene trans-1,2-Dichloroethene cis-1,2-Dichloroethene Trichloroethene Tetrachloroethene	< 0.2 < 0.2 < 0.2 < 0.2 0.1 < 0.2 < 0.2	3.6 4.1 3.3 3.6 3.7 3.8	4.0 4.0 4.0 4.0 4.0 4.0	90.0% 102% 82.5% 87.5% 92.5% 95.0%	3.3 4.2 3.6 3.7 3.5 3.6	$\begin{array}{c} 4 & . \\ 0 \\ 4 & . \\ 0 \\ 4 & . \\ 0 \\ 4 & . \\ 0 \\ 4 & . \\ 0 \end{array}$	82.5% 105% 90.0% 90.0% 87.5% 90.0%	8.7% 2.4% 8.7% 2.7% 5.6% 5.4%

Results reported in  $\mu g/L$ 

RPD calculated using sample concentrations per SW846.



ORGANICS ANALYSIS DATA SHEET Volatiles by Purge & Trap GC/MS-Method 8260B Sample ID: LCS-120804 1 of 1 Page

LCS/LCSD

Lab Sample ID: LCS-120804 LIMS ID: 04-21569 Matrix: Water Data Release Authorized: Reported: 12/09/04

QC Report No: HL28-Entrix Project: WESTFARM/LEATHERCARE 4067301 Date Sampled: NA Date Received: NA

Instrument/Analyst LCS: FINN1/PAB LCSD: FINN1/PAB Date Analyzed LCS: 12/08/04 12:16 LCSD: 12/08/04 13:13

Sample Amount LCS: 20.0 mL LCSD: 20.0 mL Purge Volume LCS: 20.0 mL LCSD: 20.0 mL

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD	
Vinyl Chloride 1,1-Dichloroethene trans-1,2-Dichloroethene cis-1,2-Dichloroethene Trichloroethene Tetrachloroethene	3.8 4.5 3.4 3.5 3.6 3.6	4.0 4.0 4.0 4.0 4.0 4.0	95.0% 112% 85.0% 87.5% 90.0% 90.0%	3.3 4.0 3.1 3.2 3.5 3.6	4.0 4.0 4.0 4.0 4.0 4.0 4.0	82.5% 100% 77.5% 80.0% 87.5% 90.0%	14.1% 11.8% 9.2% 9.0% 2.8% 0.0%	

#### Results reported in $\mu g/L$

RPD calculated using sample concentrations per SW846.

LCS spike recovery is evaluated using only the nine regulated compounds noted in the ARI LQAP. The other LCS spike compound recoveries are advisory and used for analytical troubleshooting should any of the nine regulated compounds be out of control.

	LCS	LCSD
d4-1,2-Dichloroethane	107%	82.3%
d8-Toluene	99.8%	87.6%
Bromofluorobenzene	96.9%	88.6%
d4-1,2-Dichlorobenzene	100%	90.7%

EPA SAMPLE NO.

4A VOLATILE METHOD BLANK SUMMARY

MB1208

Lab Name: ANALYTICAL RESOURCES, INCContract: ENTRIXLab Code: ARICase No.: WESTFARM/LEATHERCARESDG No.: HL28Lab File ID: MB1208Lab Sample ID: MB1208Date Analyzed: 12/08/04Time Analyzed: 1346GC Column: RTX502.2ID: 0.18 (mm)Heated Purge: (Y/N) NInstrument ID: FINN1Heated Purge: (Y/N) N

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

1	EPA	LAB	LAB	TIME
	SAMPLE NO.	SAMPLE ID	FILE ID	ANALYZED
		================	*********	=============
01	LCS1208	LCS1208	LCS1208	1216
02	LCS1208	LCS1208	LCS1208A	1313
03	CYR-1-RR	HL28A	HL28A	1602 1629
04	CYT-1-RR	HL28B	HL28B	1658
05	CYV-1-RR	HL28C	HL28C HL28D	1728
06	CYR-6	HL28D HL28E	HL28E	1758
07	CYR-5	HL28EMS	HL28EMS	1828
08	CYR-5 MS CYR-5 MSD	HL28EMSD	HL28EMSD	1858
09 10	CYR-5 MSD CYR-4	HL28F	HL28F	1928
11	CYQ-2-CP	HL28G	HL28G	1958
12	CYQ-1.5-CP	HL28H	HL28H	2027
	CYP-6	HL28J	HL28J	2057
	CYR-3	HL28K	HL28K	2127
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COMMENTS:

page 1 of 1

OLM3.2M

## Volatile Organic Compound Analysis Sample Data

Prepared for

## Entrix

Project Number: 4067301 Project: Westfarm / Leathercare

ARI Job No. HL28

Prepared By

Analytical Resources, Inc.



Sample ID: CYR-1-rr SAMPLE

Lab Sample ID: HL28A LIMS ID: 04-21565 Matrix: Water Data Release Authorized: 30 Reported: 12/09/04 QC Report No: HL28-Entrix Project: WESTFARM/LEATHERCARE 4067301 Date Sampled: 12/08/04 Date Received: 12/08/04

Sample Amount: 20.0 mL Purge Volume: 20.0 mL

Instrument/Analyst: FINN1/PAB
Date Analyzed: 12/08/04 16:02
and winner Analyte

CAS Number	Analyte	RL	Result
75-01-4 75-35-4 156-60-5 156-59-2 79-01-6 127-18-4	Vinyl Chloride 1,1-Dichloroethene trans-1,2-Dichloroethene cis-1,2-Dichloroethene Trichloroethene Tetrachloroethene	0.2 0.2 0.2 0.2 0.2 0.2	< 0.2 U < 0.2 U < 0.2 U < 0.2 U < 0.2 U < 0.2 U < 0.2 U

Reported in  $\mu$ g/L (ppb)

d4-1,2-Dichloroethane	90.5%
d8-Toluene	106%
Bromofluorobenzene	88.5%
d4-1,2-Dichlorobenzene	106%



ORGANICS ANALYSIS DATA SHEET Volatiles by Purge & Trap GC/MS-Method 8260B Sample ID: CYT-1-rr Page 1 of 1

SAMPLE

Lab Sample ID: HL28B LIMS ID: 04-21566 Matrix: Water Data Release Authorized: Reported: 12/09/04

Instrument/Analyst: FINN1/PAB Date Analyzed: 12/08/04 16:29 QC Report No: HL28-Entrix Project: WESTFARM/LEATHERCARE 4067301 Date Sampled: 12/08/04 Date Received: 12/08/04

Sample Amount: 20.0 mL Purge Volume: 20.0 mL

CAS Number	Analyte	RL	Result
75-01-4 75-35-4 156-60-5 156-59-2 79-01-6 127-18-4	Vinyl Chloride 1,1-Dichloroethene trans-1,2-Dichloroethene cis-1,2-Dichloroethene Trichloroethene Tetrachloroethene	0.2 0.2 0.2 0.2 0.2 0.2	< 0.2 U < 0.2 U < 0.2 U < 0.2 U < 0.2 U < 0.2 U < 0.2 U

Reported in  $\mu g/L$  (ppb)

d4-1,2-Dichloroethane	104%
d8-Toluene	108%
Bromofluorobenzene	93.8%
d4-1,2-Dichlorobenzene	1018



Sample ID: CYV-1-rr SAMPLE

Lab Sample ID: HL28C LIMS ID: 04-21567 Matrix: Water Data Release Authorized: Reported: 12/09/04 QC Report No: HL28-Entrix Project: WESTFARM/LEATHERCARE 4067301 Date Sampled: 12/08/04 Date Received: 12/08/04

Instrument/Analyst: FINN1/PAB Date Analyzed: 12/08/04 16:58 Date Sampled: 12/08/04 Date Received: 12/08/04 Sample Amount: 20.0 mL

Purge Volume: 20.0 mL

CAS Number	Analyte	RL	Result
75-01-4 75-35-4 156-60-5 156-59-2 79-01-6 127-18-4	Vinyl Chloride 1,1-Dichloroethene trans-1,2-Dichloroethene cis-1,2-Dichloroethene Trichloroethene Tetrachloroethene	0.2 0.2 0.2 0.2 0.2 0.2 0.2	< 0.2 U < 0.2 U

Reported in  $\mu g/L$  (ppb)

d4-1,2-Dichloroethane	96.2%
d8-Toluene	106%
Bromofluorobenzene	91.5%
d4-1,2-Dichlorobenzene	1148



SAMPLE

Lab Sample ID: HL28D LIMS ID: 04-21568 Matrix: Water Data Release Authorized: Reported: 12/09/04

Instrument/Analyst: FINN1/PAB Date Analyzed: 12/08/04 17:28

QC	Report No: HL2	8-Entrix
	Project: WES	TFARM/LEATHERCARE
	406	7301
	Date Sampled:	12/08/04
I	Date Received:	12/08/04

Sample Amount: 20.0 mL Purge Volume: 20.0 mL

CAS Number	Analyte	RL	Result
75-01-4 75-35-4 156-60-5 156-59-2 79-01-6 127-18-4	Vinyl Chloride 1,1-Dichloroethene trans-1,2-Dichloroethene cis-1,2-Dichloroethene Trichloroethene Tetrachloroethene	0.2 0.2 0.2 0.2 0.2 0.2	< 0.2 U < 0.2 U < 0.2 U < 0.2 U < 0.2 U < 0.2 U < 0.2 U

Reported in  $\mu g/L$  (ppb)

d4-1,2-Dichloroethane	99.2%
d8-Toluene	113%
Bromofluorobenzene	91.8%
d4-1,2-Dichlorobenzene	102%

SAMPLE

Lab Sample ID: HL28E LIMS ID: 04-21569 Matrix: Water Data Release Authorized: Reported: 12/14/04

QC Report No: HL28-Entrix Project: WESTFARM/LEATHERCARE 4067301 Date Sampled: 12/08/04 Date Received: 12/08/04

Sample Amount: 20.0 mL

Purge Volume: 20.0 mL

Instrument/Analyst: FINN1/PAB Date Analyzed: 12/08/04 17:58

CAS Number	Analyte	RL	Result
75-01-4	Vinyl Chloride	0.2	< 0.2 U
75-35-4	1,1-Dichloroethene	0.2	< 0.2 U
156-60-5	trans-1,2-Dichloroethene	0.2	< 0.2 Ŭ
	cis-1,2-Dichloroethene	0.2	0.1 J
156-59-2	Trichloroethene	0.2	< 0.2 U
79-01-6 127-18-4	Tetrachloroethene	0.2	< 0.2 U

Reported in  $\mu g/L$  (ppb)

d4-1,2-Dichloroethane	104%
d8-Toluene	115%
Bromofluorobenzene	92.2%
d4-1,2-Dichlorobenzene	110%



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ORGANICS ANALYSIS DATA SHEET Volatiles by Purge & Trap GC/MS-Method 8260B Sample ID: CYR-4 Page 1 of 1

SAMPLE

Lab Sample ID: HL28F LIMS ID: 04-21570 Matrix: Water Data Release Authorized: Reported: 12/14/04

QC Report No: HL28-Entrix Project: WESTFARM/LEATHERCARE 4067301 Date Sampled: 12/08/04 Date Received: 12/08/04

Sample Amount: 20.0 mL Purge Volume: 20.0 mL

Instrument/Analyst: FINN1/PAB Date Analyzed: 12/08/04 19:28 . a 9.--

CAS Number	Analyte	RL	Result
75-01-4	Vinyl Chloride	0.2	0.2 J
75-35-4	1,1-Dichloroethene	0.2	< 0.2 U
156-60-5	trans-1,2-Dichloroethene	0.2	< 0.2 U
156-59-2	cis-1,2-Dichloroethene	0.2	0.2
79-01-6	Trichloroethene	0.2	< 0.2 U
127-18-4	Tetrachloroethene	0.2	< 0.2 U

Reported in  $\mu g/L$  (ppb)

d4-1,2-Dichloroethane	105%
d8-Toluene	108%
Bromofluorobenzene	90.5%
d4-1,2-Dichlorobenzene	112%

Sample ID: CYQ-2-cp SAMPLE

D + ---- 1 +

Lab Sample ID: HL28G LIMS ID: 04-21571 Matrix: Water Data Release Authorized: Reported: 12/09/04 QC Report No: HL28-Entrix Project: WESTFARM/LEATHERCARE 4067301 Date Sampled: 12/08/04 Date Received: 12/08/04

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Instrument/Analyst: FINN1/PAB Date Analyzed: 12/08/04 19:58 Sample Amount: 20.0 mL Purge Volume: 20.0 mL

CAS Number	Analyte	RL	Result
75-01-4	Vinyl Chloride	0.2	0.3
75-35-4	1,1-Dichloroethene	0.2	< 0.2 U
156-60-5	trans-1,2-Dichloroethene	0.2	< 0.2 U
156-59-2	cis-1,2-Dichloroethene	0.2,	1.4
79-01-6	Trichloroethene	0.2	< 0.2 U
127-18-4	Tetrachloroethene	0.2	< 0.2 U

Reported in  $\mu g/L$  (ppb)

d4-1,2-Dichloroethane	104%
d8-Toluene	110%
Bromofluorobenzene	89.2%
d4-1,2-Dichlorobenzene	· 106%

Sample ID: CYQ-1.5-cp SAMPLE

Lab Sample ID: HL28H LIMS ID: 04-21572 Matrix: Water Data Release Authorized: Reported: 12/09/04

Instrument/Analyst: FINN1/PAB Date Analyzed: 12/08/04 20:27 QC Report No: HL28-Entrix Project: WESTFARM/LEATHERCARE 4067301 Date Sampled: 12/08/04 Date Received: 12/08/04

Sample Amount: 20.0 mL Purge Volume: 20.0 mL

CAS Number	Analyte	RL	Result
75-01-4	Vinyl Chloride	0.2	< 0.2 Ŭ
75-35-4	1,1-Dichloroethene	0.2	< 0.2 Ū
156-60-5	trans-1,2-Dichloroethene	0.2	< 0.2 U
156-59-2	cis-1,2-Dichloroethene	0.2	0.6
79-01-6	Trichloroethene	0.2	< 0.2 U
127-18-4	Tetrachloroethene	0.2	< 0.2 U

Reported in  $\mu g/L$  (ppb)

d4-1,2-Dichloroethane	108%
d8-Toluene	109%
Bromofluorobenzene	89.8%
d4-1,2-Dichlorobenzene	1098



Sample ID: CYP-6 SAMPLE

Lab Sample ID: HL28J LIMS ID: 04-21574 Matrix: Water Data Release Authorized: QC Report No: HL28-Entrix Project: WESTFARM/LEATHERCARE 4067301 Date Sampled: 12/08/04 Date Received: 12/08/04

Instrument/Analyst: FINN1/PAB Date Analyzed: 12/08/04 20:57 Sample Amount: 20.0 mL Purge Volume: 20.0 mL

CAS Number	Analyte	RL	Result
75-01-4	Vinyl Chloride	0.2	0.1 J
75-35-4	1,1-Dichloroethene	0.2	< 0.2 U
156-60-5	trans-1,2-Dichloroethene	0.2	< 0.2 U
156-59-2	cis-1,2-Dichloroethene	0.2	0.8
79-01-6	Trichloroethene	0.2	0.1 J
127-18-4	Tetrachloroethene	0.2	< 0.2 U

Reported in  $\mu g/L$  (ppb)

d4-1,2-Dichloroethane	105%
d8-Toluene	110%
Bromofluorobenzene	95.0%
d4-1,2-Dichlorobenzene	112%

4

#### ORGANICS ANALYSIS DATA SHEET Volatiles by Purge & Trap GC/MS-Method 8260B Page 1 of 1

Sample ID: CYR-3 SAMPLE

Lab Sample ID: HL28K LIMS ID: 04-21575 Matrix: Water Data Release Authorized: Reported: 12/09/04

Instrument/Analyst: FINN1/PAB Date Analyzed: 12/08/04 21:27 QC Report No: HL28-Entrix Project: WESTFARM/LEATHERCARE 4067301 Date Sampled: 12/08/04 Date Received: 12/08/04

Sample Amount: 20.0 mL Purge Volume: 20.0 mL

CAS Number	Analyte	RL	Result		
75-01-4	Vinyl Chloride	0.2	0.2		
75-35-4	1,1-Dichloroethene	0.2	< 0.2 U		
156-60-5	trans-1,2-Dichloroethene	0.2	< 0.2 U		
156-59-2	cis-1,2-Dichloroethene	0.2	0.5		
79-01-6	Trichloroethene	0.2	< 0.2 Ŭ		
127-18-4	Tetrachloroethene	0.2	< 0.2 U		

Reported in  $\mu g/L$  (ppb)

d4-1,2-Dichloroethane	100%
d8-Toluene	116%
Bromofluorobenzene	91.0%
d4-1,2-Dichlorobenzene	116%



December 27 2004

Robert Barrick Entrix 2701 First Avenue Suite 500 Seattle, WA 98121

### RE: Client Project: 4067301 Westfarm/Leathercare Geoprobe ARI Job No. HL83

Dear Rob:

Please find enclosed the original chain of custody documentation and the final data package for samples from the project referenced above.

Problems associated with these analyses are discussed in the Case Narrative.

An electronic copy of this package will remain on file with ARI. Should you have any questions or problems, please feel free to contact me at your convenience.

Sincerely,

ANALYTICAL-RESOURCES, INC.

Susan Dunnihoo Client Service Manager sue@arilabs.com 206/695-6207

Enclosures

cc: eFileRef HL83

SD/sdrd



**Case Narrative** 

Prepared for

## Entrix

Project Number: 4067301 Project: Westfarm / Leathercare Geoprobe

ARI Job No. HL83

Prepared By

Analytical Resources, Inc.



# Case Narrative

Client: Entrix, Inc. Project: 4067301 – Westfarm / Leathercare Geoprobe Matrix: Water ARI Job No. HL83

### Sample receipt

Seventeen water samples were accepted by Analytical Resources, Inc. on 12/09/2004. The samples were received with a cooler temperature of 2.5 °C measured by IR thermometer following ARI SOP. The samples were in good condition with no discrepancies in paperwork. Sample CYS-3 was initially received on hold, but on 12/10 was submitted for rush analysis under ARI Job HL83.

Twelve samples and a duplicate were accepted on 12/10/2004 at a cooler temperature of 5.5 °C. Samples CYS-4 and CYS-5 were also logged for rush analysis and are reported here.

### Chlorinated Volatile Analysis by 8260B

Samples were analyzed 12/10/2004 within recommended holding times. Blank spikes were run in duplicate.

Initial and continuing calibrations were within requirements of the method and ARI SOP.

The method blank was clean at the reporting limit.

LCS/LCSD recoveries and RPDs were within ARI control limits.

Surrogates recoveries were within ARI control limits.

Batch matrix spike recoveries were within ARI control limits. A copy of the summary form only has been included in this report.

Internal standard areas were within requirements.

There were no incidents of note.

## Volatile Organic Compound Analysis QC Summary Data

Prepared for

## Entrix

Project Number: 4067301 Project: Westfarm / Leathercare Geoprobe

## ARI Job No. HL83

Prepared By

Analytical Resources, Inc.



# WATER VOLATILE SYSTEM MONITORING COMPOUND SUMMARY

Matrix: Water (Low Level)

QC Report No: HL83

Lab ID	Client ID	DCE	TOL	BFB	DCB	TOT OUT
121004MB HL83LCS HL83LCD HL83A HL83B HL83C	Method Blank Lab Control LCDuplicate CYS-3 CYS-4 CYS-5	102% 90.0% 99.3% 116% 125% 109%	110% 107% 98.6% 114% 109% 110%	85.8% 92.4% 100% 91.5% 96.2% 87.2%	105% 94.8% 99.5% 103% 113% 103%	0 0 0 0 0 0

SW8260B	LCS/MB LIMITS	QC LIMITS
(DCE) = 1,2-Dichloroethane-d4	(68-126)	(62-138)
(TOL) = Toluene-d8	(59-121)	(66-124)
(BFB) = Bromofluorobenzene	(62-117)	(60-111)
(DCB) = 1,2-Dichlorobenzene-d4	(77-122)	(77-127)
$(DCB) = 1, 2^{-} DICHIOIODOULLOUT$		

# Column to be used to flag recovery values

Values outside of required QC limits

D System Monitoring Compound diluted out



## ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method 8260B Page 1 of 2

#### Sample ID: Batch QC MS/MSD

Lab Sample ID: HK38C LIMS ID: 04-20872 Matrix: Water Data Release Authorized: M Reported: 12/29/04

Instrument/Analyst MS: FINN1/PAB MSD: FINN1/PAB Date Analyzed MS: 12/10/04 16:58 MSD: 12/10/04 17:22

### QC Report No: HL83 - Entrix Project: Westfarm/Leathercare Geoprobe

Date Sampled: 12/01/04 Date Received: 12/01/04

Sample Amount MS: 20.0 mL MSD: 20.0 mL Purge Volume MS: 20.0 mL MSD: 20.0 mL

Analyte	Sample	MS	Spike Added-MS	MS Recovery	MSD	Spike Added-MSD	MSD Recovery	RPD
Vinyl Chloride 1,1-Dichloroethene trans-1,2-Dichloroethene cis-1,2-Dichloroethene Trichloroethene Tetrachloroethene	0.3 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2	5.2 4.6 · 3.2 3.4 3.9 3.9	4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0	122% 115% 80.0% 85.0% 97.5% 97.5%	5.0 4.5 3.1 3.4 3.5 3.6	4.0 4.0 4.0 4.0 4.0 4.0	118% 112% 77.5% 85.0% 87.5% 90.0%	3.9% 2.2% 3.2% 0.0% 10.8% 8.0%
ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET Volatiles by Purge & Trap GC/MS-Method 8260B 1 of 1 Page

Sample ID: LCS-121004 LCS/LCSD

Lab Sample ID: LCS-121004 LIMS ID: 04-21907 Matrix: Water Data Release Authorized: Reported: 12/14/04

QC Report No: HL83-Entrix Project: Westfarm/Leathercare Geoprobe Inv. 4067301 Date Sampled: NA

Instrument/Analyst LCS: FINN1/PAB LCSD: FINN1/PAB Date Analyzed LCS: 12/10/04 13:48 LCSD: 12/10/04 15:56

Sample Amount LCS: 20.0 mL LCSD: 20.0 mL Purge Volume LCS: 20.0 mL LCSD: 20.0 mL

Date Received: NA

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
	4.1	4.0	102%	3.8	4.0	95.0%	7.6%
Vinyl Chloride	4.3	4.0	108%	4.6	4.0	115%	6.7%
1,1-Dichloroethene trans-1,2-Dichloroethene	3.0	4.0	75.0%	3.0	4.0	75.0%	0.0%
cis-1,2-Dichloroethene	3.1	4.0	77.5%	3.2	4.0	80.0%	3.2%
Trichloroethene	3.4	4.0	85.0%	3.6	4.0	90.0%	5.7%
Tetrachloroethene	3.7	4.0	92.5%	3.8	4.0	95.0%	2.7%

#### Results reported in $\mu$ g/L

RPD calculated using sample concentrations per SW846.

LCS spike recovery is evaluated using only the nine regulated compounds noted in the ARI LQAP. The other LCS spike compound recoveries are advisory and used for analytical troubleshooting should any of the nine regulated compounds be out of control.

		LCS	LCSD
d4-1,2-Dichloroethane		90.0%	99.3%
d8-Toluene		107%	98.6%
Bromofluorobenzene		92.4%	100%
d4-1,2-Dichlorobenzene	1	94.8%	99.5%

EPA SAMPLE NO.

4A VOLATILE METHOD BLANK SUMMARY

MB1210

Lab Name: ANALYTICAL RESOURCES, INCContract: ENTRIXLab Code: ARICase No.: WESTFARM/LEATHERCARESDG No.: HL83Lab File ID: MB1210Lab Sample ID: MB1210Date Analyzed: 12/10/04Time Analyzed: 1517GC Column: RTX502.2ID: 0.18 (mm)Heated Purge: (Y/N) NInstrument ID: FINN1

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	······································		T 75 F3	TIME
	EPA	LAB	LAB	
	SAMPLE NO.	SAMPLE ID	FILE ID	ANALYZED
				=========
01	LCS1210	LCS1210	LCS1210	1348
		LCS1210	LCS12101	1556
02	LCS1210	TC2TST0		2232
03	CYS-3	HL83A	HL83A	2232
04	CYS-4	HL83B	HL83B	2302
05	CYS-5	HL83C	HL83C	2331
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COMMENTS:

page 1 of 1

FORM IV VOA

OLM3.2M

## Volatile Organic Compound Analysis Sample Data

Prepared for

#### Entrix

## Project Number: 4067301 Project: Westfarm / Leathercare Geoprobe

### ARI Job No. HL83

Prepared By

## Analytical Resources, Inc.



ORGANICS ANALYSIS DATA SHEET Volatiles by Purge & Trap GC/MS-Method 8260B Sample ID: CYS-3 Page 1 of 1

SAMPLE

Lab Sample ID: HL83A LIMS ID: 04-21907 Matrix: Water Data Release Authorized: Reported: 12/14/04

QC Report No: HL83-Entrix Project: Westfarm/Leathercare Geoprobe Inv. 4067301 Date Sampled: 12/09/04 Date Received: 12/10/04

Instrument/Analyst: FINN1/PAB Date Analyzed: 12/10/04 22:32

Sample Amount: 20.0 mL Purge Volume: 20.0 mL

CAS Number	Analyte	RL	Result
75-01-4	Vinyl Chloride	0.2	< 0.2 U
75-35-4	1,1-Dichloroethene	0.2	< 0.2 U
156-60-5	trans-1,2-Dichloroethene	0.2	< 0.2 U
156-59-2	cis-1,2-Dichloroethene	0.2	0.2
79-01-6	Trichloroethene	0.2	< 0.2 Ŭ
127-18-4	Tetrachloroethene	0.2	< 0.2 U

Reported in  $\mu g/L$  (ppb)

d4-1,2-Dichloroethane	116%
d8-Toluene	114%
Bromofluorobenzene	91.5%
d4-1,2-Dichlorobenzene	103%



ORGANICS ANALYSIS DATA SHEET Volatiles by Purge & Trap GC/MS-Method 8260B Page 1 of 1

Sample ID: CYS-4 SAMPLE

Lab Sample ID: HL83B LIMS ID: 04-21908 Matrix: Water Data Release Authorized: Reported: 12/14/04 QC Report No: HL83-Entrix Project: Westfarm/Leathercare Geoprobe Inv. 4067301 Date Sampled: 12/10/04 Date Received: 12/10/04

Instrument/Analyst: FINN1/PAB Date Analyzed: 12/10/04 23:02 Sample Amount: 20.0 mL Purge Volume: 20.0 mL

CAS Number	Analyte	RL	Result
75-01-4	Vinyl Chloride	0.2	< 0.2 U
75-35-4	1,1-Dichloroethene	0.2	< 0.2 U
156-60-5	trans-1,2-Dichloroethene	0.2	< 0.2 U
156-59-2	cis-1,2-Dichloroethene	0.2	0.1 J
79-01-6	Trichloroethene	0.2	< 0.2 U
127-18-4	Tetrachloroethene	0.2	< 0.2 U

Reported in  $\mu g/L$  (ppb)

d4-1,2-Dichloroethane	125%
d8-Toluene	109%
Bromofluorobenzene	96.2%
d4-1,2-Dichlorobenzene	113%



ORGANICS ANALYSIS DATA SHEET Volatiles by Purge & Trap GC/MS-Method 8260B Sample ID: CYS-5 Page 1 of 1

SAMPLE

Lab Sample ID: HL83C LIMS ID: 04-21909 Matrix: Water Data Release Authorized: Reported: 12/14/04

QC Report No: HL83-Entrix Project: Westfarm/Leathercare Geoprobe Inv. 4067301 Date Sampled: 12/10/04 Date Received: 12/10/04

Instrument/Analyst: FINN1/PAB Date Analyzed: 12/10/04 23:31

Sample Amount: 20.0 mL Purge Volume: 20.0 mL

CAS Number	Analyte	RL	Result
75-01-4	Vinyl Chloride	0.2	< 0.2 U
75-35-4	1,1-Dichloroethene	0.2	< 0.2 U
156-60-5	trans-1,2-Dichloroethene	0.2	< 0.2 Ŭ
156-59-2	cis-1,2-Dichloroethene	0.2	< 0.2 U
79-01-6	Trichloroethene	0.2	< 0.2 U
127-18-4	Tetrachloroethene	0.2	< 0.2 U

Reported in  $\mu g/L$  (ppb)

d4-1,2-Dichloroethane	109%
d8-Toluene	110%
Bromofluorobenzene	87.2%
d4-1,2-Dichlorobenzene	1038

Analytical Resources, Incorporated Analytical Chemists and Consultants

December 27, 2004

Robert Barrick Entrix 2701 First Avenue Suite 500 Seattle, WA 98121

## RE: Client Project: 4067301 Westfarm/Leathercare Geoprobe ARI Job No. HL86

Dear Rob:

Please find enclosed the original chain of custody documentation and the final data package for samples from the project referenced above.

Problems associated with these analyses are discussed in the Case Narrative.

An electronic copy of this package will remain on file with ARI. Should you have any questions or problems, please feel free to contact me at your convenience.

Sincerely,

ANALYTICAL RESOURCES, INC. 1 Sitis

Susan Dunnihoo Client Service Manager sue@arilabs.com 206/695-6207

Enclosures

cc: eFileRef HL86

SD/sdrd

Case Narrative

Prepared for

#### Entrix

## Project Number: 4067301 Project: Westfarm / Leathercare Geoprobe

## ARI Job No. HL86

Prepared By

## Analytical Resources, Inc.





## Case Narrative

Client: Entrix, Inc. Project: 4067301 – Westfarm / Leathercare Geoprobe Matrix: Water ARI Job No. HL86

#### Sample receipt

Seventeen water samples were accepted by Analytical Resources, Inc. on 12/09/2004. The samples were received with a cooler temperature of 2.5 °C measured by IR thermometer following ARI SOP. The samples were in good condition with no discrepancies in paperwork. Sample CYS-3 was submitted for rush analysis under ARI Job HL83. The results for the remaining samples are included in this report.

## Chlorinated Volatile Analysis by 8260B

Samples and the associated duplicate were analyzed 12/17/2004 and 12/18/2004 within recommended holding times. Blank spikes were run in duplicate.

Initial and continuing calibrations were within requirements of the method and ARI SOP.

The method blank was clean at the reporting limit.

LCS/LCSD recoveries and RPDs were within ARI control limits.

Surrogates recoveries were within ARI control limits.

Matrix spike recoveries were within ARI control limits.

Internal standard areas were within requirements.

There were no incidents of note.

## Volatile Organic Compound Analysis QC Summary Data

Prepared for

## Entrix

## Project Number: 4067301 Project: Westfarm / Leathercare Geoprobe

ARI Job No. HL86

Prepared By

Analytical Resources, Inc.



# WATER VOLATILE SYSTEM MONITORING COMPOUND SUMMARY

Matrix: Water (Low Level)

QC Report No: HL86

Lab ID	Client ID	DCE	TOL	BFB	DCB	TOT OUT
	CYO-3	105%	107%	82.0%	113%	0
HL86A 121704MB	Method Blank	104%	99.5%	76.8%	108%	0
	Lab Control	109%	110%	94.0%	103%	0
HL86LCS	LCDuplicate	105%	106%	93.6%	98.8%	0
HL86LCD	CYP-5	112%	1128	88.2%	111%	0
HL86B	CYP-5	105%	110%	97.2%	108%	0
HL86BMS	CYO-5	109%	113%	86.0%	1098	0
HL86C	CYN-5	106%	110%	93.2%	108%	0
HL86D		100%	106%	89.0%	108%	0
HL86E	CYM-6	104%	110%	84.2%	110%	0
HL86F	CYO-6	102%	99.28	78.0%	105%	0
HL86G	CYN-1-rr	120%	105%	82.8%	109%	0
HL86H	CYO-1-rr	100%	106%	79.8%	106%	0
HL86I	CYP-1-rr	102%	104%	81.8%	111%	0
HL86J	CYQ-1-rr	112%	108%	81.0%	112%	0
HL86K	CYU-1-rr	118%	104%	84.28	111%	0
HL86L	CYS-1-rr	106%	110%	84.2%	108%	0
HL86M	CYN-6	116%	118%	84.8%	114%	0
HL86N	CYN-6-DUP	101%	96.0%	75.8%	98.6%	0
121804MB	Method Blank	125%	109%	95.6%	97.7%	0
HL86LCS	Lab Control		102%	88.4%	90.5%	0
HL86LCD	LCDuplicate	105%	102%	87.8%	107%	0
HL860	CYQ-5	112%	106%	82.5%	1138	0
HL86P	CYQ-4	96.2%	106%	88.2%	118%	0
HL86Q	CYP-4	1228	TOOP	00.20		

7770 D C 0 D	LCS/MB LIMITS	QC LIMITS
SW8260B (DCE) = 1,2-Dichloroethane-d4	(68-126)	(62-138)
(DCE) = 1, 2-brenierocomune at $(TOL) = Toluene-d8$	(59-121)	(66-124)
(BFB) = Bromofluorobenzene	(62-117)	(60-111)
(DCB) = 1,2-Dichlorobenzene-d4	(77-122)	(77-127)

# Column to be used to flag recovery values

Values outside of required QC limits

D System Monitoring Compound diluted out



ORGANICS ANALYSIS DATA SHEET Volatiles by Purge & Trap GC/MS-Method 8260B Sample ID: LCS-121504 Page 1 of 1

LCS/LCSD

Lab Sample ID: LCS-121504 LIMS ID: 04-21937 Matrix: Water Data Release Authorized: Reported: 12/22/04

OC Report No: HL86-Entrix Project: Westfarm/Leathercare Geoprobes 4067301 Date Sampled: NA Date Received: NA

Instrument/Analyst LCS: FINN3/PAB LCSD: FINN3/PAB Date Analyzed LCS: 12/15/04 12:04 LCSD: 12/15/04 12:35

Sample Amount LCS: 20.0 mL LCSD: 20.0 mL Purge Volume LCS: 20.0 mL LCSD: 20.0 mL

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Vinyl Chloride 1,1-Dichloroethene trans-1,2-Dichloroethene cis-1,2-Dichloroethene Trichloroethene Tetrachloroethene	3.7 3.6 3.5 3.8 3.7 3.8	4.0 4.0 4.0 4.0 4.0 4.0 4.0	92.5% 90.0% 87.5% 95.0% 92.5% 95.0%	3.5 3.5 3.6 4.0 3.9 3.7	4.0 4.0 4.0 4.0 4.0 4.0	87.5% 87.5% 90.0% 100% 97.5% 92.5%	5.6% 2.8% 2.8% 5.1% 5.3% 2.7%

Results reported in  $\mu g/L$ 

RPD calculated using sample concentrations per SW846.

LCS spike recovery is evaluated using only the nine regulated compounds noted in the ARI LQAP. The other LCS spike compound recoveries are advisory and used for analytical troubleshooting should any of the nine regulated compounds be out of control.

Volatile Surrogate Recovery

	LCS	LCSD
d4-1,2-Dichloroethane	109%	105%
d8-Toluene	110%	106%
Bromofluorobenzene	94.0%	93.6%
d4-1,2-Dichlorobenzene	1038	98.8%

FORM III



ORGANICS ANALYSIS DATA SHEET Volatiles by Purge & Trap GC/MS-Method 8260B Sample ID: CYP-5 Page 1 of 1

# MATRIX SPIKE

Lab Sample ID: HL86B LIMS ID: 04-21937 Matrix: Water Data Release Authorized: Reported: 12/22/04

QC Report No: HL86-Entrix Project: Westfarm/Leathercare Geoprobes 4067301 Date Sampled: 12/09/04 Date Received: 12/09/04

Instrument/Analyst: FINN3/PAB Date Analyzed: 12/17/04 15:36 Sample Amount: 20.0 mL Purge Volume: 20.0 mL

Analyte	Sample	Matrix Spike	Spike Added	Recovery
Vinyl Chloride 1,1-Dichloroethene trans-1,2-Dichloroethene cis-1,2-Dichloroethene Trichloroethene Tetrachloroethene	< 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2	$ \begin{array}{r} 4.0\\ 4.0\\ 4.0\\ 4.0\\ 4.0\\ 4.0\\ 4.0\\ 4.0\end{array} $	4.0 4.0 4.0 4.0 4.0 4.0	80.0% 95.0% 95.0% 100% 97.5% 92.5%

Results reported in  $\mu g/L$ 



ORGANICS ANALYSIS DATA SHEET Volatiles by Purge & Trap GC/MS-Method 8260B Sample ID: LCS-121804 Page 1 of 1

LCS/LCSD

Lab Sample ID: LCS-121804 LIMS ID: 04-21950 Matrix: Water Data Release Authorized: Reported: 12/22/04

QC Report No: HL86-Entrix Project: Westfarm/Leathercare Geoprobes 4067301 Date Sampled: NA Date Received: NA

Instrument/Analyst LCS: FINN3/PAB LCSD: FINN3/PAB Date Analyzed LCS: 12/18/04 12:50 LCSD: 12/18/04 13:18 Sample Amount LCS: 20.0 mL LCSD: 20.0 mL Purge Volume LCS: 20.0 mL LCSD: 20.0 mL

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Vinyl Chloride 1,1-Dichloroethene trans-1,2-Dichloroethene cis-1,2-Dichloroethene Trichloroethene Tetrachloroethene	3.7 4.0 4.1 3.9 3.9	4.0 4.0 4.0 4.0 4.0 4.0 4.0	92.5% 100% 100% 102% 97.5% 97.5%	3.4 3.6 3.6 4.0 3.8 3.6	4.0 4.0 4.0 4.0 4.0 4.0	85.0% 90.0% 90.0% 100% 95.0% 90.0%	8.5% 10.5% 10.5% 2.5% 2.6% 8.0%

Results reported in  $\mu g/L$ 

RPD calculated using sample concentrations per SW846.

LCS spike recovery is evaluated using only the nine regulated compounds noted in the ARI LQAP. The other LCS spike compound recoveries are advisory and used for analytical troubleshooting should any of the nine regulated compounds be out of control.

	LCS	LCSD
d4-1,2-Dichloroethane	125%	105%
d8-Toluene	109%	102%
Bromofluorobenzene	95.6%	88.48
d4-1,2-Dichlorobenzene	97.78	90.5%

EPA SAMPLE NO.

#### 4A VOLATILE METHOD BLANK SUMMARY

MB1217

Lab Name: ANALYTICAL RESOURCES, INCContract: ENTRIXLab Code: ARICase No.: WESTFARM/LEATHERCARESDG No.: HL86Lab File ID: MB1217Lab Sample ID: MB1217Date Analyzed: 12/17/04Time Analyzed: 1303GC Column: RTX502.2 ID: 0.18 (mm)Heated Purge: (Y/N) NInstrument ID: FINN3

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	EPA	· · ·	LAB	TD	LAB FILE ID	TIME ANALYZED
	SAMPLE	NO.	SAMPLE	ID		
		======	======= LCS1217	====	LCS1217	1204
	S1217		LCS1217		LCS1217A	1235
	S1217		HL86A		HL86A	1350
	Q-3 P-5		HL86B		HL86B	1415
	2-5 20-5		HL86C		HL86C	1442
	N-5		HL86D		HL86D	1516
	P-5 MS		HL86BMS		HL86BMS	1536
	M-6		HL86E		HL86E	1605
	70-6		HL86F		HL86F	1629
0010-	N-1-RR		HL86G		HL86G	1656
	0-1-RR		HL86H		HL86H	1723
	(P-1-RR		HL86I		HL86I	1750
	(Q-1-RR		HL86J		HL86J	1817
14 CY	(Ũ-1-RR		HL86K		HL86K	1845
	(S-1-RR		HL86L		HL86L	1912 1939
	(N-6		HL86M	,	HL86M	2006
	N-6 DUP		HL86N		HL86N	2000
18				. <u></u>		-
19		<u> </u>				-
20	<u> </u>					-
21						-
22 — 23 —					]	
$\begin{bmatrix} 23\\24 \end{bmatrix}$		· · · · · · · · · · · · · · · · · · ·		<u> </u>		
25						
26						_
27	<u> </u>					_
28						-
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COMMENTS:

page 1 of 1

OLM3.2M

EPA SAMPLE NO.

4A VOLATILE METHOD BLANK SUMMARY

MB1218

Lab Name: ANALYTICAL RESOURCES, INCContract: ENTRIXLab Code: ARICase No.: WESTFARM/LEATHERCARESDG No.: HL86Lab File ID: MB1218Lab Sample ID: MB1218Date Analyzed: 12/18/04Time Analyzed: 1407GC Column: RTX502.2ID: 0.18 (mm)Heated Purge: (Y/N) NInstrument ID: FINN3

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	EPA	LAB	LAB	TIME
	SAMPLE NO.	SAMPLE ID	FILE ID	ANALYZED
012 034 05 07 08 90 112 13 15 17 18 9	EPA SAMPLE NO. ====================================	LAB SAMPLE ID ====================================		TIME ANALYZED 1250 1318 1440 1509 1536
20				
20 21 22 23 24 25 26 27				
23 24				
25				
27				
28 29				
29 30				

COMMENTS:

page 1 of 1

OLM3.2M

## Volatile Organic Compound Analysis Sample Data

Prepared for

### Entrix

## Project Number: 4067301 Project: Westfarm / Leathercare Geoprobe

ARI Job No. HL86

Prepared By

Analytical Resources, Inc.



ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method 8260B Sample ID: CYQ-3 Page 1 of 1

SAMPLE

Lab Sample ID: HL86A LIMS ID: 04-21936 Matrix: Water Data Release Authorized: Reported: 12/22/04

QC Report No: HL86-Entrix Project: Westfarm/Leathercare Geoprobes 4067301 Date Sampled: 12/08/04 Date Received: 12/09/04

Instrument/Analyst: FINN3/PAB Date Analyzed: 12/17/04 13:50

CAS Number	Analyte	RL	Result
75-01-4 75-35-4 156-60-5 <b>156-59-2</b> 79-01-6 127-18-4	Vinyl Chloride 1,1-Dichloroethene trans-1,2-Dichloroethene <b>cis-1,2-Dichloroethene</b> Trichloroethene Tetrachloroethene	0.2 0.2 0.2 0.2 0.2 0.2	< 0.2 U < 0.2 U < 0.2 U 0.3 < 0.2 U < 0.2 U < 0.2 U

Sample Amount: 20.0 mL

Purge Volume: 20.0 mL

Reported in  $\mu$ g/L (ppb)

d4-1,2-Dichloroethane	105%
d8-Toluene	1078
Bromofluorobenzene	82.0%
d4-1,2-Dichlorobenzene	1138



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ORGANICS ANALYSIS DATA SHEET Volatiles by Purge & Trap GC/MS-Method 8260B Page 1 of 1

Sample ID: CYP-5 SAMPLE

Lab Sample ID: HL86B LIMS ID: 04-21937 Matrix: Water Data Release Authorized: Reported: 12/22/04 QC Report No: HL86-Entrix Project: Westfarm/Leathercare Geoprobes 4067301 Date Sampled: 12/09/04 Date Received: 12/09/04

Instrument/Analyst: FINN3/PAB Date Analyzed: 12/17/04 14:15 Sample Amount: 20.0 mL Purge Volume: 20.0 mL

CAS Number	Analyte	RL	Result
75-01-4 75-35-4 156-60-5 156-59-2 79-01-6 127-18-4	Vinyl Chloride 1,1-Dichloroethene trans-1,2-Dichloroethene cis-1,2-Dichloroethene Trichloroethene Tetrachloroethene	0.2 0.2 0.2 0.2 0.2 0.2 0.2	< 0.2 U < 0.2 U

Reported in  $\mu$ g/L (ppb)

d4-1,2-Dichloroethane	1128
d8-Toluene	112%
Bromofluorobenzene	88.2%
d4-1,2-Dichlorobenzene	111%



ORGANICS ANALYSIS DATA SHEET Volatiles by Purge & Trap GC/MS-Method 8260B Sample ID: CYO-5 Page 1 of 1

SAMPLE

Lab Sample ID: HL86C LIMS ID: 04-21938 Matrix: Water Data Release Authorized: Reported: 12/22/04

QC Report No: HL86-Entrix Project: Westfarm/Leathercare Geoprobes 4067301 Date Sampled: 12/09/04 Date Received: 12/09/04

Instrument/Analyst: FINN3/PAB Date Analyzed: 12/17/04 14:42

Sample Amount: 20.0 mL Purge Volume: 20.0 mL

CAS Number	Analyte	RL	Result
75-01-4 75-35-4 156-60-5 156-59-2 79-01-6 127-18-4	Vinyl Chloride 1,1-Dichloroethene trans-1,2-Dichloroethene cis-1,2-Dichloroethene Trichloroethene Tetrachloroethene	0.2 0.2 0.2 0.2 0.2 0.2 0.2	< 0.2 U < 0.2 U

Reported in  $\mu g/L$  (ppb)

d4-1,2-Dichloroethane	109%
d8-Toluene	1138
Bromofluorobenzene	86.0%
d4-1,2-Dichlorobenzene	1098



ORGANICS ANALYSIS DATA SHEET Volatiles by Purge & Trap GC/MS-Method 8260B Page 1 of 1

Sample ID: CYN-5 SAMPLE

Lab Sample ID: HL86D LIMS ID: 04-21939 Matrix: Water Data Release Authorized: Reported: 12/22/04 QC Report No: HL86-Entrix Project: Westfarm/Leathercare Geoprobes 4067301 Date Sampled: 12/09/04 Date Received: 12/09/04

DT

Pegult

Instrument/Analyst: FINN3/PAB Date Analyzed: 12/17/04 15:16 Sample Amount: 20.0 mL Purge Volume: 20.0 mL

CAS Number	Analyte	RL	Result
75-01-4 75-35-4 156-60-5 156-59-2 79-01-6 127-18-4	Vinyl Chloride 1,1-Dichloroethene trans-1,2-Dichloroethene cis-1,2-Dichloroethene Trichloroethene Tetrachloroethene	0.2 0.2 0.2 0.2 0.2 0.2 0.2	< 0.2 U < 0.2 U

Reported in  $\mu g/L$  (ppb)

d4-1,2-Dichloroethane	106%
d8-Toluene	110%
Bromofluorobenzene	93.2%
d4-1,2-Dichlorobenzene	108%



ORGANICS ANALYSIS DATA SHEET Volatiles by Purge & Trap GC/MS-Method 8260B Sample ID: CYM-6 Page 1 of 1

SAMPLE

Lab Sample ID: HL86E LIMS ID: 04-21940 Matrix: Water Data Release Authorized: Reported: 12/22/04

QC Report No: HL86-Entrix Project: Westfarm/Leathercare Geoprobes 4067301 Date Sampled: 12/09/04 Date Received: 12/09/04

Instrument/Analyst: FINN3/PAB Date Analyzed: 12/17/04 16:05

CAS Number	Analyte	RL	Result
75-01-4 75-35-4 156-60-5 156-59-2 79-01-6 <b>127-18-4</b>	Vinyl Chloride 1,1-Dichloroethene trans-1,2-Dichloroethene cis-1,2-Dichloroethene Trichloroethene <b>Tetrachloroethene</b>	0.2 0.2 0.2 0.2 0.2 0.2 <b>0.2</b>	< 0.2 U < 0.2 U < 0.2 U < 0.2 U < 0.2 U < 0.2 U 0.2 U

Sample Amount: 20.0 mL

Purge Volume: 20.0 mL

Reported in  $\mu g/L$  (ppb)

d4-1,2-Dichloroethane	100%
d8-Toluene	106%
Bromofluorobenzene	89.08
d4-1,2-Dichlorobenzene	108%



ORGANICS ANALYSIS DATA SHEET Volatiles by Purge & Trap GC/MS-Method 8260B Sample ID: CYO-6 Page 1 of 1

SAMPLE

Lab Sample ID: HL86F LIMS ID: 04-21941 Matrix: Water Matrix: wale. Data Release Authorized: Reported: 12/22/04

QC Report No: HL86-Entrix Project: Westfarm/Leathercare Geoprobes 4067301 Date Sampled: 12/09/04 Date Received: 12/09/04

Sample Amount: 20.0 mL

Purge Volume: 20.0 mL

Instrument/Analyst: FINN3/PAB Date Analyzed: 12/17/04 16:29

CAS Number	Analyte	RL	Result
75-01-4 75-35-4 156-60-5 156-59-2 79-01-6 127-18-4	Vinyl Chloride 1,1-Dichloroethene trans-1,2-Dichloroethene cis-1,2-Dichloroethene Trichloroethene Tetrachloroethene	0.2 0.2 0.2 0.2 0.2 0.2 0.2	< 0.2 U < 0.2 U < 0.2 U < 0.2 U 0.6 0.3 0.2 J

Reported in  $\mu g/L$  (ppb)

d4-1,2-Dichloroethane	104%
d8-Toluene	110%
Bromofluorobenzene	84.2%
d4-1,2-Dichlorobenzene	110%



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ORGANICS ANALYSIS DATA SHEET Volatiles by Purge & Trap GC/MS-Method 8260B Sample ID: CYN-1-rr Page 1 of 1

Lab Sample ID: HL86G LIMS ID: 04-21942 Matrix: Water Data Release Authorized: Reported: 12/22/04

QC Report No: HL86-Entrix Project: Westfarm/Leathercare Geoprobes 4067301 Date Sampled: 12/09/04 Date Received: 12/09/04

Sample Amount: 20.0 mL

Purge Volume: 20.0 mL

SAMPLE

Instrument/Analyst: FINN3/PAB Date Analyzed: 12/17/04 16:56

CAS Number	Analyte	RL	Result
75-01-4 75-35-4 156-60-5 156-59-2 79-01-6 127-18-4	Vinyl Chloride 1,1-Dichloroethene trans-1,2-Dichloroethene cis-1,2-Dichloroethene Trichloroethene Tetrachloroethene	0.2 0.2 0.2 0.2 0.2 0.2 0.2	< 0.2 U < 0.2 U

Reported in  $\mu$ g/L (ppb)

d4-1,2-Dichloroethane	102%
d8-Toluene	99.2%
Bromofluorobenzene	78.0%
d4-1,2-Dichlorobenzene	105%



ORGANICS ANALYSIS DATA SHEET Volatiles by Purge & Trap GC/MS-Method 8260B Sample ID: CYO-1-rr Page 1 of 1

SAMPLE

Lab Sample ID: HL86H LIMS ID: 04-21943 Matrix: Water Data Release Authorized: Reported: 12/22/04

QC Report No: HL86-Entrix Project: Westfarm/Leathercare Geoprobes 4067301 Date Sampled: 12/09/04 Date Received: 12/09/04

Instrument/Analyst: FINN3/PAB Date Analyzed: 12/17/04 17:23

127-18-4

ht/Analyst: FINN3/FAB lyzed: 12/17/04 17:23		urge Volume:	20.0 mL	
CAS Number	Analyte		RL	Result
75-01-4	Vinyl Chloride		0.2	< 0.2 U
	1,1-Dichloroethene		0.2	< 0.2 U
75-35-4	trans-1,2-Dichloroet	hene	0.2	< 0.2 U
156-60-5	cis-1,2-Dichloroethe	ne	0.2	0.1 J
156-59-2	Trichloroethene		0.2	< 0.2 U
79-01-6	Tetrachloroethene		0.2	< 0.2 U

Sample Amount: 20.0 mL

Reported in  $\mu g/L$  (ppb)

Tetrachloroethene

d4-1,2-Dichloroethane	1208
d8-Toluene	105%
Bromofluorobenzene	82.8%
d4-1,2-Dichlorobenzene	109%



ORGANICS ANALYSIS DATA SHEET Volatiles by Purge & Trap GC/MS-Method 8260B Sample ID: CYP-1-rr Page 1 of 1

Lab Sample ID: HL86I LIMS ID: 04-21944 Matrix: Water ·JB Data Release Authorized: Reported: 12/22/04

QC Report No: HL86-Entrix Project: Westfarm/Leathercare Geoprobes 4067301 Date Sampled: 12/09/04 Date Received: 12/09/04

SAMPLE

Sample Amount: 20.0 mL Instrument/Analyst: FINN3/PAB Purge Volume: 20.0 mL Date Analyzed: 12/17/04 17:50

CAS Number	Analyte	RL	Result
75-01-4 75-35-4 156-60-5 156-59-2 79-01-6 127-18-4	Vinyl Chloride 1,1-Dichloroethene trans-1,2-Dichloroethene cis-1,2-Dichloroethene Trichloroethene Tetrachloroethene	0.2 0.2 0.2 0.2 0.2 0.2 0.2	< 0.2 U < 0.2 U < 0.2 U < 0.2 U < 0.2 U < 0.2 U < 0.2 U

Reported in  $\mu g/L$  (ppb)

d4-1,2-Dichloroethane	100%
d8-Toluene	106%
Bromofluorobenzene	79.8%
d4-1,2-Dichlorobenzene	106%



ORGANICS ANALYSIS DATA SHEET Volatiles by Purge & Trap GC/MS-Method 8260B Page 1 of 1

Sample ID: CYQ-1-rr SAMPLE

Lab Sample ID: HL86J LIMS ID: 04-21945 Matrix: Water Data Release Authorized: Reported: 12/22/04 QC Report No: HL86-Entrix Project: Westfarm/Leathercare Geoprobes 4067301 Date Sampled: 12/09/04 Date Received: 12/09/04

Sample Amount: 20.0 mL

Purge Volume: 20.0 mL

Instrument/Analyst: FINN3/PAB Date Analyzed: 12/17/04 18:17

CAS Number	Analyte	RL	Result
75-01-4	Vinyl Chloride	0.2	< 0.2 U
75-35-4	1,1-Dichloroethene	0.2	< 0.2 U < 0.2 U
156-60-5	trans-1,2-Dichloroethene	0.2	< 0.2 0 0.1 J
156-59-2	cis-1,2-Dichloroethene	0.2	< 0.2 U
79-01-6	Trichloroethene	0.2	< 0.2 U
127-18-4	Tetrachloroethene	•••	

Reported in  $\mu g/L$  (ppb)

d4-1,2-Dichloroethane	102%
d8-Toluene	104%
Bromofluorobenzene	81.8%
d4-1,2-Dichlorobenzene	111%



ORGANICS ANALYSIS DATA SHEET Volatiles by Purge & Trap GC/MS-Method 8260B Sample ID: CYU-1-rr Page 1 of 1

SAMPLE

Lab Sample ID: HL86K LIMS ID: 04-21946 Matrix: Water Data Release Authorized: Reported: 12/22/04

Instrument/Analyst: FINN3/PAB

Date Analyzed: 12/17/04 18:45

QC Report No: HL86-Entrix Project: Westfarm/Leathercare Geoprobes 4067301 Date Sampled: 12/09/04 Date Received: 12/09/04

Sample Amount: 20.0 mL Purge Volume: 20.0 mL

CAS Number	Analyte	RL	Result
75-01-4 75-35-4 156-60-5 156-59-2 79-01-6 127-18-4	Vinyl Chloride 1,1-Dichloroethene trans-1,2-Dichloroethene cis-1,2-Dichloroethene Trichloroethene Tetrachloroethene	0.2 0.2 0.2 0.2 0.2 0.2 0.2	< 0.2 U < 0.2 U

Reported in  $\mu$ g/L (ppb)

d4-1,2-Dichloroethane	112%
d8-Toluene	108%
Bromofluorobenzene	81.0%
d4-1,2-Dichlorobenzene	112%



ORGANICS ANALYSIS DATA SHEET Volatiles by Purge & Trap GC/MS-Method 8260B Sample ID: CYS-1-rr Page 1 of 1

SAMPLE

Lab Sample ID: HL86L LIMS ID: 04-21947 Matrix: Water Data Release Authorized: Reported: 12/22/04

QC Report No: HL86-Entrix Project: Westfarm/Leathercare Geoprobes 4067301 Date Sampled: 12/09/04 Date Received: 12/09/04

Instrument/Analyst: FINN3/PAB Date Analyzed: 12/17/04 19:12

Sample Amount: 20.0 mL Purge Volume: 20.0 mL

CAS Number	Analyte	RL	Result
75-01-4	Vinyl Chloride	0.2	< 0.2 U
75-35-4	1,1-Dichloroethene	0.2	< 0.2 U
156-60-5	trans-1,2-Dichloroethene	0.2	< 0.2 U
156-59-2	cis-1,2-Dichloroethene	0.2	< 0.2 U
79-01-6	Trichloroethene	0.2	< 0.2 U
127-18-4	Tetrachloroethene	0.2	< 0.2 U

Reported in  $\mu g/L$  (ppb)

d4-1,2-Dichloroethane	118%
d8-Toluene	104%
Bromofluorobenzene	84.2%
d4-1,2-Dichlorobenzene	111%



ORGANICS ANALYSIS DATA SHEET Volatiles by Purge & Trap GC/MS-Method 8260B Sample ID: CYN-6 Page 1 of 1

SAMPLE

Lab Sample ID: HL86M LIMS ID: 04-21948 Matrix: Water AS S Data Release Authorized: Reported: 12/22/04

Instrument/Analyst: FINN3/PAB Date Analyzed: 12/17/04 19:39 QC Report No: HL86-Entrix Project: Westfarm/Leathercare Geoprobes 4067301 Date Sampled: 12/09/04 Date Received: 12/09/04

Sample Amount: 20.0 mL Purge Volume: 20.0 mL

CAS Number	Analyte	RL	Result
75-01-4	Vinyl Chloride	0.2	0.1 J
75-35-4	1,1-Dichloroethene	0.2	< 0.2 U
156-60-5	trans-1,2-Dichloroethene	0.2	< 0.2 U
156-59-2	cis-1,2-Dichloroethene	0.2	< 0.2 U
79-01-6	Trichloroethene	0.2	< 0.2 U
127-18-4	Tetrachloroethene	0.2	< 0.2 Ũ

Reported in  $\mu g/L$  (ppb)

d4-1,2-Dichloroethane	106%
-	110%
d8-Toluene	
Bromofluorobenzene	84.28
d4-1,2-Dichlorobenzene	108%

ORGANICS ANALYSIS DATA SHEET Volatiles by Purge & Trap GC/MS-Method 8260B Page 1 of 1

Sample ID: CYN-6-DUP SAMPLE

Lab Sample ID: HL86N LIMS ID: 04-21949 Matrix: Water Data Release Authorized: Reported: 12/22/04 QC Report No: HL86-Entrix Project: Westfarm/Leathercare Geoprobes 4067301 Date Sampled: 12/09/04 Date Received: 12/09/04

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Instrument/Analyst: FINN3/PAB Date Analyzed: 12/17/04 20:06 Sample Amount: 20.0 mL Purge Volume: 20.0 mL

CAS Number	Analyte	RL	Resuit
75-01-4	Vinyl Chloride	0.2	0.2 MJ
75-35-4	1,1-Dichloroethene	0.2	< 0.2 U
156-60-5	trans-1,2-Dichloroethene	0.2	< 0.2 U
156-59-2	cis-1,2-Dichloroethene	0.2	< 0.2 U
79-01-6	Trichloroethene	0.2	0.1 J
127-18-4	Tetrachloroethene	0.2	< 0.2 U

Reported in  $\mu$ g/L (ppb)

d4-1,2-Dichloroethane	116%
d8-Toluene	118%
Bromofluorobenzene	84.8%
d4-1,2-Dichlorobenzene	114%



ORGANICS ANALYSIS DATA SHEET Volatiles by Purge & Trap GC/MS-Method 8260B Page 1 of 1

Sample ID: CYQ-5 SAMPLE

Lab Sample ID: HL860 LIMS ID: 04-21950 Matrix: Water Data Release Authorized: Reported: 12/22/04

Instrument/Analyst: FINN3/PAB Date Analyzed: 12/18/04 14:40 QC Report No: HL86-Entrix Project: Westfarm/Leathercare Geoprobes 4067301 Date Sampled: 12/09/04 Date Received: 12/09/04

Sample Amount: 20.0 mL Purge Volume: 20.0 mL

CAS Number	Analyte	RL	Result
75-01-4	Vinyl Chloride	0.2	< 0.2 U
75-35-4	1,1-Dichloroethene	0.2	< 0.2 U
156-60-5	trans-1,2-Dichloroethene	0.2	< 0.2 U
156-59-2	cis-1,2-Dichloroethene	0.2	< 0.2 U
79-01-6	Trichloroethene	0,2	< 0.2 U
127-18-4	Tetrachloroethene	0.2	< 0.2 U

Reported in  $\mu g/L$  (ppb)

d4-1,2-Dichloroethane	1128
d8-Toluene	108%
Bromofluorobenzene	87.8%
d4-1,2-Dichlorobenzene	107%



#### ORGANICS ANALYSIS DATA SHEET Volatiles by Purge & Trap GC/MS-Method 8260B Sample ID: CYQ-4

Page 1 of 1

SAMPLE

Lab Sample ID: HL86P LIMS ID: 04-21951 Matrix: Water Data Release Authorized: Reported: 12/22/04

Instrument/Analyst: FINN3/PAB Date Analyzed: 12/18/04 15:09

QC Report No: HL86-Entrix Project: Westfarm/Leathercare Geoprobes 4067301 Date Sampled: 12/09/04 Date Received: 12/09/04

Sample Amount: 20.0 mL Purge Volume: 20.0 mL

CAS Number	Analyte	RL	Result
75-01-4	Vinyl Chloride	0.2	< 0.2 Ŭ
75-35-4	1,1-Dichloroethene	0.2	< 0.2 U
156-60-5	trans-1,2-Dichloroethene	0.2	< 0.2 Ŭ
15 <b>6-</b> 59-2	cis-1,2-Dichloroethene	0.2	0.3
79-01-6	Trichloroethene	0.2	< 0.2 Ŭ
127-18-4	Tetrachloroethene	0.2	< 0.2 Ŭ

Reported in  $\mu g/L$  (ppb)

d4-1,2-Dichloroethane	96.2%
d8-Toluene	106%
Bromofluorobenzene	82.5%
d4-1,2-Dichlorobenzene	<b>1</b> 13%



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ORGANICS ANALYSIS DATA SHEET Volatiles by Purge & Trap GC/MS-Method 8260B Page 1 of 1

Sample ID: CYP-4 SAMPLE

Lab Sample ID: HL86Q LIMS ID: 04-21952 Matrix: Water Data Release Authorized: Reported: 12/22/04

Instrument/Analyst: FINN3/PAB Date Analyzed: 12/18/04 15:36 QC Report No: HL86-Entrix Project: Westfarm/Leathercare Geoprobes 4067301 Date Sampled: 12/09/04 Date Received: 12/09/04

Sample Amount: 20.0 mL Purge Volume: 20.0 mL

CAS Number	Analyte	RL	Result
75-01-4	Vinyl Chloride	0.2	< 0.2 U
75-35-4	1,1-Dichloroethene	0.2	< 0.2 U
156-60-5	trans-1,2-Dichloroethene	0.2	< 0.2 U
156-59-2	cis-1,2~Dichloroethene	0.2	0.2 J
79-01-6	Trichloroethene	0.2	< 0.2 U
127-18-4	Tetrachloroethene	0.2	< 0.2 Ŭ

Reported in  $\mu g/L$  (ppb)

d4-1,2-Dichloroethane	122%
d8-Toluene	106%
Bromofluorobenzene	88.28
d4-1,2-Dichlorobenzene	118%



## Analytical Resources, Incorporated

Analytical Chemists and Consultants

December 27 2004

Robert Barrick Entrix 2701 First Avenue Suite 500 Seattle, WA 98121

#### RE: Client Project: 4067301 Westfarm/Leathercare Geoprobe ARI Job No. HL90

Dear Rob:

Please find enclosed the original chain of custody documentation and the final data package for samples from the project referenced above.

Problems associated with these analyses are discussed in the Case Narrative.

An electronic copy of this package will remain on file with ARI. Should you have any questions or problems, please feel free to contact me at your convenience.

Sincerely,

ANACYTICAL RESOURCES, INC.

JUMMU/WWW Susan Dunnihoo Client Service Manager sue@arilabs.com 206/695-6207

Enclosures

cc: eFileRef HL90

SD/sdrd

**Case Narrative** 

Prepared for

## Entrix

## Project Number: 4067301 Project: Westfarm / Leathercare Geoprobe

#### ARI Job No. HL90

Prepared By

### Analytical Resources, Inc.

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## Case Narrative

Client: Entrix, Inc. Project: 4067301 – Westfarm / Leathercare Geoprobe Matrix: Water ARI Job No. HL90

#### Sample receipt

Eleven water samples were accepted by Analytical Resources, Inc. on 12/08/2004. The samples were received with a cooler temperature of 3.2 °C measured by IR thermometer following ARI SOP. The samples were in good condition with no discrepancies in paperwork. Sample CYP-2-cp was received on hold. On 12/10 we received instructions to analyze the sample, which was re-logged with samples received that day.

Fourteen water samples and a duplicate were accepted on 12/10/2004. The samples were received with a cooler temperature of 5.5 °C measured by IR thermometer following ARI SOP. The samples were in good condition with sample NPL-3 received but not listed on the COC. The sample was submitted for analysis and this response was later verbally confirmed with the client.

#### Chlorinated Volatile Analysis by 8260B

Samples were analyzed 12/19/2004 within recommended holding times. The blank spike was run in duplicate.

Initial and continuing calibrations were within requirements of the method and ARI SOP.

The method blank was clean at the reporting limit.

LCS/LCSD recoveries and RPDs were within ARI control limits.

Surrogates recoveries were within ARI control limits.

Matrix spike recoveries were within ARI control limits.

Internal standard areas were within requirements.

Preservations checks performed after analysis showed acceptable pH for all samples.

There were no incidents of note.

## Volatile Organic Compound Analysis QC Summary Data

### Prepared for

### Entrix

## Project Number: 4067301 Project: Westfarm / Leathercare Geoprobe

## ARI Job No. HL90

## Prepared By

Analytical Resources, Inc.



# WATER VOLATILE SYSTEM MONITORING COMPOUND SUMMARY

Matrix: Water (Low Level)

QC Report No: HL90

Lab ID	Client ID	DCE	TOL	BFB	DCB	TOT OUT
	· · · · · · · · · · · · · · · · · · ·		1028	00 E9	102%	0
HL90A	CYQ-6	103%	103%	88.5%	99.2%	õ
HL90B	CYO-4	102%	104%	91.2%		0
HL90C	CYN-4	119%	105%	97.2%	102%	
HL90D	CYN-3	115%	110%	89.0%	106%	0
HL90E	CYP-3	110%	99.8%	85.8%	105%	0
HL90F	CYP-3 DUP	105%	104%	84.2%	99.2%	0
121904MB	Method Blank	107%	101%	81.3%	102%	0
HL90LCS	Lab Control	110%	104%	95.0%	95.6%	0
	LCDuplicate	1118	103%	91.9%	93.0%	0
HL90LCD	CYP-5	118%	108%	90.5%	106%	0
HL90G		113%	110%	101%	1038	0
HL90GMS	CYP-5	118%	106%	89.8%	1088	0
HL90H	CYO-3		107%	84.8%	110%	0
HL90I	NPL-1	114%	103%	84.5%	105%	0
HL90J	NPL-2	116%			1118	0
HL90K	NPK-2	107%	102%	83.0%	109%	õ
HL90L	NPL-3	124%	111%	89.0%		-
HL90M	CYP-2-cp	126%	105%	86.0%	105%	0
HL90N	TRIP BLANK	114%	110%	84.5%	113%	0

SW8260B	LCS/MB LIMITS	QC LIMITS
(DCE) = 1, 2-Dichloroethane-d4	(68-126)	(62-138)
(DCE) = 1,2 brownerde of the first of the	(59-121)	(66-124)
(BFB) = Bromofluorobenzene	(62-117)	(60-111)
(DCB) = 1,2-Dichlorobenzene-d4	(77-122)	(77-127)

# Column to be used to flag recovery values

Values outside of required QC limits

D System Monitoring Compound diluted out

FORM-II VOA-1



. 4

ORGANICS ANALYSIS DATA SHEET Volatiles by Purge & Trap GC/MS-Method 8260B Sample ID: CYP-5 Page 1 of 1

# MATRIX SPIKE

Lab Sample ID: HL90G LIMS ID: 04-22008 Matrix: Water Data Release Authorized: Reported: 12/22/04

Instrument/Analyst: FINN3/PAB

Date Analyzed: 12/19/04 21:33

QC Report No: HL90-Entrix Project: WESTFARM FOODS/LEATHERCARE GEOPROBE 4067301 Date Sampled: 12/10/04 Date Received: 12/10/04

Sample Amount: 20.0 mL Purge Volume: 20.0 mL

Analyte	Sample	Matrix Spike	Spike Added	Recovery
Vinyl Chloride	< 0.2	4.0	4.0	70.0%
1,1-Dichloroethene	< 0.2	4.0	4.0	80.0%
trans-1,2-Dichloroethene	< 0.2	4.0	4.0	90.0%
cis-1,2-Dichloroethene	< 0.2	4.0	4.0	102%
Trichloroethene	< 0.2	4.0	4.0	95.0%
Tetrachloroethene	< 0.2	4.0	4.0	87.5%

Results reported in  $\mu g/L$ 



Sample ID: LCS-121904 LCS/LCSD

Lab Sample ID: LCS-121904 LIMS ID: 04-22008 Matrix: Water Data Release Authorized: Reported: 12/22/04 QC Report No: HL90-Entrix Project: WESTFARM FOODS/LEATHERCARE GEOPROBE 4067301 Date Sampled: NA

Date Received: NA

Instrument/Analyst LCS: FINN3/PAB LCSD: FINN3/PAB Date Analyzed LCS: 12/19/04 15:12 LCSD: 12/19/04 16:08 Sample Amount LCS: 20.0 mL LCSD: 20.0 mL Purge Volume LCS: 20.0 mL LCSD: 20.0 mL

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Vinyl Chloride	3.2	4.0	80.0%	3.2	4.0	80.0%	0.0%
1,1-Dichloroethene	3.7	4.0	92.5%	3.5	4.0	87.5%	5.6%
trans-1,2-Dichloroethene	3.9	4.0	97.5%	3.8	4.0	95.0%	2.6%
cis-1,2-Dichloroethene	4.1	4.0	102%	4.2	4.0	105%	2.4%
Trichloroethene	3.9	4.0	97.5%	3.9	4.0	97.5%	0.0%
Tetrachloroethene	3.7	4.0	92.5%	3.5	4.0	87.5%	5.6%

Results reported in  $\mu g/L$ 

RPD calculated using sample concentrations per SW846.

LCS spike recovery is evaluated using only the nine regulated compounds noted in the ARI LQAP. The other LCS spike compound recoveries are advisory and used for analytical troubleshooting should any of the nine regulated compounds be out of control.

	LCS	LCSD
d4-1,2-Dichloroethane	110%	111%
d8-Toluene	1048	103%
Bromofluorobenzene	95.0%	91.9%
d4-1,2-Dichlorobenzene	95.6%	93.0%

EPA SAMPLE NO.

4A VOLATILE METHOD BLANK SUMMARY

MB1219

Lab Name: ANALYTICAL RESOURCES, INCContract: ENTRIXLab Code: ARICase No.: WESTFARM/LEATHERCARESDG No.: HL90Lab File ID: MB1219Lab Sample ID: MB1219Date Analyzed: 12/19/04Time Analyzed: 1547GC Column: RTX502.2ID: 0.18 (mm)Heated Purge: (Y/N) NInstrument ID: FINN3Heated Purge: (Y/N) N

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

				TT MIZ
	EPA	LAB	LAB	TIME
	SAMPLE NO.	SAMPLE ID	FILE ID	ANALYZED
			================	
0.7	LCS1219	LCS1219	LCS1219	1512
01		LCS1219	LCS1219A	1608
	LCS1219			1823
03	CYQ-6	HL90A	HL90A	
04	CYO-4	HL90B	HL90B	1850
05	CYN-4	HL90C	HL90C	1917
06	CYN-3	HL90D	HL90D	1944
07	CYP-3	HL90E	HL90E	2011
	CYP-3 DUP	HL90F	HL90F	2039
08		HL90G	HL90G	2106
09	CYP-5	HL90GMS	HL90GMS	2133
10	CYP-5 MS		HL90H	2200
11	CYO-3	HL90H		
12	NPL-1	HL90I	HL90I	2227
13	NPL-2	HL90J	HL90J	2255
	NPK-2	HL90K	HL90K	2322
15	NPL-3	HL90L	HL90L	2349
16	CYP-2-CP	HL90M	HL90M	0016
$10 \\ 17$	TRIP BLANK	HL90N	HL90N	0043
	LIKIP BLANK	11112014		
18				
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COMMENTS:

page 1 of 1

OLM3.2M

## Volatile Organic Compound Analysis Sample Data

Prepared for

#### Entrix

## Project Number: 4067301 Project: Westfarm / Leathercare Geoprobe

ARI Job No. HL90

Prepared By

Analytical Resources, Inc.



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ORGANICS ANALYSIS DATA SHEET Volatiles by Purge & Trap GC/MS-Method 8260B Sample ID: CYQ-6 Page 1 of 1

SAMPLE

0.2

Lab Sample ID: HL90A LIMS ID: 04-22002 Matrix: Water Data Release Authorized: Reported: 12/22/04

Instrument/Analyst: FINN3/PAB

127-18-4

QC Report No: HL90-Entrix Project: WESTFARM FOODS/LEATHERCARE GEOPROBE 4067301 Date Sampled: 12/10/04 Date Received: 12/10/04

< 0.2 Ŭ

Sample Amount: 20.0 mL Purge Volume: 20.0 mL

Date Analyzed: 12/1	9/04 18:23 Pi	urge Volume: 20.0	mL
CAS Number	Analyte	RL	Result
75-01-4	Vinyl Chloride	0.2	0.2 J
75-35-4	1,1-Dichloroethene	0.2	< 0.2 U
156-60-5	trans-1,2-Dichloroeth	nene 0.2	< 0.2 Ū
156-59-2	cis-1,2-Dichloroether		0.4
79-01-6	Trichloroethene	0.2	0.2 J

Tetrachloroethene

Reported in  $\mu g/L$  (ppb)

d4-1,2-Dichloroethane	103%
d8-Toluene	103%
Bromofluorobenzene	88.5%
d4-1,2-Dichlorobenzene	1028



SAMPLE

Lab Sample ID: HL90B LIMS ID: 04-22003 Matrix: Water Data Release Authorized: QC Report No: HL90-Entrix Project: WESTFARM FOODS/LEATHERCARE GEOPROBE 4067301 Date Sampled: 12/10/04 Date Received: 12/10/04

Instrument/Analyst: FINN3/PAB Date Analyzed: 12/19/04 18:50

Sample Amount: 20.0 mL Purge Volume: 20.0 mL

CAS Number	Analyte	RL	Result
75-01-4	Vinyl Chloride	0.2	0.3
75-35-4	1,1-Dichloroethene	0.2	< 0.2 U
156-60-5	trans-1,2-Dichloroethene	0.2	< 0.2 U
156-59-2	cis-1,2-Dichloroethene	0.2	0.4
79-01-6	Trichloroethene	0.2	< 0.2 U
127-18-4	Tetrachloroethene	0.2	< 0.2 U

Reported in  $\mu g/L$  (ppb)

d4-1,2-Dichloroethane	102%
d8-Toluene	104%
Bromofluorobenzene	91.2%
d4-1,2-Dichlorobenzene	99.2%



SAMPLE

Sample Amount: 20.0 mL

Purge Volume: 20.0 mL

Lab Sample ID: HL90C LIMS ID: 04-22004 Matrix: Water Data Release Authorized Reported: 12/22/04

QC Report No: HL90-Entrix Project: WESTFARM FOODS/LEATHERCARE GEOPROBE 4067301 Date Sampled: 12/10/04 Date Received: 12/10/04

Instrument/Analyst: FINN3/PAB Date Analyzed: 12/19/04 19:17

CAS Number	Analyte	RL	Result
75-01-4	Vinyl Chloride	0.2	0.6
75-35-4	1,1-Dichloroethene	0.2	< 0.2 U
156-60-5	trans-1,2-Dichloroethene	0.2	< 0.2 U
156-59-2	cis-1,2-Dichloroethene	0.2	1.0
79-01-6	Trichloroethene	0.2	< 0.2 Ŭ
127-18-4	Tetrachloroethene	0.2	< 0.2 Ū

Reported in  $\mu g/L$  (ppb)

d4-1,2-Dichloroethane	119%
d8-Toluene	105%
Bromofluorobenzene	97.28
d4-1,2-Dichlorobenzene	102%



SAMPLE

Lab Sample ID: HL90D LIMS ID: 04-22005 Matrix: Water Data Release Authorized: Reported: 12/22/04

QC Report No: HL90-Entrix Project: WESTFARM FOODS/LEATHERCARE GEOPROBE 4067301 Date Sampled: 12/10/04 Date Received: 12/10/04

Instrument/Analyst: FINN3/PAB Date Analyzed: 12/19/04 19:44

Sample Amount: 20.0 mL Purge Volume: 20.0 mL

CAS Number	Analyte	RL	Result
75-01-4	Vinyl Chloride	0.2	0.3
75-35-4	1,1-Dichloroethene	0.2	< 0.2 U
156-60-5	trans-1,2-Dichloroethene	0.2	< 0.2 U
156-59-2	cis-1,2-Dichloroethene	0.2	1.4
79-01-6	Trichloroethene	0.2	< 0.2 U
127-18-4	Tetrachloroethene	0.2	< 0.2 U

Reported in  $\mu$ g/L (ppb)

d4-1,2-Dichloroethane	115%
d8-Toluene	1108
Bromofluorobenzene	89.0%
d4-1,2-Dichlorobenzene	106%



SAMPLE

Lab Sample ID: HL90E LIMS ID: 04-22006 Matrix: Water Data Release Authorized: Reported: 12/22/04

QC Report No: HL90-Entrix Project: WESTFARM FOODS/LEATHERCARE GEOPROBE 4067301 Date Sampled: 12/10/04 Date Received: 12/10/04

Instrument/Analyst: FINN3/PAB Date Analyzed: 12/19/04 20:11

CAS Number	Analyte	RL	Result
75-01-4	Vinyl Chloride	0.2	0.2
75-35-4	1,1-Dichloroethene	0.2	< 0.2 U
156-60-5	trans-1,2-Dichloroethene	0.2	< 0.2 U
156-59-2	cis-1,2-Dichloroethene	0.2	0.9
79-01-6	Trichloroethene	0.2	< 0.2 U
127-18-4	Tetrachloroethene	0.2	< 0.2 U

Sample Amount: 20.0 mL

Purge Volume: 20.0 mL

Reported in  $\mu g/L$  (ppb)

d4-1,2-Dichloroethane	110%
d8-Toluene	99.8%
Bromofluorobenzene	85.8%
d4-1,2-Dichlorobenzene	105%



Sample ID: CYP-3 DUP SAMPLE

Lab Sample ID: HL90F LIMS ID: 04-22007 Matrix: Water Data Release Authorized: Reported: 12/22/04

QC Report No: HL90-Entrix Project: WESTFARM FOODS/LEATHERCARE GEOPROBE 4067301 Date Sampled: 12/10/04 Date Received: 12/10/04

Instrument/Analyst: FINN3/PAB Date Analyzed: 12/19/04 20:39

Sample Amount: 20.0 mL Purge Volume: 20.0 mL

CAS Number	Analyte	RL	Result
75-01-4	Vinyl Chloride	0.2	0.2 J
75-35-4	1,1-Dichloroethene	0.2	< 0.2 Ŭ
156-60-5	trans-1,2-Dichloroethene	0.2	< 0.2 U
156-50-5	cis-1,2-Dichloroethene	0.2	0.9
	Trichloroethene	0.2	< 0.2 U
79-01-6 127-18-4	Tetrachloroethene	0.2	< 0.2 Ŭ

Reported in  $\mu g/L$  (ppb)

d4-1,2-Dichloroethane	105%
d8-Toluene	1048
Bromofluorobenzene	84.2%
d4-1,2-Dichlorobenzene	99.2%



#### Sample ID: CYP-5 SAMPLE

Lab Sample ID: HL90G LIMS ID: 04-22008 Matrix: Water Data Release Authorized: Reported: 12/22/04

QC Report No: HL90-Entrix Project: WESTFARM FOODS/LEATHERCARE GEOPROBE 4067301 Date Sampled: 12/10/04 Date Received: 12/10/04

Instrument/Analyst: FINN3/PAB Date Analyzed: 12/19/04 21:06

Sample Amount: 20.0 mL Purge Volume: 20.0 mL

CAS Number	Analyte	RL	Result
75-01-4	Vinyl Chloride	0.2	< 0.2 U
75-35-4	1,1-Dichloroethene	0.2	< 0.2 U
156-60-5	trans-1,2-Dichloroethene	0.2	< 0.2 U
156-59-2	cis-1,2-Dichloroethene	0.2	< 0.2 U
79-01-6	Trichloroethene	0.2	< 0.2 U
127-18-4	Tetrachloroethene	0.2	< 0.2 U

Reported in  $\mu g/L$  (ppb)

d4-1,2-Dichloroethane	118%
d8-Toluene	108%
Bromofluorobenzene	90.5%
d4-1,2-Dichlorobenzene	106%



SAMPLE

Lab Sample ID: HL90H LIMS ID: 04-22009 Matrix: Water Data Release Authorized: Reported: 12/22/04

C Report No: HL90-Entrix Project: WESTFARM FOODS/LEATHERCARE GEOPROBE 4067301 Date Sampled: 12/10/04 Date Received: 12/10/04

Instrument/Analyst: FINN3/PAB Date Analyzed: 12/19/04 22:00 Sample Amount: 20.0 mL Purge Volume: 20.0 mL

CAS Number	Analyte	RL	Result
75-01-4	Vinyl Chloride	0.2	0.3
75-35-4	1,1-Dichloroethene	0.2	< 0.2 U
156-60-5	trans-1,2-Dichloroethene	0.2	< 0.2 U
156-59-2	cis-1,2-Dichloroethene	0.2	0.8
79-01-6	Trichloroethene	0.2	< 0.2 Ŭ
127-18-4	Tetrachloroethene	0.2	< 0.2 U

Reported in  $\mu g/L$  (ppb)

d4-1,2-Dichloroethane	118%
d8-Toluene	106%
Bromofluorobenzene	89.8%
d4-1,2-Dichlorobenzene	108%



SAMPLE

Lab Sample ID: HL90I LIMS ID: 04-22010 Matrix: Water Data Release Authorized: Reported: 12/22/04

QC Report No: ----Entrix Project: WESTFARM FOODS/LEATHERCARE GEOPROBE 4067301 Date Sampled: 12/10/04 Date Received: 12/10/04

Instrument/Analyst: FINN3/PAB Date Analyzed: 12/19/04 22:27

Sample Amount: 20.0 mL Purge Volume: 20.0 mL

CAS Number	Analyte	RL	Result
75-01-4	Vinyl Chloride	0.2	< 0.2 U
75-35-4	1,1-Dichloroethene	0.2	< 0.2 U
156-60-5	trans-1,2-Dichloroethene	0.2	< 0.2 U
156-59-2	cis-1,2-Dichloroethene	0.2	0.3
79-01-6	Trichloroethene	0.2	< 0.2 U
127-18-4	Tetrachloroethene	0.2	< 0.2 U

Reported in  $\mu g/L$  (ppb)

d4-1,2-Dichloroethane	1148
d8-Toluene	107%
Bromofluorobenzene	84.8%
d4-1,2-Dichlorobenzene	110%



Sample ID: NPL-2 SAMPLE

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Lab Sample ID: HL90J LIMS ID: 04-22011 Matrix: Water Data Release Authorized: QC Report No: HL90-Entrix Project: WESTFARM FOODS/LEATHERCARE GEOPROBE 4067301 Date Sampled: 12/10/04 Date Received: 12/10/04

Instrument/Analyst: FINN3/PAB Date Analyzed: 12/19/04 22:55 Sample Amount: 20.0 mL Purge Volume: 20.0 mL

CAS Number	Analyte	RL	Result	
75-01-4	Vinyl Chloride	0.2	< 0.2 U	
75-35-4	1,1-Dichloroethene	0.2	< 0.2 U	
156-60-5	trans-1,2-Dichloroethene	0.2	< 0.2 U	
156-59-2	cis-1,2-Dichloroethene	0.2	0.9	
79-01-6	Trichloroethene	0.2	< 0.2 U	
127-18-4	Tetrachloroethene	0.2	< 0.2 U	

Reported in  $\mu g/L$  (ppb)

d4-1,2-Dichloroethane	116%
d8-Toluene	1038
Bromofluorobenzene	84.5%
d4-1,2-Dichlorobenzene	105%

Sample ID: NPK-2 SAMPLE

Lab Sample ID: HL90K LIMS ID: 04-22012 Matrix: Water Data Release Authorized: Reported: 12/22/04

Instrument/Analyst: FINN3/PAB Date Analyzed: 12/19/04 23:22 QC Report No: HL90-Entrix Project: WESTFARM FOODS/LEATHERCARE GEOPROBE 4067301 Date Sampled: 12/10/04 Date Received: 12/10/04

Sample Amount: 20.0 mL Purge Volume: 20.0 mL

CAS Number	Analyte	RL	Result
75-01-4	Vinyl Chloride	0.2	1.8
75-35-4	1,1-Dichloroethene	0.2	< 0.2 U
156-60-5	trans-1,2-Dichloroethene	0.2	0.2 J
156-59-2	cis-1,2-Dichloroethene	0.2	5.6
79-01-6	Trichloroethene	0.2	0.2
127-18-4	Tetrachloroethene	0.2	< 0.2 U

Reported in  $\mu g/L$  (ppb)

d4-1,2-Dichloroethane	107%
d8-Toluene	102%
Bromofluorobenzene	83.0%
d4-1,2-Dichlorobenzene	111%



Sample ID: NPL-3 SAMPLE

Lab Sample ID: HL90L LIMS ID: 04-22013 Matrix: Water Data Release Authorized: Reported: 12/22/04 Instrument/Analyst: FINN3/PAB Date Analyzed: 12/19/04 23:49 Sample Amount: 20.0 mL Purge Volume: 20.0 mL

CAS Number	Analyte	RL	Result	
75-01-4	Vinyl Chloride	0.2 0.7	0.7	
75-35-4	1,1-Dichloroethene	0.2	< 0.2 U	
156-60-5	trans-1,2-Dichloroethene	0.2	< 0.2 U	
156-59-2	cis-1,2-Dichloroethene	0.2	2.6	
79-01-6	Trichloroethene	0.2	< 0.2 U	
127-18-4	Tetrachloroethene	0.2	< 0.2 U	

Reported in  $\mu g/L$  (ppb)

d4-1,2-Dichloroethane	1248
d8-Toluene	1118
Bromofluorobenzene	89.0%
d4-1,2-Dichlorobenzene	1098



ORGANICS ANALYSIS DATA SHEET Volatiles by Purge & Trap GC/MS-Method 8260B Sample ID: CYP-2-cp Page 1 of 1

SAMPLE

Lab Sample ID: HL90M LIMS ID: 04-22014 Matrix: Water Data Release Authorized: Reported: 12/22/04

Instrument/Analyst: FINN3/PAB Date Analyzed: 12/20/04 00:16

QC Report No: HL90-Entrix Project: WESTFARM FOODS/LEATHERCARE GEOPROBE 4067301 Date Sampled: 12/08/04 Date Received: 12/10/04

Sample Amount: 20.0 mL Purge Volume: 20.0 mL

CAS Number	Analyte	RL	Result
75-01-4	Vinyl Chloride	0.2	0.5
75-35-4	1,1-Dichloroethene	0.2	< 0.2 U
156-60-5	trans-1,2-Dichloroethene	0.2	< 0.2 U
156-59-2	cis-1,2-Dichloroethene	0.2	2.4
79-01-6	Trichloroethene	0.2	< 0.2 U
127-18-4	Tetrachloroethene	0.2	< 0.2 U

Reported in  $\mu g/L$  (ppb)

d4-1,2-Dichloroethane	126%
d8-Toluene	105%
Bromofluorobenzene	86.0%
d4-1,2-Dichlorobenzene	105%



Sample ID: TRIP BLANK SAMPLE

Lab Sample ID: HL90N LIMS ID: 04-22015 Matrix: Water Data Release Authorized: QC Report No: HL90-Entrix Project: WESTFARM FOODS/LEATHERCARE GEOPROBE 4067301 Date Sampled: 12/08/04 Date Received: 12/10/04

Instrument/Analyst: FINN3/PAB Date Analyzed: 12/20/04 00:43 Sample Amount: 20.0 mL Purge Volume: 20.0 mL

CAS Number Analyte		RL	Result
75-01-4	Vinyl Chloride	0.2	< 0.2 U
75-35-4	1,1-Dichloroethene	0.2	< 0.2 U
156-60-5	trans-1,2-Dichloroethene	0.2	< 0.2 U
156-59-2	cis-1,2-Dichloroethene	0.2	< 0.2 U
79-01-6	Trichloroethene	0.2	< 0.2 U
127-18-4	Tetrachloroethene	0.2	< 0.2 U

Reported in  $\mu g/L$  (ppb)

d4-1,2-Dichloroethane	114%
d8-Toluene	110%
Bromofluorobenzene	84.5%
d4-1,2-Dichlorobenzene	113%



Analytical Resources, Incorporated

Analytical Chemists and Consultants

December 22, 2004

Robert Barrick Entrix 2701 First Avenue Suite 500 Seattle, WA 98121

#### RE: Client Project: 4067301 Westfarm/Leathercare Geoprobe ARI Job No. HL93

Dear Rob:

Please find enclosed the original chain of custody documentation and the final data package for samples from the project referenced above.

Problems associated with these analyses are discussed in the Case Narrative.

An electronic copy of this package will remain on file with ARI. Should you have any questions or problems, please feel free to contact me at your convenience.

Sincerely,

ANALYTICAL RESOURCES, INC.

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Susan Dunnihoo Client Service Manager sue@arilabs.com 206/695-6207

Enclosures

cc: eFileRef HL93

SD/sdrd

**Case Narrative** 

Prepared for

### Entrix

Project Number: 4067301 Project: Westfarm / Leathercare Geoprobe

ARI Job No. HL93

Prepared By

Analytical Resources, Inc.

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## Case Narrative

Client: Entrix, Inc. Project: 4067301 – Westfarm / Leathercare Geoprobe Matrix: Water ARI Job No. HL93

### Sample receipt

Twenty water samples were accepted by Analytical Resources, Inc. on 12/13/2004. The samples were received with a cooler temperature of 4.8 °C measured by IR thermometer following ARI SOP. The samples were in good condition with no discrepancies in paperwork. Several sample aliquots were placed on hold for possible future analysis. Two of the samples were submitted for rush analysis and results for those samples are reported here.

### Chlorinated Volatile Analysis by 8260B

Samples were analyzed 12/13/2004 within recommended holding times. The LCS (Blank Spike) was run in duplicate. The replicate analysis was run as a spiked sample on **CYS-2-base (HL93A)**.

Initial and continuing calibrations were within requirements of the method and ARI SOP.

The method blank was clean at the reporting limit.

LCS/LCSD recoveries and RPDs were within ARI control limits.

Surrogates recoveries were within ARI control limits.

Batch MS/MSD recoveries and RPDs were within ARI control limits.

Internal standard areas were within requirements.

There were no incidents of note.

## Volatile Organic Compound Analysis QC Summary Data

Prepared for

## Entrix

Project Number: 4067301 Project: Westfarm / Leathercare Geoprobe

ARI Job No. HL93

Prepared By

Analytical Resources, Inc.

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#### WATER VOLATILE SYSTEM MONITORING COMPOUND SUMMARY

Matrix: Water (Low Level)

QC Report No: HL93

Lab ID	Client ID	DCE	TOL	BFB	DCB	TOT OUT
121304MB	Method Blank	116%	108%	86.1%	102%	0
HL93LCS	Lab Control	111%	109%	98.4%	94.0%	0
HL93LCD	LCDuplicate	114%	103%	96.1%	91.9%	0
HL93A	CYS-2-base	105%	110%	90.8%	104%	0
HL93AMS	CYS-2-base	109%	104%	95.4%	94.0%	0
HL93AMSD	CYS-2-base	126%	107%	98.8%	91.9%	0
HL93B	CYS-1.5-base	115%	112%	87.0%	1048	0

SW8260B	LCS/MB LIMITS	QC LIMITS
(DCE) = 1, 2-Dichloroethane-d4	(68-126)	(62-138)
(TOL) = Toluene-d8	(59-121)	(66-124)
(BFB) = Bromofluorobenzene	(62-117)	(60-111)
(DCB) = 1,2-Dichlorobenzene-d4	(77-122)	(77-127)

# Column to be used to flag recovery values

\* Values outside of required QC limits

D System Monitoring Compound diluted out



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ORGANICS ANALYSIS DATA SHEET Volatiles by Purge & Trap GC/MS-Method 8260B Sample ID: CYS-2-base Page 1 of 1

# MS/MSD

Lab Sample ID: HL93A LIMS ID: 04-22035 Matrix: Water Data Release Authorized: Reported: 12/14/04

QC Report No: HL93-Entrix Project: WESTFARM/LEATHERCARE GEOPROBE 4067301 Date Sampled: 12/11/04 Date Received: 12/13/04

Instrument/Analyst MS: FINN1/PAB MSD: FINN1/PAB Date Analyzed MS: 12/13/04 14:50 MSD: 12/13/04 15:29

Sample Amount MS: 20.0 mL MSD: 20.0 mL Purge Volume MS: 20.0 mL MSD: 20.0 mL

Analyte	Sample	MS	Spike Added-MS	MS Recovery	MSD	Spike Added-MSD	MSD Recovery	RPD	
Vinyl Chloride	0.2	4.4	4.0	105%	4.6 4.3	4.0 4.0	110% 108%	4.4% 2.4%	
1,1-Dichloroethene trans-1,2-Dichloroethene	< 0.2 < 0.2	4.2 3.1	4.0 4.0	105% 77.5%	4.3 3.6	4.0	90.0%	14.9%	
cis-1,2-Dichloroethene Trichloroethene	0.9 < 0.2	4.3 3.9	4.0 4.0	85.0% 97.5%	4.8 4.0	4.0 4.0	97.5% 100%	11.0% 2.5%	
Tetrachloroethene	< 0.2	3.8	4.0	95.0%	3.7	4.0	92.5%	2.7%	

Results reported in  $\mu$ g/L

RPD calculated using sample concentrations per SW846.



## ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method 8260B Page 1 of 1

Sample ID: LCS-121304 LCS/LCSD

Lab Sample ID: LCS-121304 LIMS ID: 04-22035 Matrix: Water Data Release Authorized: Reported: 12/14/04 QC Report No: HL93-Entrix Project: WESTFARM/LEATHERCARE GEOPROBE 4067301 Date Sampled: NA Date Received: NA

LCSD: 20.0 mL

LCSD: 20.0 mL

Sample Amount LCS: 20.0 mL

Purge Volume LCS: 20.0 mL

Instrument/Analyst LCS: FINN1/PAB LCSD: FINN1/PAB Date Analyzed LCS: 12/13/04 12:01 LCSD: 12/13/04 12:40

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Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Vinyl Chloride	4.7	4.0	118%	5.0	4.0	125%	6.2%
1,1-Dichloroethene	4.7	4.0	118%	4.6	4.0	115%	2.2%
trans-1,2-Dichloroethene	3.5	4.0	87.5%	3.2	4.0	80.0%	9.0%
cis-1,2-Dichloroethene	3.3	4.0	82.5%	3.4	4.0	85.0%	3.0%
Trichloroethene	3.9	4.0	97.5%	4.0	4.0	100%	2.5%
Tetrachloroethene	3.6	4.0	90.0%	3.7	4.0	92.5%	2.7%

Results reported in  $\mu g/L$ 

RPD calculated using sample concentrations per SW846.

LCS spike recovery is evaluated using only the nine regulated compounds noted in the ARI LQAP. The other LCS spike compound recoveries are advisory and used for analytical troubleshooting should any of the nine regulated compounds be out of control.

	LCS	LCSD
d4-1,2-Dichloroethane	111%	114%
d8-Toluene	109%	103%
Bromofluorobenzene	98.4%	96.1%
d4-1,2-Dichlorobenzene	94.0%	91.9%

EPA SAMPLE NO.

#### 4A VOLATILE METHOD BLANK SUMMARY

MB1213

Lab Name: ANALYTICAL RESOURCES, INCContract: ENTRIXLab Code: ARICase No.: WESTFARM/LEATHERCARESDG No.: HL93Lab File ID: MB1213Lab Sample ID: MB1213Date Analyzed: 12/13/04Time Analyzed: 1311GC Column: RTX502.2ID: 0.18 (mm)Heated Purge: (Y/N) NInstrument ID: FINN1Heated Purge: (Y/N) N

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	s	8	<u> </u>	÷
	EPA	LAB	LAB	TIME
	SAMPLE NO.	SAMPLE ID	FILE ID	ANALYZED
				=============
01	LCS1213	LCS1213	LCS1213	1201
02		LCS1213	LCS1213A	1240
	LCS1213		LICOLZICA	
	CYS-2-BASE	HL93A	HL93A	1355
04	CYS-1.5-BASE	HL93B	HL93B	1420
05	CYS-2-BASE M	HL93AMS	HL93AMS	1450
06	CYS-2-BASE M	HL93AMSD	HL93AMSD	1529
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#### COMMENTS:

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OLM3.2M

## Volatile Organic Compound Analysis Sample Data

Prepared for

## Entrix

## Project Number: 4067301 Project: Westfarm / Leathercare Geoprobe

ARI Job No. HL93

Prepared By

Analytical Resources, Inc.

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET Volatiles by Purge & Trap GC/MS-Method 8260B Sample ID: CYS-2-base Page 1 of 1

SAMPLE

Lab Sample ID: HL93A LIMS ID: 04-22035 Matrix: Water Data Release Authorized: 🏉 Reported: 12/14/04

QC Report No: HL93-Entrix Project: WESTFARM/LEATHERCARE GEOPROBE 4067301 Date Sampled: 12/11/04 Date Received: 12/13/04

Instrument/Analyst: FINN1/PAB Date Analyzed: 12/13/04 13:55

Sample Amount: 20.0 mL Purge Volume: 20.0 mL

CAS Number	Analyte	RL	Result
75-01-4	Vinyl Chloride	0.2	0.2
75-35-4	1,1-Dichloroethene	0.2	< 0.2 U
156-60-5	trans-1,2-Dichloroethene	0.2	< 0.2 U
156-59-2	cis-1,2-Dichloroethene	0.2	0.9
79-01-6	Trichloroethene	0.2	< 0.2 U
127-18-4	Tetrachloroethene	0.2	< 0.2 U

Reported in  $\mu g/L$  (ppb)

d4-1,2-Dichloroethane	105%
d8-Toluene	110%
Bromofluorobenzene	90.8%
d4-1,2-Dichlorobenzene	1048

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET Volatiles by Purge & Trap GC/MS-Method 8260B Page 1 of 1

#### Sample ID: CYS-1.5-base SAMPLE

Lab Sample ID: HL93B LIMS ID: 04-22036 Matrix: Water Data Release Authorized: Reported: 12/14/04

QC Report No: HL93-Entrix Project: WESTFARM/LEATHERCARE GEOPROBE 4067301 Date Sampled: 12/11/04 Date Received: 12/13/04

Instrument/Analyst: FINN1/PAB Date Analyzed: 12/13/04 14:20 Sample Amount: 20.0 mL Purge Volume: 20.0 mL

CAS Number	Analyte	RL	Result
75-01-4	Vinyl Chloride	0.2	< 0.2 U
75-35-4	1,1-Dichloroethene	0.2	< 0.2 U
156-60-5	trans-1,2-Dichloroethene	0.2	< 0.2 U
156-59-2	cis-1,2-Dichloroethene	0.2	< 0.2 U
79-01-6	Trichloroethene	0.2	< 0.2 U
127-18-4	Tetrachloroethene	0.2	< 0.2 U

Reported in  $\mu$ g/L (ppb)

d4-1,2-Dichloroethane	115%
d8-Toluene	112%
Bromofluorobenzene	87.0%
d4-1,2-Dichlorobenzene	1048

## Analytical Resources, Incorporated



Analytical Chemists and Consultants

December 27 2004

Robert Barrick Entrix 2701 First Avenue Suite 500 Seattle, WA 98121

### RE: Client Project: 4067301 Westfarm/Leathercare Geoprobe ARI Job No. HL97

Dear Rob:

Please find enclosed the original chain of custody documentation and the final data package for samples from the project referenced above.

Problems associated with these analyses are discussed in the Case Narrative.

An electronic copy of this package will remain on file with ARI. Should you have any guestions or problems, please feel free to contact me at your convenience.

Sincerely,

ANALYTICAL RESOURCES, INC.

Susan Dunnihoo Client Service Manager sue@arilabs.com

Enclosures

206/695-6207

cc: eFileRef HL97

SD/sdrd

Case Narrative

## Prepared for

### Entrix

## Project Number: 4067301 Project: Westfarm / Leathercare Geoprobe

## ARI Job No. HL97

Prepared By

## Analytical Resources, Inc.





## Case Narrative

Client: Entrix, Inc. Project: 4067301 – Westfarm / Leathercare Geoprobe Matrix: Water ARI Job No. HL97

### Sample receipt

Eighteen water samples and a duplicate were accepted on 12/13/2004. The samples were received with a cooler temperature of 4.8 °C measured by IR thermometer following ARI SOP. The samples were in good condition with no discrepancies in paperwork. Two of the samples were submitted for rush analysis, the samples for standard turn-around are reported here. Several additional samples aliquots were received and placed on hold for possible future analysis.

#### Chlorinated Volatile Analysis by 8260B

Samples were analyzed 12/18 and 12/19/2004 within recommended holding times. The blank spikes were run in duplicate.

Initial and continuing calibrations were within requirements of the method and ARI SOP.

The method blanks were clean at the reporting limit.

LCS/LCSD recoveries and RPDs were within ARI control limits.

Surrogates recoveries were within ARI control limits.

Matrix spike recoveries for samples NPJ-1 and NPH-3 were within ARI control limits.

Internal standard areas were within requirements.

Preservations checks performed after analysis showed acceptable pH for all samples.

There were no incidents of note.

## Volatile Organic Compound Analysis QC Summary Data

Prepared for

### Entrix

## Project Number: 4067301 Project: Westfarm / Leathercare Geoprobe

ARI Job No. HL97

Prepared By

Analytical Resources, Inc.

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### WATER VOLATILE SYSTEM MONITORING COMPOUND SUMMARY

Matrix: Water (Low Level)

### QC Report No: HL97

Lab ID	Client ID	DCE	TOL	BFB	DCB	TOT OUT
····		7708	104%	85.8%	107%	0
HL97A	NPJ-2	110%	1048	78.5%	1078	ů 0
HL97B	NPI-1	102%		87.8%	112%	ů 0
HL97C	CYR-2-base	99.4%	1178	89.88	106%	õ
HL97D	MW9-121104	108%	112%		108%	0
HL97E	CYR-1.5-base	110%	109%	84.0%	108%	0
HL97F	CYS-1.5-base DUP	108%	104%	82.0%	110%	0
HL97G	NPL-4	108%	108%	88.2%		0
HL97H	NPI-4	116%	103%	84.0%	86.5%	-
HL97I	NPI-3	97.5%	106%	89.5%	108%	0
HL97J	NPI-2	107%	102%	86.8%	110%	0
121804MB	Method Blank	101%	96.0%	75.8%	98.6%	0
HL97LCS	Lab Control	125%	109%	95.6%	97.7%	0
HL97LCD	LCDuplicate	105%	102%	88.4%	90.5%	0
HL97K	NPJ-1	104%	109%	83.5%	110%	0
HL97KMS	NPJ-1	99.8%	105%	96.9%	93.8%	0
HL97L	NPK-1	96.8%	106%	85.0%	107%	0
HL97M	NPH-1	108%	104%	82.8%	105%	0
HL97N	NPH-2	103%	110%	85.2%	109%	0
HL970	NPK-4	115%	112%	91.5%	116%	0
HL97P	NPK-5	112%	102%	82.5%	101%	0
HL970	NPH-4	92.0%	109%	87.8%	102%	0
121904MB	Method Blank	107%	101%	81.3%	102%	0
HL97LCS	Lab Control	110%	104%	95.0%	95.6%	0
HL97LCD	LCDuplicate	111%	103%	91.9%	93.0%	0
HL97R	NPH-3	114%	105%	90.5%	100%	0
HL97RMS	NPH-3	108%	107%	95.4%	95.3%	0

SW8260B	LCS/MB LIMITS	QC LIMITS
(DCE) = 1, 2-Dichloroethane-d4	(68-126)	(62-138)
(TOL) = Toluene-d8	(59-121)	(66-124)
(BFB) = Bromofluorobenzene	(62-117)	(60-111)
(DCB) = 1,2-Dichlorobenzene-d4	(77-122)	(77-127)

# Column to be used to flag recovery values

\* Values outside of required QC limits

D System Monitoring Compound diluted out



ORGANICS ANALYSIS DATA SHEET Volatiles by Purge & Trap GC/MS-Method 8260B Sample ID: NPJ-1

Page 1 of 1

Sample ID: NPJ-1 MATRIX SPIKE

Lab Sample ID: HL97K LIMS ID: 04-22053 Matrix: Water Data Release Authorized: Reported: 12/23/04

Instrument/Analyst: FINN3/PAB

Date Analyzed: 12/18/04 21:02

QC Report No: HL97-Entrix Project: WESTFARM/LEATHERCARE GEOPROBE 4067301 Date Sampled: 12/11/04 Date Received: 12/13/04

Sample Amount: 20.0 mL Purge Volume: 20.0 mL

Analyte	Sample	Matrix Spike	Spike Added	Recovery
Vinyl Chloride 1,1-Dichloroethene trans-1,2-Dichloroethene cis-1,2-Dichloroethene Trichloroethene Tetrachloroethene	< 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2	4.0 4.0 4.0 4.0 4.0 4.0 4.0	4.0 4.0 4.0 4.0 4.0 4.0 4.0	87.5% 97.5% 95.0% 102% 102% 97.5%

Results reported in  $\mu$ g/L

ORGANICS ANALYSIS DATA SHEET Volatiles by Purge & Trap GC/MS-Method 8260B Sample ID: NPH-3 Page 1 of 1

# MATRIX SPIKE

Lab Sample ID: HL97R LIMS ID: 04-22060 Matrix: Water Data Release Authorized: QC Report No: HL97-Entrix Project: WESTFARM/LEATHERCARE GEOPROBE 4067301 Date Sampled: 12/13/04 Date Received: 12/13/04

Instrument/Analyst: FINN3/PAB Date Analyzed: 12/19/04 17:55 Sample Amount: 20.0 mL Purge Volume: 20.0 mL

Analyte	Sample	Matrix Spike	Spike Added	Recovery
Vinyl Chloride	4.0	4.0	4.0	75.0%
1,1-Dichloroethene	< 0.2	4.0	4.0	85.0%
trans-1,2-Dichloroethene	0.2	4.0	4.0	87.5%
cis-1,2-Dichloroethene	3.4	4.0	4.0	95.0%
Trichloroethene	0.6	4.0	4.0	92.5%
Tetrachloroethene	< 0.2	4.0	4.0	85.0%

Results reported in  $\mu g/L$ 



ORGANICS ANALYSIS DATA SHEET Volatiles by Purge & Trap GC/MS-Method 8260B Sample ID: LCS-121804

Page 1 of 1

LCS/LCSD

Lab Sample ID: LCS-121804 LIMS ID: 04-22053 Matrix: Water Data Release Authorized: Reported: 12/23/04

QC Report No: HL97-Entrix Project: WESTFARM/LEATHERCARE GEOPROBE 4067301 Date Sampled: NA Date Received: NA

Instrument/Analyst LCS: FINN3/PAB LCSD: FINN3/PAB Date Analyzed LCS: 12/18/04 12:50 LCSD: 12/18/04 13:18

Sample Amount LCS: 20.0 mL LCSD: 20.0 mL Purge Volume LCS: 20.0 mL LCSD: 20.0 mL

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Vinyl Chloride	3.7	4.0	92.5%	3.4	4.0	85.0%	8.5%
1,1-Dichloroethene	4.0	4.0	100%	3.6	4.0	90.0%	10.5%
trans-1,2-Dichloroethene	4.0	4.0	100%	3.6	4.0	90.0%	10.5%
cis-1.2-Dichloroethene	4.1	4.0	102%	4.0	4.0	100%	2.5%
Trichloroethene	3.9	4.0	97.5%	3.8	4.0	95.0%	2.6%
Trichloroethene	3.9	4.0	97.5%	3.6	4.0	90.0%	8.0%

Results reported in  $\mu g/L$ 

RPD calculated using sample concentrations per SW846.

LCS spike recovery is evaluated using only the nine regulated compounds noted in the ARI LQAP. The other LCS spike compound recoveries are advisory and used for analytical troubleshooting should any of the nine regulated compounds be out of control.

	LCS	LCSD
d4-1,2-Dichloroethane	125%	105%
d8-Toluene	109%	102%
Bromofluorobenzene	95.6%	88.4%
d4-1,2-Dichlorobenzene	97.78	90.5%

ORGANICS ANALYSIS DATA SHEET Volatiles by Purge & Trap GC/MS-Method 8260B Page 1 of 1

Sample ID: LCS-121904 LCS/LCSD

Lab Sample ID: LCS-121904 LIMS ID: 04-22060 Matrix: Water Data Release Authorized: Reported: 12/23/04

QC Report No: HL97-Entrix Project: WESTFARM/LEATHERCARE GEOPROBE 4067301 Date Sampled: NA Date Received: NA

Instrument/Analyst LCS: FINN3/PAB LCSD: FINN3/PAB Date Analyzed LCS: 12/19/04 15:12 LCSD: 12/19/04 16:08

Sample Amount LCS: 20.0 mL LCSD: 20.0 mL Purge Volume LCS: 20.0 mL LCSD: 20.0 mL

· · ·		LCSD	Added-LCSD	Recovery	RPD
4.0 4.0 4.0 4.0	80.0% 92.5% 97.5% 102% 97.5% 97.5%	3.2 3.5 3.8 4.2 3.9 3.5	$\begin{array}{c} 4.0\\ 4.0\\ 4.0\\ 4.0\\ 4.0\\ 4.0\\ 4.0\\ 4.0\\$	80.0% 87.5% 95.0% 105% 97.5% 87.5%	0.0% 5.6% 2.6% 2.4% 0.0% 5.6%
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	<b>2S Added</b> 4.0 4.0 4.0 4.0	Added-LCS         Recovery           4.0         80.0%           4.0         92.5%           4.0         97.5%           4.0         102%           4.0         97.5%	Added-LCS         Recovery         LCSD           4.0         80.0%         3.2           4.0         92.5%         3.5           4.0         97.5%         3.8           4.0         102%         4.2           4.0         97.5%         3.9	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	4.0       80.0% $3.2$ $4.0$ $80.0%$ $4.0$ $92.5\%$ $3.5$ $4.0$ $87.5\%$ $4.0$ $97.5\%$ $3.8$ $4.0$ $95.0\%$ $4.0$ $102\%$ $4.2$ $4.0$ $105\%$ $4.0$ $97.5\%$ $3.9$ $4.0$ $97.5\%$

Results reported in  $\mu g/L$ 

RPD calculated using sample concentrations per SW846.

LCS spike recovery is evaluated using only the nine regulated compounds noted in the ARI LQAP. The other LCS spike compound recoveries are advisory and used for analytical troubleshooting should any of the nine regulated compounds be out of control.

	LCS	LCSD
d4-1,2-Dichloroethane	110%	111%
d8-Toluene	1048	103%
Bromofluorobenzene	95.0%	91.9%
d4-1,2-Dichlorobenzene	95.6%	93.0%

EPA SAMPLE NO.

4A VOLATILE METHOD BLANK SUMMARY

MB1218

Lab Name: ANALYTICAL RESOURCES, INC Lab Code: ARI Lab Code: ARI Case No.: WESTFARM/LEATHERCARE Lab Sample ID: MB1218 Date Analyzed: 12/18/04 GC Column: RTX502.2 ID: 0.18 (mm) Instrument ID: FINN3

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

			1 7 1	TTME
	EPA	LAB	LAB	
	SAMPLE NO.	SAMPLE ID	FILE ID	ANALYZED
		22222222222	=======================================	========
01	LCS1218	LCS1218	LCS1218	1250
		LCS1218	LCS1218A	1318
02	LCS1218	HL97A	HL97A	1603
03	NPJ-2		HL97B	1630
04	NPI-1	HL97B	HL97C	1658
05	CYR-2-BASE	HL97C		1725
06	MW9-121104	HL97D	HL97D	1752
07	CYR-1.5-BASE	HL97E	HL97E	
08	CYS-1.5-BASE	HL97F	HL97F	1819
09	NPL-4	HL97G	HL97G	1846
10	NPI-4	HL97H	HL97H	1914
11	NPI-E	HL97I	HL97I	1941
		HL97J	HL97J	2008
	NPI-2	HL97K	HL97K	2035
13	NPJ-1	HT.97KMS	HL97KMS	2102
	NPJ-1 MS	Co whe comment and it is not over 1 and		2130
15	NPK-1	HL97L		2157
16	NPH-1	HL97M		2224
17	NPH-2	HL97N	HL97N	2224
18	NPK-4	HL970	HL970	2251
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COMMENTS:

page 1 of 1

OLM3.2M

К.,

### Volatile Organic Compound Analysis Sample Data

Prepared for

### Entrix

### Project Number: 4067301 Project: Westfarm / Leathercare Geoprobe

### ARI Job No. HL97

Prepared By

### Analytical Resources, Inc.

ORGANICS ANALYSIS DATA SHEET Volatiles by Purge & Trap GC/MS-Method 8260B Page 1 of 1

Sample ID: NPJ-2 SAMPLE

Lab Sample ID: HL97A LIMS ID: 04-22043 Matrix: Water Data Release Authorized: Reported: 12/23/04

Instrument/Analyst: FINN3/PAB Date Analyzed: 12/18/04 16:03 QC Report No: HL97-Entrix Project: WESTFARM/LEATHERCARE GEOPROBE 4067301 Date Sampled: 12/10/04 Date Received: 12/13/04

Sample Amount: 20.0 mL Purge Volume: 20.0 mL

CAS Number	Analyte	RL	Result
75-01-4	Vinyl Chloride	0.2	2.4
75-35-4	1,1-Dichloroethene	0.2	< 0.2 U
156-60-5	trans-1,2-Dichloroethene	0.2	0.2
156-59-2	cis-1,2-Dichloroethene	0.2	6.7
79-01-6	Trichloroethene	0.2	0.3
127-18-4	Tetrachloroethene	0.2	< 0.2 U

Reported in  $\mu g/L$  (ppb)

d4-1,2-Dichloroethane	110%
d8-Toluene	104%
Bromofluorobenzene	85.8%
d4-1,2-Dichlorobenzene	1078



ORGANICS ANALYSIS DATA SHEET Volatiles by Purge & Trap GC/MS-Method 8260B Page 1 of 1

Sample ID: NPI-1 SAMPLE

Lab Sample ID: HL97B LIMS ID: 04-22044 Matrix: Water Data Release Authorized: Reported: 12/23/04 QC Report No: HL97-Entrix Project: WESTFARM/LEATHERCARE GEOPROBE 4067301 Date Sampled: 12/10/04 Date Received: 12/13/04

Instrument/Analyst: FINN3/PAB Date Analyzed: 12/18/04 16:30 Sample Amount: 20.0 mL Purge Volume: 20.0 mL

CAS Number	Analyte	RL	Result
75-01-4	Vinyl Chloride	0.2	< 0.2 U
75-35-4	1,1-Dichloroethene	0.2	< 0.2 U
156-60-5	trans-1,2-Dichloroethene	0.2	< 0.2 U
156-59-2	cis-1,2-Dichloroethene	0.2	1.6
79-01-6	Trichloroethene	0.2	0.2
127-18-4	Tetrachloroethene	0.2	< 0.2 U

Reported in  $\mu g/L$  (ppb)

d4-1,2-Dichloroethane	102%
d8-Toluene	1018
Bromofluorobenzene	78.5%
d4-1,2-Dichlorobenzene	1078



ORGANICS ANALYSIS DATA SHEET Volatiles by Purge & Trap GC/MS-Method 8260B Sample ID: CYR-2-base Page 1 of 1

SAMPLE

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Lab Sample ID: HL97C LIMS ID: 04-22045 Matrix: Water Data Release Authorized: QC Report No: HL97-Entrix Project: WESTFARM/LEATHERCARE GEOPROBE 4067301 Date Sampled: 12/11/04 Date Received: 12/13/04

Instrument/Analyst: FINN3/PAB Date Analyzed: 12/18/04 16:58

Sample Amount: 20.0 mL Purge Volume: 20.0 mL

CAS Number	Analyte	RL	Result
75-01-4	Vinyl Chloride	0.2	0.4
75-35-4	1,1-Dichloroethene	0.2	< 0.2 U
156-60-5	trans-1,2-Dichloroethene	0.2	< 0.2 U
156-59-2	cis-1,2-Dichloroethene	0.2	1.6
79-01-6	Trichloroethene	0.2	< 0.2 U
127-18-4	Tetrachloroethene	0.2	< 0.2 U

Reported in  $\mu$ g/L (ppb)

d4-1,2-Dichloroethane	99.4%
d8-Toluene	1178
Bromofluorobenzene	87.8%
d4-1,2-Dichlorobenzene	112%



ORGANICS ANALYSIS DATA SHEET Volatiles by Purge & Trap GC/MS-Method 8260B Page 1 of 1

Sample ID: MW9-121104 SAMPLE

Lab Sample ID: HL97D LIMS ID: 04-22046 Matrix: Water Data Release Authorized: Reported: 12/23/04

QC Report No: HL97-Entrix Project: WESTFARM/LEATHERCARE GEOPROBE 4067301 Date Sampled: 12/11/04 Date Received: 12/13/04

Instrument/Analyst: FINN3/PAB Date Analyzed: 12/18/04 17:25 Sample Amount: 20.0 mL Purge Volume: 20.0 mL

CAS Number	Analyte	RL	Result
75-01-4	Vinyl Chloride	0.2	0.2
75-35-4	1,1-Dichloroethene	0.2	< 0.2 U
156-60-5	trans-1,2-Dichloroethene	0.2	< 0.2 U
156-59-2	cis-1,2-Dichloroethene	0.2	1.0
79-01- <b>6</b>	Trichloroethene	0.2	0.3
127-18-4	Tetrachloroethene	0.2	< 0.2 U

Reported in  $\mu$ g/L (ppb)

d4-1,2-Dichloroethane	108%
d8-Toluene	112%
Bromofluorobenzene	89.8%
d4-1,2-Dichlorobenzene	1 <b>0</b> 6%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET Volatiles by Purge & Trap GC/MS-Method 8260B Sample ID: CYR-1.5-base Page 1 of 1

SAMPLE

Lab Sample ID: HL97E LIMS ID: 04-22047 Matrix: Water Data Release Authorized; Reported: 12/23/04

QC Report No: HL97-Entrix Project: WESTFARM/LEATHERCARE GEOPROBE 4067301 Date Sampled: 12/11/04 Date Received: 12/13/04

Instrument/Analyst: FINN3/PAB Date Analyzed: 12/18/04 17:52 Sample Amount: 20.0 mL Purge Volume: 20.0 mL

CAS Number	Analyte	RL	Result
75-01-4	Vinyl Chloride	0.2	< 0.2 U
75-35-4	1,1-Dichloroethene	0.2	< 0.2 U
156-60-5	trans-1,2-Dichloroethene	0.2	< 0.2 U
156-59-2	cis-1,2-Dichloroethene	0.2	0.2 J
79-01-6	Trichloroethene	0.2	< 0.2 Ŭ
127-18-4	Tetrachloroethene	0.2	< 0.2 U

Reported in  $\mu g/L$  (ppb)

d4-1,2-Dichloroethane	110%
d8-Toluene	109%
Bromofluorobenzene	84.0%
d4-1,2-Dichlorobenzene	108%

ANALYTICAL RESOURCES

ORGANICS ANALYSIS DATA SHEET Volatiles by Purge & Trap GC/MS-Method 8260B Page 1 of 1

Sample ID: CYS-1.5-base DUP SAMPLE

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Lab Sample ID: HL97F LIMS ID: 04-22048 Matrix: Water Data Release Authorized: Reported: 12/23/04 QC Report No: HL97-Entrix Project: WESTFARM/LEATHERCARE GEOPROBE 4067301 Date Sampled: 12/11/04 Date Received: 12/13/04

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Instrument/Analyst: FINN3/PAB Date Analyzed: 12/18/04 18:19 Sample Amount: 20.0 mL Purge Volume: 20.0 mL

CAS Number	Analyte	RL	Result
75-01-4	Vinyl Chloride	0.2	< 0.2 U
75-35-4	1,1-Dichloroethene	0.2	< 0.2 Ŭ
156-60-5	trans-1,2-Dichloroethene	0.2	< 0.2 U
156-59-2	cis-1,2-Dichloroethene	0.2	< 0.2 U
79-01-6	Trichloroethene	0.2	< 0.2 U
127-18-4	Tetrachloroethene	0.2	< 0.2 U

Reported in  $\mu g/L$  (ppb)

d4-1,2-Dichloroethane	108%
d8-Toluene	104%
Bromofluorobenzene	82.0%
d4-1,2-Dichlorobenzene	108%

### ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method 8260B Sample ID: NPL-4 Page 1 of 1

SAMPLE

Lab Sample ID: HL97G LIMS ID: 04-22049 Matrix: Water Data Release Authorized: Reported: 12/23/04

Instrument/Analyst: FINN3/PAB Date Analyzed: 12/18/04 18:46 QC Report No: HL97-Entrix Project: WESTFARM/LEATHERCARE GEOPROBE 4067301 Date Sampled: 12/11/04 Date Received: 12/13/04

Sample Amount: 20.0 mL Purge Volume: 20.0 mL

CAS Number	Analyte	RL	Result
75-01-4	Vinyl Chloride	0.2	0.7
75-35-4	1,1-Dichloroethene	0.2	< 0.2 Ū
156-60-5	trans-1,2-Dichloroethene	0.2	< 0.2 Ŭ
156-59-2	cis-1,2-Dichloroethene	0.2	1.4
79-01-6	Trichloroethene	0.2	< 0.2 U
127-18-4	Tetrachloroethene	0.2	< 0.2 U

Reported in  $\mu g/L$  (ppb)

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET Volatiles by Purge & Trap GC/MS-Method 8260B Page 1 of 1

Sample ID: NPI-4 SAMPLE

Lab Sample ID: HL97H LIMS ID: 04-22050 Matrix: Water Data Release Authorized: Reported: 12/23/04

QC Report No: HL97-Entrix Project: WESTFARM/LEATHERCARE GEOPROBE 4067301 Date Sampled: 12/11/04 Date Received: 12/13/04

Sample Amount: 20.0 mL

Purge Volume: 20.0 mL

Instrument/Analyst: FINN3/PAB Date Analyzed: 12/18/04 19:14

CAS Number	Analyte	RL	Result
75-01-4	Vinyl Chloride	0.2	0.7
75-35-4	1,1-Dichloroethene	0.2	< 0.2 U
156-60-5	trans-1,2-Dichloroethene	0.2	< 0.2 Ŭ
156-59-2	cis-1,2-Dichloroethene	0.2	1.1
79-01-6	Trichloroethene	0.2	< 0.2 Ŭ
127-18-4	Tetrachloroethene	0.2	< 0.2 U

Reported in  $\mu g/L$  (ppb)

d4-1,2-Dichloroethane	116%
d8-Toluene	1038
Bromofluorobenzene	84.0%
d4-1,2-Dichlorobenzene	86.5%



ORGANICS ANALYSIS DATA SHEET Volatiles by Purge & Trap GC/MS-Method 8260B Page 1 of 1

Sample ID: NPI-3 SAMPLE

Lab Sample ID: HL97I LIMS ID: 04-22051 Matrix: Water Data Release Authorized: Reported: 12/23/04

Instrument/Analyst: FINN3/PAB Date Analyzed: 12/18/04 19:41 QC Report No: HL97-Entrix Project: WESTFARM/LEATHERCARE GEOPROBE 4067301 Date Sampled: 12/11/04 Date Received: 12/13/04

Sample Amount: 20.0 mL Purge Volume: 20.0 mL

CAS Number	Analyte	RL	Result
75-01-4	Vinyl Chloride	0.2	1.8
75-35-4	1,1-Dichloroethene	0.2	< 0.2 U
156-60-5	trans-1,2-Dichloroethene	0.2	< 0.2 U
156-59-2	cis-1,2-Dichloroethene	0.2	2.7
79-01-6	Trichloroethene	0.2	< 0.2 U
127-18-4	Tetrachloroethene	0.2	< 0.2 U

Reported in  $\mu g/L$  (ppb)

d4-1,2-Dichloroethane	97.5%
d8-Toluene	106%
Bromofluorobenzene	89.5%
d4-1,2-Dichlorobenzene	108%



ORGANICS ANALYSIS DATA SHEET Volatiles by Purge & Trap GC/MS-Method 8260B Sample ID: NPI-2 Page 1 of 1

SAMPLE

Lab Sample ID: HL97J LIMS ID: 04-22052 Matrix: Water Data Release Authorized: Reported: 12/23/04

QC Report No: HL97-Entrix Project: WESTFARM/LEATHERCARE GEOPROBE 4067301 Date Sampled: 12/11/04 Date Received: 12/13/04

Instrument/Analyst: FINN3/PAB Date Analyzed: 12/18/04 20:08

Sample	Amount:	20.0	mL
	Volume:		

CAS Number	Analyte	RL	Result
75-01-4	Vinyl Chloride	0.2	0.8
75-35-4	1,1-Dichloroethene	0.2	< 0.2 U
	trans-1,2-Dichloroethene	0.2	0.2
156-60-5	cis-1,2-Dichloroethene	0.2	6.6
156-59-2	Trichloroethene	0.2	0.5
7 <b>9-01-6</b> 127-18-4	Tetrachloroethene	0.2	< 0.2 U

Reported in  $\mu g/L$  (ppb)

d4-1,2-Dichloroethane	1078
d8-Toluene	102%
Bromofluorobenzene	86.8%
d4-1,2-Dichlorobenzene	110%



ORGANICS ANALYSIS DATA SHEET Volatiles by Purge & Trap GC/MS-Method 8260B Sample ID: NPJ-1

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Lab Sample ID: HL97K LIMS ID: 04-22053 Matrix: Water Data Release Authorized: Reported: 12/23/04

Instrument/Analyst: FINN3/PAB

Date Analyzed: 12/18/04 20:35

QC Report No: HL97-Entrix Project: WESTFARM/LEATHERCARE GEOPROBE 4067301 Date Sampled: 12/11/04 Date Received: 12/13/04

SAMPLE

Sample Amount: 20.0 mL Purge Volume: 20.0 mL

CAS Number	Analyte	RL	Result
75-01-4 75-35-4 156-60-5 156-59-2 79-01-6 127-18-4	Vinyl Chloride 1,1-Dichloroethene trans-1,2-Dichloroethene cis-1,2-Dichloroethene Trichloroethene Tetrachloroethene	0.2 0.2 0.2 0.2 0.2 0.2 0.2	< 0.2 U < 0.2 U

Reported in  $\mu$ g/L (ppb)

d4-1,2-Dichloroethane	1048
d8-Toluene	109%
Bromofluorobenzene	83.5%
d4-1,2-Dichlorobenzene	110웅



ORGANICS ANALYSIS DATA SHEET Volatiles by Purge & Trap GC/MS-Method 8260B Sample ID: NPK-1 Page 1 of 1

SAMPLE

Lab Sample ID: HL97L LIMS ID: 04-22054 Matrix: Water Data Release Authorized: Reported: 12/23/04

QC Report No: HL97-Entrix Project: WESTFARM/LEATHERCARE GEOPROBE 4067301 Date Sampled: 12/11/04 Date Received: 12/13/04

Instrument/Analyst: FINN3/PAB Date Analyzed: 12/18/04 21:30

Sample Amount: 20.0 mL Purge Volume: 20.0 mL

CAS Number	Analyte	RL	Result
75-01-4 75-35-4 156-60-5 156-59-2 79-01-6 127-18-4	Vinyl Chloride 1,1-Dichloroethene trans-1,2-Dichloroethene cis-1,2-Dichloroethene Trichloroethene Tetrachloroethene	0.2 0.2 0.2 0.2 0.2 0.2 0.2	< 0.2 U < 0.2 U

Reported in  $\mu g/L$  (ppb)

d4-1,2-Dichloroethane	96.8%
d8-Toluene	106%
Bromofluorobenzene	85.0%
d4-1,2-Dichlorobenzene	107%



ORGANICS ANALYSIS DATA SHEET Volatiles by Purge & Trap GC/MS-Method 8260B Sample ID: NPH-1 Page 1 of 1

SAMPLE

Lab Sample ID: HL97M LIMS ID: 04-22055 Matrix: Water Data Release Authorized: Reported: 12/23/04 Reported: 12/23/04

QC Report No: HL97-Entrix Project: WESTFARM/LEATHERCARE GEOPROBE 4067301 Date Sampled: 12/11/04 Date Received: 12/13/04

Sample Amount: 20.0 mL Purge Volume: 20.0 mL

Instrument/Analyst: FINN3/PAB Date Analyzed: 12/18/04 21:57

CAS Number	Analyte	RL	Result
75-01-4 75-35-4 156-60-5 <b>156-59-2</b> 79-01-6 127-18-4	Vinyl Chloride 1,1-Dichloroethene trans-1,2-Dichloroethene cis-1,2-Dichloroethene Trichloroethene Tetrachloroethene	0.2 0.2 0.2 0.2 0.2 0.2 0.2	< 0.2 U < 0.2 U < 0.2 U < 0.2 U 1.2 0.3 0.2

Reported in  $\mu g/L$  (ppb)

d4-1,2-Dichloroethane	108%
d8-Toluene	104%
Bromofluorobenzene	82.8%
d4-1,2-Dichlorobenzene	105%



ORGANICS ANALYSIS DATA SHEET Volatiles by Purge & Trap GC/MS-Method 8260B Page 1 of 1

Sample ID: NPH-2 SAMPLE

Lab Sample ID: HL97N LIMS ID: 04-22056 Matrix: Water Data Release Authorized:

Instrument/Analyst: FINN3/PAB Date Analyzed: 12/18/04 22:24 QC Report No: HL97-Entrix Project: WESTFARM/LEATHERCARE GEOPROBE 4067301 Date Sampled: 12/11/04 Date Received: 12/13/04

Sample Amount: 20.0 mL Purge Volume: 20.0 mL

CAS Number	umber Analyte		Result	
75-01-4	Vinyl Chloride	0.2	1.2	
75-35-4	1,1-Dichloroethene	0.2	< 0.2 U	
156-60-5	trans-1,2-Dichloroethene	0.2	0.3	
156-59-2	cis-1,2-Dichloroethene	0.2	6.5	
79-01-6	Trichloroethene	0.2	0.8	
127-18-4	Tetrachloroethene	0.2	0.1 J	

Reported in  $\mu$ g/L (ppb)

d4-1,2-Dichloroethane	103%
d8-Toluene	110%
Bromofluorobenzene	85.2%
d4-1,2-Dichlorobenzene	109%

#### ORGANICS ANALYSIS DATA SHEET Volatiles by Purge & Trap GC/MS-Method 8260B Sample ID: NPK-4 Page 1 of 1

SAMPLE

Lab Sample ID: HL970 LIMS ID: 04-22057 Matrix: Water Data Release Authorized: Reported: 12/23/04

Instrument/Analyst: FINN3/PAB Date Analyzed: 12/18/04 22:51 QC Report No: HL97-Entrix Project: WESTFARM/LEATHERCARE GEOPROBE 4067301 Date Sampled: 12/13/04 Date Received: 12/13/04

Sample Amount: 20.0 mL Purge Volume: 20.0 mL

CAS Number	Analyte	e RL	
75-01-4	Vinyl Chloride	0.2	1.2
75-35-4	1,1-Dichloroethene	0.2	< 0.2 U
156-60-5	trans-1,2-Dichloroethene	0.2	< 0.2 U
156-59-2	cis-1,2-Dichloroethene	0.2	1.7
79-01-6	Trichloroethene	0.2	< 0.2 U
127-18-4	Tetrachloroethene	0.2	< 0.2 U

Reported in  $\mu g/L$  (ppb)

d4-1,2-Dichloroethane	115%
d8-Toluene	112%
Bromofluorobenzene	91.5%
d4-1,2-Dichlorobenzene	116%



ORGANICS ANALYSIS DATA SHEET Volatiles by Purge & Trap GC/MS-Method 8260B Page 1 of 1

Sample ID: NPK-5 SAMPLE

Lab Sample ID: HL97P LIMS ID: 04-22058 Matrix: Water Data Release Authorized: Reported: 12/23/04

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Instrument/Analyst: FINN3/PAB Date Analyzed: 12/19/04 16:37 QC Report No: HL97-Entrix Project: WESTFARM/LEATHERCARE GEOPROBE 4067301 Date Sampled: 12/13/04 Date Received: 12/13/04

Sample Amount: 20.0 mL Purge Volume: 20.0 mL

CAS Number	Analyte	RL Resul	
75-01-4	Vinyl Chloride	0.2	< 0.2 U
75-35-4	1,1-Dichloroethene	0.2	< 0.2 U
156-60-5	trans-1,2-Dichloroethene	0.2	< 0.2 U
156-59-2	cis-1,2-Dichloroethene	0.2	< 0.2 U
79-01-6	Trichloroethene	0.2	< 0.2 U
127-18-4	Tetrachloroethene	0.2	< 0.2 Ŭ

Reported in  $\mu g/L$  (ppb)

d4-1,2-Dichloroethane	112%
d8-Toluene	102%
Bromofluorobenzene	82.5%
d4-1,2-Dichlorobenzene	101%

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ORGANICS ANALYSIS DATA SHEET Volatiles by Purge & Trap GC/MS-Method 8260B Sample ID: NPH-4 Page 1 of 1

SAMPLE

Lab Sample ID: HL97Q LIMS ID: 04-22059 Matrix: Water · Øð Data Release Authorized: Reported: 12/23/04

Instrument/Analyst: FINN3/PAB Date Analyzed: 12/19/04 17:01 QC Report No: HL97-Entrix Project: WESTFARM/LEATHERCARE GEOPROBE 4067301 Date Sampled: 12/13/04 Date Received: 12/13/04

Sample Amount: 20.0 mL Purge Volume: 20.0 mL

CAS Number	Analyte	RL	Result
75-01-4	Vinyl Chloride	0.2	1.4
75-35-4	1,1-Dichloroethene	0.2	< 0.2 U
156-60-5	trans-1,2-Dichloroethene	0.2	< 0.2 U
156-59-2	cis-1,2-Dichloroethene	0.2	1.6
79-01-6	Trichloroethene	0.2	0.1 J
127-18-4	Tetrachloroethene	0.2	< 0.2 Ŭ

Reported in  $\mu g/L$  (ppb)

d4-1,2-Dichloroethane	92.0%
d8-Toluene	109%
Bromofluorobenzene	87.8%
d4-1,2-Dichlorobenzene	102%

ANALYTICAL RESOURCES INCORPORATED

#### ORGANICS ANALYSIS DATA SHEET Volatiles by Purge & Trap GC/MS-Method 8260B Page 1 of 1

Sample ID: NPH-3 SAMPLE

Lab Sample ID: HL97R LIMS ID: 04-22060 Matrix: Water Data Release Authorized: Reported: 12/23/04

Instrument/Analyst: FINN3/PAB Date Analyzed: 12/19/04 17:28 QC Report No: HL97-Entrix Project: WESTFARM/LEATHERCARE GEOPROBE 4067301 Date Sampled: 12/13/04 Date Received: 12/13/04

Sample Amount: 20.0 mL Purge Volume: 20.0 mL

CAS Number	Analyte	RL	Result
75-01-4	Vinyl Chloride	0.2	4.0
75-35-4	1,1-Dichloroethene	0.2	< 0.2 U
156-60-5	trans-1,2-Dichloroethene	0.2	0.2
156-59-2	cis-1,2-Dichloroethene	0.2	3.4
79-01-6	Trichloroethene	0.2	0.6
127-18-4	Tetrachloroethene	0.2	< 0.2 U

Reported in  $\mu g/L$  (ppb)

d4-1,2-Dichloroethane	114%
d8-Toluene	105%
Bromofluorobenzene	90.5%
d4-1,2-Dichlorobenzene	100%



December 28, 2004

Robert Barrick Entrix 2701 First Avenue Suite 500 Seattle, WA 98121

# RE: Client Project: 4067301 Westfarm/Leathercare Geoprobe

Dear Rob:

Please find enclosed the original chain of custody documentation and the final data package for samples from the project referenced above.

Problems associated with these analyses are discussed in the Case Narrative.

An electronic copy of this package will remain on file with ARI. Should you have any questions or problems, please feel free to contact me at your convenience.

Sincerely,

ANALYSTICAL/RESOURCES, INC. wa

Susan Dunnihoo Client Service Manager sue@arilabs.com 206/695-6207

Enclosures

cc: eFileRef HM16

SD/sdrd

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**Case Narrative** 

Prepared for

### Entrix

Project Number: 4067301 Project: Westfarm / Leathercare Geoprobe

ARI Job No. HM16

Prepared By

Analytical Resources, Inc.

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### Case Narrative

Client: Entrix, Inc. Project: 4067301 – Westfarm / Leathercare Geoprobe Matrix: Water ARI Job No. HM16

#### Sample receipt

Ten water samples and a duplicate, and one 'oil' were accepted on 12/13/2004. The samples were received with a cooler temperature of 6.0 °C measured by IR thermometer following ARI SOP. The samples were in good condition with no discrepancies in paperwork. The oil was submitted for rush analysis under a separate job number. Results for standard turnaround samples are reported here. Several additional samples aliquots were received and placed on hold for possible future analysis.

### Chlorinated Volatile Analysis by 8260B

Samples were analyzed 12/18 and 12/19/2004 within recommended holding times. The blank spikes were run in duplicate.

Initial and continuing calibrations were within requirements of the method and ARI SOP.

The method blanks were clean at the reporting limit.

LCS/LCSD recoveries and RPDs were within ARI control limits.

Surrogates recoveries were within ARI control limits.

Matrix spike recoveries were within ARI control limits.

Internal standard areas were within requirements.

Preservations checks performed after analysis showed acceptable pH for all samples.

There were no incidents of note.

### Volatile Organic Compound Analysis QC Summary Data

Prepared for

### Entrix

# Project Number: 4067301 Project: Westfarm / Leathercare Geoprobe

ARI Job No. HM16

Prepared By

Analytical Resources, Inc.

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# WATER VOLATILE SYSTEM MONITORING COMPOUND SUMMARY

Matrix: Water (Low Level)

QC Report No: HM16

Lab ID	Client ID	DCE	TOL	BFB	DCB	TOT OUT
Lab ID HM16A HM16B 122004MB HM16LCS HM16LCD HM16C HM16C HM16C HM16F HM16F HM16F HM16G HM16H HM16I HM16J HM16J	Client ID NPG-4 NPG-3 Method Blank Lab Control LCDuplicate NPG-2 NPG-2 NPF-1 NPF-2 NPF-3 NPE-1 NPE-2 NPE-3 NPE-3 DUP NPE-4 TRIP BLANK	DCE 116% 96.2% 98.2% 105% 110% 91.8% 94.5% 102% 96.5% 103% 109% 119% 104% 112% 107% 103%	114% 102% 92.6% 95.4% 101% 100% 99.8% 100% 102% 104% 94.8% 99.0% 104% 104% 104% 104%	109% 87.5% 75.5% 91.4% 92.0% 85.5% 93.7% 88.8% 88.0% 95.2% 71.5% 92.0% 88.8% 92.5% 88.0% 88.0% 87.2%	90.2% 103% 91.5% 91.9% 93.1% 97.2% 96.2% 103% 100% 105% 77.5% 98.5% 104% 110% 102% 102%	

SW8260B (DCE) = 1,2-Dichloroethane-d4 (TOL) = Toluene-d8 (BFB) = Bromofluorobenzene	LCS/MB LIMITS (68-126) (59-121) (62-117)	QC LIMITS (62-138) (66-124) (60-111) (77-127)
(BFB) = Bromofluorobenzene (DCB) = 1,2-Dichlorobenzene-d4	(77-122)	(77-127)

# Column to be used to flag recovery values

Values outside of required QC limits

D System Monitoring Compound diluted out



ORGANICS ANALYSIS DATA SHEET Volatiles by Purge & Trap GC/MS-Method 8260B Sample ID: NPG-2 Page 1 of 1

MATRIX SPIKE

QC Report No: HM16-Entrix Project: WESTFARM/LEATHERCARE GEOPROBES 4067301 Date Sampled: 12/13/04 Date Received: 12/13/04

Sample Amount: 20.0 mL Purge Volume: 20.0 mL

Analyte	Sample	Matrix Spike	Spike Added	Recovery
Vinyl Chloride	1.2	4.0	$\begin{array}{c} 4 & . \\ 0 \\ 4 & . \\ 0 \\ 4 & . \\ 0 \\ 4 & . \\ 0 \\ 4 & . \\ 0 \end{array}$	72.5%
1,1-Dichloroethene	< 0.2	4.0		80.0%
trans-1,2-Dichloroethene	0.5	4.0		80.0%
cis-1,2-Dichloroethene	8.2	4.0		102%
Trichloroethene	0.4	4.0		90.0%
Tetrachloroethene	< 0.2	4.0		90.0%

Results reported in  $\mu g/L$ 

Lab Sample ID: HM16C LIMS ID: 04-22134

Reported: 12/29/04

Data Release Authorized:

Instrument/Analyst: FINN3/PAB Date Analyzed: 12/20/04 13:37

Matrix: Water



ORGANICS ANALYSIS DATA SHEET Volatiles by Purge & Trap GC/MS-Method 8260B 1 of 1 Page

Sample ID: LCS-122004 LCS/LCSD

Lab Sample ID: LCS-122004 LIMS ID: 04-22134 Matrix: Water Data Release Authorized: Reported: 12/23/04

QC Report No: HM16-Entrix Project: WESTFARM/LEATHERCARE GEOPROBES 4067301 Date Sampled: NA Date Received: NA

Instrument/Analyst LCS: FINN3/PAB LCSD: FINN3/PAB Date Analyzed LCS: 12/20/04 10:43 LCSD: 12/20/04 11:11

Sample Amount LCS: 20.0 mL LCSD: 20.0 mL Purge Volume LCS: 20.0 mL LCSD: 20.0 mL

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Vinyl Chloride	3.3	4.0	82.5%	3.1	4.0	77.5%	6.2%
1,1-Dichloroethene	3.8	4.0	95.0%	3.9	4.0	97.5%	2.6%
trans-1,2-Dichloroethene	3.9	4.0	97.5%	4.0	4.0	100%	2.5%
cis-1,2-Dichloroethene	4.2	4.0	105%	4.3	4.0	108%	2.4%
Trichloroethene	3.8	4.0	95.0%	4.0	4.0	100%	5.1%
Tetrachloroethene	3.8	4.0	95.0%	3.8	4.0	95.0%	0.0%

#### Results reported in $\mu$ g/L

RPD calculated using sample concentrations per SW846.

LCS spike recovery is evaluated using only the nine regulated compounds noted in the ARI LQAP. The other LCS spike compound recoveries are advisory and used for analytical troubleshooting should any of the nine regulated compounds be out of control.

	LCS	LCSD
d4-1,2-Dichloroethane	105%	110%
d8-Toluene Bromofluorobenzene	95.4%	101%
	91.4%	92.0%
d4-1,2-Dichlorobenzene	91.9%	93.1%

EPA SAMPLE NO.

4A VOLATILE METHOD BLANK SUMMARY

MB1220

Lab Name: ANALYTICAL RESOURCES, INCContract: ENTRIXLab Code: ARICase No.: WESTFARM/LEATHERCARESDG No.: HM16Lab File ID: MB1220Lab Sample ID: MB1220Date Analyzed: 12/20/04Time Analyzed: 1139GC Column: RTX502.2ID: 0.18 (mm)Heated Purge: (Y/N) NInstrument ID: FINN3Heated Purge: (Y/N) N

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

EPA	LAB	LAB	TIME
SAMPLE NO.	SAMPLE ID	FILE ID	ANALYZED
			==============
		LCS1220	1043
01 LCS1220	LCS1220		1111
02 LCS1220	LCS1220	LCS1220A	
03 NPG-4	HM16A	HM16A	1223
04 NPG-3	HM16B	HM16B	1244
	HM16C	HM16C	1310
05 NPG-2		HM16CMS	1337
06 NPG-2 MS	HM16CMS		1404
07 NPF-1	HM16D	HM16D	1431
08 NPF-2	HM16E	HM16E	
09 NPF-3	HM16F	HM16F	1506
10 NPE-1	HM16G	HM16G	1527
	HM16H	HM16H	1553
11 NPE-2	HM16I	HM16I	1622
12 NPE-3		HM16J	1645
13 NPE-3 DUP	HM16J		1713
14 NPE-4	HM16K	HM16K	
15 TRIP BLANK	HM16L	HM16L	1740
16			
17	-		
18			
	-		
19	-		
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COMMENTS:

page 1 of 1

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### Volatile Organic Compound Analysis Sample Data

Prepared for

### Entrix

## Project Number: 4067301 Project: Westfarm / Leathercare Geoprobe

# ARI Job No. HM16

Prepared By

Analytical Resources, Inc.



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ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method 8260B Sample ID: NPG-4 Page 1 of 1

Lab Sample ID: HM16A LIMS ID: 04-22132 Matrix: Water Data Release Authorized: Reported: 12/23/04

QC Report No: HM16-Entrix Project: WESTFARM/LEATHERCARE GEOPROBES 4067301 Date Sampled: 12/13/04 Date Received: 12/13/04

SAMPLE

Instrument/Analyst: FINN3/PAB Date Analyzed: 12/20/04 12:23

Sample Amount: 20.0 mL Purge Volume: 20.0 mL

CAS Number	Analyte	RL	Result
75-01-4 75-35-4 156-60-5 156-59-2 79-01-6 127-18-4	Vinyl Chloride 1,1-Dichloroethene trans-1,2-Dichloroethene cis-1,2-Dichloroethene Trichloroethene Tetrachloroethene	0.2 0.2 0.2 0.2 0.2 0.2 0.2	2.5 < 0.2 U 0.1 J 2.8 0.3 < 0.2 U

Reported in  $\mu g/L$  (ppb)

#### Volatile Surrogate Recovery

d4-1,2-Dichloroethane	116%
d8-Toluene	1148
Bromofluorobenzene	1098
d4-1,2-Dichlorobenzene	90.2%

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ORGANICS ANALYSIS DATA SHEET Volatiles by Purge & Trap GC/MS-Method 8260B Sample ID: NPG-3 Page 1 of 1

# SAMPLE

Lab Sample ID: HM16B LIMS ID: 04-22133 Matrix: Water Data Release Authorized: Reported: 12/23/04

QC Report No: HM16-Entrix Project: WESTFARM/LEATHERCARE GEOPROBES 4067301 Date Sampled: 12/13/04 Date Received: 12/13/04

Instrument/Analyst: FINN3/PAB Date Analyzed: 12/20/04 12:44

		RL		Result
Purge	Volume:	20.0	mL	

Sample Amount: 20.0 mL

CAS Number	Analyte	RL	Result
	Vinyl Chloride	0.2	5.2
75-01-4	1,1-Dichloroethene	0.2	< 0.2 U
75-35-4	trans-1,2-Dichloroethene	0.2	0.4
156-60-5	cis-1,2-Dichloroethene	0.2	5.5
156-59-2		0.2	1.4
79-01 <b>-6</b>	Trichloroethene	0.2	< 0.2 U
127-18-4	Tetrachloroethene	0.2	

Reported in  $\mu g/L$  (ppb)

d4-1,2-Dichloroethane	96.2%
d8-Toluene	102%
Bromofluorobenzene	87.5%
d4-1,2-Dichlorobenzene	103%


ORGANICS ANALYSIS DATA SHEET Volatiles by Purge & Trap GC/MS-Method 8260B Sample ID: NPG-2 Page 1 of 1 SAMPLE

Lab Sample ID: HM16C LIMS ID: 04-22134 Matrix: Water Data Release Authorized: Reported: 12/23/04 QC Report No: HM16-Entrix Project: WESTFARM/LEATHERCARE GEOPROBES 4067301 Date Sampled: 12/13/04 Date Received: 12/13/04 Sample Amount: 20.0 mL Purge Volume: 20.0 mL

Instrument/Analyst: FINN3/PAB Date Analyzed: 12/20/04 13:10

CAS Number	Analyte	RL	Result
75-01-4 75-35-4 156-60-5 156-59-2 79-01-6 127-18-4	Vinyl Chloride 1,1-Dichloroethene trans-1,2-Dichloroethene cis-1,2-Dichloroethene Trichloroethene Tetrachloroethene	0.2 0.2 0.2 0.2 0.2 0.2 0.2	1.2 < 0.2 U 0.5 8.2 0.4 < 0.2 U

Reported in  $\mu g/L$  (ppb)

d4-1,2-Dichloroethane	91.8%
d8-Toluene	100%
Bromofluorobenzene	85.5%
d4-1,2-Dichlorobenzene	97.2%



SAMPLE

Lab Sample ID: HM16D LIMS ID: 04-22135 Matrix: Water Data Release Authorized: Reported: 12/23/04

QC Report No: HM16-Entrix Project: WESTFARM/LEATHERCARE GEOPROBES 4067301 Date Sampled: 12/13/04 Date Received: 12/13/04

Sample Amount: 20.0 mL

Purge Volume: 20.0 mL

Instrument/Analyst: FINN3/PAB Date Analyzed: 12/20/04 14:04

CAS Number	Analyte	RL	Result
75-01-4	Vinyl Chloride	0.2	< 0.2 U
75-35-4	1,1-Dichloroethene	0.2	< 0.2 U
156-60-5	trans-1,2-Dichloroethene	0.2	0.1 J
156-59-2	cis-1,2-Dichloroethene	0.2	1.5
79-01-6	Trichloroethene	0.2	1.0
127-18-4	Tetrachloroethene	0.2	1.5

Reported in  $\mu g/L$  (ppb)

d4-1,2-Dichloroethane	102%
d8-Toluene	100%
Bromofluorobenzene	88.8%
d4-1,2-Dichlorobenzene	103%



Lab Sample ID: HM16E LIMS ID: 04-22136 Matrix: Water Matrix: Water Data Release Authorized: Reported: 12/23/04

Instrument/Analyst: FINN3/PAB Date Analyzed: 12/20/04 14:31 QC Report No: HM16-Entrix Project: WESTFARM/LEATHERCARE GEOPROBES 4067301 Date Sampled: 12/13/04 Date Received: 12/13/04

SAMPLE

Sample Amount: 20.0 mL Purge Volume: 20.0 mL

CAS Number	Analyte	RL	Result
75-01-4	Vinyl Chloride	0.2	0.9
75-35-4	1,1-Dichloroethene	0.2	< 0.2 U
156-60-5	trans-1,2-Dichloroethene	0.2	0.3
156-59-2	cis-1,2-Dichloroethene	0.2	2.8
156~59-2 79-01-6	Trichloroethene	0.2	1.7
79-01-6	Tetrachloroethene	0.2	0.6

Reported in  $\mu g/L$  (ppb)

#### Volatile Surrogate Recovery

d4-1,2-Dichloroethane	96.5%
d8-Toluene	1028
Bromofluorobenzene	88.0%
d4-1,2-Dichlorobenzene	100%

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SAMPLE

Lab Sample ID: HM16F LIMS ID: 04-22137 Matrix: Water Data Release Authorized: Reported: 12/23/04

QC Report No: HM16-Entrix Project: WESTFARM/LEATHERCARE GEOPROBES 4067301 Date Sampled: 12/13/04 Date Received: 12/13/04

Sample Amount: 20.0 mL

Purge Volume: 20.0 mL

Instrument/Analyst: FINN3/PAB Date Analyzed: 12/20/04 15:06

CAS Number	Analyte	RL	Result
75-01-4 75-35-4 156-60-5 156-59-2 79-01-6 127-18-4	Vinyl Chloride 1,1-Dichloroethene trans-1,2-Dichloroethene cis-1,2-Dichloroethene Trichloroethene Tetrachloroethene	0.2 0.2 0.2 0.2 0.2 0.2 0.2	3.8 < 0.2 U 0.4 5.4 1.8 1.3

Reported in  $\mu g/L$  (ppb)

# Volatile Surrogate Recovery

d4-1,2-Dichloroethane	1038
d8-Toluene	104%
Bromofluorobenzene	95.2%
d4-1,2-Dichlorobenzene	105%

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SAMPLE

Lab Sample ID: HM16G LIMS ID: 04-22138 Matrix: Water Matrix: water Data Release Authorized: Reported: 12/23/04

Instrument/Analyst: FINN3/PAB

Date Analyzed: 12/20/04 15:27

QC Report No: HM16-Entrix Project: WESTFARM/LEATHERCARE GEOPROBES 4067301 Date Sampled: 12/13/04 Date Received: 12/13/04

Sample Amount: 20.0 mL Purge Volume: 20.0 mL

CAS Number	Analyte	RL	Result
75-01-4	Vinyl Chloride	0.2	< 0.2 U
75-35-4	1,1-Dichloroethene	0.2	< 0.2 U
156-60-5	trans-1,2-Dichloroethene	0.2	< 0.2 Ŭ
156-59-2	cis-1,2-Dichloroethene	0.2	1.1
79-01-6	Trichloroethene	0.2	0.9
127-18-4	Tetrachloroethene	0.2	2.9

Reported in  $\mu g/L$  (ppb)

d4-1,2-Dichloroethane	1098
d8-Toluene	94.8%
Bromofluorobenzene	71.5%
d4-1,2-Dichlorobenzene	77.5%

Sample ID: NPE-2 SAMPLE

Lab Sample ID: HM16H LIMS ID: 04-22139 Matrix: Water Data Release Authorized: Reported: 12/23/04 QC Report No: HM16-Entrix Project: WESTFARM/LEATHERCARE GEOPROBES 4067301 Date Sampled: 12/13/04 Date Received: 12/13/04

Instrument/Analyst: FINN3/PAB Date Analyzed: 12/20/04 15:53 Sample Amount: 20.0 mL Purge Volume: 20.0 mL

CAS Number	Analyte	RL	Result
75-01-4	Vinyl Chloride	0.2	2.0
75-35-4	1,1-Dichloroethene	0.2	< 0.2 U
156-60-5	trans-1,2-Dichloroethene	0.2	0.2 J
156-59-2	cis-1,2-Dichloroethene	0.2	2.4
——————————————————————————————————————	Trichloroethene	0.2	1.0
79-01-6 127-18-4	Tetrachloroethene	0.2	0.6

Reported in  $\mu g/L$  (ppb)

d4-1,2-Dichloroethane	119%
d8-Toluene	99.0%
Bromofluorobenzene	92.0%
d4-1,2-Dichlorobenzene	98.5%

SAMPLE

Lab Sample ID: HM16I LIMS ID: 04-22140 Matrix: Water Data Release Authorized: ØB Reported: 12/23/04

Instrument/Analyst: FINN3/PAB Date Analyzed: 12/20/04 16:22 QC Report No: HM16-Entrix Project: WESTFARM/LEATHERCARE GEOPROBES 4067301 Date Sampled: 12/13/04 Date Received: 12/13/04

Sample Amount: 20.0 mL Purge Volume: 20.0 mL

CAS Number	Analyte	RL	Result
75-01-4	Vinyl Chloride	0.2	1.5
75-35-4	1,1-Dichloroethene	0.2	< 0.2 U
156-60-5	trans-1,2-Dichloroethene	0.2	0.3
156-59-2	cis-1,2-Dichloroethene	0.2	5.4
79-01-6	Trichloroethene	0.2	1.3
127-18-4	Tetrachloroethene	0.2	3.1

Reported in  $\mu g/L$  (ppb)

d4-1,2-Dichloroethane	1048
d8-Toluene	1048
Bromofluorobenzene	88.8%
d4-1,2-Dichlorobenzene	1048

ANALYTICAL RESOURCES

#### ORGANICS ANALYSIS DATA SHEET Volatiles by Purge & Trap GC/MS-Method 8260B Page 1 of 1

Sample ID: NPE-3 DUP SAMPLE

Lab Sample ID: HM16J LIMS ID: 04-22141 Matrix: Water Data Release Authorized: Reported: 12/23/04 QC Report No: HM16-Entrix Project: WESTFARM/LEATHERCARE GEOPROBES 4067301 Date Sampled: 12/13/04 Date Received: 12/13/04

Instrument/Analyst: FINN3/PAB Date Analyzed: 12/20/04 16:45 Sample Amount: 20.0 mL Purge Volume: 20.0 mL

CAS Number	Analyte	RL	Result
75-01-4	Vinyl Chloride	0.2	1.6
75-35-4	1,1-Dichloroethene	0.2	< 0.2 U
156-60-5	trans-1,2-Dichloroethene	0.2	0.2
156-59-2	cis-1,2-Dichloroethene	0.2	5.2
79-01 <b>-6</b>	Trichloroethene	0.2	1.2
127-18-4	Tetrachloroethene	0.2	2.9

Reported in  $\mu g/L$  (ppb)

d4-1,2-Dichloroethane	1128
d8-Toluene	104%
Bromofluorobenzene	92.5%
d4-1,2-Dichlorobenzene	110%

Sample ID: NPE-4 SAMPLE

Lab Sample ID: HM16K LIMS ID: 04-22142 Matrix: Water Data Release Authorized: Reported: 12/23/04

Instrument/Analyst: FINN3/PAB Date Analyzed: 12/20/04 17:13 QC Report No: HM16-Entrix Project: WESTFARM/LEATHERCARE GEOPROBES 4067301 Date Sampled: 12/13/04 Date Received: 12/13/04

Sample Amount: 20.0 mL Purge Volume: 20.0 mL

CAS Number	Analyte	RL	Result
75-01-4	Vinyl Chloride	0.2	1.2
75-35-4	1,1-Dichloroethene	0.2	< 0.2 Ũ
156-60-5	trans-1,2-Dichloroethene	0.2	< 0.2 U
156-59-2	cis-1,2-Dichloroethene	0.2	2.4
79-01-6	Trichloroethene	0.2	0.2 J
127-18-4	Tetrachloroethene	0.2	< 0.2 U

Reported in  $\mu$ g/L (ppb)

d4-1,2-Dichloroethane	1078
d8-Toluene	104%
Bromofluorobenzene	88.0%
d4-1,2-Dichlorobenzene	1028



Sample ID: TRIP BLANK SAMPLE

Lab Sample ID: HM16L LIMS ID: 04-22143 Matrix: Water Data Release Authorized: Instrument/Analyst: FINN3/PAB Date Analyzed: 12/20/04 17:40 Sample Amount: 20.0 mL Purge Volume: 20.0 mL

CAS Number	Analyte	RL Resu		
75-01-4	Vinyl Chloride	0.2	< 0.2 U	
75-35-4	1,1-Dichloroethene	0.2	< 0.2 U	
156-60-5	trans-1,2-Dichloroethene	0.2	< 0.2 U	
156-59-2	cis-1,2-Dichloroethene	0.2	< 0.2 U	
79-01-6	Trichloroethene	0.2	< 0.2 U	
127-18-4	Tetrachloroethene	0.2	< 0.2 U	

Reported in  $\mu$ g/L (ppb)

d4-1,2-Dichloroethane	1038
d8-Toluene	106%
Bromofluorobenzene	87.2%
d4-1,2-Dichlorobenzene	102%



# Analytical Resources, Incorporated

Analytical Chemists and Consultants

December 22, 2004

Robert Barrick Entrix 2701 First Avenue Suite 500 Seattle, WA 98121

### RE: Client Project: 4067301 Westfarm/Leathercare Geoprobe ARI Job No. HM35

Dear Rob:

Please find enclosed the original chain of custody documentation and the final data package for samples from the project referenced above.

Problems associated with these analyses are discussed in the Case Narrative.

An electronic copy of this package will remain on file with ARI. Should you have any questions or problems, please feel free to contact me at your convenience.

Sincerely,

TICAL RES DURCES, INC. Øl

Susan Dunnihoo Client Service Manager sue@arilabs.com 206/695-6207

Enclosures

cc: eFileRef HM35

SD/sdrd

**Case Narrative** 

# Prepared for

### Entrix

Project Number: 4067301 Project: Westfarm / Leathercare Geoprobe

ARI Job No. HM35

Prepared By

Analytical Resources, Inc.



# Case Narrative

Client: Entrix, Inc. Project: 4067301 – Westfarm / Leathercare Geoprobe Matrix: Water ARI Job No. HM35

### Sample receipt

Sixteen water samples were accepted by Analytical Resources, Inc. on 12/14/2004. The samples were received with a cooler temperature of 2.0 °C measured by IR thermometer following ARI SOP. The samples were in good condition with no discrepancies in paperwork. Three of the samples were submitted for rush analysis and results for those samples are included on this report.

# Chlorinated Volatile Analysis by 8260B

Samples were analyzed 12/15/2004 within recommended holding times. The LCS (Blank Spike) was also run in duplicate. The batch replicate analysis was run as a spiked sample on CYS-2-base (HL93A). Copies of the summary MS/MSD results have been included in this package.

Initial and continuing calibrations were within requirements of the method and ARI SOP.

The method blank was clean at the reporting limit.

LCS/LCSD recoveries and RPDs were within ARI control limits.

Surrogates recoveries were within ARI control limits with the exception of BFB in sample **CYT-3.** Entrix was contacted concerning the results. As no hits were found in the sample and the BFB was high, no further corrective action was considered required.

Batch MS/MSD recoveries and RPDs were within ARI control limits.

Internal standard areas were within requirements.

There were no other incidents of note.

# Volatile Organic Compound Analysis QC Summary Data

Prepared for

### Entrix

Project Number: 4067301 Project: Westfarm / Leathercare Geoprobe

# ARI Job No. HM35

Prepared By

Analytical Resources, Inc.



### WATER VOLATILE SYSTEM MONITORING COMPOUND SUMMARY

Matrix: Water (Low Level)

### QC Report No: HM35

Lab ID	Client ID	DCE	TOL	BFB	DCB	TOT OUT
121504MB	Method Blank	109%	102%	103%	104%	0
HM35LCS	Lab Control	114%	100%	101%	98.8%	0
HM35LCD	LCDuplicate	94.1%	97.4%	95.1%	95.8%	0
HM35A	CYT-3	104%	114%	1128 *	106%	1
HM35B	CYT-4	106%	104%	109%	103%	0
HM35C	CYT-5	103%	99.8%	98.28	96.0%	. 0

SW8260B	LCS/MB LIMITS	QC LIMITS
(DCE) = 1, 2-Dichloroethane-d4	(68-126)	(62-138)
(TOL) = Toluene-d8	(59-121)	(66-124)
(BFB) = Bromofluorobenzene	(62-117)	(60-111)
(DCB) = 1,2-Dichlorobenzene-d4	(77-122)	(77-127)

# Column to be used to flag recovery values

\* Values outside of required QC limits

D System Monitoring Compound diluted out



Sample ID: LCS-121504 LCS/LCSD

Lab Sample ID: LCS-121504 LIMS ID: 04-22204 Matrix: Water Data Release Authorized: Reported: 12/16/04 QC Report No: HM35-Entrix Project: Westfarm/Leathercare 4067301 Date Sampled: NA Date Received: NA

Instrument/Analyst LCS: FINN1/PAB LCSD: FINN1/PAB Date Analyzed LCS: 12/15/04 14:58 LCSD: 12/15/04 16:06 Sample Amount LCS: 20.0 mL LCSD: 20.0 mL Purge Volume LCS: 20.0 mL LCSD: 20.0 mL

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Vinyl Chloride 1,1-Dichloroethene trans-1,2-Dichloroethene cis-1,2-Dichloroethene Trichloroethene Tetrachloroethene	4.0 4.0 3.9 4.1 3.8 3.7	4.0 4.0 4.0 4.0 4.0 4.0	100% 100% 97.5% 102% 95.0% 92.5%	3.7 3.9 4.1 4.1 3.9 3.9	4.0 4.0 4.0 4.0 4.0 4.0 4.0	92.5% 97.5% 102% 102% 97.5% 97.5%	7.8% 2.5% 5.0% 0.0% 2.6% 5.3%

#### Results reported in $\mu$ g/L

RPD calculated using sample concentrations per SW846.

LCS spike recovery is evaluated using only the nine regulated compounds noted in the ARI LQAP. The other LCS spike compound recoveries are advisory and used for analytical troubleshooting should any of the nine regulated compounds be out of control.

	LCS	LCSD
d4-1,2-Dichloroethane	1148	94.1%
d8-Toluene	100%	97.48
Bromofluorobenzene	1018	95.1%
d4-1,2-Dichlorobenzene	98.8%	95.8%

ANALYTICAL RESOURCES

ORGANICS ANALYSIS DATA SHEET Volatiles by Purge & Trap GC/MS-Method 8260B Page 1 of 1

#### Sample ID: CYS-2-base MS/MSD

Lab Sample ID: HL93AQC Report No: HL93-EntrixLIMS ID: 04-22035Project: WESTFARM/LEATHERCARE GEOPROBEMatrix: Water4067301Data Release Authorized:Date Sampled: 12/11/04Reported: 12/14/04Date Received: 12/13/04

Instrument/Analyst MS: FINN1/PAB MSD: FINN1/PAB Date Analyzed MS: 12/13/04 14:50 MSD: 12/13/04 15:29 Sample Amount MS: 20.0 mL MSD: 20.0 mL Purge Volume MS: 20.0 mL MSD: 20.0 mL

Analyte	Sample	MS	Spike Added-MS	MS Recovery	MSD	Spike Added-MSD	MSD Recovery	RPD
Vinyl Chloride	0.2	4.4	4.0	105%	4.6	4.0	110%	4.4%
1.1-Dichloroethene	< 0.2	4.2	4.0	105%	4.3	4.0	108%	2.4%
trans-1,2-Dichloroethene	< 0.2	3.1	4.0	77.5%	3.6	4.0	90.0%	14.9%
cis-1,2-Dichloroethene	0.9	4.3	4.0	85.0%	4.8	4.0	97.5%	11.0%
Trichloroethene	< 0.2	3.9	4.0	97.5%	4.0	4.0	100%	2:5%
Tetrachloroethene	< 0.2	3.8	4.0	95.0%	3.7	4.0	92.5%	2.7%

Results reported in  $\mu g/L$ 

RPD calculated using sample concentrations per SW846.

EPA SAMPLE NO.

$$\label{eq:alpha} \begin{split} & d = a_{aa} = - a_{ab} \frac{\partial a}{\partial a_{ab}} a^{b} = - \frac{1}{2} e^{i \theta t} d \theta e^{i \theta t} e^{i \theta t} a^{b} = 0 \end{split}$$

4A VOLATILE METHOD BLANK SUMMARY

MB1215

Lab Name: ANALYTICAL RESOURCES, INCContract: ENTRIXLab Code: ARICase No.: WESTFARM/LEATHERCARESDG No.: HM35Lab File ID: MB1215Lab Sample ID: MB1215Date Analyzed: 12/15/04Time Analyzed: 1528GC Column: RTX502.2ID: 0.18 (mm)Heated Purge: (Y/N) NInstrument ID: FINN1

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

1		LAB	LAB	TIME
	EPA	SAMPLE ID	FILE ID	ANALYZED
	SAMPLE NO.	SAMPLE ID		
			LCS1215	1458
01	LCS1215	LCS1215	LCS1215A	1606
02	LCS1215	LCS1215		1705
03	CYT-3	HM35A	HM35A	1734
04	CYT-4	HM35B	HM35B	1804
05	CYT-5	HM35C	HM35C	1004
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COMMENTS :

page 1 of 1

FORM IV VOA

OLM3.2M

# Volatile Organic Compound Analysis Sample Data

Prepared for

# Entrix

# Project Number: 4067301 Project: Westfarm / Leathercare Geoprobe

# ARI Job No. HM35

Prepared By

# Analytical Resources, Inc.

SAMPLE

Lab Sample ID: HM35A LIMS ID: 04-22204 Matrix: Water Data Release Authorized: Reported: 12/16/04

Instrument/Analyst: FINN1/PAB Date Analyzed: 12/15/04 17:05 QC Report No: HM35-Entrix Project: Westfarm/Leathercare 4067301 Date Sampled: 12/14/04 Date Received: 12/14/04

Sample Amount: 20.0 mL Purge Volume: 20.0 mL

CAS Number	Analyte	RL	Result
75-01-4	Vinyl Chloride	0.2	< 0.2 U
75-35-4	1,1-Dichloroethene	0.2	< 0.2 U
156-60-5	trans-1,2-Dichloroethene	0.2	< 0.2 U
156-59-2	cis-1,2-Dichloroethene	0.2	< 0.2 U
79-01-6	Trichloroethene	0.2	< 0.2 U
127-18-4	Tetrachloroethene	0.2	< 0.2 U

Reported in  $\mu g/L$  (ppb)

d4-1,2-Dichloroethane	104%
d8-Toluene	1148
Bromofluorobenzene	112%
d4-1,2-Dichlorobenzene	106%



Sample ID: CYT-4 SAMPLE

Lab Sample ID: HM35B LIMS ID: 04-22205 Matrix: Water Data Release Authorized:

Instrument/Analyst: FINN1/PAB Date Analyzed: 12/15/04 17:34 QC Report No: HM35-Entrix Project: Westfarm/Leathercare 4067301 Date Sampled: 12/14/04 Date Received: 12/14/04

Sample Amount: 20.0 mL Purge Volume: 20.0 mL

CAS Number	Analyte	RL	Result
75-01-4	Vinyl Chloride	0.2	< 0.2 U
75-35-4	1,1-Dichloroethene	0.2	< 0.2 U
156-60-5	trans-1,2-Dichloroethene	0.2	< 0.2 U
156-59-2	cis-1,2-Dichloroethene	0.2	0.1 J
79-01-6	Trichloroethene	0.2	< 0.2 U
127-18-4	Tetrachloroethene	0.2	< 0.2 U

Reported in  $\mu$ g/L (ppb)

d4-1,2-Dichloroethane	106%
d8-Toluene	104%
Bromofluorobenzene	109%
d4-1,2-Dichlorobenzene	103%

Sample ID: CYT-5 SAMPLE

Lab Sample ID: HM35C LIMS ID: 04-22206 Matrix: Water Data Release Authorized: Reported: 12/16/04

Instrument/Analyst: FINN1/PAB Date Analyzed: 12/15/04 18:04 QC Report No: HM35-Entrix Project: Westfarm/Leathercare 4067301 Date Sampled: 12/14/04 Date Received: 12/14/04

Sample Amount: 20.0 mL Purge Volume: 20.0 mL

CAS Number	Analyte	RL	Result
75-01-4	Vinyl Chloride	0.2	< 0.2 U
75-35-4	1,1-Dichloroethene	0.2	< 0.2 U
156-60-5	trans-1,2-Dichloroethene	0.2	< 0.2 U
156-59-2	cis-1,2-Dichloroethene	0.2	< 0.2 U
79-01-6	Trichloroethene	0.2	< 0.2 Ũ
127-18-4	Tetrachloroethene	0.2	< 0.2 Ŭ

Reported in  $\mu g/L$  (ppb)

d4-1,2-Dichloroethane	103%
d8-Toluene	99.8%
Bromofluorobenzene	98.2%
d4-1,2-Dichlorobenzene	96.0%



# Analytical Resources, Incorporated

Analytical Chemists and Consultants

January 3, 2005

Robert Barrick Entrix 2701 First Avenue Suite 500 Seattle, WA 98121

### RE: Client Project: 4067301 Westfarm/Leathercare ARI Job No. HM39

Dear Rob:

Please find enclosed the original chain of custody documentation and the final data package for samples from the project referenced above.

Problems associated with these analyses are discussed in the Case Narrative.

An electronic copy of this package will remain on file with ARI. Should you have any questions or problems, please feel free to contact me at your convenience.

Sincerely,

ANADYTICAL RESOURCES, INC.

Susan Dunnihoo Client Service Manager sue@arilabs.com 206/695-6207

Enclosures

cc: eFileRef HM39

SD/sdrd

**Case Narrative** 

Prepared for

# Entrix

# Project Number: 4067301 Project: Westfarm / Leathercare

# ARI Job No. HM39

Prepared By

# Analytical Resources, Inc.





# **Case Narrative**

Client: Entrix, Inc. Project: 4067301 – Westfarm / Leathercare Matrix: Water ARI Job No. HM39

### Sample receipt

Eleven were accepted on 12/14/2004. The samples were received with a cooler temperature of 2.0 °C measured by IR thermometer following ARI SOP. The samples were in good condition. Sample NPI-6 was not marked for analysis or for hold. The sample was submitted for analysis and this course was confirmed with the client.

### **Chlorinated Volatile Analysis by 8260B**

Samples were analyzed 12/20 and 12/21/2004 within recommended holding times. The blank spikes were run in duplicate.

Initial and continuing calibrations were within requirements of the method and ARI SOP.

The method blanks were clean at the reporting limit.

LCS/LCSD recoveries and RPDs were within ARI control limits.

Surrogates recoveries were within ARI control limits.

Matrix spike recoveries were within ARI control limits.

Internal standard areas were within requirements.

Preservations checks performed after analysis showed acceptable pH for all samples.

There were no incidents of note.

# Volatile Organic Compound Analysis QC Summary Data

Prepared for

### Entrix

Project Number: 4067301 Project: Westfarm / Leathercare

# ARI Job No. HM39

# Prepared By

Analytical Resources, Inc.

000007



### WATER VOLATILE SYSTEM MONITORING COMPOUND SUMMARY

Matrix: Water (Low Level)

### QC Report No: HM39

Lab ID	Client ID	DCE	TOL	BFB	DCB	TOT OUT
122004MB	Method Blank	98.2%	92.6%	75.5%	91.5%	0
HM39LCS	Lab Control	105%	95.4%	91.4%	91.9%	0
HM39LCD	LCDuplicate	110%	101%	92.0%	93.1%	0
HM39A	NPG-1	97.8%	109%	87.5%	103%	0
HM39B	NPG-5	114%	102%	103%	88.2%	0
HM39C	NPI-5	106%	104%	90.8%	95.8%	0
HM39D	NPJ-5	95.2%	101%	87.2%	97.28	0
HM39E	NPI-6	100%	100%	87.8%	99.0%	0
HM39F	NPH-5	108%	98.0%	92.8%	88.0%	0
122104MB	Method Blank	108%	96.5%	78.8%	92.6%	0
HM39LCS	Lab Control	107%	1048	91.6%	92.8%	0
HM39LCD	LCDuplicate	112%	96.5%	89.9%	92.4%	0
HM3 9G	NPF-6	102%	106%	99.5%	101%	0
HM39GMS	NPF-6	88.4%	104%	97.1%	96.6%	0
НМЗ 9Н	NPF-4	102%	93.2%	98.5%	78.5%	0
HM39I	NPE-5	93.5%	99.0%	85.8%	98.2%	0
HM39J	NPE-6	101%	98.0%	85.0%	96.8%	0
нмзэк	NPG-6	102%	98.5%	84.8%	98.8%	0
HM39L	TRIP BLANK	98.0%	99.2%	85.2%	99.5%	0

SW8260B	LCS/MB LIMITS	QC LIMITS
(DCE) = 1, 2-Dichloroethane-d4	(68-126)	(62-138)
(TOL) = Toluene-d8	(59-121)	(66-124)
(BFB) = Bromofluorobenzene	(62-117)	(60-111)
(DCB) = 1, 2-Dichlorobenzene-d4	(77-122)	(77-127)

# Column to be used to flag recovery values

\* Values outside of required QC limits

D System Monitoring Compound diluted out



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ORGANICS ANALYSIS DATA SHEET Volatiles by Purge & Trap GC/MS-Method 8260B Sample ID: NPF-6 Page 1 of 1

MATRIX SPIKE

Lab Sample ID: HM39G LIMS ID: 04-22278 Matrix: Water Data Release Authorized: Reported: 12/31/04

Instrument/Analyst: FINN3/PAB

Date Analyzed: 12/21/04 14:54

QC Report No: HM39-Entrix Project: WESTFARM/LEATHERCARE 4067301 Date Sampled: 12/14/04 Date Received: 12/14/04

Sample Amount: 20.0 mL Purge Volume: 20.0 mL

Analyte	Sample	Matrix Spike	Spike Added	Recovery
Vinyl Chloride	< 0.2	3.7	4.0	92.5%
1.1-Dichloroethene	< 0.2	3.6	4.0	90.0%
trans-1,2-Dichloroethene	< 0.2	3.6	4.0	90.0%
cis-1,2-Dichloroethene	< 0.2	3.8	4.0	95.0%
Trichloroethene	< 0.2	4.1	4.0	102%
Tetrachloroethene	< 0.2	4.2	4.0	105%

Results reported in  $\mu$ g/L



Sample ID: LCS-122004 LCS/LCSD

Lab Sample ID: LCS-122004 LIMS ID: 04-22272 Matrix: Water Data Release Authorized: Reported: 12/31/04

Instrument/Analyst LCS: FINN3/PAB LCSD: FINN3/PAB Date Analyzed LCS: 12/20/04 10:43 LCSD: 12/20/04 11:11 QC Report No: HM39-Entrix Project: WESTFARM/LEATHERCARE 4067301 Date Sampled: NA Date Received: NA

Sample Amount LCS: 20.0 mL LCSD: 20.0 mL Purge Volume LCS: 20.0 mL LCSD: 20.0 mL

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Vinyl Chloride	3.3	4.0	82.5%	3.1	$\begin{array}{c} 4.0 \\ 4.0 \\ 4.0 \\ 4.0 \\ 4.0 \\ 4.0 \\ 4.0 \\ 4.0 \\ 4.0 \end{array}$	77.5%	6.2%
1,1-Dichloroethene	3.8	4.0	95.0%	3.9		97.5%	2.6%
trans-1,2-Dichloroethene	3.9	4.0	97.5%	4.0		100%	2.5%
cis-1,2-Dichloroethene	4.2	4.0	105%	4.3		108%	2.4%
Trichloroethene	3.8	4.0	95.0%	4.0		100%	5.1%
Tetrachloroethene	3.8	4.0	95.0%	3.8		95.0%	0.0%

Results reported in  $\mu g/L$ 

RPD calculated using sample concentrations per SW846.

LCS spike recovery is evaluated using only the nine regulated compounds noted in the ARI LQAP. The other LCS spike compound recoveries are advisory and used for analytical troubleshooting should any of the nine regulated compounds be out of control.

	LCS	LCSD
d4-1,2-Dichloroethane	105%	110%
d8-Toluene	95.4%	1018
Bromofluorobenzene	91.4%	92.0%
d4-1,2-Dichlorobenzene	91.9%	93.1%



ORGANICS ANALYSIS DATA SHEET Volatiles by Purge & Trap GC/MS-Method 8260B Sample ID: LCS-122104 Page 1 of 1

LCS/LCSD

Lab Sample ID: LCS-122104 LIMS ID: 04-22278 Matrix: Water Data Release Authorized: A Reported: 12/31/04

QC Report No: HM39-Entrix Project: WESTFARM/LEATHERCARE 4067301 Date Sampled: NA Date Received: NA

Instrument/Analyst LCS: FINN3/PAB LCSD: FINN3/PAB Date Analyzed LCS: 12/21/04 11:26 LCSD: 12/21/04 11:56

Sample Amount LCS: 20.0 mL LCSD: 20.0 mL Purge Volume LCS: 20.0 mL LCSD: 20.0 mL

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Vinyl Chloride	4.0	4.0	100%	3.6	4.0	90.08	10.5%
1.1-Dichloroethene	3.7	4.0	92.5%	3.7	4.0	92.5%	0.0%
trans-1,2-Dichloroethene	3.7	4.0	92.5%	3.6	4.0	90.0%	2.7%
cis-1,2-Dichloroethene	4.1	4.0	1028	4.1	4.0	102%	0.0%
Trichloroethene	4.0	4.0	100%	3.9	4.0	97.5%	2.5%
Tetrachloroethene	3.7	4.0	92.5%	3.6	4.0	90.0%	2.7%

#### Results reported in $\mu g/L$

RPD calculated using sample concentrations per SW846.

LCS spike recovery is evaluated using only the nine regulated compounds noted in the ARI LQAP. The other LCS spike compound recoveries are advisory and used for analytical troubleshooting should any of the nine regulated compounds be out of control.

	LCS	LCSD
d4-1,2-Dichloroethane	107%	112%
d8-Toluene	1048	96.5%
Bromofluorobenzene	91.6%	89.9%
d4-1,2-Dichlorobenzene	92.8%	92.48

4A VOLATILE METHOD BLANK SUMMARY

Lab Name: ANALYTICAL RESOURCES, INCContract: ENTRIXLab Code: ARICase No.: WESTFARM/LEATHERCARESDG No.: HM39Lab File ID: MB1220Lab Sample ID: MB1220Date Analyzed: 12/20/04Time Analyzed: 1139GC Column: RTX502.2ID: 0.18 (mm)Heated Purge: (Y/N) NInstrument ID: FINN3Heated Purge: (Y/N) N

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

SAMPLE NO.      SAMPLE ID      FILE ID      ANALYZED        01      LCS1220      LCS1220      ICS1220      1043        02      LCS1220      LCS1220      ILS1220A      1111        03      NPG-1      HM39A      H807      1111        04      NPG-5      HM39B      H344      1807        05      NPI-5      HM39C      H901      1929        06      NPJ-5      HM39E      HM39D      1929        07      NPI-6      HM39F      HM39F      2023        09			T 7 10		TIME
01    LCS1220    LCS1220    1043      02    LCS1220    LCS1220    1111      03    NPG-1    HM3 9A    1807      04    NPG-5    HM3 9B    HM3 9A    1807      04    NPG-5    HM3 9B    1834    1901      06    NPJ-5    HM3 9D    1929    1929      07    NPI - 6    HM3 9F    1956    1956      08    NPH - 5    HM3 9F    1956    1956      09		ÉPA	LAB	LAB	
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $		SAMPLE NO.	SAMPLE ID	FILE ID	ANALYZED
01    LCS1220    LCS1220    1111      03    NPG-1    HM39A    HM39A    1807      04    NPG-5    HM39B    HM39B    1834      05    NPI-5    HM39C    HM39D    1901      06    NPJ-5    HM39C    HM39D    1929      07    NPI-6    HM39E    HM39E    1956      08    NPH-5    HM39F    IM39F    2023      09			===`===========	================	
02    LCS1220    LCS1220    1111      03    NPG-1    HM39A    HM39A    1807      04    NPG-5    HM39B    HM39A    1834      05    NPJ-5    HM39C    HM39D    1901      06    NPJ-5    HM39E    HM39D    1929      07    NPI-6    HM39E    HM39F    1956      08    NPH-5    HM39F    1956    111      12	01	LCS1220	LCS1220	LCS1220	1043
03    NPG-1    HM39A    HM39A    1807      04    NPG-5    HM39B    HM39B    1834      05    NPI-5    HM39C    HM39D    1929      07    NPI-6    HM39E    HM39E    1929      07    NPI-6    HM39F    HM39F    2023      09				LCS1220A	1111
04    NPG-5    HM39B    HM39B    1834      05    NPI-5    HM39C    HM39C    1901      06    NPJ-5    HM39D    HM39D    1929      07    NPI-6    HM39F    HM39F    1956      08    NPH-5    HM39F    HM39F    2023      09					
05    NPI-5    HM39C    HM39C    1901      06    NPJ-5    HM39D    1929      07    NPI-6    HM39F    HM39F    1956      08    NPH-5    HM39F    HM39F    2023      09					
06    NPJ-5    HM39D    HM39D    1929      07    NPI-6    HM39E    HM39F    1956      08    NPH-5    HM39F    HM39F    2023      09					
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COMMENTS:

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FORM IV VOA

MB1220

OLM3.2M

#### EPA SAMPLE NO.

EPA SAMPLE NO.

4A VOLATILE METHOD BLANK SUMMARY

MB1221

Lab Name: ANALYTICAL RESOURCES, INCContract: ENTRIXLab Code: ARICase No.: WESTFARM/LEATHERCARESDG No.: HM39Lab File ID: MB1221Lab Sample ID: MB1221Date Analyzed: 12/21/04Time Analyzed: 1225GC Column: RTX502.2ID: 0.18 (mm)Heated Purge: (Y/N) NInstrument ID: FINN3Heated Purge: (Y/N) N

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	EPA	LAB	LAB	TIME
		SAMPLE ID	FILE ID	ANALYZED
	SAMPLE NO.	SAMPLE ID		1141101000
				========
01	LCS1221	LCS1221	LCS1221	1126
		LCS1221	LCS1221A	1156
02	LCS1221			1430
03	NPF-6	HM39G	HM39G	
04	NPF-6 MS	HM39GMS	HM39GMS	1454
05	NPF-4	HM39H	HM39H	1521
			HM39I	1548
06	NPE-5	HM39I		
07	NPE-6	HM39J	HM39J	1622
08	NPG-6	HM39K	HM39K	1640
		HM39L	HM39L	1707
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COMMENTS:

page 1 of 1

FORM IV VOA

OLM3.2M

# Volatile Organic Compound Analysis Sample Data

Prepared for

### Entrix

# Project Number: 4067301 Project: Westfarm / Leathercare

### ARI Job No. HM39

Prepared By

# Analytical Resources, Inc.



 $\mathbf{1}^{\mathbf{1}}$ 

ORGANICS ANALYSIS DATA SHEET Volatiles by Purge & Trap GC/MS-Method 8260B Sample ID: NPG-1 Page 1 of 1

SAMPLE

Lab Sample ID: HM39A LIMS ID: 04-22272 Matrix: Water R Data Release Authorized: Reported: 12/31/04

Instrument/Analyst: FINN3/PAB Date Analyzed: 12/20/04 18:07 QC Report No: HM39-Entrix Project: WESTFARM/LEATHERCARE 4067301 Date Sampled: 12/14/04 Date Received: 12/14/04

Sample Amount: 20.0 mL Purge Volume: 20.0 mL

CAS Number	Analyte	RL	Result
75-01-4	Vinyl Chloride	0.2	< 0.2 U
75-35-4	1,1-Dichloroethene	0.2	< 0.2 Ŭ
156-60-5	trans-1,2-Dichloroethene	0.2	0.2
156-59-2	cis-1,2-Dichloroethene	0.2	5.2
79-01-6	Trichloroethene	0.2	1.8
127-18-4	Tetrachloroethene	0.2	1.2

Reported in  $\mu g/L$  (ppb)

### Volatile Surrogate Recovery

d4-1,2-Dichloroethane	97.8%
d8-Toluene	109%
Bromofluorobenzene	87.5%
d4-1,2-Dichlorobenzene	1038

000022



Sample ID: NPG-5 SAMPLE

Lab Sample ID: HM39B LIMS ID: 04-22273 Matrix: Water Data Release Authorized: Reported: 12/31/04 QC Report No: HM39-Entrix Project: WESTFARM/LEATHERCARE 4067301 Date Sampled: 12/14/04 Date Received: 12/14/04

Instrument/Analyst: FINN3/PAB Date Analyzed: 12/20/04 18:34 Sample Amount: 20.0 mL Purge Volume: 20.0 mL

CAS Number	Analyte	RL	Result
75-01-4	Vinyl Chloride	0.2	< 0.2 U
75-35-4	1,1-Dichloroethene	0.2	< 0.2 U
156-60-5	trans-1,2-Dichloroethene	0.2	< 0.2 U
156-59-2	cis-1,2-Dichloroethene	0.2	< 0.2 U
79-01-6	Trichloroethene	0.2	< 0.2 U
127-18-4	Tetrachloroethene	0.2	< 0.2 U

Reported in  $\mu g/L$  (ppb)

d4-1,2-Dichloroethane	114%
d8-Toluene	102%
Bromofluorobenzene	103%
d4-1,2-Dichlorobenzene	88.2%



SAMPLE

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Lab Sample ID: HM39C LIMS ID: 04-22274 Matrix: Water Data Release Authorized: Reported: 12/31/04

QC Report No: HM39-Entrix Project: WESTFARM/LEATHERCARE 4067301 Date Sampled: 12/14/04 Date Received: 12/14/04

Instrument/Analyst: FINN3/PAB Date Analyzed: 12/20/04 19:01 Sample Amount: 20.0 mL Purge Volume: 20.0 mL

CAS Number	Analyte	RL	Result
75-01-4	Vinyl Chloride	0.2	< 0.2 U
75-35-4	1,1-Dichloroethene	0.2	< 0.2 U
156-60-5	trans-1,2-Dichloroethene	0.2	< 0.2 U
156-59-2	cis-1,2-Dichloroethene	0.2	< 0.2 U
79-01-6	Trichloroethene	0.2	< 0.2 U
127-18-4	Tetrachloroethene	0.2	< 0.2 U

Reported in  $\mu g/L$  (ppb)

d4-1,2-Dichloroethane	106%
d8-Toluene	104%
Bromofluorobenzene	90.8%
d4-1,2-Dichlorobenzene	95.8%
Sample ID: NPJ-5 SAMPLE

**D** = --- **1** +

Lab Sample ID: HM39D LIMS ID: 04-22275 Matrix: Water Data Release Authorized: Reported: 12/31/04

Instrument/Analyst: FINN3/PAB Date Analyzed: 12/20/04 19:29 QC Report No: HM39-Entrix Project: WESTFARM/LEATHERCARE 4067301 Date Sampled: 12/14/04 Date Received: 12/14/04

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Sample Amount: 20.0 mL Purge Volume: 20.0 mL

CAS Number	Analyte	КГ	Result
75-01-4	Vinyl Chloride	0.2	< 0.2 U
75-35-4	1,1-Dichloroethene	0.2	< 0.2 U
156-60-5	trans-1,2-Dichloroethene	0.2	< 0.2 U
156-59-2	cis-1,2-Dichloroethene	0.2	< 0.2 U
79-01-6	Trichloroethene	0.2	< 0.2 U
127-18-4	Tetrachloroethene	0.2	< 0.2 U

Reported in  $\mu g/L$  (ppb)

d4-1,2-Dichloroethane	95.2%
d8-Toluene	101%
Bromofluorobenzene	87.2%
d4-1,2-Dichlorobenzene	97.28



SAMPLE

Lab Sample ID: HM39G LIMS ID: 04-22278 Matrix: Water Data Release Authorized: Reported: 12/31/04

Instrument/Analyst: FINN3/PAB Date Analyzed: 12/21/04 14:30 QC Report No: HM39-Entrix Project: WESTFARM/LEATHERCARE 4067301 Date Sampled: 12/14/04 Date Received: 12/14/04

Sample Amount: 20.0 mL Purge Volume: 20.0 mL

CAS Number	Analyte	RL	Result
75-01-4 75-35-4 156-60-5 156-59-2 79-01-6 127-18-4	Vinyl Chloride 1,1-Dichloroethene trans-1,2-Dichloroethene cis-1,2-Dichloroethene Trichloroethene Tetrachloroethene	0.2 0.2 0.2 0.2 0.2 0.2	< 0.2 U < 0.2 U < 0.2 U < 0.2 U < 0.2 U < 0.2 U < 0.2 U

Reported in  $\mu$ g/L (ppb)

d4-1,2-Dichloroethane	1028
d8-Toluene	106%
Bromofluorobenzene	99.5%
d4-1,2-Dichlorobenzene	101%



Sample ID: NPF-4 SAMPLE

Lab Sample ID: HM39H LIMS ID: 04-22279 Matrix: Water Data Release Authorized: Reported: 12/31/04

Project: WESTFARM/LEATHERCARE 4067301 Date Sampled: 12/14/04 Date Received: 12/14/04

Instrument/Analyst: FINN3/PAB Date Analyzed: 12/21/04 15:21 Sample Amount: 20.0 mL Purge Volume: 20.0 mL

QC Report No: HM39-Entrix

CAS Number	Analyte	RL	Result
75-01-4	Vinyl Chloride	0.2	1.4
75-35-4	1,1-Dichloroethene	0.2	< 0.2 U
156-60-5	trans-1,2-Dichloroethene	0.2	< 0.2 U
156-59 <b>-2</b>	cis-1,2-Dichloroethene	0.2	1.5
79-01-6	Trichloroethene	0.2	< 0.2 U
127-18-4	Tetrachloroethene	0.2	< 0.2 U

Reported in  $\mu g/L$  (ppb)

d4-1,2-Dichloroethane	102%
d8-Toluene	93.2%
Bromofluorobenzene	98.5%
d4-1,2-Dichlorobenzene	78.5%



Sample ID: NPE-5 SAMPLE

Lab Sample ID: HM39I LIMS ID: 04-22280 Matrix: Water Data Release Authorized: Reported: 12/31/04 QC Report No: HM39-Entrix Project: WESTFARM/LEATHERCARE 4067301 Date Sampled: 12/14/04 Date Received: 12/14/04

Instrument/Analyst: FINN3/PAB Date Analyzed: 12/21/04 15:48 Sample Amount: 20.0 mL Purge Volume: 20.0 mL

CAS Number	Analyte	RL	Result
75-01-4	Vinyl Chloride	0.2	0.3
75-35-4	1,1-Dichloroethene	0.2	< 0.2 U
156-60-5	trans-1,2-Dichloroethene	0.2	< 0.2 U
156-59-2	cis-1,2-Dichloroethene	0.2	0.6
79-01-6	Trichloroethene	0.2	< 0.2 U
127-18-4	Tetrachloroethene	0.2	< 0.2 U

Reported in  $\mu$ g/L (ppb)

d4-1,2-Dichloroethane	93.5%
d8-Toluene	99.0%
Bromofluorobenzene	85.8%
d4-1,2-Dichlorobenzene	98.2%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET Volatiles by Purge & Trap GC/MS-Method 8260B Page 1 of 1

Sample ID: NPE-6 SAMPLE

Lab Sample ID: HM39J LIMS ID: 04-22281 Matrix: Water Data Release Authorized: Reported: 12/31/04

Instrument/Analyst: FINN3/PAB
Date Analyzed: 12/21/04 16:22

QC Report No: HM39-Entrix Project: WESTFARM/LEATHERCARE 4067301 Date Sampled: 12/14/04 Date Received: 12/14/04

Sample Amount: 20.0 mL Purge Volume: 20.0 mL

CAS Number	Analyte	RL	Result
75-01-4	Vinyl Chloride	0.2	< 0.2 U
75-35-4	1,1-Dichloroethene	0.2	< 0.2 U
156-60-5	trans-1,2-Dichloroethene	0.2	< 0.2 U
156-59-2	cis-1,2-Dichloroethene	0.2	0.2 J
79-01- <b>6</b>	Trichloroethene	0.2	< 0.2 U
127-18-4	Tetrachloroethene	0.2	< 0.2 U

Reported in  $\mu$ g/L (ppb)

d4-1,2-Dichloroethane	1018
d8-Toluene	98.0%
Bromofluorobenzene	85.0%
d4-1,2-Dichlorobenzene	96.8%



2

ORGANICS ANALYSIS DATA SHEET Volatiles by Purge & Trap GC/MS-Method 8260B Page 1 of 1

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Sample ID: NPG-6 SAMPLE

Lab Sample ID: HM39K LIMS ID: 04-22282 Matrix: Water Data Release Authorized: Reported: 12/31/04

Instrument/Analyst: FINN3/PAB Date Analyzed: 12/21/04 16:40 QC Report No: HM39-Entrix Project: WESTFARM/LEATHERCARE 4067301 Date Sampled: 12/14/04 Date Received: 12/14/04

Sample Amount: 20.0 mL Purge Volume: 20.0 mL

CAS Number	Analyte	RL	Result
75-01-4	Vinyl Chloride	0.2	< 0.2 U
75-35-4	1,1-Dichloroethene	0.2	< 0.2 U
156-60-5	trans-1,2-Dichloroethene	0.2	< 0.2 U
156-59-2	cis-1,2-Dichloroethene	0.2	< 0.2 U
79-01-6	Trichloroethene	0.2	< 0.2 U
127-18-4	Tetrachloroethene	0.2	< 0.2 U

Reported in  $\mu$ g/L (ppb)

d4-1,2-Dichloroethane	1028
d8-Toluene	98.5%
Bromofluorobenzene	84.8%
d4-1,2-Dichlorobenzene	98.8%



#### Sample ID: TRIP BLANK SAMPLE

Lab Sample ID: HM39L LIMS ID: 04-22283 Matrix: Water Data Release Authorized: Reported: 12/31/04 QC Report No: HM39-Entrix Project: WESTFARM/LEATHERCARE 4067301 Date Sampled: 12/14/04 Date Received: 12/14/04

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Instrument/Analyst: FINN3/PAB Date Analyzed: 12/21/04 17:07 Sample Amount: 20.0 mL Purge Volume: 20.0 mL

CAS Number	Analyte	RL	Result
75-01-4	Vinyl Chloride	0.2	< 0.2 U
75-35-4	1,1-Dichloroethene	0.2	< 0.2 U
156-60-5	trans-1,2-Dichloroethene	0.2	< 0.2 U
156-59-2	cis-1,2-Dichloroethene	0.2	< 0.2 U
79-01-6	Trichloroethene	0.2	< 0.2 U
127-18-4	Tetrachloroethene	0.2	< 0.2 U

Reported in  $\mu g/L$  (ppb)

d4-1,2-Dichloroethane	98.0%
d8-Toluene	99.2%
Bromofluorobenzene	85.2%
d4-1,2-Dichlorobenzene	99.5%



### Analytical Resources, Incorporated

Analytical Chemists and Consultants

January 4, 2005

Robert Barrick Entrix 2701 First Avenue Suite 500 Seattle, WA 98121

### RE: Client Project: 4067301 Westfarm/Leathercare ARI Job No. HM59

Dear Rob:

Please find enclosed the original chain of custody documentation and the final data package for samples from the project referenced above.

Problems associated with these analyses are discussed in the Case Narrative.

An electronic copy of this package will remain on file with ARI. Should you have any questions or problems, please feel free to contact me at your convenience.

Sincerely,

ANALYTICAL RESOURCES, INC.

Alsa

Susan Dunnihoo Client Service Manager sue@arilabs.com 206/695-6207

Enclosures

cc: eFileRef HM59

SD/sdrd

**Case Narrative** 

Prepared for

### Entrix

Project Number: 4067301 Project: Westfarm / Leathercare

ARI Job No. HM59

Prepared By

Analytical Resources, Inc.



# Case Narrative

Client: Entrix, Inc. Project: 4067301 – Westfarm / Leathercare Matrix: Water ARI Job No. HM59

### Sample receipt

Eleven samples, a duplicate and a tripblank were accepted on 12/15/2004. The samples were received with a cooler temperature of 5.0 °C measured by IR thermometer following ARI SOP. The samples were in good condition. Sample LCC-2 was received with no request for analysis. The sample was submitted to the lab for analysis and confirmed by the client. Several sample aliquots were received on hold for possible further analysis. One container was received with no label and was stored with the hold samples.

## Chlorinated Volatile Analysis by 8260B

Samples were analyzed 12/08-12/10/2004 within recommended holding times. The blank spikes were run in duplicate.

Initial and continuing calibrations were within requirements of the method and ARI SOP.

The method blanks were clean at the reporting limit.

LCS/LCSD recoveries and RPDs were within ARI control limits.

Surrogates recoveries were within ARI control limits.

Matrix spike recoveries were within ARI control limits.

Internal standard areas were within requirements.

Preservations checks performed after analysis showed acceptable pH for all samples.

Sample LCD-1 was rerun at dilution due to analytes found above the calibrated range of the instrument. Both sets of results are included here.

There were no incidents of note.

# Volatile Organic Compound Analysis QC Summary Data

Prepared for

### Entrix

Project Number: 4067301 Project: Westfarm / Leathercare

ARI Job No. HM59

Prepared By

Analytical Resources, Inc.

# WATER VOLATILE SYSTEM MONITORING COMPOUND SUMMARY

Matrix: Water (Low Level)

QC Report No: HM59

Lab ID	Client ID	DCE	TOL	BFB	DCB	TOT OUT
				78.8%	92.6%	0
122104MB	Method Blank	108%	96.5%		92.8%	0
HM59LCS	Lab Control	1078	104%	91.6%	92.8%	õ
HM59LCD	LCDuplicate	112%	96.5%	89.9%		0
HM59A	NPJ-6	1128	99.8%	86.8%	97.8%	0
HM59B	CYT-2-base	104%	99.5%	94.5%	97.2%	-
HM59C	NPJ-3	94.5%	102%	86.5%	101%	0
HM59D	NPH-6	116%	99.5%	88.2%	91.0%	0
HM59E	NPF-5	109%	91.0%	84.8%	104%	0
HM59G	NPK-3	92.0%	100%	86.8%	101%	0
HM59H	LCD-1	89.0%	95.2%	78.8%	86.8%	0
	LCD-1	92.7%	93.8%	83.8%	88.3%	0
HM59HDL	Method Blank	112%	103%	83.7%	113%	0
122904MB		110%	103%	94.8%	95.4%	0
HM59LCS	Lab Control	95.38	99.6%	91.0%	95.0%	0
HM59LCD	LCDuplicate	97.28	101%	80.2%	110%	0
HM59I	LCC-1		95.48	88.5%	93.2%	· 0
122804MB	Method Blank	82.7%	96.1%	94.9%	96.2%	0
HM59LCS	Lab Control	83.3%		96.68	90.6%	0
HM59LCD	LCDuplicate	86.2%	97.6%	97.8%	104%	0
HM59J	LCC-2	93.2%	1078	-	101%	0
HM59JMS	LCC-2	97.6%	108%	101%		Ö
HM59K	LCD-2	106%	104%	82.8%	109%	0
HM59M	LCD-2 DUP	103%	99.0%	82.0%	108%	
HM59N	TRIP BLANK	93.8%	105%	92.8%	107%	0

SW8260B	LCS/MB LIMITS	QC LIMITS
(DCE) = 1,2-Dichloroethane-d4	(68-126)	(62-138)
(TOL) = Toluene-d8	(59-121)	(66-124)
(BFB) = Bromofluorobenzene	(62-117)	(60-111)
(DCB) = 1,2-Dichlorobenzene-d4	(77-122)	(77-127)

# Column to be used to flag recovery values

Values outside of required QC limits

D System Monitoring Compound diluted out



i.

ORGANICS ANALYSIS DATA SHEET Volatiles by Purge & Trap GC/MS-Method 8260B Sample ID: LCC-2 Page 1 of 1

MATRIX SPIKE

Lab Sample ID: HM59J LIMS ID: 04-22362 Matrix: Water Data Release Authorized: Reported: 12/30/04

Instrument/Analyst: FINN1/PAB Date Analyzed: 12/28/04 13:38 QC Report No: HM59-Entrix Project: WESTFARM/LEATHERCARE 4067301 Date Sampled: 12/15/04 Date Received: 12/15/04

Sample Amount: 20.0 mL Purge Volume: 20.0 mL

Analyte	Sample	Matrix Spike	Spike Added	Recovery
Vinyl Chloride 1,1-Dichloroethene trans-1,2-Dichloroethene cis-1,2-Dichloroethene Trichloroethene	1.0 < 0.2 < 0.2 4.3 1.7	5.4 4.6 3.8 7.6 5.2	4.0 4.0 4.0 4.0 4.0	110% 115% 95.0% 82.5% 87.5%
Tetrachloroethene	4.4	7.8	4.0	85.0%

Results reported in  $\mu$ g/L

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET Volatiles by Purge & Trap GC/MS-Method 8260B Page 1 of 1

Sample ID: LCS-122104 LCS/LCSD

Lab Sample ID: LCS-122104 LIMS ID: 04-22353 Matrix: Water Data Release Authorized: MW Reported: 12/30/04

QC Report No: HM59-Entrix Project: WESTFARM/LEATHERCARE 4067301 Date Sampled: NA Date Received: NA

LCSD: 20.0 mL

LCSD: 20.0 mL

Sample Amount LCS: 20.0 mL

Purge Volume LCS: 20.0 mL

Instrument/Analyst LCS: FINN3/PAB LCSD: FINN3/PAB Date Analyzed LCS: 12/21/04 11:26 LCSD: 12/21/04 11:56

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Vinyl Chloride	4.0	4.0	100%	3.6	4.0 4.0	90.0% 92.5%	10.5%
l,l-Dichloroethene trans-1,2-Dichloroethene	3.7 3.7	4.0 4.0	92.5% 92.5%	3.7 3.6	4.0	90.0%	2.7%
cis-1,2-Dichloroethe <b>ne</b>	4.1 4.0	4.0 4.0	102% 100%	4.1 3.9	4.0 4.0	102% 97.5%	0.0% 2.5%
Trichloroethene Tetrachloroethene	4.0 3.7	4.0	92.5%	3.6	4.0	90.0%	2.7%

#### Results reported in $\mu g/L$

RPD calculated using sample concentrations per SW846.

LCS spike recovery is evaluated using only the nine regulated compounds noted in the ARI LQAP. The other LCS spike compound recoveries are advisory and used for analytical troubleshooting should any of the nine regulated compounds be out of control.

	LCS	LCSD
d4-1,2-Dichloroethane	1078	112%
dB-Toluene	104%	96.5%
Bromofluorobenzene	91.6%	89.9%
d4-1,2-Dichlorobenzene	92.8%	92.4%



ORGANICS ANALYSIS DATA SHEET Volatiles by Purge & Trap GC/MS-Method 8260B Sample ID: LCS-122904 Page 1 of 1

LCS/LCSD

Lab Sample ID: LCS-122904 LIMS ID: 04-22361 Matrix: Water Data Release Authorized: WW Reported: 12/30/04

QC Report No: HM59-Entrix Project: WESTFARM/LEATHERCARE 4067301 Date Sampled: NA Date Received: NA

Instrument/Analyst LCS: FINN3/PAB LCSD: FINN3/PAB Date Analyzed LCS: 12/29/04 11:19 LCSD: 12/29/04 12:00

Sample Amount LCS: 20.0 mL LCSD: 20.0 mL Purge Volume LCS: 20.0 mL LCSD: 20.0 mL

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Vinyl Chloride 1,1-Dichloroethene trans-1,2-Dichloroethene cis-1,2-Dichloroethene Trichloroethene Tetrachloroethene	3.5 3.8 3.8 4.2 3.9 3.9	4.0 4.0 4.0 4.0 4.0 4.0	87.5% 95.0% 95.0% 105% 97.5% 97.5%	3.7 3.9 3.9 4.1 4.0 4.1	4.0 4.0 4.0 4.0 4.0 4.0 4.0	92.5% 97.5% 97.5% 102% 100% 102%	5.6% 2.6% 2.6% 2.4% 2.5% 5.0%

Results reported in  $\mu g/L$ 

RPD calculated using sample concentrations per SW846.

LCS spike recovery is evaluated using only the nine regulated compounds noted in the ARI LQAP. The other LCS spike compound recoveries are advisory and used for analytical troubleshooting should any of the nine regulated compounds be out of control.

	LCS	LCSD
d4-1,2-Dichloroethane	110%	95.3%
d8-Toluene	1038	99.6%
Bromofluorobenzene	94.8%	91.0%
d4-1,2-Dichlorobenzene	95.4%	95.0%

ANALYTICA RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET Volatiles by Purge & Trap GC/MS-Method 8260B 1 of 1 Page

Sample ID: LCS-122804 LCS/LCSD

Lab Sample ID: LCS-122804 LIMS ID: 04-22362 Matrix: Water Data Release Authorized: MW Reported: 12/30/04

QC Report No: HM59-Entrix Project: WESTFARM/LEATHERCARE 4067301 Date Sampled: NA Date Received: NA

Instrument/Analyst LCS: FINN1/PAB LCSD: FINN1/PAB Date Analyzed LCS: 12/28/04 10:56 LCSD: 12/28/04 11:29

Sample Amount LCS: 20.0 mL LCSD: 20.0 mL Purge Volume LCS: 20.0 mL LCSD: 20.0 mL

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Vinyl Chloride 1,1-Dichloroethene trans-1,2-Dichloroethene cis-1,2-Dichloroethene Trichloroethene Tetrachloroethene	4.4 4.4 3.8 3.7 3.8 4.1	4.0 4.0 4.0 4.0 4.0 4.0 4.0	110% 110% 95.0% 92.5% 95.0% 102%	4.3 4.4 3.8 3.8 3.7 4.0	4.0 4.0 4.0 4.0 4.0 4.0 4.0	108% 110% 95.0% 95.0% 92.5% 100%	2.3% 0.0% 0.0% 2.7% 2.7% 2.5%

Results reported in  $\mu$ g/L

RPD calculated using sample concentrations per SW846.

LCS spike recovery is evaluated using only the nine regulated compounds noted in the ARI LQAP. The other LCS spike compound recoveries are advisory and used for analytical troubleshooting should any of the nine regulated compounds be out of control.

	LCS	LCSD
d4-1,2-Dichloroethane	83.3%	86.2%
d8-Toluene	96.1%	97.6%
Bromofluorobenzene	94.9%	96.6%
d4-1,2-Dichlorobenzene	96.2%	90.6%

EPA SAMPLE NO.

#### 4A VOLATILE METHOD BLANK SUMMARY

MB1221

Lab Name: ANALYTICAL RESOURCES, INCContract: ENTRIXLab Code: ARICase No.: WESTFARM/LEATHERCARESDG No.: HM59Lab File ID: MB1221Lab Sample ID: MB1221Date Analyzed: 12/21/04Time Analyzed: 1225GC Column: RTX502.2ID: 0.18 (mm)Heated Purge: (Y/N) NInstrument ID: FINN3Heated Purge: (Y/N) N

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	EPA	LAB	LAB	TIME
	SAMPLE NO.	SAMPLE ID		ANALYZED
01230456789011234567890122223			LAB FILE ID ====================================	TIME ANALYZED ====================================
23 24 25				
25 26				
27				
28 29				
30				

COMMENTS:

page 1 of 1

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EPA SAMPLE NO.

#### 4A VOLATILE METHOD BLANK SUMMARY

MB1228

Lab Name: ANALYTICAL RESOURCES, INCContract: ENTRIXLab Code: ARICase No.: WESTFARM/LEATHERCARESDG No.: HM59Lab File ID: MB1228Lab Sample ID: MB1228Date Analyzed: 12/28/04Time Analyzed: 1200GC Column: RTX502.2ID: 0.18 (mm)Heated Purge: (Y/N) NInstrument ID: FINN1Heated Purge: (Y/N) N

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

			· · · ·	
	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01 02 03 04 05 06	LCS1228 LCS1228 LCC-2 LCC-2 MS LCD-1 TRIP BLANK	LCS1228 LCS1228 HM59J HM59JMS HM59H HM59N	LCS1228 LCS1228A HM59J HM59JMS HM59H2 HM59N	======== 1056 1129 1309 1338 1735 1933
07 08 09 10				i
11 12 13 14				
15 16 17 18				
19 20 21 22				
23 24 25 26 27				
27 28 29 30				

COMMENTS:

page 1 of 1

FORM IV VOA

OLM3.2M

EPA SAMPLE NO.

4A VOLATILE METHOD BLANK SUMMARY

MB1229

Lab Name: ANALYTICAL RESOURCES, INCContract: ENTRIXLab Code: ARICase No.: WESTFARM/LEATHERCARESDG No.: HM59Lab File ID: MB1229ALab Sample ID: MB1229Date Analyzed: 12/29/04Time Analyzed: 1304GC Column: RTX502.2ID: 0.18 (mm)Heated Purge: (Y/N) NInstrument ID: FINN3Heated Purge: (Y/N) N

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	· · · · · · · · · · · · · · · · · · ·			
	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01 02 03 04 05 06	LCS1229 LCS1229 LCC-1 LCD-2 LCD-2 DUP	LCS1229 LCS1229 HM59I HM59K HM59M	LCS1229 LCS1229A HM5912 HM59K2 HM59M2	1119 1200 1356 1423 1451
07 08 09 10 11 12				
13 14 15 16 17 18				
19 20 21 22 23				
24 25 26 27 28 29				
29 30				

COMMENTS:

page 1 of 1

FORM IV VOA

OLM3.2M

# Volatile Organic Compound Analysis Sample Data

Prepared for

### Entrix

### Project Number: 4067301 Project: Westfarm / Leathercare

### ARI Job No. HM59

Prepared By

### Analytical Resources, Inc.



SAMPLE

Lab Sample ID: HM59A LIMS ID: 04-22353 Matrix: Water Data Release Authorized: WWV Reported: 12/30/04

QC Report No: HM59-Entrix Project: WESTFARM/LEATHERCARE 4067301 Date Sampled: 12/15/04 Date Received: 12/15/04

Sample Amount: 20.0 mL Instrument/Analyst: FINN3/PAB Purge Volume: 20.0 mL Date Analyzed: 12/21/04 17:35

CAS Number	Analyte	RL	Result
75-01-4	Vinyl Chloride	0.2	< 0.2 U
75-35-4	1,1-Dichloroethene	0.2	< 0.2 U
156-60-5	trans-1,2-Dichloroethene	0.2	< 0.2 U
156-59-2	cis-1,2-Dichloroethene	0.2	0.3
79-01-6	Trichloroethene	0.2	< 0.2 Ŭ
127-18-4	Tetrachloroethene	0.2	< 0.2 U

Reported in  $\mu g/L$  (ppb)

#### Volatile Surrogate Recovery

d4-1,2-Dichloroethane	112%
d8-Toluene	99.8%
Bromofluorobenzene	86.8%
d4-1,2-Dichlorobenzene	97.8%

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ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET Volatiles by Purge & Trap GC/MS-Method 8260B Sample ID: CYT-2-base Page 1 of 1

SAMPLE

Lab Sample ID: HM59B LIMS ID: 04-22354 Matrix: Water Data Release Authorized: ᡝ Reported: 12/30/04

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QC Report No: HM59-Entrix Project: WESTFARM/LEATHERCARE 4067301 Date Sampled: 12/15/04 Date Received: 12/15/04

Instrument/Analyst: FINN3/PAB Date Analyzed: 12/21/04 18:02 Sample Amount: 20.0 mL Purge Volume: 20.0 mL

CAS Number	Analyte	RL	Result
75-01-4 75-35-4 156-60-5 156-59-2 79-01-6 127-18-4	Vinyl Chloride 1,1-Dichloroethene trans-1,2-Dichloroethene cis-1,2-Dichloroethene Trichloroethene Tetrachloroethene	0.2 0.2 0.2 0.2 0.2 0.2 0.2	< 0.2 U < 0.2 U

Reported in  $\mu g/L$  (ppb)

d4-1,2-Dichloroethane	104%
d8-Toluene	99.5%
Bromofluorobenzene	94.5%
d4-1,2-Dichlorobenzene	97.2%



SAMPLE

Lab Sample ID: HM59C LIMS ID: 04-22355 Matrix: Water Data Release Authorized: ᡝ Reported: 12/30/04

Instrument/Analyst: FINN3/PAB

Date Analyzed: 12/21/04 18:29

QC Report No: HM59-Entrix Project: WESTFARM/LEATHERCARE 4067301 Date Sampled: 12/15/04 Date Received: 12/15/04

Sample Amount: 20.0 mL Purge Volume: 20.0 mL

CAS Number	Analyte	RL	Result
75-01-4	Vinyl Chloride	0.2	0.4
75-35-4	1,1-Dichloroethene	0.2	< 0.2 Ŭ
156-60-5	trans-1,2-Dichloroethene	0.2	< 0.2 U
156-59-2	cis-1,2-Dichloroethene	0.2	1.2
79-01-6	Trichloroethene	0.2	< 0.2 U
127-18-4	Tetrachloroethene	0.2	< 0.2 Ū

Reported in  $\mu g/L$  (ppb)

d4-1,2-Dichloroethane	94.58
d8-Toluene	1028
Bromofluorobenzene	86.5%
d4-1,2-Dichlorobenzene	101%



SAMPLE

Lab Sample ID: HM59D LIMS ID: 04-22356 Matrix: Water Data Release Authorized: WWW Reported: 12/30/04

Instrument/Analyst: FINN3/PAB

Date Analyzed: 12/21/04 18:56

QC Report No: HM59-Entrix Project: WESTFARM/LEATHERCARE 4067301 Date Sampled: 12/15/04 Date Received: 12/15/04

Sample Amount: 20.0 mL Purge Volume: 20.0 mL

CAS Number	Analyte	RL	Result
75-01-4	Vinyl Chloride	0.2	< 0.2 U
75-35-4	1,1-Dichloroethene	0.2	< 0.2 U
156-60-5	trans-1,2-Dichloroethene	0.2	< 0.2 U
156-59-2	cis-1,2-Dichloroethene	0.2	< 0.2 U
79-01-6	Trichloroethene	0.2	< 0.2 U
127-18-4	Tetrachloroethene	0.2	< 0.2 U

Reported in  $\mu g/L$  (ppb)

d4-1,2-Dichloroethane	116%
d8-Toluene	99.5%
Bromofluorobenzene	88.2%
d4-1,2-Dichlorobenzene	91.0%



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ORGANICS ANALYSIS DATA SHEET Volatiles by Purge & Trap GC/MS-Method 8260B Sample ID: NPF-5 Page 1 of 1

SAMPLE

Lab Sample ID: HM59E LIMS ID: 04-22357 Matrix: Water Data Release Authorized: WWW Reported: 12/30/04

QC Report No: HM59-Entrix Project: WESTFARM/LEATHERCARE 4067301 Date Sampled: 12/15/04 Date Received: 12/15/04 Sample Amount: 20.0 mL

Purge Volume: 20.0 mL

Instrument/Analyst: FINN3/PAB Date Analyzed: 12/21/04 19:23

CAS Number	Analyte	RL	Result
75-01-4 75-35-4 156-60-5 156-59-2 79-01-6 127-18-4	Vinyl Chloride 1,1-Dichloroethene trans-1,2-Dichloroethene cis-1,2-Dichloroethene Trichloroethene Tetrachloroethene	0.2 0.2 0.2 0.2 0.2 0.2 0.2	< 0.2 U < 0.2 U

Reported in  $\mu$ g/L (ppb)

d4-1,2-Dichloroethane	109%
d8-Toluene	91.0%
Bromofluorobenzene	84.8%
d4-1,2-Dichlorobenzene	104%

Sample ID: NPK-3 SAMPLE

Result

Lab Sample ID: HM59G LIMS ID: 04-22359 Matrix: Water Data Release Authorized: 🇤 🗤 Reported: 12/30/04

QC Report No: HM59-Entrix Project: WESTFARM/LEATHERCARE 4067301 Date Sampled: 12/15/04 Date Received: 12/15/04

Instrument/Analyst: FINN3/PAB Date Analyzed: 12/21/04 19:51 Sample Amount: 20.0 mL Purge Volume: 20.0 mL RL

CAS Number	Analyte	RL	Result
75-01-4	Vinyl Chloride	0.2	1.7
75-35-4	1,1-Dichloroethene	0.2	< 0.2 U
156-60-5	trans-1,2-Dichloroethene	0.2	< 0.2 U
156-60-5 156-59-2	cis-1,2-Dichloroethene	0.2	3.7
	Trichloroethene	0.2	< 0.2 U
79-01-6 127-18-4	Tetrachloroethene	0.2	< 0.2 U

Reported in  $\mu g/L$  (ppb)

d4-1,2-Dichloroethane	92.0%
d8-Toluene Bromofluorobenzene	100% 86.8%
d4-1,2-Dichlorobenzene	101%



ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method 8260B Sample ID: LCD-1 Page 1 of 1

SAMPLE

Lab Sample ID: HM59H LIMS ID: 04-22360 Matrix: Water Data Release Authorized: MM Reported: 12/30/04

Instrument/Analyst: FINN3/PAB

Date Analyzed: 12/21/04 20:18

QC Report No: HM59-Entrix Project: WESTFARM/LEATHERCARE 4067301 Date Sampled: 12/15/04 Date Received: 12/15/04

Sample Amount: 20.0 mL Purge Volume: 20.0 mL

CAS Number	Analyte	RL	Result
75-01-4	Vinyl Chloride	0.2	1
75-35-4	1,1-Dichloroethene	0.2	< 0.2 U
156-60-5	trans-1,2-Dichloroethene	0.2	0.2
156-59-2	cis-1,2-Dichloroethene	0.2	8.4
79-01-6	Trichloroethene	0.2	4.9
127-18-4	Tetrachloroethene	0.2	55 E

Reported in  $\mu g/L$  (ppb)

d4-1,2-Dichloroethane	89.0%
d8-Toluene	95.2%
Bromofluorobenzene	78.8%
d4-1,2-Dichlorobenzene	86.8%

Sample ID: LCD-1 DILUTION

Lab Sample ID: HM59H LIMS ID: 04-22360 Matrix: Water Data Release Authorized: WW Reported: 12/30/04 QC Report No: HM59-Entrix Project: WESTFARM/LEATHERCARE 4067301 Date Sampled: 12/15/04 Date Received: 12/15/04

Instrument/Analyst: FINN1/PAB Date Analyzed: 12/28/04 17:35 Sample Amount: 1.0 mL Purge Volume: 20.0 mL

CAS Number	Analyte	RL	Result
75-01-4	Vinyl Chloride	4.0	< 4.0 U
	1,1-Dichloroethene	4.0	< 4.0 U
75-35-4	trans-1,2-Dichloroethene	4.0	< 4.0 U
156-60-5	cis-1,2-Dichloroethene	4.0	9.0
156-59-2		4.0	4.4
79-01-6	Trichloroethene	4.0	100
127-18-4	Tetrachloroethene	1.0	200

Reported in  $\mu$ g/L (ppb)

d4-1,2-Dichloroethane	92.7%
d8-Toluene	93.8%
Bromofluorobenzene	83.8%
d4-1,2-Dichlorobenzene	88.3%



ORGANICS ANALYSIS DATA SHEET

Volatiles by Purge & Trap GC/MS-Method 8260B Sample ID: LCC-1 Page 1 of 1

SAMPLE

Lab Sample ID: HM59I LIMS ID: 04-22361 Matrix: Water Data Release Authorized: W Reported: 12/30/04

Instrument/Analyst: FINN3/PAB Date Analyzed: 12/29/04 13:56 QC Report No: HM59-Entrix Project: WESTFARM/LEATHERCARE 4067301 Date Sampled: 12/15/04 Date Received: 12/15/04

Sample Amount: 20.0 mL Purge Volume: 20.0 mL

CAS Number	Analyte	RL	Result
75 - 01 - 4 75 - 35 - 4 156 - 60 - 5 156 - 59 - 2 79 - 01 - 6 127 - 18 - 4	Vinyl Chloride 1,1-Dichloroethene trans-1,2-Dichloroethene cis-1,2-Dichloroethene Trichloroethene Tetrachloroethene	0.2 0.2 0.2 0.2 0.2 0.2 0.2	< 0.2 U < 0.2 U < 0.2 U 0.3 0.3 2.7

Reported in  $\mu g/L$  (ppb)

d4-1,2-Dichloroethane	97.2%
d8-Toluene	101%
Bromofluorobenzene	80.2%
d4-1,2-Dichlorobenzene	110%



Sample ID: LCC-2 SAMPLE

Lab Sample ID: HM59J LIMS ID: 04-22362 Matrix: Water Data Release Authorized: \\\\ Reported: 12/30/04 QC Report No: HM59-Entrix Project: WESTFARM/LEATHERCARE 4067301 Date Sampled: 12/15/04 Date Received: 12/15/04

Instrument/Analyst: FINN1/PAB Date Analyzed: 12/28/04 13:09 Sample Amount: 20.0 mL Purge Volume: 20.0 mL

CAS Number	Analyte	RL	Result
75-01-4	Vinyl Chloride	0.2	1.0
75-35-4	1,1-Dichloroethene	0.2	< 0.2 U
156-60-5	trans-1,2-Dichloroethene	0.2	< 0.2 U
156-59-2	cis-1,2-Dichloroethene	0.2	4.3
79-01-6	Trichloroethene	0.2	1.7
127-18-4	Tetrachloroethene	0.2	4.4

Reported in  $\mu g/L$  (ppb)

d4-1,2-Dichloroethane	93.2%
d8-Toluene	1078
Bromofluorobenzene	97.8%
d4-1,2-Dichlorobenzene	1048

SAMPLE

Lab Sample ID: HM59K LIMS ID: 04-22363 4067301 Matrix: Water Data Release Authorized : Reported: 12/30/04

Instrument/Analyst: FINN3/PAB Date Analyzed: 12/29/04 14:23 QC Report No: HM59-Entrix Project: WESTFARM/LEATHERCARE Date Sampled: 12/15/04 Date Received: 12/15/04

Sample Amount: 20.0 mL Purge Volume: 20.0 mL

CAS Number	Analyte	RL	Result
75-01-4	Vinyl Chloride	0.2	1.5
75-35-4	1,1-Dichloroethene	0.2	< 0.2 U
156-60-5	trans-1,2-Dichloroethene	0.2	0.3
156-59-2	cis-1,2-Dichloroethene	0.2	5.1
79-01-6	Trichloroethene	0.2	1.7
127-18-4	Tetrachloroethene	0.2	6.2

Reported in  $\mu g/L$  (ppb)

d4-1,2-Dichloroethane	106%
d8-Toluene	104%
Bromofluorobenzene	82.8%
d4-1,2-Dichlorobenzene	1098



Sample ID: LCD-2 DUP SAMPLE

Lab Sample ID: HM59M LIMS ID: 04-22364 Matrix: Water Data Release Authorized: YVVV Reported: 12/30/04 QC Report No: HM59-Entrix Project: WESTFARM/LEATHERCARE 4067301 Date Sampled: 12/15/04 Date Received: 12/15/04

Instrument/Analyst: FINN3/PAB Date Analyzed: 12/29/04 14:51 Sample Amount: 20.0 mL Purge Volume: 20.0 mL

CAS Number	Analyte	RL	Result
75-01-4	Vinyl Chloride	0.2	1.6
75-35-4	1,1-Dichloroethene	0.2	< 0.2 U
156-60-5	trans-1,2-Dichloroethene	0.2	0.3
156-59-2	cis-1,2-Dichloroethene	0.2	5.2
79-01-6	Trichloroethene	0.2	1.6
127-18-4	Tetrachloroethene	0.2	5.2

Reported in  $\mu g/L$  (ppb)

d4-1,2-Dichloroethane	1038
dB-Toluene	99.0%
Bromofluorobenzene	82.0%
d4-1,2-Dichlorobenzene	1088

ANALYTICAL RESOURCES

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ORGANICS ANALYSIS DATA SHEET Volatiles by Purge & Trap GC/MS-Method 8260B Page 1 of 1

Sample ID: TRIP BLANK SAMPLE

Lab Sample ID: HM59N LIMS ID: 04-22365 Matrix: Water Data Release Authorized: WWW Reported: 12/30/04 QC Report No: HM59-Entrix Project: WESTFARM/LEATHERCARE 4067301 Date Sampled: 12/15/04 Date Received: 12/15/04

Instrument/Analyst: FINN1/PAB Date Analyzed: 12/28/04 19:33

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Sample Amount: 20.0 mL Purge Volume: 20.0 mL

CAS Number	Analyte	RL	Result
75-01-4	Vinyl Chloride	0.2	< 0.2 U
75-35-4	1,1-Dichloroethene	0.2	< 0.2 U
156-60-5	trans-1,2-Dichloroethene	0.2	< 0.2 Ŭ
156-59-2	cis-1,2-Dichloroethene	0.2	< 0.2 U
79-01-6	Trichloroethene	0.2	< 0.2 Ŭ
127-18-4	Tetrachloroethene	0.2	< 0.2 U

Reported in  $\mu$ g/L (ppb)

d4-1,2-Dichloroethane	93.8%
d8-Toluene	105%
Bromofluorobenzene	92.8%
d4-1,2-Dichlorobenzene	107%



### Analytical Resources, Incorporated

Analytical Chemists and Consultants

January 4, 2005

Robert Barrick Entrix 2701 First Avenue Suite 500 Seattle, WA 98121

### RE: Client Project: 4067301 Westfarm/Leathercare ARI Job No. HM72

Dear Rob:

Please find enclosed the original chain of custody documentation and the final data package for samples from the project referenced above.

Problems associated with these analyses are discussed in the Case Narrative.

An electronic copy of this package will remain on file with ARI. Should you have any guestions or problems, please feel free to contact me at your convenience.

Sincerely,

ANADYTICAL RESOURCES, INC.

Susan Dunnihoo Client Service Manager sue@arilabs.com 206/695-6207

Enclosures

cc: eFileRef HM72

SD/sdrd

Case Narrative

Prepared for

### Entrix

Project Number: 4067301 Project: Westfarm / Leathercare

### ARI Job No. HM72

Prepared By

### Analytical Resources, Inc.





# Case Narrative

Client: Entrix, Inc. Project: 4067301 – Westfarm / Leathercare Matrix: Water ARI Job No. HM72

### Sample receipt

Eighteen water samples and a duplicate were accepted on 12/16/2004. The samples were received with a cooler temperature of 2.0 °C measured by IR thermometer following ARI SOP. The samples were in good condition with no discrepancies in paperwork. Additional aliquots of some samples were received on hold for possible further analysis.

### Chlorinated Volatile Analysis by 8260B

Samples were analyzed 12/28-12/30/2004 within recommended holding times. The blank spikes were run in duplicate.

Initial and continuing calibrations were within requirements of the method and ARI SOP.

The method blanks were clean at the reporting limit.

LCS/LCSD recoveries and RPDs were within ARI control limits.

Surrogates recoveries were within ARI control limits.

Matrix spike recoveries were within ARI control limits.

Internal standard areas were within requirements.

Preservations checks performed after analysis showed acceptable pH for all samples.

Sample LCD-3 had concentrations of target analytes above the limit of the low level method. The sample was reanalyzed at standard levels and both sets of results are included here.

There were no other incidents of note.
# Volatile Organic Compound Analysis QC Summary Data

Prepared for

## Entrix

## Project Number: 4067301 Project: Westfarm / Leathercare

## ARI Job No. HM72

## Prepared By

Analytical Resources, Inc.

# WATER VOLATILE SYSTEM MONITORING COMPOUND SUMMARY

Matrix: Water (Low Level)

### QC Report No: HM72

Lab ID	Client ID	DCE	TOL	BFB	DCB	TOT OUT
				88.5%	93.2%	0
122804MB	Method Blank	82.7%	95.48	88.5° 94.98	96.2%	Ő
HM72LCS	Lab Control	83.3%	96.18		90.6%	0
HM72LCD	LCDuplicate	86.2%	97.6%	96.6% 109%	109%	õ
HM72A	NPJ-4	86.5%	106%	-	109%	ů ·
HM72B	LCB-1	115%	102%	80.8%	110%	0 0
HM72C	CYU-2-base	110%	104%	82.2%	110%	0
HM72D	CYV-2-base	112%	101%	82.2%	107%	0
HM72E	CYV-3-base	1108	106%	89.8%		õ
HM72F	LCA-1	120%	95.8%	80.0%	101%	0
HM72G	LCA-2	1108	99.0%	82.8%	106%	0
HM72H	LCB-2	106%	1048	83.0%	110%	0
HM72I	LCA-2 DUP	106%	97.5%	77.2%	106%	-
HM72J	LCA-3	106%	96.0%	76.2%	100%	0
122904MB	Method Blank	112%	1038	83.7%	113%	-
HM72LCS	Lab Control	110%	1038	94.8%	95.4%	0
HM72LCD	LCDuplicate	95.3%	99.68	91.0%	95.0%	0
HM72K	LCB-3	108%	99.8%	79.0%	108%	. 0
HM72KMS	LCB-3	111%	109%	96.6%	96.48	0
HM72L	LCC-3	110%	98.2%	77.5%	105%	0
HM72M	LCA-5	1048	94.0%	76.5%	1048	0
HM72N	LCB-5	99.0%	100%	78.8%	106%	0
HM720	LCD-6	115%	99.0%	80.5%	104%	0
123004MB	Method Blank	95.2%	89.1%	74.4%	95.7%	0
HM72LCS	Lab Control	112%	99.9%	95.8%	98.6%	0
	LCDuplicate	95.8%	94.7%	85.2%	90.6%	0
HM72LCD	LCD-4	1148	102%	103%	79.8%	0
HM72P		94.28	92.88	79.08	89.2%	. 0
HM72Q	LCD-5 LCD-3	103%	97.08	86.0%	98.0%	0
HM72R	TCD-2	1000	2			

SW8260B (DCE) = 1,2-Dichloroethane-d4 (TOL) = Toluene-d8 (BFB) = Bromofluorobenzene	LCS/MB LIMITS (68-126) (59-121) (62-117)	QC LIMITS (62-138) (66-124) (60-111) (77-127)
(BFB) = Bromorruorobenzene (DCB) = 1,2-Dichlorobenzene-d4	(77-122)	(77-127)

# Column to be used to flag recovery values

\* Values outside of required QC limits

D System Monitoring Compound diluted out



# WATER VOLATILE SYSTEM MONITORING COMPOUND SUMMARY

Matrix: Water 5 mL

## QC Report No: HM72

Lab ID	Client ID	DCE	тоь	BFB	DCB	TOT OUT
	Method Blank Lab Cntrl Sample Lab Cntrl Sample Dp LCD-3	120% 122% 119% 134%	105% 106% 106% 109%	90.0% 103% 105% 82.6%	115% 102% 100% 128%	0 0 0

SW8260B	LCS/MB LIMITS	QC LIMITS
(DCE) = 1,2-Dichloroethane-d4	(74-133)	(74-142)
(TOL) = Toluene-d8	(77-131)	(84-129)
(BFB) = Bromofluorobenzene	(79-127)	(77-122)
(DCB) = 1,2-Dichlorobenzene-d4	(84-132)	(85-135)
(DCB) = 1, 2 - DTCMTOLODEHZEHE - d4	(02 200)	

# Column to be used to flag recovery values

Values outside of required QC limits

D System Monitoring Compound diluted out

ANALYTICA RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET Volatiles by Purge & Trap GC/MS-Method 8260B Page 1 of 1

Sample ID: LCS-123004 LCS/LCSD

Lab Sample ID: LCS-123004 LIMS ID: 04-22422 Matrix: Water Data Release Authorized: Reported: 01/03/05

QC Report No: HM72-Entrix Project: Westfarm/leathercare 4067301 Date Sampled: NA Date Received: NA

Instrument/Analyst LCS: NT3/PAB LCSD: NT3/PAB Date Analyzed LCS: 12/30/04 12:32 LCSD: 12/30/04 12:59

Sample Amount LCS: 5.00 mL LCSD: 5.00 mL Purge Volume LCS: 5.0 mL LCSD: 5.0 mL

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Vinyl Chloride 1,1-Dichloroethene trans-1,2-Dichloroethene cis-1,2-Dichloroethene Trichloroethene Tetrachloroethene	65.3 56.5 54.2 49.6 49.1 51.5	50.0 50.0 50.0 50.0 50.0 50.0 50.0	131% 113% 108% 99.2% 98.2% 103%	63.5 57.0 51.8 50.1 48.5 52.1	50.0 50.0 50.0 50.0 50.0 50.0	127% 114% 104% 100% 97.0% 104%	2.8% 0.9% 4.5% 1.0% 1.2% 1.2%

## Results reported in $\mu$ g/L

RPD calculated using sample concentrations per SW846.

LCS spike recovery is evaluated using only the nine regulated compounds noted in the ARI LQAP. The other LCS spike compound recoveries are advisory and used for analytical troubleshooting should any of the nine regulated compounds be out of control.

	LCS	LCSD
d4-1,2-Dichloroethane	122%	119%
d8-Toluene	· 106%	106%
Bromofluorobenzene	103%	105%
d4-1,2-Dichlorobenzene	102%	100%



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ORGANICS ANALYSIS DATA SHEET Volatiles by Purge & Trap GC/MS-Method 8260B Sample ID: LCB-3 Page 1 of 1

MATRIX SPIKE

Lab Sample ID: HM72K LIMS ID: 04-22415 Matrix: Water Data Release Authorized: Reported: 01/03/05

Instrument/Analyst: FINN3/PAB Date Analyzed: 12/29/04 19:21

QC Report No: HM72-Entrix Project: Westfarm/leathercare 4067301 Date Sampled: 12/16/04 Date Received: 12/16/04

Sample Amount: 20.0 mL Purge Volume: 20.0 mL

Analyte	Sample	Matrix Spike	Spike Added	Recovery
Vinyl Chloride 1,1-Dichloroethene trans-1,2-Dichloroethene cis-1,2-Dichloroethene Trichloroethene Tetrachloroethene	0.7 < 0.2 0.2 3.6 1.2 6.0	4.3 3.5 3.8 7.7 5.1 9.4	4.0 4.0 4.0 4.0 4.0 4.0 4.0	90.0% 87.5% 90.0% 102% 97.5% 85.0%

Results reported in  $\mu g/L$ 

ORGANICS ANALYSIS DATA SHEET Volatiles by Purge & Trap GC/MS-Method 8260B 1 of 1 Page

Lab Sample ID: LCS-122804 LIMS ID: 04-22405 Matrix: Water Data Release Authorized: Sample ID: LCS-122804 LCS/LCSD

LCSD: 20.0 mL

LCSD: 20.0 mL

QC Report No: HM72-Entrix Project: Westfarm/leathercare 4067301 Date Sampled: NA Date Received: NA

Sample Amount LCS: 20.0 mL

Purge Volume LCS: 20.0 mL

Instrument/Analyst LCS: FINN1/PAB LCSD: FINN1/PAB Date Analyzed LCS: 12/28/04 10:56 LCSD: 12/28/04 11:29

Reported: 01/03/05

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Vinyl Chloride	4.4	4.0	110%	4.3	4.0	108%	2.3%
1,1-Dichloroethene	4.4	4.0	110%	4.4	4.0	110%	0.0%
trans-1,2-Dichloroethene	3.8	4.0	95.0%	3.8	4.0	95.0%	0.0%
cis-1,2-Dichloroethene	3.7	4.0	92.5%	3.8	4.0	95.0%	2.7%
Trichloroethene	3.8	4.0	95.0%	3.7	4.0	92.5%	2.7%
Tetrachloroethene	4.1	4.0	102%	4.0	4.0	100%	2.5%

Results reported in  $\mu$ g/L

RPD calculated using sample concentrations per SW846.

LCS spike recovery is evaluated using only the nine regulated compounds noted in the ARI LQAP. The other LCS spike compound recoveries are advisory and used for analytical troubleshooting should any of the nine regulated compounds be out of control.

	LCS	LCSD
d4-1,2-Dichloroethane	83.3%	86.2%
d8-Toluene	96.1%	97.6%
Bromofluorobenzene	94.9%	96.6%
d4-1,2-Dichlorobenzene	96.2%	90.6%



ORGANICS ANALYSIS DATA SHEET Volatiles by Purge & Trap GC/MS-Method 8260B Sample ID: LCS-122904 Page 1 of 1

LCSD: FINN3/PAB

LCSD: 12/29/04 12:00

LCS/LCSD

Lab Sample ID: LCS-122904 LIMS ID: 04-22415 Matrix: Water Data Release Authorized: Ø Reported: 01/03/05

Instrument/Analyst LCS: FINN3/PAB

Date Analyzed LCS: 12/29/04 11:19

QC Report No: HM72-Entrix Project: Westfarm/leathercare 4067301 Date Sampled: NA Date Received: NA

Sample Amount LCS: 20.0 mL LCSD: 20.0 mL Purge Volume LCS: 20.0 mL LCSD: 20.0 mL

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Vinyl Chloride 1,1-Dichloroethene trans-1,2-Dichloroethene cis-1,2-Dichloroethene Trichloroethene Tetrachloroethene	3.5 3.8 3.8 4.2 3.9 3.9	4.0 4.0 4.0 4.0 4.0 4.0 4.0	87.5% 95.0% 95.0% 105% 97.5% 97.5%	3.7 3.9 3.9 4.1 4.0 4.1	4.0 4.0 4.0 4.0 4.0 4.0 4.0	92.5% 97.5% 97.5% 102% 100% 102%	5.6% 2.6% 2.6% 2.4% 2.5% 5.0%

### Results reported in $\mu g/L$

RPD calculated using sample concentrations per SW846. LCS spike recovery is evaluated using only the nine regulated compounds noted in the ARI LQAP. The other LCS spike compound recoveries are advisory and used for analytical troubleshooting should any of the nine regulated compounds be out of control.

	LCS	LCSD
d4-1,2-Dichloroethane	110%	95.3%
d8-Toluene	103%	99.6%
Bromofluorobenzene	94.8%	91.0%
d4-1,2-Dichlorobenzene	95.48	95.0%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET Volatiles by Purge & Trap GC/MS-Method 8260B Page 1 of 1

Sample ID: LCS-123004 LCS/LCSD

Lab Sample ID: LCS-123004 LIMS ID: 04-22420 Matrix: Water Data Release Authorized: Reported: 01/03/05

OC Report No: HM72-Entrix Project: Westfarm/leathercare 4067301 Date Sampled: NA Date Received: NA

Instrument/Analyst LCS: FINN3/PAB LCSD: FINN3/PAB Date Analyzed LCS: 12/30/04 13:05 LCSD: 12/30/04 13:48 Sample Amount LCS: 20.0 mL LCSD: 20.0 mL Purge Volume LCS: 20.0 mL LCSD: 20.0 mL

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Vinyl Chloride	3.6	4.0	90.0%	3.4	4.0	85.0%	5.7%
1,1-Dichloroethene	4.1	4.0	102%	3.8	4.0	95.0%	7.6%
trans-1,2-Dichloroethene	4.3	4.0	102%	3.8	4.0	95.0%	7.6%
cis-1,2-Dichloroethene	4.1	4.0	108%	4.0	4.0	100%	7.2%
Trichloroethene	4.3	4.0	102%	4.0	4.0	100%	2.5%
Tetrachloroethene	4.1	4.0	100%	4.0	4.0	100%	0.0%

### Results reported in $\mu g/L$

RPD calculated using sample concentrations per SW846.

LCS spike recovery is evaluated using only the nine regulated compounds noted in the ARI LQAP. The other LCS spike compound recoveries are advisory and used for analytical troubleshooting should any of the nine regulated compounds be out of control.

	LCS	LCSD
d4-1,2-Dichloroethane	1128	95.8원
d8-Toluene	99.9%	94.7%
Bromofluorobenzene	95.8%	85.2%
d4-1,2-Dichlorobenzene	98.6%	90.6%

4A VOLATILE METHOD BLANK SUMMARY

MB1228

Lab Name: ANALYTICAL RESOURCES, INCContract: ENTRIXLab Code: ARICase No.: WESTFARM/LEATHERCARESDG No.: HM72Lab File ID: MB1228Lab Sample ID: MB1228Date Analyzed: 12/28/04Time Analyzed: 1200GC Column: RTX502.2ID: 0.18 (mm)Heated Purge: (Y/N) NInstrument ID: FINN1

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	EPA	LAB	LAB FILE ID	TIME ANALYZED
	SAMPLE NO.	SAMPLE ID		=======================================
01 02 03	======================================	=========== LCS1228 HM72A	LCS1228 LCS1228A HM72A	1056 1129 1246
04 05 06				
07 08 09				·
10 11				
12 13 14				
15 16 17				
18 19				
20 21 22				
22 23 24 25 26 27				
26 27 28		-		
29 30				

COMMENTS :

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#### 4A VOLATILE METHOD BLANK SUMMARY

MB1229

Lab Name: ANALYTICAL RESOURCES, INCContract: ENTRIXLab Code: ARICase No.: WESTFARM/LEATHERCARESDG No.: HM72Lab File ID: MB1229ALab Sample ID: MB1229Date Analyzed: 12/29/04Time Analyzed: 1304GC Column: RTX502.2ID: 0.18 (mm)Heated Purge: (Y/N) NInstrument ID: FINN3

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

		· · · · · · · · · · · · · · · · · · ·		TIME
1	EPA	LAB	LAB	
-	SAMPLE NO.	SAMPLE ID	FILE ID	ANALYZED
				=========
		LCS1229	LCS1229	1119
01	LCS1229		LCS1229A	1200
02	LCS1229	LCS1229	HM72B2	1329
03	LCB-1	HM72B		1518
04	CYU-2-BASE	HM72C	HM72C	1545
05	CYV-2-BASE	HM72D	HM72D	1612
05	CYV-3-BASE	HM72E	HM72E	1645
	LCA-1	HM72F	HM72F	
07		HM72G	HM72G	1705
08	LCA-2	HM72H	HM72H	1732
09	LCB-2	HM72I	HM72I	1759
10	LCA-2 DUP	HM72J	HM72J	1826
11	LCA-3		HM72K	1854
12	LCB-3	HM72K	HM72KMS	1921
13	LCB-3 MS	HM72KMS	HM72L	1948
14	LCC-3	HM72L	HM72M	2015
15	LCA-5	HM72M		2042
16	LCB-5	HM72N	HM72N	2110
17	1	HM720	HM720	2110
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21		-		
22		-		
23			-	
24		-		
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COMMENTS:

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4A VOLATILE METHOD BLANK SUMMARY

MB1230

Lab Name: ANALYTICAL RESOURCES, INCContract: ENTRIXLab Code: ARICase No.: WESTFARM/LEATHERCARESDG No.: HM72Lab File ID: MB1230Lab Sample ID: MB1230Date Analyzed: 12/30/04Time Analyzed: 1415GC Column: RTX502.2ID: 0.18 (mm)Heated Purge: (Y/N) NInstrument ID: FINN3

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

			LAB	TIME
	EPA	LAB	FILE ID	ANALYZED
	SAMPLE NO.	SAMPLE ID		===============
		=======================================	LCS1230	1305
01	LCS1230	LCS1230	LCS1230A	1348
02	LCS1230	LCS1230	HM72P	1447
	LCD-4	HM72P	HM72Q	1519
04	LCD-4 LCD-5	HM72Q	HM72R	1542
05	LCD-3	HM72R	111.1,210	
06				
07				
08				
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15 16				
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23				
24				.
25				.
2.6				
2.7			_	
25 26 27 28			-   - <u> </u>	-
29			_	-
30			_	_
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COMMENTS :

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#### 4A VOLATILE METHOD BLANK SUMMARY

MB1230

Lab Name: ANALYTICAL RESOURCES, INCContract: ENTRIXLab Code: ARICase No.: WESTFARM/LEATHERCARESDG No.: 30DEC04Lab File ID: MB1230Lab Sample ID: HM72Date Analyzed: 12/30/04Time Analyzed: 1352GC Column: RTX502.2ID: 0.18 (mm)Heated Purge: (Y/N) NInstrument ID: NT3NT3

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

			T <u>ND</u>	TIME
1	EPA	LAB	LAB FILE ID	ANALYZED
	SAMPLE NO.	SAMPLE ID	FIDE ID	-================
			LCS1230	1232
01	LCS1230	LCS1230	LCS1230	1259
02	LCS1230	LCS1230	HM72R2	2051
03	LCD-3	HM72R	IM / ZKZ	
04				
05				
06				
07				
08		-		
09		_		
10				
11		-		
12		-		
13		-		
14 15		-		
15		-		
16 17		-		
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22			-	·
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27			- ]	-
19 20 21 22 23 24 25 26 27 28 27 28 29	3		-	-
29			-	-
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COMMENTS:

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OLM3.2M

## Volatile Organic Compound Analysis Sample Data

Prepared for

### Entrix

Project Number: 4067301 Project: Westfarm / Leathercare

ARI Job No. HM72

Prepared By

Analytical Resources, Inc.

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ORGANICS ANALYSIS DATA SHEET Volatiles by Purge & Trap GC/MS-Method 8260B Page 1 of 1

Sample ID: NPJ-4 SAMPLE

Lab Sample ID: HM72A LIMS ID: 04-22405 Matrix: Water Data Release Authorized: Reported: 01/03/05 QC Report No: HM72-Entrix Project: Westfarm/leathercare 4067301 Date Sampled: 12/14/04 Date Received: 12/16/04

Instrument/Analyst: FINN1/PAB Date Analyzed: 12/28/04 12:46 Sample Amount: 20.0 mL Purge Volume: 20.0 mL

CAS Number	Analyte	RL	Result
75-01-4	Vinyl Chloride	0.2	1.6
75-35-4	1,1-Dichloroethene	0.2	< 0.2 Ŭ
	trans-1,2-Dichloroethene	0.2	< 0.2 U
156-60-5	cis-1,2-Dichloroethene	0.2	1.1
156-59- <b>2</b>	Trichloroethene	0.2	< 0.2 U
79-01-6		0.2	< 0.2 U
127-18-4	Tetrachloroethene	0.2	

Reported in  $\mu g/L$  (ppb)

d4-1,2-Dichloroethane	86.5%
d8-Toluene	106%
Bromofluorobenzene	109%
d4-1,2-Dichlorobenzene	1098



ORGANICS ANALYSIS DATA SHEET Volatiles by Purge & Trap GC/MS-Method 8260B Sample ID: LCB-1 Page 1 of 1

127-18-4 Tetrachloroethene

SAMPLE

Lab Sample ID: HM72B LIMS ID: 04-22406 Matrix: Water Data Release Authorized: Reported: 01/03/05

Instrument/Analyst: FINN3/PAB

Date Analyzed: 12/29/04 13:29

QC Report No: HM72-Entrix Project: Westfarm/leathercare 4067301 Date Sampled: 12/15/04 Date Received: 12/16/04

Sample Amount: 20.0 mL Purge Volume: 20.0 mL

CAS Number	Analyte	RL	Result
75-01-4	Vinyl Chloride	0.2	0.2
75-35-4	1,1-Dichloroethene	0.2	< 0.2 U
	trans-1,2-Dichloroethene	0.2	0.8
156-60-5	cis-1,2-Dichloroethene	0.2	3.7
56-59-2	Trichloroethene	0.2	1.3
79 - 01 - 6	Trichloroethene	0.2	1.6

Reported in  $\mu g/L$  (ppb)

### Volatile Surrogate Recovery

d4-1,2-Dichloroethane	115%
d8-Toluene	1028
Bromofluorobenzene	80.8%
d4-1,2-Dichlorobenzene	108%

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ORGANICS ANALYSIS DATA SHEET Volatiles by Purge & Trap GC/MS-Method 8260B Sample ID: CYU-2-base Page 1 of 1

SAMPLE

Lab Sample ID: HM72C LIMS ID: 04-22407 Matrix: Water Data Release Authorized: Reported: 01/03/05

Instrument/Analyst: FINN3/PAB Date Analyzed: 12/29/04 15:18 QC Report No: HM72-Entrix Project: Westfarm/leathercare 4067301 Date Sampled: 12/16/04 Date Received: 12/16/04

Sample Amount: 20.0 mL Purge Volume: 20.0 mL

CAS Number	Analyte	RL	Result
75 07 4	Vinyl Chloride	0.2	< 0.2 U
75-01-4	1,1-Dichloroethene	0.2	< 0.2 U
75-35-4	trans-1,2-Dichloroethene	0.2	< 0.2 U
156-60-5	cis-1,2-Dichloroethene	0.2	0.2 J
156-59-2	Trichloroethene	0.2	< 0.2 U
79-01-6		0.2	< 0.2 U
127-18-4	Tetrachloroethene	0.2	

Reported in  $\mu g/L$  (ppb)

d4-1,2-Dichloroethane	110%
d8-Toluene	1048
Bromofluorobenzene	82.2%
d4-1,2-Dichlorobenzene	110%



ORGANICS ANALYSIS DATA SHEET Volatiles by Purge & Trap GC/MS-Method 8260B Sample ID: CYV-3-base Page 1 of 1 SAMPLE

Lab Sample ID: HM72E LIMS ID: 04-22409 Matrix: Water Data Release Authorized: Reported: 01/03/05 QC Report No: HM72-Entrix Project: Westfarm/leathercare 4067301 Date Sampled: 12/16/04 Date Received: 12/16/04 Sample Amount: 20.0 mL

Instrument/Analyst: FINN3/PAB Date Analyzed: 12/29/04 16:12

nt/Anaiyst: B lyzed: 12 <b>/29</b> /	/04 16:12 1	Purge Volume:	20.0 mL	
CAS Number	Analyte		RL	Result
75-01-4 75-35-4 156-60-5 156-59-2 79-01-6 127-18-4	Vinyl Chloride 1,1-Dichloroethene trans-1,2-Dichloroe cis-1,2-Dichloroeth Trichloroethene Tetrachloroethene	thene ene	0.2 0.2 0.2 0.2 0.2 0.2 0.2	< 0.2 U < 0.2 U

Reported in  $\mu g/L$  (ppb)

## Volatile Surrogate Recovery

d4-1,2-Dichloroethane	110%
d8-Toluene	106%
	00.0%
Bromofluorobenzene	89.8%
d4-1,2-Dichlorobenzene	1078
a4-1, 2-DICHIOLODENZERG	

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ORGANICS ANALYSIS DATA SHEET Volatiles by Purge & Trap GC/MS-Method 8260B Sample ID: LCA-1 Page 1 of 1

SAMPLE

Lab Sample ID: HM72F LIMS ID: 04-22410 Matrix: Water Data Release Authorized: Reported: 01/03/05

QC Report No: HM72-Entrix Project: Westfarm/leathercare 4067301 Date Sampled: 12/16/04 Date Received: 12/16/04

Instrument/Analyst: FINN3/PAB Date Analyzed: 12/29/04 16:45 Sample Amount: 20.0 mL Purge Volume: 20.0 mL

CAS Number	Analyte	RL	Result
75-01-4	Vinyl Chloride	0.2	0.4
75-35-4	1,1-Dichloroethene	0.2	< 0.2 U
156-60-5	trans-1,2-Dichloroethene	0.2	< 0.2 U
156-59-2	cis-1,2-Dichloroethene	0.2	1.9
79-01-6	Trichloroethene	0.2	1.4
127-18-4	Tetrachloroethene	0.2	8.4

Reported in  $\mu g/L$  (ppb)

d4-1,2-Dichloroethane	120%
d8-Toluene	95.8%
Bromofluorobenzene	80.0%
d4-1,2-Dichlorobenzene	1018



ORGANICS ANALYSIS DATA SHEET Volatiles by Purge & Trap GC/MS-Method 8260B Sample ID: LCA-2 Page 1 of 1

Lab Sample ID: HM72G LIMS ID: 04-22411 Matrix: Water Data Release Authorized: Reported: 01/03/05

Instrument/Analyst: FINN3/PAB Date Analyzed: 12/29/04 17:05 QC Report No: HM72-Entrix Project: Westfarm/leathercare 4067301 Date Sampled: 12/16/04 Date Received: 12/16/04

SAMPLE

Sample Amount: 20.0 mL Purge Volume: 20.0 mL

CAS Number	Analyte	RL	Result
75-01-4 75-35-4 156-60-5 156-59-2 79-01-6 127-18-4	Vinyl Chloride 1,1-Dichloroethene trans-1,2-Dichloroethene cis-1,2-Dichloroethene Trichloroethene Tetrachloroethene	0.2 0.2 0.2 0.2 0.2 0.2 0.2	1.4 < 0.2 U 0.3 4.4 1.9 3.9

Reported in  $\mu g/L$  (ppb)

d4-1,2-Dichloroethane	1108
d8-Toluene	99.0%
Bromofluorobenzene	82.8%
d4-1,2-Dichlorobenzene	106%

ANALYTICAL RESOURCES

ORGANICS ANALYSIS DATA SHEET Volatiles by Purge & Trap GC/MS-Method 8260B Page 1 of 1

Sample ID: LCB-2 SAMPLE

DT. .

Result

Lab Sample ID: HM72H LIMS ID: 04-22412 Matrix: Water Data Release Authorized: Reported: 01/03/05 QC Report No: HM72-Entrix Project: Westfarm/leathercare 4067301 Date Sampled: 12/16/04 Date Received: 12/16/04

Instrument/Analyst: FINN3/PAB Date Analyzed: 12/29/04 17:32

.

Sample Amount: 20.0 mL Purge Volume: 20.0 mL

CAS Number	Analyte	кц	Keburo
75-01-4 75-35-4 156-60-5 156-59-2 79-01-6 127-18-4	Vinyl Chloride 1,1-Dichloroethene trans-1,2-Dichloroethene cis-1,2-Dichloroethene Trichloroethene Tetrachloroethene	0.2 0.2 0.2 0.2 0.2 0.2 0.2	6.4 < 0.2 U 0.6 12 1.4 0.8

## Reported in $\mu$ g/L (ppb)

d4-1,2-Dichloroethane	106%
d8-Toluene	104%
Bromofluorobenzene	83.0%
d4-1,2-Dichlorobenzene	110%



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ORGANICS ANALYSIS DATA SHEET Volatiles by Purge & Trap GC/MS-Method 8260B Sample ID: LCA-2 DUP Page 1 of 1

Lab Sample ID: HM72I LIMS ID: 04-22413 Matrix: Water Data Release Authorized: Reported: 01/03/05

QC Report No: HM72-Entrix Project: Westfarm/leathercare 4067301 Date Sampled: 12/16/04 Date Received: 12/16/04 Sample Amount: 20.0 mL Purge Volume: 20.0 mL

Result

Instrument/Analyst: FINN3/PAB Date Analyzed: 12/29/04 17:59

CAS Number	Analyte	RL	Result
75-01-4 75-35-4 156-60-5 156-59-2 79-01-6 127-18-4	Vinyl Chloride 1,1-Dichloroethene trans-1,2-Dichloroethene cis-1,2-Dichloroethene Trichloroethene Tetrachloroethene	0.2 0.2 0.2 0.2 0.2 0.2 0.2	1.4 < 0.2 U 0.3 4.3 1.9 3.9

Reported in  $\mu$ g/L (ppb)

## Volatile Surrogate Recovery

d4-1,2-Dichloroethane	106%
d8-Toluene	97.5%
	77.28
Bromofluorobenzene	
d4-1,2-Dichlorobenzene	106%

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ORGANICS ANALYSIS DATA SHEET Volatiles by Purge & Trap GC/MS-Method 8260B Page 1 of 1

Sample ID: LCA-3 SAMPLE

Lab Sample ID: HM72J LIMS ID: 04-22414 Matrix: Water Data Release Authorized: Reported: 01/03/05

Instrument/Analyst: FINN3/PAB Date Analyzed: 12/29/04 18:26 QC Report No: HM72-Entrix Project: Westfarm/leathercare 4067301 Date Sampled: 12/16/04 Date Received: 12/16/04

Sample Amount: 20.0 mL Purge Volume: 20.0 mL

CAS Number	Analyte	RL	Result
75-01-4	Vinyl Chloride	0.2	7.6
75-35-4	1,1-Dichloroethene	0.2	< 0.2 U
156-6 <b>0-5</b>	trans-1,2-Dichloroethene	0.2	0.4
156-59-2	cis-1,2-Dichloroethene	0.2	5.6
79-01-6	Trichloroethene .	0.2	0.1 J
127-18-4	Tetrachloroethene	0.2	0.2 J

Reported in  $\mu g/L$  (ppb)

d4-1,2-Dichloroethane	106%
d8-Toluene	96.0%
Bromofluorobenzene	76.2%
d4-1,2-Dichlorobenzene	100%



ORGANICS ANALYSIS DATA SHEET Volatiles by Purge & Trap GC/MS-Method 8260B Sample ID: LCB-3 Page 1 of 1

Lab Sample ID: HM72K LIMS ID: 04-22415 Matrix: Water Data Release Authorized: Reported: 01/03/05

QC Report No: HM72-Entrix Project: Westfarm/leathercare 4067301 Date Sampled: 12/16/04 Date Received: 12/16/04 Sample Amount: 20.0 mL Purge Volume: 20.0 mL

SAMPLE

Instrument/Analyst: FINN3/PAB Date Analyzed: 12/29/04 18:54

CAS Number	Analyte	RL	Result
75-01-4 75-35-4 156-60-5	Vinyl Chloride 1,1-Dichloroethene trans-1,2-Dichloroethene cis-1,2-Dichloroethene	0.2 0.2 0.2 0.2	0.7 < 0.2 U 0.2 3.6
156-59-2 79-01-6 127-18-4	Trichloroethene Tetrachloroethene	0.2 0.2	1.2

Reported in  $\mu g/L$  (ppb)

## Volatile Surrogate Recovery

d4-1,2-Dichloroethane	108%
d8-Toluene	99.88
Bromofluorobenzene	79.0%
d4-1,2-Dichlorobenzene	1088

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ORGANICS ANALYSIS DATA SHEET Volatiles by Purge & Trap GC/MS-Method 8260B Page 1 of 1

Sample ID: LCC-3 SAMPLE

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Lab Sample ID: HM72L LIMS ID: 04-22416 Matrix: Water Data Release Authorized: Reported: 01/03/05 QC Report No: HM72-Entrix Project: Westfarm/leathercare 4067301 Date Sampled: 12/16/04 Date Received: 12/16/04

Instrument/Analyst: FINN3/PAB Date Analyzed: 12/29/04 19:48 Sample Amount: 20.0 mL Purge Volume: 20.0 mL

CAS Number	Analyte	RL	Result
75-01-4	Vinyl Chloride	0.2	10
1 2 1 2 2	1,1-Dichloroethene	0.2	< 0.2 Ŭ
75-35-4	trans-1,2-Dichloroethene	0.2	0.6
156-60-5	cis-1,2-Dichloroethene	0.2	5.4
156-59-2		0.2	0.5
79-01-6	Trichloroethene	0.2	0.6
127-18-4	Tetrachloroethene	0.2	••••

Reported in  $\mu g/L$  (ppb)

d4-1,2-Dichloroethane	110%
d8-Toluene	98.2%
Bromofluorobenzene	77.5%
d4-1,2-Dichlorobenzene	105%



ORGANICS ANALYSIS DATA SHEET Volatiles by Purge & Trap GC/MS-Method 8260B Sample ID: LCA-5 Page 1 of 1

SAMPLE

Lab Sample ID: HM72M LIMS ID: 04-22417 Matrix: Water Data Release Authorized: Reported: 01/03/05

Instrument/Analyst: FINN3/PAB

Date Analyzed: 12/29/04 20:15

QC Report No: HM72-Entrix Project: Westfarm/leathercare 4067301 Date Sampled: 12/16/04 Date Received: 12/16/04

Sample Amount: 20.0 mL Purge Volume: 20.0 mL

CAS Number	Analyte	RL	Result
75-01-4	Vinyl Chloride	0.2	2.0
75-35-4	1,1-Dichloroethene	0.2	< 0.2 U
156-60-5	trans-1,2-Dichloroethene	0.2	0.2
156-59-2	cis-1,2-Dichloroethene	0.2	13
79-01-6	Trichloroethene	0.2	0.9
127-18-4	Tetrachloroethene	0.2	0.2 J

Reported in  $\mu g/L$  (ppb)

## Volatile Surrogate Recovery

d4-1,2-Dichloroethane	104%
d8-Toluene	94.0号
Bromofluorobenzene	76.58
d4-1,2-Dichlorobenzene	1048

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ORGANICS ANALYSIS DATA SHEET Volatiles by Purge & Trap GC/MS-Method 8260B Page 1 of 1

Sample ID: LCB-5 SAMPLE

Lab Sample ID: HM72N LIMS ID: 04-22418 Matrix: Water Data Release Authorized: Reported: 01/03/05

Instrument/Analyst: FINN3/PAB Date Analyzed: 12/29/04 20:42 QC Report No: HM72-Entrix Project: Westfarm/leathercare 4067301 Date Sampled: 12/16/04 Date Received: 12/16/04

Sample Amount: 20.0 mL Purge Volume: 20.0 mL

CAS Number	Analyte	RL	Result
75-01-4	Vinyl Chloride	0.2	1.1
75-35-4	1,1-Dichloroethene	0.2	< 0.2 U
156-60-5	trans-1,2-Dichloroethene	0.2	0.1 J
156-59-2	cis-1,2-Dichloroethene	0.2	2.8
79-01-6	Trichloroethene	0.2	0.4
127-18-4	Tetrachloroethene	0.2	0.1 J

Reported in  $\mu g/L$  (ppb)

d4-1,2-Dichloroethane	99.0%
d8-Toluene	100동
Bromofluorobenzene	78.8%
d4-1,2-Dichlorobenzene	106%

ORGANICS ANALYSIS DATA SHEET Volatiles by Purge & Trap GC/MS-Method 8260B Sample ID: LCD-6 Page 1 of 1

SAMPLE

Lab Sample ID: HM720 LIMS ID: 04-22419 Matrix: Water Data Release Authorized Reported: 01/03/05

Instrument/Analyst: FINN3/PAB Date Analyzed: 12/29/04 21:10

QC Report No: HM72-Entrix Project: Westfarm/leathercare 4067301 Date Sampled: 12/16/04 Date Received: 12/16/04

Sample Amount: 20.0 mL Purge Volume: 20.0 mL

CAS Number	Analyte	RL	Result
75-01-4	Vinyl Chloride	0.2	0.3
75-35-4	1,1-Dichloroethene	0.2	< 0.2 U
156-60-5	trans-1,2-Dichloroethene	0.2	< 0.2 U
156-59-2	cis-1,2-Dichloroethene	0.2	1.2
79-01-6	Trichloroethene	0.2	0.2
127-18-4	Tetrachloroethene	0.2	0.1 J

Reported in  $\mu g/L$  (ppb)

#### Volatile Surrogate Recovery

d4-1,2-Dichloroethane	115%
d8-Toluene	99.0%
Bromofluorobenzene	80.5%
d4-1,2-Dichlorobenzene	1048

000158

ANALYTICAL RESOURCES

ORGANICS ANALYSIS DATA SHEET Volatiles by Purge & Trap GC/MS-Method 8260B Page 1 of 1

Sample ID: LCD-4 SAMPLE

Lab Sample ID: HM72P LIMS ID: 04-22420 Matrix: Water Data Release Authorized: Reported: 01/03/05

Instrument/Analyst: FINN3/PAB Date Analyzed: 12/30/04 14:47 QC Report No: HM72-Entrix Project: Westfarm/leathercare 4067301 Date Sampled: 12/16/04 Date Received: 12/16/04

Sample Amount: 20.0 mL Purge Volume: 20.0 mL

CAS Number	Analyte	RL	Result
75-01-4	Vinyl Chloride	0.2	1.8
75-35-4	1,1-Dichloroethene	0.2	< 0.2 Ŭ
156-60-5	trans-1,2-Dichloroethene	0.2	< 0.2 U
156-59-2	cis-1,2-Dichloroethene	0.2	3.1
79-01-6	Trichloroethene	0.2	0.5
127-18-4	Tetrachloroethene	0.2	< 0.2 U

Reported in  $\mu g/L$  (ppb)

d4-1,2-Dichloroethane	114%
d8-Toluene	102%
Bromofluorobenzene	103%
d4-1,2-Dichlorobenzene	79.8%

#### ORGANICS ANALYSIS DATA SHEET Volatiles by Purge & Trap GC/MS-Method 8260B Page 1 of 1

Sample ID: LCD-5 SAMPLE

Lab Sample ID: HM72Q LIMS ID: 04-22421 Matrix: Water Data Release Authorized: Reported: 01/03/05

Instrument/Analyst: FINN3/PAB Date Analyzed: 12/30/04 15:19 QC Report No: HM72-Entrix Project: Westfarm/leathercare 4067301 Date Sampled: 12/16/04 Date Received: 12/16/04

Sample Amount: 20.0 mL Purge Volume: 20.0 mL

CAS Number	Analyte	RL	Result
75-01-4	Vinyl Chloride	0.2	< 0.2 U
75-35-4	1,1-Dichloroethene	0.2	< 0.2 U
156-60-5	trans-1,2-Dichloroethene	0.2	< 0.2 U
156-59-2	cis-1,2-Dichloroethene	0.2	0.5
79-01-6	Trichloroethene	0.2	< 0.2 U
127-18-4	Tetrachloroethene	0.2	< 0.2 U

Reported in  $\mu g/L$  (ppb)

d4-1,2-Dichloroethane	94.2%
d8-Toluene	92.8%
Bromofluorobenzene	79.0%
d4-1,2-Dichlorobenzene	89.2%



ORGANICS ANALYSIS DATA SHEET Volatiles by Purge & Trap GC/MS-Method 8260B Page 1 of 1

Sample ID: LCD-3 SAMPLE

Lab Sample ID: HM72R LIMS ID: 04-22422 Matrix: Water Data Release Authorized:

Instrument/Analyst: FINN3/PAB Date Analyzed: 12/30/04 15:42 QC Report No: HM72-Entrix Project: Westfarm/leathercare 4067301 Date Sampled: 12/16/04 Date Received: 12/16/04

Sample Amount: 20.0 mL Purge Volume: 20.0 mL

CAS Number	Analyte	RL	Result	
75-01-4	Vinyl Chloride	0.2	1.6	
75-35-4	1,1-Dichloroethene	0.2	< 0.2 U	
156-60-5	trans-1,2-Dichloroethene	0.2	1.9	
156-5 <b>9-2</b>	cis-1,2-Dichloroethene	0.2	33 E	
79-01-6	Trichloroethene	0.2	9.6	
127-18 <b>-4</b>	Tetrachloroethene	0.2	31 E	

Reported in  $\mu g/L$  (ppb)

d4-1,2-Dichloroethane	103%
d8-Toluene	97.0%
Bromofluorobenzene	86.0%
d4-1,2-Dichlorobenzene	98.0%

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#### ORGANICS ANALYSIS DATA SHEET Volatiles by Purge & Trap GC/MS-Method 8260B Page 1 of 1

Sample ID: LCD-3 REANALYSIS

Lab Sample ID: HM72R LIMS ID: 04-22422 Matrix: Water Data Release Authorized: Reported: 01/03/05 Instrument/Analyst: NT3/PAB Date Analyzed: 12/30/04 20:51 Sample Amount: 5.00 mL Purge Volume: 5.0 mL

CAS Number	Analyte	RL	Result	
75-01-4	Vinyl Chloride	1.0	2.6	
75-35-4	1,1-Dichloroethene	1.0	< 1.0 U	
156-60-5	trans-1,2-Dichloroethene	1.0	2.6	
156-59-2	cis-1,2-Dichloroethene	1.0	30	
79-01-6	Trichloroethene	1.0	9.3	
127-18-4	Tetrachloroethene	1.0	35	

Reported in  $\mu g/L$  (ppb)

d4-1,2-Dichloroethane	134%
d8-Toluene	109%
Bromofluorobenzene	82.6%
d4-1,2-Dichlorobenzene	128%



# Analytical Resources, Incorporated

Analytical Chemists and Consultants

January 4, 2005

Robert Barrick Entrix 2701 First Avenue Suite 500 Seattle, WA 98121

## RE: Client Project: 4067301 Westfarm/Leathercare ARI Job No. HM98

Dear Rob:

Please find enclosed the original chain of custody documentation and the final data package for samples from the project referenced above.

Problems associated with these analyses are discussed in the Case Narrative.

An electronic copy of this package will remain on file with ARI. Should you have any questions or problems, please feel free to contact me at your convenience.

Sincerely,

ANALYTICAL RESOURCES, INC.

Susan Dunnihoo Client Service Manager sue@arilabs.com 206/695-6207

Enclosures

cc: eFileRef HM98

SD/sdrd

Case Narrative

Prepared for

## Entrix

# Project Number: 4067301 Project: Westfarm / Leathercare

## ARI Job No. HM98

# Prepared By

# Analytical Resources, Inc.





# Case Narrative

Client: Entrix, Inc. Project: 4067301 – Westfarm / Leathercare Matrix: Water ARI Job No. HM98

### Sample receipt

Eleven water samples were accepted at Analytical Resources, Inc. on 12/17/2004. The samples were received with a cooler temperature of 2.0 °C measured by IR thermometer following ARI SOP. The samples were in good condition with no discrepancies in paperwork. Additional aliquots of some samples were received on hold for possible further analysis.

## Chlorinated Volatile Analysis by 8260B

Samples were analyzed 12/27-12/29/2004 within recommended holding times. The blank spikes were run in duplicate.

Initial and continuing calibrations were within requirements of the method and ARI SOP.

The method blanks were clean at the reporting limit.

LCS/LCSD recoveries and RPDs were within ARI control limits.

Surrogates recoveries were within ARI control limits.

Matrix spike/matrix spike duplicate recoveries and RPDs were within ARI control limits with the exception of Vinyl Chloride, which was high due to high concentrations of the compound in the un-spiked sample. No corrective action is required.

Internal standard areas were within requirements.

Preservations checks performed after analysis showed acceptable pH for all samples.

Sample LCA-4 had concentrations of target analytes above the limit of the low level method. The sample was reanalyzed at dilution and both sets of results are included here.

There were no other incidents of note.

## Volatile Organic Compound Analysis QC Summary Data

Prepared for

## Entrix

## Project Number: 4067301 Project: Westfarm / Leathercare

ARI Job No. HM98

Prepared By

Analytical Resources, Inc.



## WATER VOLATILE SYSTEM MONITORING COMPOUND SUMMARY

Matrix: Water (Low Level)

QC Report No: HM98

Lab ID	Client ID	DCE	TOL	BFB	DCB	TOT OUT
						0
122904MB	Method Blank	94.4%	101%	91.6%	105%	0
HM98LCS	Lab Control	80.8%	98.6%	97.3%	99.2%	0
HM98LCD	LCDuplicate	98.2%	1088	105%	103%	0
HM98A	LCA-4	84.0%	105%	89.5%	100%	0
HM98ADL	LCA-4	81.4%	95.3%	83.4%	95.2%	0
HM98AMS	LCA-4	92.4%	101%	102 ዓ	105%	0
HM98AMSD	LCA-4	84.0%	96.0%	97.0%	89.6%	0
HM98B	LCB-4	88.0%	1078	91.2%	110%	0
122704MB	Method Blank	83.2%	93.8%	83.8%	94.3%	0
HM98LCS	Lab Control	98.3%	99.0%	97.9%	93.4%	0
	LCDuplicate	95.2%	97.5%	97.B%	95.6%	0
HM98LCD	LCC-4	94.8%	100%	94.0%	101%	0
HM98C		90.5%	100%	92.28	97.8%	0
HM98D	LCC-5	94.28	99.8%	88.5%	102%	0
HM98E	LCC-6	88.5%	102%	91.0%	104%	0
HM98F	LCA-6		1028	95.5%	1048	0
HM98G	LCB-6	92.2%		94.0%	104%	0
нмэвн	SLZ-1	90.0%	103%		104%	õ
HM98I	SLZ-2	98.8%	101%	1018		0
HM98J	SLZ-3	94.0%	104%	90.0%	1028	-
HM98K	SLZ-4	92.5%	108%	93.0%	110%	0

SW8260B	LCS/MB LIMITS	QC LIMITS
(DCE) = 1, 2-Dichloroethane-d4	(68-126)	(62-138)
(TOL) = Toluene-d8	(59-121)	(66-124)
(BFB) = Bromofluorobenzene	(62-117)	(60-111)
(DCB) = 1,2-Dichlorobenzene-d4	(77-122)	(77-127)

# Column to be used to flag recovery values

\* Values outside of required QC limits

D System Monitoring Compound diluted out
ANALYTICAL RESOURCES

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ORGANICS ANALYSIS DATA SHEET Volatiles by Purge & Trap GC/MS-Method 8260B Page 1 of 1

Sample ID: LCA-4 MS/MSD

Lab Sample ID: HM98AQC Report No: HM8LIMS ID: 04-22631Project: WesMatrix: Water400Data Release Authorized:Date Sampled:Reported: 01/04/05Date Received:

Instrument/Analyst MS: FINN1/PAB MSD: FINN1/PAB Date Analyzed MS: 12/29/04 16:49 MSD: 12/29/04 17:19 QC Report No: HM98-Entrix Project: Westfarm/Leathercare 4067301 Date Sampled: 12/17/04 Date Received: 12/20/04

Sample Amount MS: 4.00 mL MSD: 4.00 mL Purge Volume MS: 20.0 mL MSD: 20.0 mL

Analyte	Sample	MS	Spike Added-MS	MS Recovery	MSD	Spike Added-MSD	MSD Recovery	RPD	
Vinyl Chloride 1,1-Dichloroethene trans-1,2-Dichloroethene cis-1,2-Dichloroethene Trichloroethene Tetrachloroethene	36.3 < 0.2 0.4 6.0 0.2 0.2	78.0 24.6 18.0 25.0 18.8 21.4	20.0 20.0 20.0 20.0 20.0 20.0 20.0	208% 123% 88.0% 95.0% 93.0% 106%	72.5 22.6 16.6 21.8 17.1 19.1	20.0 20.0 20.0 20.0 20.0 20.0	181% 113% 81.0% 79.0% 84.5% 94.5%	7.3% 8.5% 8.1% 13.7% 9.5% 11.4%	

Results reported in  $\mu$ g/L

RPD calculated using sample concentrations per SW846.

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ORGANICS ANALYSIS DATA SHEET Volatiles by Purge & Trap GC/MS-Method 8260B Page lofl

Sample ID: LCS-122904 LCS/LCSD

LCSD: 20.0 mL

LCSD: 20.0 mL

Lab Sample ID: LCS-122904 LIMS ID: 04-22631 Matrix: Water Data Release Authorized: Reported: 01/04/05

QC Report No: HM98-Entrix Project: Westfarm/Leathercare 4067301 Date Sampled: NA Date Received: NA

Sample Amount LCS: 20.0 mL

Purge Volume LCS: 20.0 mL

Instrument/Analyst LCS: FINN1/PAB LCSD: FINN1/PAB Date Analyzed LCS: 12/29/04 14:50 LCSD: 12/29/04 15:24

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Vinyl Chloride	4.7	4.0	118%	4.6	4.0	115%	2.2%
1,1-Dichloroethene	4.6	4.0	115%	4.7	4.0	118%	2.2%
trans-1,2-Dichloroethene	3.6	4.0	90.0%	3.4	4.0	85.0%	5.7%
cis-1,2-Dichloroethene	3.6	4.0	90.0%	3.5	4.0	87.5%	2.8%
Trichloroethene	3.9	4.0	97.5%	3.7	4.0	92.5%	5.3%
Tetrachloroethene	4.3	4.0	108%	4.1	4.0	102%	4.8%

Results reported in  $\mu g/L$ 

RPD calculated using sample concentrations per SW846.

LCS spike recovery is evaluated using only the nine regulated compounds noted in the ARI LQAP. The other LCS spike compound recoveries are advisory and used for analytical troubleshooting should any of the nine regulated compounds be out of control.

	LCS	LCSD
d4-1,2-Dichloroethane	80.8%	98.2%
dB-Toluene	98.6%	108%
Bromofluorobenzene	97.3%	105%
d4-1,2-Dichlorobenzene	99.2%	103%



ORGANICS ANALYSIS DATA SHEET Volatiles by Purge & Trap GC/MS-Method 8260B Sample ID: LCS-122704 Page 1 of 1

LCS/LCSD

LCSD: 20.0 mL

Lab Sample ID: LCS-122704 LIMS ID: 04-22633 Matrix: Water Data Release Authorized: Reported: 01/04/05

QC Report No: HM98-Entrix Project: Westfarm/Leathercare 4067301 Date Sampled: NA Date Received: NA

Sample Amount LCS: 20.0 mL Instrument/Analyst LCS: FINN1/PAB LCSD: 20.0 mL LCSD: FINN1/PAB Purge Volume LCS: 20.0 mL Date Analyzed LCS: 12/27/04 15:47 LCSD: 12/27/04 17:32

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Vinyl Chloride	4.4	4.0	110%	4.6	4.0	115%	4.4%
1,1-Dichloroethene	4.1	4.0	102%	4.2	4.0	105%	2.4%
trans-1,2-Dichloroethene	4.0	4.0	100%	4.0	4.0	100%	0.0%
cis-1,2-Dichloroethene	4.0	4.0	100%	4.0	4.0	100%	0.0%
Trichloroethene	3.9	4.0	97.5%	3.8	4.0	95.0%	2.6%
Tetrachloroethene	3.9	4.0	97.5%	4.0	4.0	100%	2.5%

Results reported in  $\mu$ g/L

RPD calculated using sample concentrations per SW846.

LCS spike recovery is evaluated using only the nine regulated compounds noted in the ARI LQAP. The other LCS spike compound recoveries are advisory and used for analytical troubleshooting should any of the nine regulated compounds be out of control.

	LCS	LCSD
d4-1,2-Dichloroethane	98.3%	95.2%
d8-Toluene	99.0%	97.5%
Bromofluorobenzene	97.9%	97.8%
d4-1,2-Dichlorobenzene	93.48	95.6%

EPA SAMPLE NO.

4A VOLATILE METHOD BLANK SUMMARY

MB1227

Jab Name: ANALYTICAL RESOURCES, INCContract: ENTRIXLab Code: ARICase No.: WESTFARM/LEATHERCARESDG No.: HM98Jab File ID: MB1227Lab Sample ID: MB1227Date Analyzed: 12/27/04Time Analyzed: 1620JC Column: RTX502.2ID: 0.18 (mm)Heated Purge: (Y/N) NInstrument ID: FINN1

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

-	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED =========
02 03 04	EPA SAMPLE NO. ====================================		LAB FILE ID ====================================	ANALYZED
27 28			-	
29 30			_1	_

COMMENTS:

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FORM IV VOA

OLM3.21

EPA SAMPLE NO.

4A VOLATILE METHOD BLANK SUMMARY

MB1229

Lab Name: ANALYTICAL RESOURCES, INCContract: ENTRIXLab Code: ARICase No.: WESTFARM/LEATHERCARESDG No.: HM98Lab File ID: MB1229Lab Sample ID: MB1229Date Analyzed: 12/29/04Time Analyzed: 1607GC Column: RTX502.2ID: 0.18 (mm)Heated Purge: (Y/N) NInstrument ID: FINN1

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	EPA CAMPLE N		LAB	ID	LAB FILE ID	TIME ANALYZED
000000000011234567890122345678901222222222222222222222222222222222222	SAMPLE N LCS1229 LCS1229 LCA-4 MS LCA-4 MSD LCA-4 LCB-4 LCC-6 LCA-6 LCB-6 SLZ-1 SLZ-2 SLZ-3 SLZ-3 SLZ-4	JO.	LAB SAMPLE ====== LCS1229 LCS1229 HM98AMS HM98AAMSI HM98B HM98B HM98F HM98F HM98G HM98H HM98J HM98J HM98J HM98J HM98J HM98K	====		
29 30	)					

COMMENTS:

page 1 of 1

FORM IV VOA

OLM3.2M

## Volatile Organic Compound Analysis Sample Data

### Prepared for

### Entrix

# Project Number: 4067301 Project: Westfarm / Leathercare

# ARI Job No. HM98

Prepared By

# Analytical Resources, Inc.



SAMPLE

Lab Sample ID: HM98A LIMS ID: 04-22631 Matrix: Water Data Release Authorized: Reported: 01/04/05

Instrument/Analyst: FINN1/PAB Date Analyzed: 12/27/04 20:20 QC Report No: HM98-Entrix Project: Westfarm/Leathercare 4067301 Date Sampled: 12/17/04 Date Received: 12/20/04

Sample Amount: 20.0 mL Purge Volume: 20.0 mL

CAS Number	Analyte	RL	Result
75-01-4	Vinyl Chloride	0.2	36 E
75-35-4	1,1-Dichloroethene	0.2	< 0.2 U
156-60-5	trans-1,2-Dichloroethene	0.2	0.4
156-59-2	cis-1,2-Dichloroethene	0.2	6.0
79-01-6	Trichloroethene	0.2	0.2 J
127-18-4	Tetrachloroethene	0.2	0.2

Reported in  $\mu g/L$  (ppb)

#### Volatile Surrogate Recovery

d4-1,2-Dichloroethane	84.0%
d8-Toluene	1058
Bromofluorobenzene	89.5%
d4-1,2-Dichlorobenzene	100%

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ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET Volatiles by Purge & Trap GC/MS-Method 8260B Page 1 of 1

Lab Sample ID: HM98A LIMS ID: 04-22631 Matrix: Water Data Release Authorized: Reported: 01/04/05

QC Report No: HM98-Entrix Project: Westfarm/Leathercare 4067301 Date Sampled: 12/17/04 Date Received: 12/20/04

Sample ID: LCA-4

DILUTION

Instrument/Analyst: FINN1/PAB Date Analyzed: 12/29/04 17:48

Sample Amount: 4.00 mL Purge Volume: 20.0 mL

Analyte	RL	Result
Vinyl Chloride 1,1-Dichloroethene trans-1,2-Dichloroethene cis-1,2-Dichloroethene Trichloroethene	1.0 1.0 1.0 1.0 1.0	47 < 1.0 U < 1.0 U 6.0 < 1.0 U < 1.0 U
	Vinyl Chloride 1,1-Dichloroethene trans-1,2-Dichloroethene cis-1,2-Dichloroethene	Analyte1.0Vinyl Chloride1.01,1-Dichloroethene1.0trans-1,2-Dichloroethene1.0cis-1,2-Dichloroethene1.0Trichloroethene1.0

### Reported in $\mu$ g/L (ppb)

d4-1,2-Dichloroethane	81.4%
d8-Toluene	95.3%
Bromofluorobenzene	83.48
d4-1,2-Dichlorobenzene	95.2%



SAMPLE

Lab Sample ID: HM98B LIMS ID: 04-22632 Matrix: Water Data Release Authorized: Reported: 01/04/05

QC Report No: HM98-Entrix Project: Westfarm/Leathercare 4067301 Date Sampled: 12/17/04 Date Received: 12/20/04 \_ \_ \_ -

Instrument/Analyst: FINN1/PAB Date Analyzed: 12/29/04 18:48

Sample	Amount:	20.0	mL
Purge	Volume:	20.0	mL

CAS Number	Analyte	RL	Result
75-01-4	Vinyl Chloride	0.2	3.1
75-35-4	1,1-Dichloroethene	0.2	< 0.2 U
156-60-5	trans-1,2-Dichloroethene	0.2	0.3
156-59-2	cis-1,2-Dichloroethene	0.2	5.8
79-01-6	Trichloroethene	0.2	3.0
127-18-4	Tetrachloroethene	0.2	5.7

#### Reported in $\mu$ g/L (ppb)

d4-1,2-Dichloroethane	88.0%
d8-Toluene	1078
Bromofluorobenzene	91.2%
d4-1,2-Dichlorobenzene	110%

Sample ID: LCC-4 SAMPLE

0.4

Lab Sample ID: HM98C LIMS ID: 04-22633 Matrix: Water Data Release Authorized: - M Reported: 01/04/05

Instrument/Analyst: FINN1/PAB

79-01-6

127-18-4

QC Report No: HM98-Entrix Project: Westfarm/Leathercare 4067301 Date Sampled: 12/17/04 Date Received: 12/20/04

0.2

Sample Amount: 20.0 mL Purge Volume: 20.0 mL

Date Analyzed: 12/27/04 21:19 Purge		urge Volume:	20.0 mL		
	CAS Number	Analyte		RL	Result
		Vinyl Chloride		0.2	4.4
	75-01-4	1,1-Dichloroethene		0.2	< 0.2 U
	75-35-4	trans-1,2-Dichloroet	hene	0.2	0.2 J
	156-60-5	cis-1,2-Dichloroethe		0.2	4.2
	156-59-2			0.2	0.8
	79-01-6	Trichloroethene			o 4

Tetrachloroethene

Reported in  $\mu$ g/L (ppb)

d4-1,2-Dichloroethane	94.8%
d8-Toluene	100%
Bromofluorobenzene	94.0%
d4-1,2-Dichlorobenzene	101%

ANALYTICAL RESOURCES V INCORPORATED

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ORGANICS ANALYSIS DATA SHEET Volatiles by Purge & Trap GC/MS-Method 8260B Sample ID: LCC-5 Page 1 of 1

SAMPLE

Lab Sample ID: HM98D LIMS ID: 04-22634 Matrix: Water Data Release Authorized: Reported: 01/04/05

QC Report No: HM98-Entrix Project: Westfarm/Leathercare 4067301 Date Sampled: 12/17/04 Date Received: 12/20/04 Sample Amount: 20.0 mL

Purge Volume: 20.0 mL

Instrument/Analyst: FINN1/PAB Date Analyzed: 12/27/04 21:49

| CAS Number                                                        | Analyte                                                                                                                            | RL                                            | Result                                             |
|-------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|----------------------------------------------------|
| 75-01-4<br>75-35-4<br>156-60-5<br>156-59-2<br>79-01-6<br>127-18-4 | Vinyl Chloride<br>1,1-Dichloroethene<br>trans-1,2-Dichloroethene<br>cis-1,2-Dichloroethene<br>Trichloroethene<br>Tetrachloroethene | 0.2<br>0.2<br>0.2<br>0.2<br>0.2<br>0.2<br>0.2 | < 0.2 U<br>< 0.2 U<br>< 0.2 U<br>0.7<br>0.3<br>0.3 |

### Reported in $\mu g/L$ (ppb)

#### Volatile Surrogate Recovery

| d4-1,2-Dichloroethane  | 90.5% |
|------------------------|-------|
| d8-Toluene             | 100%  |
| Bromofluorobenzene     | 92.2% |
| d4-1,2-Dichlorobenzene | 97.8% |

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Sample ID: LCC-6 SAMPLE

Lab Sample ID: HM98E LIMS ID: 04-22635 Matrix: Water Data Release Authorized: QC Report No: HM98-Entrix Project: Westfarm/Leathercare 4067301 Date Sampled: 12/17/04 Date Received: 12/20/04

Sample Amount: 20.0 mL

Instrument/Analyst: FINN1/PAB Date Analy

| ht/Analyst: FINNI/FAB<br>lyzed: 12/29/04 19:18                    |                                                                                                                              | Purge Volume: | 20.0 mL                                       |                                                               |
|-------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|---------------|-----------------------------------------------|---------------------------------------------------------------|
| CAS Number                                                        | Analyte                                                                                                                      |               | RL                                            | Result                                                        |
| 75-01-4<br>75-35-4<br>156-60-5<br>156-59-2<br>79-01-6<br>127-18-4 | Vinyl Chloride<br>1,1-Dichloroethene<br>trans-1,2-Dichloroet<br>cis-1,2-Dichloroethe<br>Trichloroethene<br>Tetrachloroethene |               | 0.2<br>0.2<br>0.2<br>0.2<br>0.2<br>0.2<br>0.2 | < 0.2 U<br>< 0.2 U<br>< 0.2 U<br>< 0.2 U<br>0.8<br>0.4<br>0.2 |

Reported in  $\mu g/L$  (ppb)

| d4-1,2-Dichloroethane<br>d8-Toluene | 94.28<br>99.88<br>88.58 |
|-------------------------------------|-------------------------|
| Bromofluorobenzene                  | 88.58                   |
| d4-1,2-Dichlorobenzene              | 1028                    |



SAMPLE

Lab Sample ID: HM98F LIMS ID: 04-22636 Matrix: Water Data Release Authorized: Reported: 01/04/05

QC Report No: HM98-Entrix Project: Westfarm/Leathercare 4067301 Date Sampled: 12/17/04 Date Received: 12/20/04

Instrument/Analyst: FINN1/PAB Date Analyzed: 12/29/04 19:47 Sample Amount: 20.0 mL Purge Volume: 20.0 mL

| CAS Number | Analyte                  | RL  | Result  |
|------------|--------------------------|-----|---------|
| 75-01-4    | Vinyl Chloride           | 0.2 | < 0.2 U |
| 75-35-4    | 1,1-Dichloroethene       | 0.2 | < 0.2 U |
| 156-60-5   | trans-1,2-Dichloroethene | 0.2 | < 0.2 U |
| 156-59-2   | cis-1,2-Dichloroethene   | 0.2 | 0.8     |
| 79-01-6    | Trichloroethene          | 0.2 | 0.3     |
| 127-18-4   | Tetrachloroethene        | 0.2 | 0.6     |

Reported in  $\mu g/L$  (ppb)

### Volatile Surrogate Recovery

| d4-1,2-Dichloroethane  | 88.5% |
|------------------------|-------|
| d8-Toluene             | 1028  |
| Bromofluorobenzene     | 91.0% |
| d4-1,2-Dichlorobenzene | 104%  |

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Sample ID: LCB-6 SAMPLE

Lab Sample ID: HM98G LIMS ID: 04-22637 Matrix: Water Data Release Authorized: Reported: 01/04/05

Instrument/Analyst: FINN1/PAB Date Analyzed: 12/29/04 20:17 QC Report No: HM98-Entrix Project: Westfarm/Leathercare 4067301 Date Sampled: 12/17/04 Date Received: 12/20/04

Sample Amount: 20.0 mL Purge Volume: 20.0 mL

| CAS Number | Analyte                  | RL  | Result  |
|------------|--------------------------|-----|---------|
|            | Vinyl Chloride           | 0.2 | < 0.2 U |
| 75-35-4    | 1,1-Dichloroethene       | 0.2 | < 0.2 U |
| 156-60-5   | trans-1,2-Dichloroethene | 0.2 | < 0.2 U |
| 156-59-2   | cis-1,2-Dichloroethene   | 0.2 | 0.6     |
| 79-01-6    | Trichloroethene          | 0.2 | 0.3     |
| 127-18-4   | Tetrachloroethene        | 0.2 | 0.5     |

Reported in  $\mu g/L$  (ppb)

| d4-1,2-Dichloroethane  | 92.2% |
|------------------------|-------|
| d8-Toluene             | 1038  |
| Bromofluorobenzene     | 95.5% |
| d4-1,2-Dichlorobenzene | 104%  |

Sample ID: SLZ-1 SAMPLE

Lab Sample ID: HM98H LIMS ID: 04-22638 Matrix: Water Data Release Authorized: Reported: 01/04/05

Instrument/Analyst: FINN1/PAB Date Analyzed: 12/29/04 20:47 QC Report No: HM98-Entrix Project: Westfarm/Leathercare 4067301 Date Sampled: 12/17/04 Date Received: 12/20/04

Sample Amount: 20.0 mL Purge Volume: 20.0 mL

| CAS Number | Analyte                  | RL    | Result  |
|------------|--------------------------|-------|---------|
| 75-01-4    | Vinyl Chloride           | 0.2   | < 0.2 U |
| 75-35-4    | 1,1-Dichloroethene       | 0.2   | < 0.2 U |
| 156-60-5   | trans-1,2-Dichloroethene | 0.2   | < 0.2 U |
| 156-59-2   | cis-1,2-Dichloroethene   | 0.2   | < 0.2 Ŭ |
| 79-01-6    | Trichloroethene          | 0.2 - | < 0.2 U |
| 127-18-4   | Tetrachloroethene        | 0.2   | < 0.2 U |

Reported in  $\mu$ g/L (ppb)

| d4-1,2-Dichloroethane  | 90.0% |
|------------------------|-------|
| d8-Toluene             | 103%  |
| Bromofluorobenzene     | 94.0% |
| d4-1,2-Dichlorobenzene | 1048  |

ANALYTICAL RESOURCES

ORGANICS ANALYSIS DATA SHEET Volatiles by Purge & Trap GC/MS-Method 8260B Page 1 of 1

Sample ID: SLZ-2 SAMPLE

Lab Sample ID: HM98I LIMS ID: 04-22639 Matrix: Water Data Release Authorized:

Instrument/Analyst: FINN1/PAB Date Analyzed: 12/29/04 21:17 QC Report No: HM98-Entrix Project: Westfarm/Leathercare 4067301 Date Sampled: 12/17/04 Date Received: 12/20/04

Sample Amount: 20.0 mL Purge Volume: 20.0 mL

| CAS Number | Analyte                  | RL  | Result  |
|------------|--------------------------|-----|---------|
| 75-01-4    | Vinyl Chloride           | 0.2 | 0.2 J   |
| 75-35-4    | 1,1-Dichloroethene       | 0.2 | < 0.2 Ŭ |
| 156-60-5   | trans-1,2-Dichloroethene | 0.2 | < 0.2 Ŭ |
| 156-59-2   | cis-1,2-Dichloroethene   | 0.2 | 0.3     |
| 79-01-6    | Trichloroethene          | 0.2 | < 0.2 Ŭ |
| 127-18-4   | Tetrachloroethene        | 0.2 | < 0.2 Ŭ |

Reported in  $\mu g/L$  (ppb)

| d4-1,2-Dichloroethane  | 98.8% |
|------------------------|-------|
| d8-Toluene             | 101%  |
| Bromofluorobenzene     | 101%  |
| d4-1,2-Dichlorobenzene | 106%  |

SAMPLE

Lab Sample ID: HM98J LIMS ID: 04-22640 Matrix: Water Data Release Authorized: Reported: 01/04/05

Instrument/Analyst: FINN1/PAB Date Analyzed: 12/29/04 21:46 QC Report No: HM98-Entrix Project: Westfarm/Leathercare 4067301 Date Sampled: 12/17/04 Date Received: 12/20/04

Sample Amount: 20.0 mL Purge Volume: 20.0 mL

| CAS Number | Analyte                  | RL  | Result  |
|------------|--------------------------|-----|---------|
| 75-01-4    | Vinyl Chloride           | 0.2 | < 0.2 U |
| 75-35-4    | 1,1-Dichloroethene       | 0.2 | < 0.2 Ŭ |
| 156-60-5   | trans-1,2-Dichloroethene | 0.2 | < 0.2 U |
| 156-59-2   | cis-1,2-Dichloroethene   | 0.2 | < 0.2 U |
| 79-01-6    | Trichloroethene          | 0.2 | < 0.2 U |
| 127-18-4   | Tetrachloroethene        | 0.2 | < 0.2 U |

Reported in  $\mu$ g/L (ppb)

| d4-1,2-Dichloroethane  | 94.0% |
|------------------------|-------|
| d8-Toluene             | 104%  |
| Bromofluorobenzene     | 90.0号 |
| d4-1,2-Dichlorobenzene | 102%  |

ANALYTICAL RESOURCES

ORGANICS ANALYSIS DATA SHEET Volatiles by Purge & Trap GC/MS-Method 8260B Page 1 of 1

Sample ID: SLZ-4 SAMPLE

Lab Sample ID: HM98K LIMS ID: 04-22641 Matrix: Water Data Release Authorized: Reported: 01/04/05 QC Report No: HM98-Entrix Project: Westfarm/Leathercare 4067301 Date Sampled: 12/17/04 Date Received: 12/20/04

Instrument/Analyst: FINN1/PAB Date Analyzed: 12/29/04 22:16 Sample Amount: 20.0 mL Purge Volume: 20.0 mL

| CAS Number | Analyte                  | RL  | Result  |
|------------|--------------------------|-----|---------|
| 75-01-4    | Vinyl Chloride           | 0.2 | 0.4     |
| 75-35-4    | 1,1-Dichloroethene       | 0.2 | < 0.2 U |
| 156-60-5   | trans-1,2-Dichloroethene | 0.2 | < 0.2 U |
| 156-59-2   | cis-1,2-Dichloroethene   | 0.2 | 0.2     |
| 79-01-6    | Trichloroethene          | 0.2 | < 0.2 U |
| 127-18-4   | Tetrachloroethene        | 0.2 | < 0.2 U |

Reported in  $\mu$ g/L (ppb)

| d4-1,2-Dichloroethane  | 92.5% |
|------------------------|-------|
| d8-Toluene             | 108%  |
| Bromofluorobenzene     | 93.0% |
| d4-1,2-Dichlorobenzene | 110%  |