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December 7, 2006

Mr. Brian Jankauskas, P.E.
Division of Environmental Remediation
New York State Department of Environmental Conservation, 11th Floor
625 Broadway
Albany, New York 12233-7015

**Subject: Final SVIE Data Summary Report
Soil Vapor Intrusion Evaluation (SVIE) Work Assignment # D003826-33
Arba Dry Cleaners, Levittown, New York, Site ID # 1-30-062**

Dear Mr. Jankauskas,

MACTEC Engineering and Consulting, P.C., (MACTEC), under contract to the New York State Department of Environmental Conservation (NYSDEC) is pleased to present this letter report for the Soil Vapor Intrusion Evaluation (SVIE) Work Assignment (WA) # D003826-33 for sub-slab soil vapor, outdoor air, and groundwater sampling at the former Arba Dry Cleaners (Site), Site # 1-30-062, dated June 7, 2006 (NYSDEC, 2006). This letter report provides a description of the field activities completed and analytical results for the WA. Field activities and laboratory analyses were conducted as outlined in the Work Plan (MACTEC, 2006). Based on an evaluation of the site conditions observed during the SVIE site work and results reported by the laboratory for samples collected as part of the SVIE, the site does not appear to pose a threat to public health from the vapor intrusion pathway.

Site Background

The Site is located in a mixed light commercial/residential area at 701 Newbridge Road in Levittown, Nassau County, New York (Figure 1). The site is located within a shopping mall consisting of several businesses in a one-story building with a sub level. The area surrounding the building is paved. The adjacent properties on the south and west sides of the shopping mall are residential. Levittown Parkway and Newbridge Road border the north and east sides of the mall respectively and there are residential properties located beyond both streets. Presently, Newbridge Kim Cleaners occupies the space previously used by Arba Dry Cleaners. Newbridge Kim Cleaners

is an active dry cleaning facility. Nassau County Department of Health records indicate the facility uses tetrachloroethene (PCE) as part of their dry cleaning operations. The Site property consists of approximately 1.7 acres.

In April 1988, a fire in the basement of the dry cleaners melted a plastic nozzle of an 80 gallon storage tank containing PCE. The water used to put the fire out mobilized the PCE to a floor drain that discharged to the underlying soils. Remedial action performed at the site included removing contaminated soil, closing the floor drain, refinishing the floor, and monitoring groundwater quality. In April 1995, groundwater and soil (taken from the source area) results indicated that the volatile organics remaining did not pose a threat to human health or the environment. In March 1996, a ROD was developed recommending "No Further Action" for the Site. Lastly, in August 1996, the site was de-listed from the New York State Registry of Inactive Hazardous Waste Disposal Sites (NYSDEC, 2006). Subsequently, NYSDEC determined an SVIE was necessary at the Site to verify remedial efforts undertaken to date are protective of human health.

Field Activities

The NYSDEC contracted MACTEC to conduct an SVIE that included: obtaining water level measurements; determining the presence/absence of non-aqueous phase liquids, and sampling groundwater at the four on-site monitoring wells; conducting sub-slab soil vapor sampling beneath the concrete basement floor of the existing dry cleaners space; and obtaining one outdoor air sample upwind of the building. The field investigation and associated sampling were conducted on September 27 and September 28, 2006. Investigation locations are shown on Figure 2.

Groundwater Sampling and Gauging. There are four on-site monitoring wells, MW-1, MW-2, MW-3, and MW-3D (Figure 2). Prior to sampling, water level measurements and presence/absence of non-aqueous phase liquids were documented at three of the four monitoring wells using a water level indicator. The cover on the fourth monitoring well (MW-3) was unable to be opened until after groundwater sampling activities were initiated. Low flow groundwater field data records are included in Appendix A.

All four monitoring wells were purged and sampled using bladder pumps and dedicated Teflon lined, low density polyethylene (LDPE) tubing. The air source was compressed nitrogen.

Groundwater samples were collected using low-flow sampling and documentation procedures described in the SVIE Work Plan (MACTEC, 2006) and analyzed for target compound list (TCL) volatile organic compounds (VOCs) using EPA method 8260, semivolatile organic compounds (SVOCs) using EPA method 8270, and Target Analyte List (TAL) metals using EPA methods 6010/7470. Purge water was initially contained, screened with the photoionization detector (PID), and then dispersed in the grassy areas on-site as the purge water did not exhibit visual or olfactory evidence of contamination, and the PID readings were not above background.

The following table summarizes the survey information and groundwater elevations at the four on-site monitoring wells. The coordinates are NAD 83 NY State Plane (Long Island) with units of US Survey Feet, and the elevations are NAVD 88.

Groundwater Survey Table

Well ID	Northing	Easting	Top of PVC Elevation (ft)	Depth to Water (ft)	Groundwater Elevation (ft)
MW-1	210362.80	1112687.47	111.48	45.13	66.35
MW-2	210095.68	1112606.20	110.21	44.18	66.03
MW-3	210068.35	1112711.53	111.01	45.01	66.00
MW-3D	210065.75	1112711.28	110.82	44.97	65.85

Source Area Investigation. An indoor air quality questionnaire and building inventory was conducted in the basement of Newbridge Kim Cleaners using the NYSDOH “Indoor Air Quality Questionnaire and Building Inventory” form. A parts per billion (ppb) MiniRae PID was used to scan product containers that may have been off-gassing VOCs, and photographs of the product containers were obtained. When VOC readings were detected or products inventoried listed primary contaminants of concern (i.e. chlorinated solvents) as ingredients, the containers in question were noted, however, they were not removed from the basement due to the fact that indoor air was not being sampled. The maximum PID readings observed ranged from 6 parts per million (ppm) near the racks of dry-cleaned clothes to greater than 20 ppm inside the storage container as noted in the questionnaire. The completed questionnaire is included in Appendix B. Representative photos of the site visit and field investigation are included in Appendix C.

Two sub-slab soil vapor sample locations (SS-1 and SS-2) were completed in the basement of Newbridge Kim Cleaners. SS-1 was located in the vicinity of patched concrete. This was most likely the location of the former floor drain. SS-2 was located west of SS-1, near the entrance to the boiler room. Sub-slab soil vapor sampling followed the procedure as described in the SVIE Work Plan (MACTEC, 2006). Sample locations were approximately 3-inches below the slab. A 1-liter SUMMA[®]-type canister with a 20-minute flow valve was used to collect the soil vapor samples. Each location was backfilled with cement grout and finished to existing grade.

One ambient air sample (OA-1) was collected using a 1-liter SUMMA[®]-type canister. OA-1 was located outside the mall in which Newbridge Kim Cleaners is housed and was located upwind, near MW-2 at the south of the mall, at approximately three feet above ground surface. As indicated in Item 12, Appendix B, the wind was observed from the south. OA-1 was also set with a 20-minute flow valve.

The time of sample collection and initial and final canister vacuum (in inches Hg) were recorded in the field log book (see Appendix A). Representative photos are included in Appendix C. Weather data from the National Oceanic Atmospheric Administration (NOAA) for September 27 and September 28 are included in Appendix D. The samples were shipped to Columbia Analytical Services for analyses of VOCs via USEPA Method TO-15.

Site Survey. A site survey, which included the location and elevation of all monitoring wells, was conducted by YEC, Inc, Valley Cottage, NY. The horizontal datum was NY State Plane NAD83, and the vertical datum was NAVD88.

Results

Upon receipt of the analytical laboratory data, a Data Usability Summary Report (DUSR) was completed by EDV, Inc., an independent third party validation subcontractor. EDV, Inc, determined that the laboratory data met the project specific criteria for data quality and data use. The DUSR, validated Form I's and chain of custody records are presented in Appendix E.

A summary of detected compounds in groundwater is included in Table 1. Detected compounds in groundwater are compared to New York State (NYS) Class GA Groundwater Quality Standards. A

summary of detected compounds in sub-slab soil vapor and outdoor air samples are presented on Table 2. Table 2 includes the October 2006 NYSDOH decision matrices for PCE and trichloroethene (TCE), for reference purposes only. Compounds detected consistent with dry cleaning operations (PCE, TCE, and cis-1,2-dichloroethene [c12DCE]) are summarized on Figure 2.

Groundwater. Groundwater at the site is approximately 45 ft bgs, and as shown on Figure 2, is interpreted to flow south/southwest. This interpreted flow direction is consistent with previous information gathered at the site (NYSDEC, 2006). Chlorinated VOCs consistent with dry cleaning operations were detected in groundwater from wells MW-3 and MW-3D.

Based on a comparison of groundwater results to NYSDDEC water quality standards (see Table 1), the following compound concentrations were observed in excess of criteria.

- MW-1: SVOCs (bis(2-ethylhexyl)phthalate, 6.2 µg/L) and metals (iron, 1,520 µg/L and sodium, 174,000 µg/L);
- MW-2: Metals (sodium, 55,100 µg/L);
- MW-3: Chlorinated VOCs (c12DCE, 8.2 µg/L and PCE, 6.7 µg/L) and metals (sodium, 60,600 µg/L); and
- MW-3D: SVOC (bis(2-ethylhexyl)phthalate, 11 µg/L) and metals (iron, 8,450 µg/L and sodium, 33,400 µg/L).

Air. Based on results reported by the laboratory (see Table 2), chlorinated VOCs consistent with dry cleaning operations were detected in the sub-slab soil vapor samples. PCE concentrations ranged from 28 to 86 µg/m³, TCE ranged from 6.9 to 29 µg/m³, and c12DCE concentrations ranged from 54-110 µg/m³. Concentrations detected in these samples reflect sub-slab soil vapor and outdoor air only and therefore cannot be directly compared to the NYSDOH decision matrices for indoor air. PCE was also detected in the outdoor air sample at 40 µg/m³.

Conclusions

Based on an evaluation of the site conditions observed during the SVIE site work and results reported by the laboratory for samples collected as part of the SVIE, the site is not anticipated to pose a threat to public health from the vapor intrusion pathway.

Concentrations of PCE detected in the sub-slab soil vapor samples were detected at concentrations below indoor air threshold values that would require mitigation (28 to 86 $\mu\text{g}/\text{m}^3$). Concentrations of TCE detected (6.9 to 29 $\mu\text{g}/\text{m}^3$) in the sub-slab soil vapor samples require an evaluation of TCE concentrations in indoor air to compare to the NYSDOH guidance matrix. Indoor air samples, however, were not collected due to the continued use of chlorinated solvents at the Site; therefore, it is not known if the TCE detected represents vapors from a sub-slab source (i.e., contaminated soil or groundwater), or vapors from the active dry cleaner that have migrated from indoor air into the sub-slab. Assuming TCE is present in the sub-slab soil vapors due to a sub-slab source, then it is reasonable to assume the solvents from sub-slab soil gas to indoor air would attenuate by at least a factor of 10^1 and therefore indoor air concentrations resulting from sub-slab sources would be below the guidance concentrations requiring mitigation. In conclusion, concentrations of chlorinated VOCs detected in sub-slab soil vapor samples, when evaluated in comparison to NYSDOH decision matrices for indoor air, suggest soil vapor migration from sub-slab vapors are not believed to pose a threat to public health.

As discussed above, the outdoor air sample was collected up-wind of the mall; however, there may have been shifting wind conditions during sampling. This potential change in wind direction may explain the presence of PCE in the outdoor air sample as PCE is currently used at the facility and would presumably be vented to the outdoor.

Chlorinated VOCs consistent with dry cleaning operations were detected in groundwater, sub-slab soil vapor, and outdoor air samples; however concentrations of these solvents were observed below

¹ Draft EPA guidance (November, 2002) for evaluation of soil vapor intrusion into indoor air states soil gas from sub-slab is conservatively assumed to intrude to indoor spaces with an attenuation factor of 10.

NYS standards and guidelines, as applicable and noted above, with the exception of PCE and c12DCE in groundwater at location MW-3. PCE (6.7 ug/L) and c12DCE (8.2 ug/L) concentrations detected at this location slightly exceeded the NYS GA standard of 5 ug/L. In April 1995, PCE was previously detected in the groundwater downgradient of the site at a concentration of 3.4 ug/L at MW-3, which was below the NYS GA standard (NYSDEC, 2006). Samples collected as part of the SVIE were performed using low flow purging/sampling techniques. It is likely previous site groundwater samples were collected using conventional well sampling techniques (removing three well casing volumes and sampling with a bailer). The slight variation of concentrations detected in groundwater samples as compared to historical results may be contributed to the differences in sampling techniques used.

Recommendations

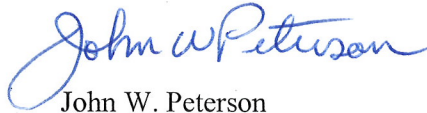
As requested by NYSDEC, the following recommendations are offered to assist with potential future monitoring activities at the site:

- Evaluate how dry cleaning chemicals are utilized as part of daily operations (i.e., dry cleaning process and chemical storage) and apply best management practices to reduce the potential for direct exposures to chemicals at the facility;
- Inspect the dry cleaning facility to determine if present operations comply with Division of Air Resources Title 6 New York Code Rules and Regulations (NYCRR) part 232, Perchloroethylene Dry Cleaning Facilities;
- Utilize Division of Air Resources Title 6 NYCRR part 232 to evaluate the potential for emissions from the facility to impact the indoor air quality at the mall by assessing the dry cleaning equipment, dry cleaning exhaust vent location, concentration of volatile organics emitting from the exhaust vent, and distance to structure openings/air intakes from the exhaust vent;
- Verify downgradient groundwater concentrations of chemicals exceeding NYS GA standards. If concentrations exceeding standards are confirmed, consider implementing a periodic groundwater monitoring program.

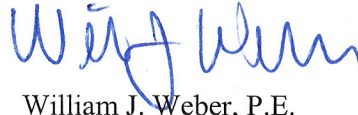
If you have any questions or concerns, please feel free to call us at 207-775-5401.

Sincerely,

MACTEC Engineering and Consulting, P.C.



John W. Peterson
Project Manager



William J. Weber, P.E.
Program Manager

ATTACHMENTS:

References
Tables
Figures
Appendices

cc: Ms. Jacquelyn Nealon
Mr. Joe DeFranco
File

REFERENCES

- MACTEC Engineering and Consulting, 2006. Soil Vapor Intrusion Evaluation Work Plan, Arba Dry Cleaners, Levittown , New York. Work Assignment No. D003826-33, September 2006.
- New York State Department of Health (NYSDOH), 2006. *“Guidance for Evaluating Soil Vapor Intrusion in the State of New York”*, October 2006
- New York State Department Environmental Conservation (NYSDEC), 2006. Work Assignment #D003826-33, Arba Dry Cleaners, Site # 1-30-062-letter dated June 7, 2006.
- United States Environmental Protection Agency, 2002. Evaluating the Vapor Intrusion to Indoor Air (EPA 530-F-02-052).
- New York State Department Environmental Conservation (NYSDEC), 1997. Division of Air Resources, Title 6 New York Code Rules and Regulations (NYCRR) Part 232, Perchloroethylene Dry Cleaning Facilities, effective date 5/15/1997.

TABLES

TABLE 1
SUMMARY OF DETECTED COMPOUNDS IN GROUNDWATER
SVIE Data Summary Report
Arba Dry Cleaners
Site # 1-30-062

					Location Sample Date Sample ID QC Code	MW-1 9/28/2006 GW-MW1 FS	MW-2 9/27/2006 GW-MW2 FS	MW-3 9/28/2006 GW-MW3 FS	MW-3D 9/27/2006 GW-MW3D FS	MW-3D 9/27/2006 GW-MW3D DUP FD
Analysis	Parameter	Units	GA Std	GA Guidance						
VOCs	1,1,1-Trichloroethane	µg/L	5			5 U	5 U	5 U	5 U	0.35 J
VOCs	2-Butanone	µg/L		50		10 U	10 U	10 U	2.6 J	2.4 J
VOCs	Chloroform	µg/L	7			0.65 J	0.52 J	5 U	0.38 J	0.44 J
VOCs	Cis-1,2-Dichloroethene	µg/L	5			5 U	5 U	8.2	5 U	5 U
VOCs	Tetrachloroethene (PCE)	µg/L	5			5 U	5 U	6.7	5 U	5 U
VOCs	Trichloroethene (TCE)	µg/L	5			5 U	5 U	3.8 J	0.37 J	0.51 J
SVOCs	Benzo(b)fluoranthene	µg/L		0.002		3.9 J	9.4 U	9.4 U	9.4 U	NS
SVOCs	Bis(2-Ethylhexyl)phthalate	µg/L	5			6.2 J	9.4 U	9.4 U	11	NS
SVOCs	Butylbenzylphthalate	µg/L		50		4 J	9.4 U	9.4 U	9.4 U	NS
SVOCs	Fluoranthene	µg/L		50		37 U	9.4 U	9.4 U	0.99 J	NS
Metals	Aluminum	µg/L				1,380	166	100 U	365	NS
Metals	Arsenic	µg/L	25			19.3	10 U	10 U	10 U	NS
Metals	Barium	µg/L	1,000			48.5	90.7	120	56.4	NS
Metals	Calcium	µg/L				48,800	31,000	14,500	17,700	NS
Metals	Chromium	µg/L	50			32.5	10 U	10 U	10 U	NS
Metals	Iron	µg/L	300	500*		1,520	247	184	8,450	NS
Metals	Lead	µg/L	25			17.2	5 U	5 U	7.9	NS
Metals	Magnesium	µg/L		35,000		4,630	6,380	1,000 U	2,960	NS
Metals	Manganese	µg/L	300	500*		46.4	10 U	15.8	270	NS
Metals	Potassium	µg/L				114,000	4,360	4,290	4,230	NS
Metals	Sodium	µg/L	20,000			174,000	55,100	60,600	33,400	NS
Metals	Zinc	µg/L		2,000		39.3	20.2	20 U	197	NS

Notes:

Shaded = Sample concentration exceeds GA Std

µg/L - Micrograms per liter

U = Not Detected

J = Estimated Value

NS = Not Sampled

FS = Field Sample

FD = Field Duplicate

* = Combined value for sum of iron and manganese concentrations.

GA Std/Guidance values obtained from New York Codes, Rules, and Regulations, Title 6, Part 700-705 Water Quality Regulations Surface Water and Groundwater Classifications and Standards, August, 1999.

Prepared by: PM
Checked by: JPC

TABLE 2
SUMMARY OF DETECTED COMPOUNDS IN AIR SAMPLES
SVIE Data Summary Report
Arba Dry Cleaners
Site # 1-30-062

			Location Sample Date Sample ID QC Code	OA-1 9/28/2006 OA-1 FS	SS-1 9/28/2006 SS-1 FS	SS-1 9/28/2006 SS-1 DUP FD	SS-2 9/28/2006 SS-2 FS
Analysis Class	Parameter	Units					
VOCs	2-Butanone	µg/m ³		3	10	8.9	14
VOCs	2-Hexanone	µg/m ³		3.5 U	3.5	3 U	3.3 U
VOCs	4-Methyl-2-pentanone	µg/m ³		3.5 U	2.8	3 U	4
VOCs	Acetone	µg/m ³		18	200 D	120 D	220 D
VOCs	Benzene	µg/m ³		2.7 U	2.2 U	2.3 U	2.9
VOCs	Carbon disulfide	µg/m ³		2.5 U	5.6	2.2 U	42
VOCs	Chloroform	µg/m ³		3.7 U	3.1 J	6.1 J	3.4 U
VOCs	Cis-1,2-Dichloroethene	µg/m ³		3.3 U	54	110 D	3.1 U
VOCs	Ethyl benzene	µg/m ³		3.6 U	3 U	3.1 U	3.5
VOCs	Tetrachloroethene	µg/m ³		40	28 J	86 J	78
VOCs	Toluene	µg/m ³		3.2 U	14	17	20
VOCs	Trichloroethene	µg/m ³		4.5 U	6.9 J	29 J	4.2 U
VOCs	Trichlorofluoromethane	µg/m ³		4.3 U	3.5 U	3.7 U	14
VOCs	Vinyl acetate	µg/m ³		3.1 U	4.8	4.8	7.5
VOCs	Xylene, m/p	µg/m ³		7.2 U	5.8 U	6.2 U	9.7

Prepared by: PM

Checked by: JPC

NYSDOH MATRIX 1 FOR TCE (OCT 2006) - INDOOR AIR CONCENTRATION OF COMPOUND (mcg/m³)

SUB-SLAB VAPOR CONCENTRATION OF COMPOUND (mcg/m ³)	INDOOR AIR			
	<0.25	0.25 to < 1	1 to < 5.0	5.0 and above
<5	1. No further action	2. Take reasonable and practical actions to identify sources(s) and reduce exposures.	3. Take reasonable and practical actions to identify source(s) and reduce exposures.	4. Take reasonable and practical actions to identify sources(s) and reduce exposures.
5 to < 50	5. No further action	6. MONITOR	7. MONITOR	8. MITIGATE
50 to < 250	9. MONITOR	10. MONITOR/MITIGATE	11. MITIGATE	12. MITIGATE
250 and below	13. MITIGATE	14. MITIGATE	15. MITIGATE	16. MITIGATE

NYSDOH MATRIX 2 FOR PCE (OCT 2006) - INDOOR AIR CONCENTRATION OF COMPOUND (mcg/m³)

SUB-SLAB VAPOR CONCENTRATION OF COMPOUND (mcg/m ³)	INDOOR AIR			
	< 3	3 to < 30	30 to < 100	100 and above
< 100	1. No further action	2. Take reasonable and practical actions to identify sources(s) and reduce exposures.	3. Take reasonable and practical actions to identify source(s) and reduce exposures.	4. Take reasonable and practical actions to identify sources(s) and reduce exposures.
100 to < 1,000	5. MONITOR	6. MONITOR/MITIGATE	7. MITIGATE	8. MITIGATE
1,000 and above	9. MITIGATE	10. MITIGATE	11. MITIGATE	12. MITIGATE

NOTES:

U = Not Detected

J = Estimated Value

D = Value obtained from secondary dilution run

NS = Value reported from secondary dilution run

FS = Field Sample

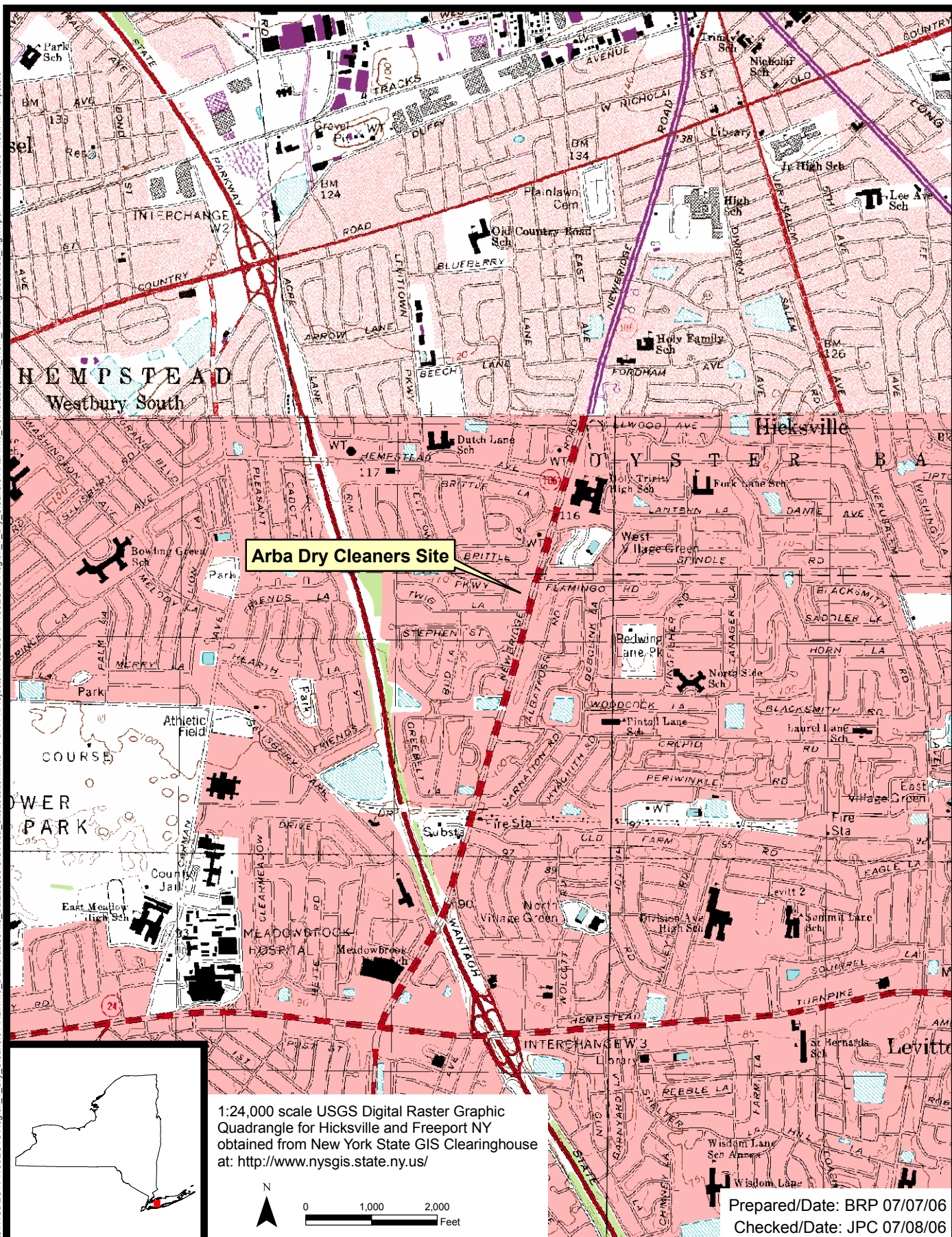
FD = Field Duplicate

µg/m³ = micrograms per cubic meter

mcg/m³ = micrograms per cubic meter

NYSDOH matrix values obtained from "Guidelines for Evaluating Soil Vapor Intrusion in the State of New York", October, 2006.

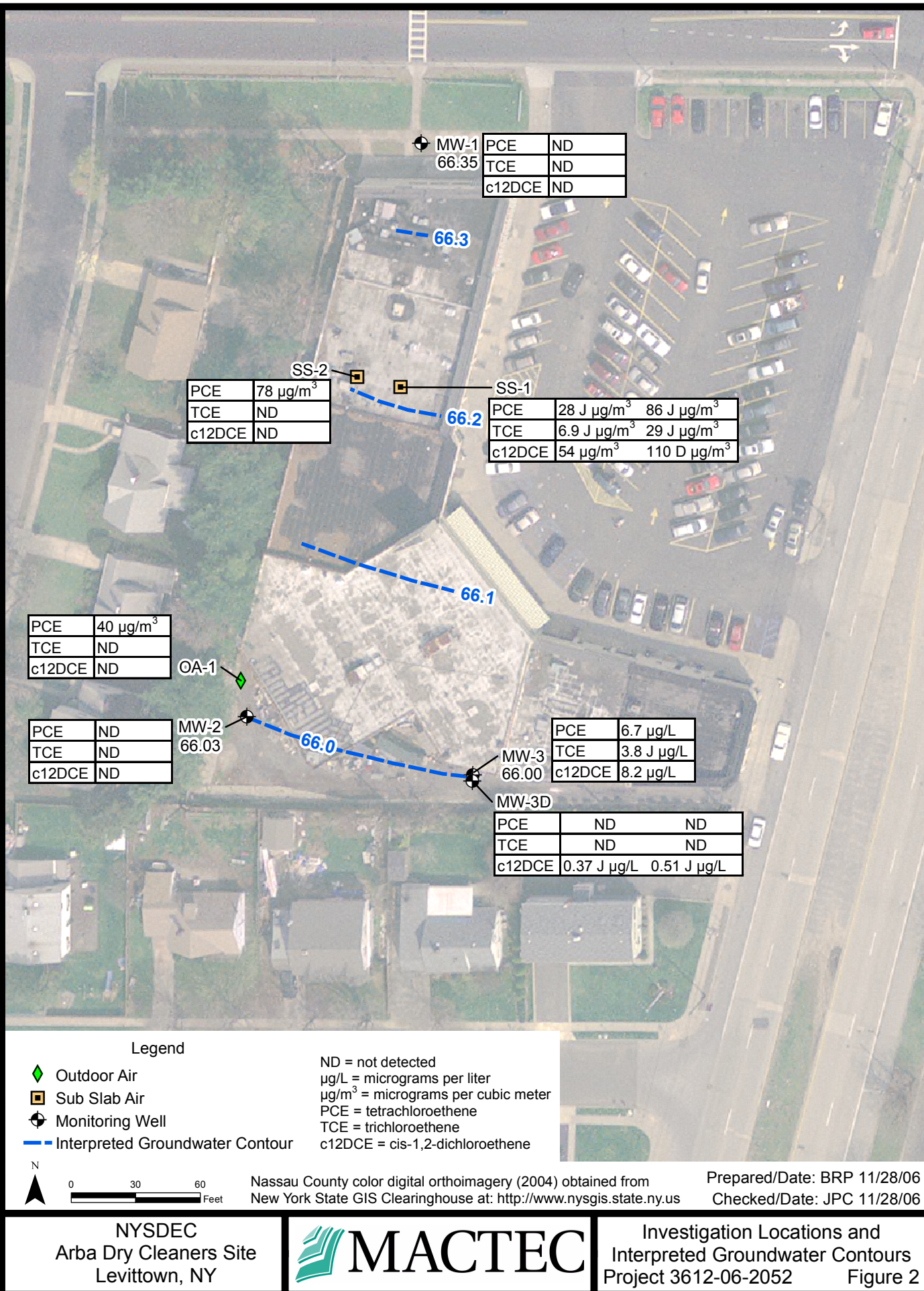
FIGURES



NYSDEC
Arba Dry Cleaners Site
Levittown, NY



Site Location
Project 3612062052
Figure 1



APPENDIX A

**LOW FLOW GROUNDWATER FIELD DATA RECORDS
AND
FIELD LOG BOOK NOTES**

FIELD DATA RECORD - LOW FLOW GROUNDWATER SAMPLING

JOB NUMBER 3612062052

PROJECT Arba

FIELD SAMPLE NUMBER Arba - GW - MW1

EVENT NO.

SITE ID MW1

SITE TYPE

DATE 9.27.06

ACTIVITY START 1420 END 1620

SAMPLE TIME 9.28.06 / 0930

FILE TYPE

WATER LEVEL / PUMP SETTINGS

INITIAL DEPTH TO WATER 45.11 FT

MEASUREMENT POINT
☒ TOP OF WELL RISER
☐ TOP OF PROTECTIVE CASING

PROTECTIVE CASING STICKUP (FROM GROUND) FT

CASING / WELL DIFFERENCE FT

FINAL DEPTH TO WATER 51.5 FT

HISTORICAL WELL DEPTH (TOR) 52.0
58.5 FT

PID AMBIENT AIR 0 PPM

WELL DIAMETER 4 IN

SCREEN LENGTH 10 FT

PRESSURE TO PUMP 30 PSI

PID WELL MOUTH 0 PPM

WELL INTERGRIITY: INTEGRITY: YES NO N/A

TOTAL VOL. PURGED 4.2 GAL

REFILL SETTING 10 s

DISCHARGE SETTING 5 s

CAP ☒ YES
CASING LOCKED ☒ YES
COLLAR ☒ YES

(purge volume (milliliters per minute) x time duration (minutes) x 0.00026 gal/milliliter)

PURGE DATA

TIME	DEPTH TO WATER (ft)	PURGE RATE (ml/m)	TEMP. (+/- deg. c)	SPECIFIC CONDUCTANCE (ms/cm)	pH (units)	DO (mg/L)	TURBIDITY (ntu)	REDOX (+/- mv)	PUMP INTAKE DEPTH (ft)	COMMENTS
1435	Begin	Purging @		240 uS/cm					50.5	clear
1443	45.47	160					3.58		"	"
1448	45.79	160					3.02		"	"
1452	46.10	160					2.84		"	"
1457	46.57			52.0						
1501	Pump lowered to	54.5								purge rate increased to purge well dry (400 uS/cm)
1504	46.78									
1508	47.51									
1520	49.30									
1545	51.5									Well pumped dry - collect Sample 9.28.06
Note: Not enough sample collected to obtain purge data w/ YSI										

EQUIPMENT DOCUMENTATION

TYPE OF PUMP	TYPE OF TUBING	TYPE OF PUMP MATERIAL	TYPE OF BLADDER MATERIAL
☒ BLADDER	☐ HIGH DENSITY POLYETHYLENE	☒ STAINLESS STEEL	☐ TEFLON
☐ PERISTALTIC ☐ OTHER	☒ OTHER <u>LDPE, teflon-lined</u>	☐ OTHER	☐ OTHER

ANALYTICAL PARAMETERS

ANALYSIS	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID LETTERS
VOC	8260	HCl	vials	✓	Arba - GW - MW1
SVOC	8270	4°C	500 mL	✓	"
TAL Metals		HNO ₃	1 L	✓	"

PURGE OBSERVATIONS

PURGE WATER CONTAINERIZED ☒ YES ☐ NO No odor or sheen

NOTES:

SIGNATURE: Shirley J. Tyler

LOW FLOW GROUNDWATER DATA RECORD
QUALITY ASSURANCE PROJECT PLAN

94th RRC 2004

CHECKED BY:

MACTEC, Inc.

FIELD DATA RECORD - LOW FLOW GROUNDWATER SAMPLING

JOB NUMBER 3612062052

PROJECT Arba FIELD SAMPLE NUMBER Arba-GW-MW2 EVENT NO.
 SITE ID MW-2 SITE TYPE DATE 9.27.06
 CITY START 1220 END 1410 SAMPLE TIME 1350 FILE TYPE

WATER LEVEL / PUMP SETTINGS

MEASUREMENT POINT
☒ TOP OF WELL RISER
☐ TOP OF PROTECTIVE CASING
 PROTECTIVE CASING STICKUP (FROM GROUND) FT
 CASING / WELL DIFFERENCE FT
 INITIAL DEPTH TO WATER 44.18 FT
 FINAL DEPTH TO WATER 44.20 FT
 HISTORICAL WELL DEPTH (TOR) 55.2 FT
 WELL DIAMETER 4 IN
 SCREEN LENGTH 10 FT
 PRESSURE TO PUMP 300^{PSI}
 PID AMBIENT AIR 0 PPM
 PID WELL MOUTH 0 PPM
 TOTAL VOL. PURGED 2.8 GAL
 REFILL SETTING 105
 DISCHARGE SETTING 55
 WELL INTERGRITY:
 INTEGRITY: YES NO N/A
 CAP X
 CASING X
 LOCKED X
 COLLAR X

(purge volume (milliliters per minute) x time duration (minutes) x 0.00026 gal/milliliter)

PURGE DATA

TIME	DEPTH TO WATER (ft)	PURGE RATE (ml/m)	TEMP. (+/- deg. c)	SPECIFIC CONDUCTANCE (ms/cm)	pH (units)	DO (mg/L)	TURBIDITY (ntu)	REDOX (+/- mv)	PUMP INTAKE DEPTH (ft)	COMMENTS
1255	44.18	Begin purging		@ 320	ml/m				50.2	clear
1300	44.20	320					12.5		"	"
1323	Hookup to PSI								"	"
1326	44.20	280	17.06	0.453	6.03	5.50	12.5	111.8	"	"
1331	44.20	300	16.73	0.449	6.02	6.02	7.67	133.8	"	"
1336	44.20	300	16.56	0.448	6.01	6.09	7.10	146.8	"	"
1341	44.20	300	16.59	0.452	6.00	5.74	6.83	156.6	"	"
1350	Collect Sample									

EQUIPMENT DOCUMENTATION

TYPE OF PUMP
☒ BLADDER
☐ PERISTALTIC ☐ OTHER
 TYPE OF TUBING
☐ HIGH DENSITY POLYETHYLENE
☒ OTHER LDPE, Teflon-lined
 TYPE OF PUMP MATERIAL
☒ STAINLESS STEEL
☐ OTHER
 TYPE OF BLADDER MATERIAL
☐ TEFLON
☐ OTHER

ANALYTICAL PARAMETERS

ANALYSIS	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID LETTERS
VOC	8260	HCl	100 mL	✓	Arba-GW-MW2
SVOC	8270	40C	1 L amber	✓	"
TAL Metals		H ₂ NO ₃ pm	500 mL	✓	"

PURGE OBSERVATIONS

PURGE WATER CONTAINERIZED YES NO
 NOTES: No odor or sheen

SIGNATURE: LOW FLOW GROUNDWATER DATA RECORD
QUALITY ASSURANCE PROJECT PLAN

94th RRC 2004

Don
MACTEC, Inc.

FIELD DATA RECORD - LOW FLOW GROUNDWATER SAMPLING

JOB NUMBER 3612062052

PROJECT Arba FIELD SAMPLE NUMBER Arba - GW - MW3 EVENT NO.
 SITE ID MW-3 SITE TYPE DATE 9.28.06
 CITY START 1400 END 1610 SAMPLE TIME 1535 FILE TYPE

WATER LEVEL / PUMP SETTINGS

MEASUREMENT POINT
☒ TOP OF WELL RISER
☐ TOP OF PROTECTIVE CASING
 PROTECTIVE CASING STICKUP (FROM GROUND) FT
 CASING / WELL DIFFERENCE FT
 INITIAL DEPTH TO WATER 45.01 FT
 HISTORICAL WELL DEPTH (TOR) 56 FT
 FINAL DEPTH TO WATER 45.01 FT
 PID AMBIENT AIR 0 PPM
 SCREEN LENGTH 10 FT
 PRESSURE TO PUMP 30 PSI
 PID WELL MOUTH 156 ppb ppm
 TOTAL VOL. PURGED 3.6 GAL
 REFILL SETTING 10 s
 DISCHARGE SETTING 5 s
 WELL INTERGRITY:
 INTEGRITY: YES NO N/A
 CAP
 CASING LOCKED
 COLLAR

(purge volume (milliliters per minute) x time duration (minutes) x 0.00026 gal/milliliter)

PURGE DATA

TIME	DEPTH TO WATER (ft)	PURGE RATE (ml/m)	TEMP. (+/- deg. c)	SPECIFIC CONDUCTANCE (ms/cm)	pH (units)	DO (mg/L)	TURBIDITY (ntu)	REDOX (+/- mv)	PUMP INTAKE DEPTH (ft)	COMMENTS
1447	Begin Purging @			320 mL/min					51	clear
1451	45.01	240					6.04		"	"
1453	Connect to YSI								"	"
1456	45.01	260	17.40	0.407	5.32	14.04	5.25	112.0	"	"
1501	45.01	300	17.15	0.396	5.29	12.95	4.14	134.3	"	"
1506	45.01	300	17.09	0.393	5.28	11.90	4.15	154.6	"	"
1511	45.01	300	17.02	0.391	5.29	11.88	4.19	173.2	"	"
1516	45.01	300	17.04	0.393	5.29	10.89	4.01	183.2	"	"
1521	45.01	300	16.97	0.391	5.29	10.64	3.52	194.6	"	"
1526	45.01	300	16.97	0.392	5.29	10.42	3.75	199.8	"	"
1531	45.01	300	16.95	0.389	5.29	10.41	4.02	197.0	"	"
1535	Collect									Arba - GW - MW3

EQUIPMENT DOCUMENTATION

TYPE OF PUMP ☒ BLADDER ☐ PERISTALTIC ☐ OTHER
 TYPE OF TUBING ☐ HIGH DENSITY POLYETHYLENE ☒ OTHER LDPE, teflon lined
 TYPE OF PUMP MATERIAL ☒ STAINLESS STEEL ☐ OTHER
 TYPE OF BLADDER MATERIAL ☐ TEFLON ☐ OTHER

ANALYTICAL PARAMETERS

ANALYSIS	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID LETTERS
VOL	8260	HCl	3x 40mL	✓	Arba - GW - MW3
SVOL	8270	4°C	1x 1L	✓	
TAL Metals		HNO ₃	1x 500 mL	✓	

PURGE OBSERVATIONS

PURGE WATER CONTAINERIZED YES NO clear, no odor, no sheen

NOTES:

SIGNATURE: [Signature]CHECKED BY:

LOW FLOW GROUNDWATER DATA RECORD
 QUALITY ASSURANCE PROJECT PLAN

94th RRC 2004

MACTEC, Inc.

FIELD DATA RECORD - LOW FLOW GROUNDWATER SAMPLING

JOB NUMBER 3612062052

PROJECT Arba FIELD SAMPLE NUMBER Arba-GW-MW3D EVENT NO.
 SITE ID MW-3D SITE TYPE DATE 9-27-06
 VITY START 1630 END 1840 SAMPLE TIME 1805 FILE TYPE

WATER LEVEL / PUMP SETTINGS MEASUREMENT POINT
☒ TOP OF WELL RISER
☐ TOP OF PROTECTIVE CASING
 PROTECTIVE CASING STICKUP (FROM GROUND) FT
 CASING / WELL DIFFERENCE FT
 INITIAL DEPTH TO WATER 44.98 FT
 HISTORICAL WELL DEPTH (TOR) 84 FT
 PID AMBIENT AIR 0 PPM
 WELL DIAMETER 2 IN
 FINAL DEPTH TO WATER 45.20 FT
 SCREEN LENGTH 10 FT
 PRESSURE TO PUMP PSI
 PID WELL MOUTH 0 PPM
 WELL INTERGRITY:
 INTEGRITY: YES NO N/A
 CAP X
 CASING X
 LOCKED X
 COLLAR X
 TOTAL VOL. PURGED 5.1 GAL
 REFILL SETTING 10 S
 DISCHARGE SETTING 5 S
 (purge volume (milliliters per minute) x time duration (minutes) x 0.00026 gal/milliliter)

PURGE DATA			SPECIFIC					PUMP			COMMENTS
TIME	DEPTH TO WATER (ft)	PURGE RATE (ml/m)	TEMP. (+/- deg. c)	CONDUCTANCE (ms/cm)	pH (units)	DO (mg/L)	TURBIDITY (ntu)	REDOX (+/- mv)	INTAKE DEPTH (ft)		
1658	Begin	purging	0	240 ml/m					79	cloudy (black color)	
1705	45.20	300					186		"	"	
1713	45.20	300					148		"	"	
1718	45.20	300					83.5		"	clearing	
1726	45.20	300					60.2		"	"	
1732	45.20	300					46.2		"	"	
1738	Hookup to YS1								"	"	
1740	45.20	300	16.60	0.297	6.06	2.15	38.1	-52.4	"	little cloudy	
1745	45.20	300	16.20	0.290	5.89	2.05	32.6	-53.2	"	"	
1750	45.20	300	16.09	0.291	5.86	2.23	28.3	-43.8	"	"	
1755	45.20	300	16.03	0.292	5.84	2.22	27.9	-38.2	"	"	
1800	45.20	300	15.97	0.291	5.82	2.12	28.3	-34.5	"	"	

EQUIPMENT DOCUMENTATION 1805 collect Samples Arba-GW-MW3D and Arba-GW-MW3DMS
 TYPE OF PUMP ☒ BLADDER ☐ PERISTALTIC ☐ OTHER
 TYPE OF TUBING ☐ HIGH DENSITY POLYETHYLENE ☒ OTHER LDPE, teflon lined
 TYPE OF PUMP MATERIAL ☒ STAINLESS STEEL ☐ OTHER
 TYPE OF BLADDER MATERIAL ☐ TEFLON ☒ OTHER Arba-GW-Dup (see only)

ANALYSIS	METHOD NUMBER	PRESERVATION METHOD	VOLUME REQUIRED	SAMPLE COLLECTED	SAMPLE BOTTLE ID LETTERS
VOC	8260	HCl	3 vials	✓	Arba-GW-MW3D + dup + MS
SVOC	8270	4% HNO ₃	1L amber	✓	+ MS
TAL Metals		HNO ₃	500 mL	✓	+ MS

PURGE OBSERVATIONS
 PURGE WATER CONTAINERIZED YES NO
 NOTES: MAX pid reading in purge water bucket - 339 ppb
no sheen, but black due to black particulates
some asphalt fell into well during process of unobstructing well
Slight sulfur odor
 SIGNATURE:
 CHECKED BY:
 LOW FLOW GROUNDWATER DATA RECORD
 QUALITY ASSURANCE PROJECT PLAN
 94th RRC 2004
 MACTEC, Inc.

(54)

Arba

9.27.06

Weather: Partly cloudy, 60's, slight ~~pm~~ westerly breeze

Forecast: partly cloudy 70's

Personnel: MACTEC (Phil Muller - PM.)

0800 MACTEC on-site

0810 Prepare for GW level count.

Well id: bTW Notes, NARL DFB

MW-1 45.13 32 ppb, N 55.5

MW-2 44.18 0 ppb, N 55.2

MW-3D 44.97 0 ppb, N 64

MW-3D pm could not open well

Note: PFB Rate was calibrated w/

10 ppm isobutylene.

Zero air = 0.0 ppm (ambient)

10 ppm isobutylene = 10.0 ppm

no serial # on unit.

Note: From 0900 - 1200 PM tried to

open MW-2, MW-3, and MW-3D

asphalt + J-plugs had prevented

easy access. During this time

one trip to hardware store was

made. MW-3D still could not be

opened. May try later.

1220 Set up @ MW-2 ^{truck} -

because delivery n has blocked

9.27.06

Arba

(55)

me in. Otherwise I would have started w/ upgradient well MW-1.

I will use second bladder pump for MW-1 and dedicated tubing

1350 Collect Sample Arba - GW - MW2

for VOC, TAC Metals, and SVOC

1420 Set-up @ MW-1

Recovery was very poor, thus well was pumped dry - to be

Sampled 9.28.06 pm

1630 Set-up @ MW-3D, decon'd bladder pump

1805 Collect Samples Arba - GW - MW3D

Arba - GW - MW3D Dup ~~Arba - GW - MW3D~~ pm

(VOC only) and Arba - GW - MW3D pm

1840 MACTEC off-site

Note: See purge data sheets for each

MW for details of purge and

sample

Note: Turbidity meter calibrated @ MW-2

@ 1220.

HACH 2100P

std. curv) reading (NTU)

0.01 0.09

20.0 19.6

100 97.8

56

Arba

9.27.06

Note: During purging of MW-3, purge water had black particulate some of this may have been due to asphalt falling into well during the removal of asphalt obstruction when PM was trying to open well. The well was completely obstructed by asphalt and PM had to chip it away. Also, the PVC well below plug was grimy and dirty & thus black particulate may be due to other factors. In addition purge water had a slight sulfur odor. However, PID was < 1 ppm (max = 539 ppb).

Note: Samples put on ice in cooler.

57

Arba

9.28.06

Weather:	partly cloudy, high 50's F no wind
Personnel:	forecast: cloudy 70's MACTEC - Phil Miller (PM)
0645 PM	placed pin flags @ Soil gas well locations @ Village Valet.
0800	MACTEC on-site @ Arba
0810	DTW @ MW-1 = 50.65
	well has recovered ~ 1 ft from yesterday afternoon
	PM to try to sample MW-1 now
0820	Set-up @ MW-1 for collection of sample - no purging.
0835	Calibrate HACH 2100P Turbidity Meter.
	std. (NTU) reading (NTU)
	20.01 0.07
	20 20.0
	100 101
0850	Calibrate ppb RAE
	Zero air (background) = 0.0
	10 ppm isobutylene = 10.0
0905	Calibrate YSI
	pH = 4, pH = 7

(58)

	Arba	9-20-06
	conductivity = 1.413 $\mu\text{m}/\text{cm}$ ppm	
0930	VOC pm Sample <u>Arba - GW - MW-1</u> collected for VOC only - not enough water for SVOC + metals	
0945	Called Jayme Connolly She said 100 mL is enough to analyze for metals, try to collect some SVOC sample at end of day	
1000	Brian Tankavster on-site (NYSDEC) He said VOCs + metal is enough but said to try to obtain SVOC later @ MW-1	
1015	Enter dry cleaners ppb rae - 6 ppm max racks of dry cleaned clothes in basement, vac. waste bucket w/ epoxy + epoxy thinner, blower vacuum	
1030	Conduct survey	
1100	Drill holes SS-1 and SS-2 in basement. SS-1 near columns, SS-2 near boiler rm. pm	

(59)

	Arba	9-20-06
	1" hole drilled 1" into cone. 1/2" hole drilled through cone. slab and 3" into material below slab	
	hole filled partly w/ glass beads stirrer pm teflon tubing placed into hole - 2" below bottom of slab. Addition glass beads placed into hole above bottom of tubing Then bees wax melted on portable tea cooker placed into remainder of hole to surface for seal. Purged 3 tube volumes - 60 mL w/ Syringe	
1149	Connected Summa canister to tubing @ SS-1, Collect. Sample <u>Arba - SS-1</u> for TO-15 P _i = 29.0" Hg P _f = 1.0" Hg 20 min, 1.0 L Summa reg. No. 143463 7313624	
1154	Connect Summa canister to tubing @ SS-2, Collect Sample <u>Arba - SS-2</u> for TO-15	

60

Arba

9.28.06

Pi = 29.0" Hg

Pf = 5.0" Hg

20 min, 1.0 L canister

reg. no. 143470

7313585

Collect Sample Arba - SS-1 Dup

Pi = 27.5" Hg

Pf = 1.0" Hg

20 min, 1.0 L canister

reg. no. 142251

7310404

PID hooked up to SS-1

Max PID = 45 ppm

bkgd = 600 ppb

PID hooked up to SS-2

Max PID = 135 ppm

bkgd = 600 ppb

Note: PID reading kept climbing, PM not sure about validity of reading

De-mob from basement

Set-up outside, wind is

from South @ 10 mph

Collect Sample Arba - OA-1

for T0-15, outdoor air

@ South of mall near MW-2

9.28.06

Arba

61

Pi = 29.0" Hg

Pf = 6.5" Hg

20 min, 1.0 L canister

reg. no. 143470

7313583

bkgd. PID = 0 ppb

Brian opened MW-3

MW-3 from yesterday is MW-3D

PM to edit notes

lunch break

Set-up @ MW-3

PID = 156 ppb

1415 decon pump

1430 45.01' = dtw

dtb = 56'

Collect Sample Arba - GW-MW-3

for vol, svoc, + TAL Metals

De-mob from MW-3

re-write MW-3D for samples

labelled MW-3 from 9.27.06

Set-up @ MW-1

dtw = 50.20

Collect 200 mL for svoc

MW-1 dry

de-mob

(62)

9-28-00

Arba

1738 MACREC off-site
Ice added to samples
1825 C.O.C. completed
Sample cooler + box delivered
to FedEx

12

13

131

1315

133

141

1425

Not

APPENDIX B

INDOOR AIR QUALITY QUESTIONNAIRE AND BUILDING INVENTRORY

NEW YORK STATE DEPARTMENT OF HEALTH
INDOOR AIR QUALITY QUESTIONNAIRE AND BUILDING INVENTORY
CENTER FOR ENVIRONMENTAL HEALTH

This form must be completed for each residence involved in indoor air testing.

Preparer's Name Phil Muller Date/Time Prepared 9.28.06

Preparer's Affiliation MACTEL Phone No. 603 315 4402

Purpose of Investigation former spill @ Arba dry cleaners

1. OCCUPANT:

Interviewed: Y/N

First Last
Last Name: Kwangsoo First Name: Soo Kim

Address: 701 N. Newbridge Rd. Newbridge Kim Cleaners

County: Levittown, NY 11756

Home Phone: (516) 931 3289 Office Phone: _____

Number of Occupants/persons at this location 3 Age of Occupants 40-50

2. OWNER OR LANDLORD: (Check if same as occupant ____)

Interviewed: Y/N (N)

Last Name: _____ First Name: _____

Address: _____

County: _____

Home Phone: _____ Office Phone: _____

3. BUILDING CHARACTERISTICS

Type of Building: (Circle appropriate response)

Residential
Industrial

School
Church

Commercial Multi-use
Other: _____

If the property is residential, type? (Circle appropriate response)

Ranch	2-Family	3-Family
Raised Ranch	Split Level	Colonial
Cape Cod	Contemporary	Mobile Home
Duplex	Apartment House	Townhouses/Condos
Modular	Log Home	Other: _____

If multiple units, how many? _____

If the property is commercial, type?

Business Type(s) Dry Cleaner

Does it include residences (i.e., multi-use)? Y (N) If yes, how many? _____

Other characteristics:

Number of floors 2 basement + 1st Building age _____

Is the building insulated? Y / N How air tight? Tight / Average / Not Tight

4. AIRFLOW

Use air current tubes or tracer smoke to evaluate airflow patterns and qualitatively describe:

Airflow between floors

Air pump (vacuum) blows air from 1st floor into basement

Airflow near source

Outdoor air infiltration

Infiltration into air ducts

5. BASEMENT AND CONSTRUCTION CHARACTERISTICS (Circle all that apply)

- a. Above grade construction: wood frame concrete stone brick
- b. Basement type: full crawlspace slab other _____
- c. Basement floor: concrete dirt stone other _____
- d. Basement floor: sealed uncovered covered covered with epoxy in
- e. Concrete floor: unsealed sealed sealed with epoxy
- f. Foundation walls: poured block stone other _____
- g. Foundation walls: unsealed sealed sealed with _____
- h. The basement is: wet damp dry moldy
- i. The basement is: finished unfinished partially finished
- j. Sump present? Y/N drain
- k. Water in sump? Y/N / not applicable little (outside basement)

Basement/Lowest level depth below grade: 10 (feet)

Identify potential soil vapor entry points and approximate size (e.g., cracks, utility ports, drains)

Basement door seems to be open all the time, at night
Small cracks in slab are sealed w/ epoxy
 door to dry cleaner's basement locked

6. HEATING, VENTING and AIR CONDITIONING (Circle all that apply)

Type of heating system(s) used in this building: (circle all that apply – note primary)

Hot air circulation	Heat pump	Hot water baseboard
Space Heaters	<u>Stream radiation</u>	Radiant floor
Electric baseboard	Wood stove	Outdoor wood boiler Other _____

The primary type of fuel used is:

Natural Gas	<u>Fuel Oil</u>	Kerosene
Electric	Propane	Solar
Wood	Coal	

Domestic hot water tank fueled by: _____

Boiler/furnace located in: Basement Outdoors Main Floor Other _____

Air conditioning: Central Air Window units Open Windows None

4

Are there air distribution ducts present? Y / N

Describe the supply and cold air return ductwork, and its condition where visible, including whether there is a cold air return and the tightness of duct joints. Indicate the locations on the floor plan diagram.

7. OCCUPANCY

Is basement/lowest level occupied? Full-time Occasionally Seldom Almost Never

Level General Use of Each Floor (e.g., familyroom, bedroom, laundry, workshop, storage)

Basement storage

1st Floor Business - dry cleaners

2nd Floor _____

3rd Floor _____

4th Floor _____

8. FACTORS THAT MAY INFLUENCE INDOOR AIR QUALITY

- a. Is there an attached garage? Y / N
- b. Does the garage have a separate heating unit? Y / N / NA
- c. Are petroleum-powered machines or vehicles stored in the garage (e.g., lawnmower, atv, car) Y / N / NA
Please specify _____
- d. Has the building ever had a fire? Y / N When? _____
- e. Is a kerosene or unvented gas space heater present? Y / N Where? _____
- f. Is there a workshop or hobby/craft area? Y / N Where & Type? _____
- g. Is there smoking in the building? Y / N How frequently? _____
- h. Have cleaning products been used recently? Y / N When & Type? _____

i. Have cosmetic products been used recently?

Y / ☒ N When & Type? _____

5

j. Has painting/staining been done in the last 6 months?

Y / ☒ N Where & When? _____

k. Is there new carpet, drapes or other textiles?

Y / ☒ N Where & When? _____

l. Have air fresheners been used recently?

Y / ☒ N When & Type? _____

m. Is there a kitchen exhaust fan?

Y / ☒ N If yes, where vented? _____

n. Is there a bathroom exhaust fan?

Y / ☒ N If yes, where vented? _____

o. Is there a clothes dryer?

Y / ☒ N If yes, is it vented outside? Y / N

p. Has there been a pesticide application?

Y / ☒ N When & Type? _____

Are there odors in the building?

If yes, please describe: not pleasant

☒ Y / ☐ N

Do any of the building occupants use solvents at work?

☒ Y / ☐ N

(e.g., chemical manufacturing or laboratory, auto mechanic or auto body shop, painting, fuel oil delivery, boiler mechanic, pesticide application, cosmetologist)

If yes, what types of solvents are used? epoxy thinner

If yes, are their clothes washed at work?

☒ Y / ☐ N

dry cleaning

Do any of the building occupants regularly use or work at a dry-cleaning service? (Circle appropriate response)

☒ Yes, use dry-cleaning regularly (weekly)

No

Yes, use dry-cleaning infrequently (monthly or less)

Unknown

Yes, work at a dry-cleaning service

Is there a radon mitigation system for the building/structure? Y / ☒ N Date of Installation: _____

Is the system active or passive? Active/Passive NA

9. WATER AND SEWAGE

Water Supply: ☒ Public Water ☐ Drilled Well ☐ Driven Well ☐ Dug Well Other: _____

Sewage Disposal: ☒ Public Sewer ☐ Septic Tank ☐ Leach Field ☐ Dry Well Other: _____

10. RELOCATION INFORMATION (for oil spill residential emergency)

a. Provide reasons why relocation is recommended: _____

b. Residents choose to: remain in home ☐ relocate to friends/family ☐ relocate to hotel/motel ☐

c. Responsibility for costs associated with reimbursement explained? Y/N

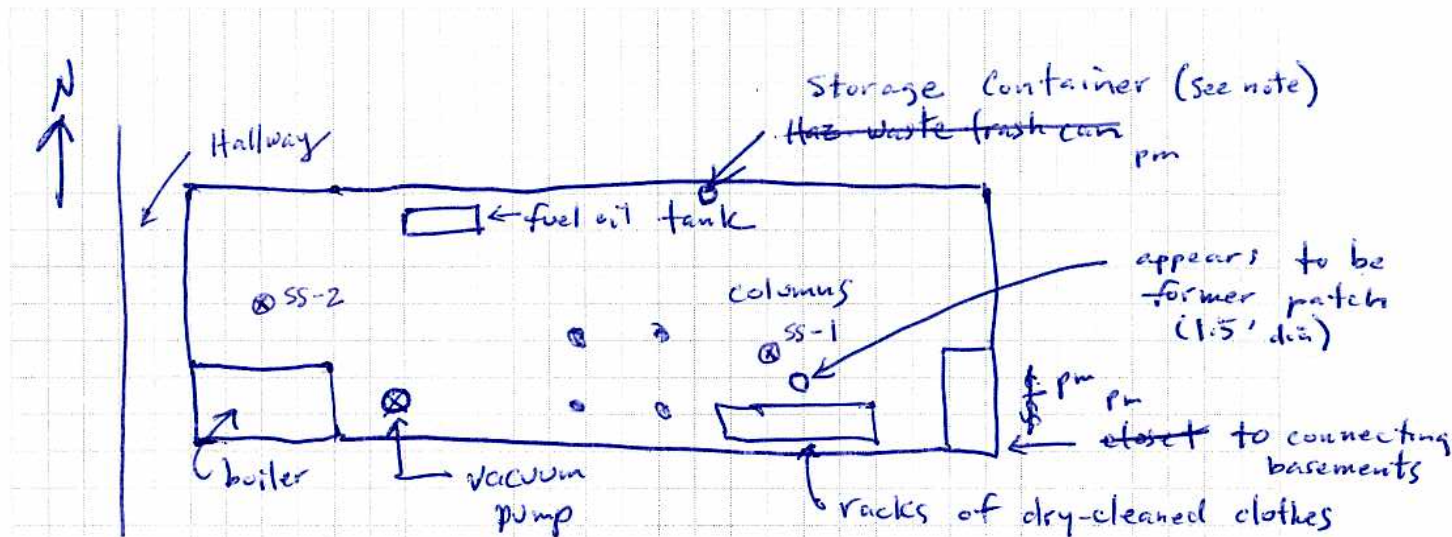
d. Relocation package provided and explained to residents? Y/N

6

11. FLOOR PLANS

Draw a plan view sketch of the basement and first floor of the building. Indicate air sampling locations, possible indoor air pollution sources and PID meter readings. If the building does not have a basement, please note.

Basement:



Notes: epoxy painted on floor in 2005

First Floor:

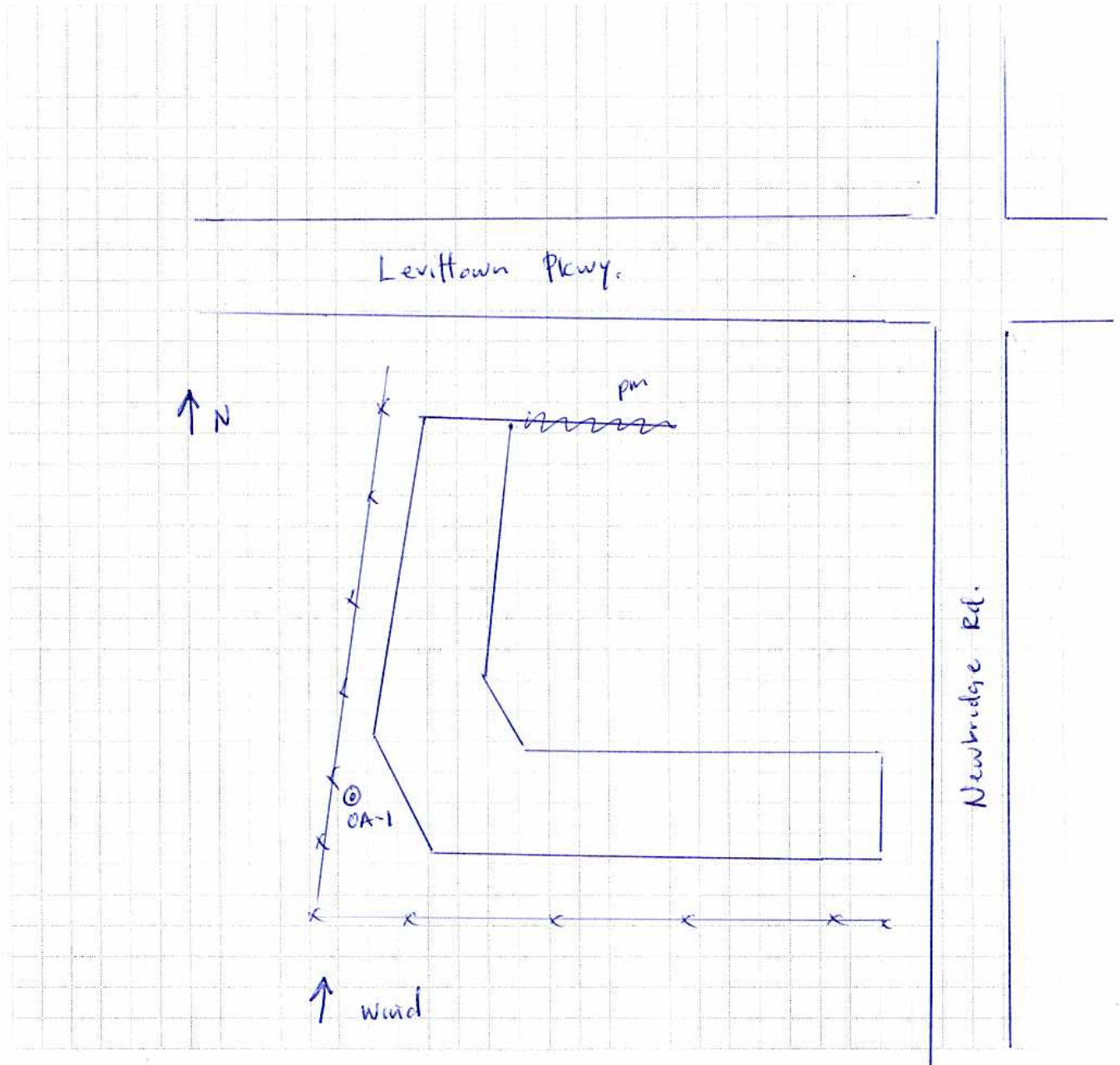
MAX PID = 6 ppm PID @ ~~storage container~~ ~~haz. waste barrel~~ (inside)
 pm > 20 ppm

Note: Storage Container identified with placard as "Hazardous Waste," and contained 1 gallon containers of epoxy thinner, epoxy coating, and epoxy coating gloss catalyst.

12. OUTDOOR PLOT

Draw a sketch of the area surrounding the building being sampled. If applicable, provide information on spill locations, potential air contamination sources (industries, gas stations, repair shops, landfills, etc.), outdoor air sampling location(s) and PID meter readings.

Also indicate compass direction, wind direction and speed during sampling, the locations of the well and septic system, if applicable, and a qualifying statement to help locate the site on a topographic map.



13. PRODUCT INVENTORY FORM

see photos

Make & Model of field instrument used: _____

List specific products found in the residence that have the potential to affect indoor air quality.

Location	Product Description	Size (units)	Condition*	Chemical Ingredients	Field Instrument Reading (units)	Photo** <u>Y/N</u>

* Describe the condition of the product containers as **Unopened (UO)**, **Used (U)**, or **Deteriorated (D)**** Photographs of the **front and back** of product containers can replace the handwritten list of chemical ingredients. However, the photographs must be of good quality and ingredient labels must be legible.

APPENDIX C

SITE PHOTOGRAPHS

**Arba Dry Cleaners Site
Levittown, NY**



July 11, 2006

Photograph 1:

Basement,
looking east



July 11, 2006

Photograph 2:

Basement

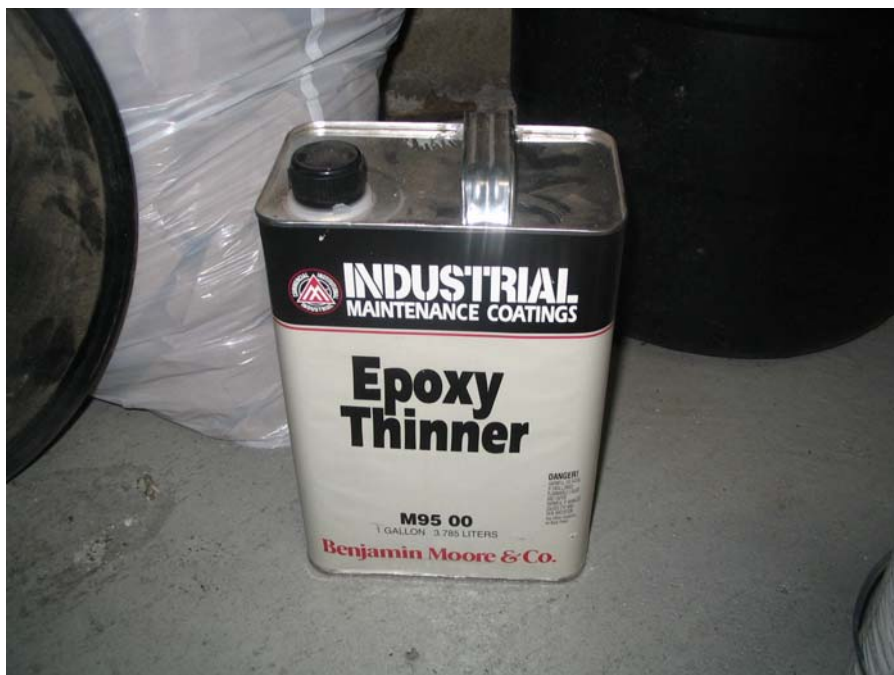
Arba Dry Cleaners Site Levittown, NY



Sept 28, 2006

Photograph 3:

Epoxy Thinner in
Basement



Sept 28, 2006

Photograph 4:

Epoxy Thinner in
Basement

Arba Dry Cleaners Site Levittown, NY



Sept 28, 2006

Photograph 5:

Epoxy Coating in
Basement



Sept 28, 2006

Photograph 6:

Epoxy Coating in
Basement

Arba Dry Cleaners Site Levittown, NY



Sept 28, 2006

Photograph 7:

Oil Tank in
Basement



Sept 28, 2006

Photograph 8:

Vacuum Pump in
Basement

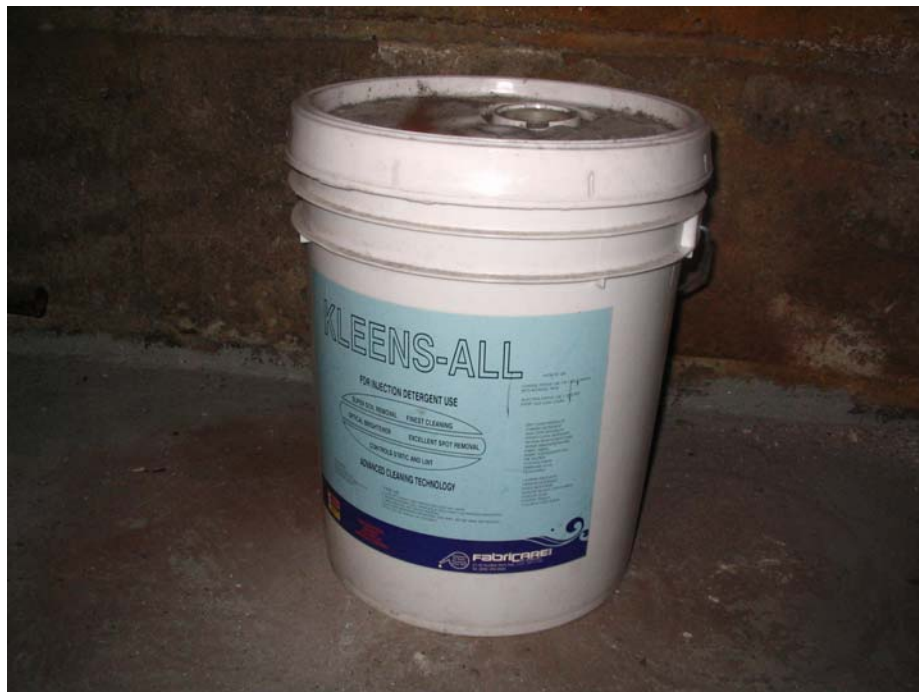
Arba Dry Cleaners Site Levittown, NY



Sept 28, 2006

Photograph 9:

Storage
Container in
Basement



Sept 28, 2006

Photograph 10:

Cleaning
Detergent in
Basement.

Arba Dry Cleaners Site Levittown, NY



Sept 28, 2006

Photograph 11:

Former Cleaning
Equipment



Sept 28, 2006

Photograph 12:

Former Cleaning
Equipment

**Arba Dry Cleaners Site
Levittown, NY**



Sept 28, 2006

Photograph 13:

Sub-Slab
Sampling (SS-1)



Sept 28, 2006

Photograph 14:

PID Screening at
SS-1

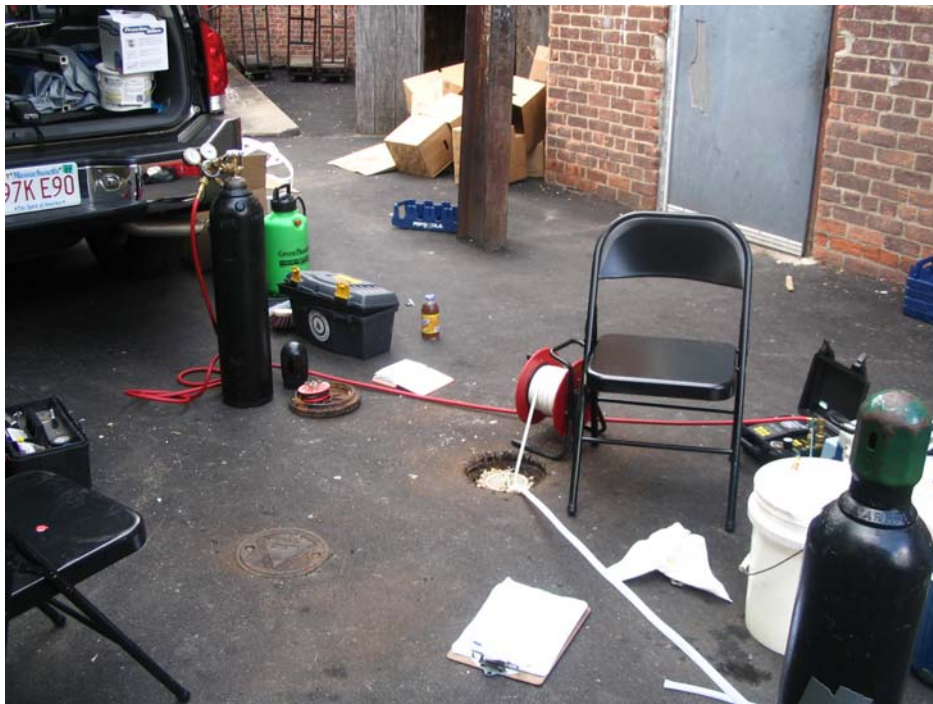
**Arba Dry Cleaners Site
Levittown, NY**



Sept 28, 2006

Photograph 15:

Outdoor Air
Sample



Sept 28, 2006

Photograph 16:

Groundwater
Sampling at MW-
3

APPENDIX D

SITE WEATHER



Weather observations for the past two days

New York/John F. Kennedy Intl Airport

Enter Your "City, ST"

Date	Time (edt)	Wind (mph)	Vis. (mi.)	Weather	Sky Cond.	Temperature (°F)				Pressure		Precipitation		
						Air	Dwpt	6 hour		altimeter (in)	sea level (mb)	1 hr	3 hr	6 hr
								Max.	Min.					
29	07:51	SW 16	10.00	Overcast	FEW013 BKN029 OVC100	61	56	67	60	29.69	1005.2			0.04
29	06:51	SW 12	10.00	Light Rain	SCT009 BKN060 OVC100	61	58			29.68	1004.8	0.04		
29	05:51	W 10	10.00	Light Rain	FEW060 OVC100	62	58			29.68	1004.9			
29	04:51	SW 14	10.00	Mostly Cloudy	FEW010 BKN130	63	59			29.67	1004.7			
29	03:51	SW 7	10.00	Mostly Cloudy	FEW029 SCT060 BKN120	63	58			29.67	1004.6			
29	02:51	W 8	10.00	Overcast	SCT029 BKN060 OVC130	64	60			29.67	1004.7			
29	01:51	S 15	9.00	Light Rain	BKN028 BKN060 OVC095	67	62	68	67	29.69	1005.2	0.01		0.01
29	00:51	S 18	10.00	Mostly Cloudy	SCT060 BKN110	68	63			29.70	1005.6			
28	23:51	S 15	10.00	Mostly Cloudy	FEW012 SCT060 BKN130	68	64			29.72	1006.4			
28	22:51	SE 15	10.00	Overcast	FEW014 BKN070 OVC250	68	64			29.74	1006.9			
28	21:51	SE 13	10.00	Mostly Cloudy	FEW017 BKN065 BKN250	68	63			29.75	1007.3			
28	20:51	SE 14	10.00	Mostly Cloudy	FEW017 SCT140 BKN250	67	62			29.74	1007.1			
28	19:51	SE 14	10.00	Partly Cloudy	FEW015 SCT035 SCT250	67	62	73	67	29.75	1007.3			
28	18:51	SE 15	10.00	Partly Cloudy	FEW033 SCT200	68	62			29.76	1007.6			
28	17:51	SE 17 G 25	10.00	Partly Cloudy	FEW017 SCT035	69	62			29.77	1007.9			
28	16:51	SE 14	10.00	A Few Clouds	FEW017	71	62			29.78	1008.6			
28	15:51	SE 17	10.00	A Few Clouds	FEW017	72	59			29.80	1009.2			
28	14:51	SE 16	10.00	Partly Cloudy	FEW017	72	59			29.83	1010.1			

					SCT042 SCT250							
28	13:51	SE 16	10.00	Partly Cloudy	FEW017 SCT042	72	61	73	65	29.86	1011.0	
28	12:51	S 17	10.00	Partly Cloudy	SCT017 SCT042	73	63			29.89	1012.0	
28	11:51	SE 14	10.00	Partly Cloudy	SCT020	71	61			29.90	1012.4	
28	10:51	SE 13	10.00	Partly Cloudy	SCT020	71	61			29.91	1012.8	
28	09:51	SE 14	10.00	Partly Cloudy	SCT018	70	60			29.93	1013.5	
28	08:51	SE 13	10.00	Partly Cloudy	FEW030 SCT250	68	60			29.93	1013.4	
28	07:51	SE 7	10.00	Partly Cloudy	FEW030 SCT250	65	60	65	58	29.93	1013.4	
28	06:51	SE 5	10.00	Partly Cloudy	SCT030 SCT250	59	55			29.92	1013.2	
28	05:51	E 3	10.00	Partly Cloudy	SCT035	60	56			29.93	1013.4	
28	04:51	SE 6	10.00	Partly Cloudy	SCT035	62	57			29.92	1013.2	
28	03:51	SE 6	10.00	A Few Clouds	FEW035	62	56			29.92	1013.3	
28	02:51	S 6	10.00	Fair	CLR	63	56			29.94	1013.8	
28	01:51	S 8	10.00	A Few Clouds	FEW095	64	57	67	64	29.95	1014.1	
28	00:51	S 10	10.00	Partly Cloudy	FEW095 SCT250	65	56			29.95	1014.2	
27	23:51	S 8	10.00	Partly Cloudy	SCT095	65	56			29.96	1014.4	
27	22:51	S 9	10.00	Mostly Cloudy	BKN095	66	57			29.96	1014.6	
27	21:51	S 10	10.00	Overcast	OVC095	67	58			29.97	1014.7	
27	20:51	S 10	10.00	Mostly Cloudy	BKN095	65	58			29.97	1014.9	
27	19:51	S 9	10.00	A Few Clouds	FEW080	65	56	72	65	29.97	1014.8	
27	18:51	S 9	10.00	Mostly Cloudy	FEW050 BKN075	67	56			29.96	1014.6	
27	17:51	S 9	10.00	Mostly Cloudy	FEW046 BKN080	68	55			29.96	1014.6	
27	16:51	S 12	10.00	Mostly Cloudy	FEW045 BKN090	68	56			29.97	1014.8	
27	15:51	S 12	10.00	Mostly Cloudy	FEW040 BKN090	68	57			29.98	1015.1	
27	14:51	S 12	10.00	Mostly Cloudy	FEW040 BKN095	70	53			29.98	1015.2	
27	13:51	S 13	10.00	Partly Cloudy	FEW040 SCT060	72	55	73	60	30.00	1015.7	
27	12:51	S 12	10.00	Partly Cloudy	FEW040 SCT060 SCT095	72	52			30.02	1016.5	
27	11:51	S 10	10.00	Mostly Cloudy	FEW032 SCT065 BKN085	71	54			30.04	1017.1	
27	10:51	SE 9	10.00	Mostly Cloudy	FEW025 SCT065 BKN085	69	60			30.05	1017.5	
27	09:51	E 7	10.00	Mostly Cloudy	BKN060 BKN085	67	59			30.05	1017.5	
27	08:51	E 5	8.00	Mostly Cloudy	FEW060	63	57			30.04	1017.3	

BKN090

D a t e	Time (edt)	Wind (mph)	Vis. (mi.)	Weather	Sky Cond.	Air	Dwpt	Max.	Min.	altimeter (in)	sea level (mb)	1 hr	3 hr	6 hr
								6 hour						
						Temperature (°F)		Pressure			Precipitation			

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APPENDIX E

**DATA USABILITY SUMMARY REPORT LABORATORY DATA
AND
CHAIN OF CUSTODY RECORDS**

DATA VALIDATION REPORT

Volatile, Semi-volatile, and Metals Analyses

***SDG No. 941066 (R2633867)
Sampling Date: September 27-28, 2006***

Submitted to:

***MACTEC, Inc.,
511 Congress Street
Portland, ME 04112
207-775-5401***

Submitted by:

***EDV, Inc.,
1326 Oranewood Avenue
Pittsburgh, PA 15216
412-341-5281***

October 30, 2006

Site: Arba/NYSDEC

Client: MACTEC, Inc.

Analytical Laboratory: Columbia Analytical
One Mustard Street
Rochester, NY 14609-0859

Sample Delivery Group (SDG): 941066 (R2633867)

Sampling Date: September 27-28, 2006

Analyses: Volatile, semi-volatile and metals

Analytical Method: 8260B, TO-15, 8270C and 6010

Summary of Data Validation:

The adherence of laboratory analytical performance to SW-846 Analytical Specifications was evaluated during the data validation process. The USEPA Region II's data validation SOP Checklists (SOP HW-18 rev 0, August 1994; SOP HW-24 Rev 1, June 1999; SOP HW-22 Rev 2, June 2001), the National Functional Guidelines for Organic Data Review (October 1999), the National Functional Guidelines for Inorganic Data Review (October 2004) were used as guidelines for data qualifications.

Volatile: Some acetone groundwater results were qualified as non-detects due to blank contamination. Chloroform, tetrachloroethene, and trichloroethene were qualified as estimated in a sub-slab soil vapor sample and its field duplicate due to precision issues.

Semi-volatile analyses: Phenol and 4-nitrophenol results were qualified as estimated due to precision issues.

Metals: The results as presented by the laboratory are acceptable.

The sample qualifiers applied by the data validator are in section 15.0 and Attachment A-Form 1s. The detailed discussions can be found in the report.

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1.0 Sample Identifications

The following table summarizes sample IDENTIFICATIONS, matrix of each sample and analyses present in the data package for each sample.

Client Sample ID	Matrix	Volatile 8260B	Volatile TO-15	Semi-volatile 8270C	Metals 6010
<i>SDG No. R2633867</i>					
GW-MW2	AQUEOUS	X	–	X	X
GW-MW3D	AQUEOUS	X	–	X	X
GW-MW1	AQUEOUS	X	–	X	X
GW-MW3	AQUEOUS	X	–	X	X
TRIP BLANK	AQUEOUS	X	–	–	–
SS-1	AIR	–	X	–	–
SS-2	AIR	–	X	–	–
OA-1	AIR	–	X	–	–
QC sample ID	Matrix				
GW-MS3DMS	AQUEOUS	X	–	–	X
GW-MW3DMSD	AQUEOUS	X	–	–	–
GW-MS3DDUP	AQUEOUS	X	–	–	–
SS-1DUP	AIR	–	X	–	–
LCS/LCSD		–	–	X	–

2.0 Completeness Checklist

The following table identifies the summary form information and raw data found in the data package. Form numbers shown in parentheses refer to the current U.S. EPA CLP SOW equivalent reporting of results in an alternate summary format that has been determined to be acceptable. Analyses in this data package were performed in accordance with SW-846 Methods and TO-15.

Completeness Checklist

X	Case Narrative
X	Chain of Custody Records/Traffic Reports/Tracking Records
X	Preservation Information
X	Sample Cross Reference with Unique Identifiers
X	Sample Results Summary Form (Form 1/Form 1-TIC)
X	CLP Flagging used on Results Summary
X	SMC/Surrogate Results Summary (Form 2)
NR	Matrix Spike/Matrix Spike Duplicate Results Summary (Form 3)
X	Laboratory Control Sample (LCS)/ Blank Spike Results Summary (Form 3)
NR	Control Charts
X	Method/Preparation Blank Results Summary (Form 4)
X	Volatile Initial Calibration Summary (Forms 6)
X	Volatile Continuing Calibration Summary (Form 7)
X	Volatile Analytical Sequence (Form 8)
x	Internal Standard Area Summary (Form X11)
X	Raw Data (incl. IS, Surr/SMC, RT, quant. Reports, etc.)
X	Samples
X	Initial Calibration
NR	Clean-ups
X	Continuing Calibration
NR	Instrument Blanks
X	Preparation Blanks/Method Blanks
O	Other Blanks
X	LCS/Blank Spike
X	Matrix Spikes/Matrix Spike Duplicates
NR	Matrix Duplicates/Replicates
O	Field Blanks - Trip Blank
X	Field Duplicates
X	Extraction Log Benchsheets
X	Instrument Run Logs
X	Sample Descriptions
X	Legible Pages
x	Pages in Package Numbered and in Sequence
X	Electronic Data Deliverable (EDD)

X: Included in original Data Package

NR: Not Required

O: Not Included and/or Not Available

RS: Provided as a Resubmission

X/RS: Incomplete in original data package, completed as a resubmission

3.0 Detection Limits

All Contract Required Detection Limits (CRDLs) were met.

4.0 Holding Time

Holding times were acceptable.

4.1 Sample Preservation

Preservation was acceptable.

4.2 Percent Moisture

Percent moisture is not a requirement since these are aqueous and air samples.

4.3 Chain of Custody Record

Chain of Custody Records were present.

5.0 Calibration Quality Control

5.1 Initial Calibration

The initial calibration was acceptable.

5.2 Continuing Calibration

The CCAL was acceptable.

5.3 CRDL Standard

Recoveries were acceptable.

6.0 Blanks Quality Control

Method blanks were acceptable.

7.0 Surrogate Recoveries

Surrogate recoveries were acceptable.

8.0 Accuracy

8.1 Laboratory Control Samples (LCS)/Blank Spikes

LCS recoveries were acceptable.

8.2 Matrix Spike/Matrix Spike Duplicates (MS/MSD)

8.2.1 Frequency

Frequency was met.

8.2.2 Recovery

Recoveries were acceptable.

9.0 Precision

9.1 Matrix Spike Duplicates

The results were acceptable.

9.2 Matrix Duplicate

RPDs were not acceptable for phenol-33% and 4-nitrophenol-42% due to the exceedance in the 30% QC criteria. All results for these compounds were qualified as estimated "UJ."

9.3 ICP Serial Dilution

The ICP serial dilution was acceptable.

10.0 Field QC

10.1 Field Blanks/Rinse Blanks

TO-15: Ambient blank reported acetone, 2-butanone and tetrachloroethene contamination. This ambient blank represented outdoor air and thus no qualification was necessary.

10.2 Trip Blanks

VOA: The trip blank reported acetone contamination. All associated detected acetone results were qualified as non-detects at CRDL.

10.3 Field Duplicate

MW-3D DUP is identified as a field duplicate. The original sample is identified as MW-3D. RPDs are calculated when both the field duplicate and original sample report detects. All RPDs were acceptable. SS-1DUP is presented as a field duplicate. The original sample is identified as SS-1. RPDs are calculated when both the field duplicate and original sample report detects. RPDs for chloroform (-65% & -62%), tetrachloroethene (-102% & -104%) and trichloroethene (-123% & -122%) were not acceptable thus, these compounds were qualified as estimated for this precision anomaly in both sample and duplicate.

11.0 Internal Standards (IS)

11.1 IS Area Counts

IS area counts were acceptable.

11.2 Retention Time (RT)

All RTs were within the method accepted criteria.

12.0 Target Compound Identification

All target compounds identification was acceptable.

12.1 Tentatively Identified Compounds (TICs)

TICs were not a requirement for this SDG.

13.0 Calculations and Transcription

Raw data were accurately transcribed to summary data sheets.

14.0 Additional Comments

15.0 Data Qualifier Table

Volatile

Sample Identification	Compound	Qualifier	Section Reference
GW-MW3D, GW-MW3D DUP, GW-MW1	Acetone	U	10.2
SS-1, SS-1DUP	Chloroform, tetrachloroethene, trichloroethene	J	10.3

Semi-volatile

Sample Identification	Compound	Qualifier	Section Reference
GW-MW3D, GW-MW1, GW- MW3, GW-MW2	4-Nitrophenol, phenol	UJ	9.2

ATTACHMENT A

VALIDATED AND QUALIFIED DATA SHEETS (FORM 1s)

COLUMBIA ANALYTICAL SERVICES

VOLATILE ORGANICS

METHOD 8260B TCL

Reported: 10/12/06

MACTEC, Inc.

Project Reference: ARBA

Client Sample ID : GW-MW2

Date Sampled : 09/27/06 13:50 Order #: 941066 Sample Matrix: WATER
Date Received: 09/29/06 Submission #: R2633867 Analytical Run 135439

ANALYTE	PQL	RESULT	UNITS
DATE ANALYZED : 10/03/06			
ANALYTICAL DILUTION: 1.00			
ACETONE	20	20 U	UG/L
BENZENE	5.0	5.0 U	UG/L
BROMODICHLOROMETHANE	5.0	5.0 U	UG/L
BROMOFORM	5.0	5.0 U	UG/L
BROMOMETHANE	5.0	5.0 U	UG/L
2-BUTANONE (MEK)	10	10 U	UG/L
CARBON DISULFIDE	10	10 U	UG/L
CARBON TETRACHLORIDE	5.0	5.0 U	UG/L
CHLOROBENZENE	5.0	5.0 U	UG/L
CHLOROETHANE	5.0	5.0 U	UG/L
CHLOROFORM	5.0	0.52 J	UG/L
CHLOROMETHANE	5.0	5.0 U	UG/L
DIBROMOCHLOROMETHANE	5.0	5.0 U	UG/L
1,1-DICHLOROETHANE	5.0	5.0 U	UG/L
1,2-DICHLOROETHANE	5.0	5.0 U	UG/L
1,1-DICHLOROETHENE	5.0	5.0 U	UG/L
CIS-1,2-DICHLOROETHENE	5.0	5.0 U	UG/L
TRANS-1,2-DICHLOROETHENE	5.0	5.0 U	UG/L
1,2-DICHLOROPROPANE	5.0	5.0 U	UG/L
CIS-1,3-DICHLOROPROPENE	5.0	5.0 U	UG/L
TRANS-1,3-DICHLOROPROPENE	5.0	5.0 U	UG/L
ETHYLBENZENE	5.0	5.0 U	UG/L
2-HEXANONE	10	10 U	UG/L
METHYLENE CHLORIDE	5.0	5.0 U	UG/L
4-METHYL-2-PENTANONE (MIBK)	10	10 U	UG/L
STYRENE	5.0	5.0 U	UG/L
1,1,2,2-TETRACHLOROETHANE	5.0	5.0 U	UG/L
TETRACHLOROETHENE	5.0	5.0 U	UG/L
TOLUENE	5.0	5.0 U	UG/L
1,1,1-TRICHLOROETHANE	5.0	5.0 U	UG/L
1,1,2-TRICHLOROETHANE	5.0	5.0 U	UG/L
TRICHLOROETHENE	5.0	5.0 U	UG/L
VINYL CHLORIDE	5.0	5.0 U	UG/L
O-XYLENE	5.0	5.0 U	UG/L
M+P-XYLENE	5.0	5.0 U	UG/L

SURROGATE RECOVERIES

QC LIMITS

4-BROMOFLUOROBENZENE	(80 - 123 %)	107	%
TOLUENE-D8	(88 - 124 %)	99	%
DIBROMOFLUOROMETHANE	(91 - 115 %)	100	%

COLUMBIA ANALYTICAL SERVICES

VOLATILE ORGANICS
METHOD 8260B TCL
Reported: 10/12/06

MACTEC, Inc.
Project Reference: ARBA
Client Sample ID : GW-MW3D

Date Sampled : 09/27/06 18:05 Order #: 941067 Sample Matrix: WATER
Date Received: 09/29/06 Submission #: R2633867 Analytical Run 135482

ANALYTE	PQL	RESULT	UNITS
DATE ANALYZED : 10/04/06			
ANALYTICAL DILUTION: 1.00			
ACETONE	20	5.2 J ✓	UG/L
BENZENE	5.0	5.0 U	UG/L
BROMODICHLOROMETHANE	5.0	5.0 U	UG/L
BROMOFORM	5.0	5.0 U	UG/L
BROMOMETHANE	5.0	5.0 U	UG/L
2-BUTANONE (MEK)	10	2.6 J	UG/L
CARBON DISULFIDE	10	10 U	UG/L
CARBON TETRACHLORIDE	5.0	5.0 U	UG/L
CHLOROBENZENE	5.0	5.0 U	UG/L
CHLOROETHANE	5.0	5.0 U	UG/L
CHLOROFORM	5.0	0.38 J	UG/L
CHLOROMETHANE	5.0	5.0 U	UG/L
DIBROMOCHLOROMETHANE	5.0	5.0 U	UG/L
1,1-DICHLOROETHANE	5.0	5.0 U	UG/L
1,2-DICHLOROETHANE	5.0	5.0 U	UG/L
1,1-DICHLOROETHENE	5.0	5.0 U	UG/L
CIS-1,2-DICHLOROETHENE	5.0	5.0 U	UG/L
TRANS-1,2-DICHLOROETHENE	5.0	5.0 U	UG/L
1,2-DICHLOROPROPANE	5.0	5.0 U	UG/L
CIS-1,3-DICHLOROPROPENE	5.0	5.0 U	UG/L
TRANS-1,3-DICHLOROPROPENE	5.0	5.0 U	UG/L
ETHYLBENZENE	5.0	5.0 U	UG/L
2-HEXANONE	10	10 U	UG/L
METHYLENE CHLORIDE	5.0	5.0 U	UG/L
4-METHYL-2-PENTANONE (MIBK)	10	10 U	UG/L
STYRENE	5.0	5.0 U	UG/L
1,1,2,2-TETRACHLOROETHANE	5.0	5.0 U	UG/L
TETRACHLOROETHENE	5.0	5.0 U	UG/L
TOLUENE	5.0	5.0 U	UG/L
1,1,1-TRICHLOROETHANE	5.0	5.0 U	UG/L
1,1,2-TRICHLOROETHANE	5.0	5.0 U	UG/L
TRICHLOROETHENE	5.0	0.37 J	UG/L
VINYL CHLORIDE	5.0	5.0 U	UG/L
O-XYLENE	5.0	5.0 U	UG/L
M+P-XYLENE	5.0	5.0 U	UG/L

SURROGATE RECOVERIES

QC LIMITS

4-BROMOFLUOROBENZENE	(80 - 123 %)	106	%
TOLUENE-D8	(88 - 124 %)	97	%
DIBROMOFLUOROMETHANE	(91 - 115 %)	100	%

COLUMBIA ANALYTICAL SERVICES

VOLATILE ORGANICS

METHOD 8260B TCL

Reported: 10/12/06

MACTEC, Inc.

Project Reference: ARBA

Client Sample ID : GW-MW3D DUP

Date Sampled : 09/27/06 18:05 Order #: 941068 Sample Matrix: WATER
Date Received: 09/29/06 Submission #: R2633867 Analytical Run 135482

ANALYTE	PQL	RESULT	UNITS
DATE ANALYZED : 10/03/06			
ANALYTICAL DILUTION: 1.00			
ACETONE	20	6.6 J 4	UG/L
BENZENE	5.0	5.0 U	UG/L
BROMODICHLOROMETHANE	5.0	5.0 U	UG/L
BROMOFORM	5.0	5.0 U	UG/L
BROMOMETHANE	5.0	5.0 U	UG/L
2-BUTANONE (MEK)	10	2.4 J	UG/L
CARBON DISULFIDE	10	10 U	UG/L
CARBON TETRACHLORIDE	5.0	5.0 U	UG/L
CHLOROBENZENE	5.0	5.0 U	UG/L
CHLOROETHANE	5.0	5.0 U	UG/L
CHLOROFORM	5.0	0.44 J	UG/L
CHLOROMETHANE	5.0	5.0 U	UG/L
DIBROMOCHLOROMETHANE	5.0	5.0 U	UG/L
1,1-DICHLOROETHANE	5.0	5.0 U	UG/L
1,2-DICHLOROETHANE	5.0	5.0 U	UG/L
1,1-DICHLOROETHENE	5.0	5.0 U	UG/L
CIS-1,2-DICHLOROETHENE	5.0	5.0 U	UG/L
TRANS-1,2-DICHLOROETHENE	5.0	5.0 U	UG/L
1,2-DICHLOROPROPANE	5.0	5.0 U	UG/L
CIS-1,3-DICHLOROPROPENE	5.0	5.0 U	UG/L
TRANS-1,3-DICHLOROPROPENE	5.0	5.0 U	UG/L
ETHYLBENZENE	5.0	5.0 U	UG/L
2-HEXANONE	10	10 U	UG/L
METHYLENE CHLORIDE	5.0	5.0 U	UG/L
4-METHYL-2-PENTANONE (MIBK)	10	10 U	UG/L
STYRENE	5.0	5.0 U	UG/L
1,1,2,2-TETRACHLOROETHANE	5.0	5.0 U	UG/L
TETRACHLOROETHENE	5.0	5.0 U	UG/L
TOLUENE	5.0	5.0 U	UG/L
1,1,1-TRICHLOROETHANE	5.0	0.35 J	UG/L
1,1,2-TRICHLOROETHANE	5.0	5.0 U	UG/L
TRICHLOROETHENE	5.0	0.51 J	UG/L
VINYL CHLORIDE	5.0	5.0 U	UG/L
O-XYLENE	5.0	5.0 U	UG/L
M+P-XYLENE	5.0	5.0 U	UG/L

SURROGATE RECOVERIES

QC LIMITS

4-BROMOFLUOROBENZENE	(80 - 123 %)	105	%
TOLUENE-D8	(88 - 124 %)	100	%
DIBROMOFLUOROMETHANE	(91 - 115 %)	97	%

COLUMBIA ANALYTICAL SERVICES

VOLATILE ORGANICS
 METHOD 8260B TCL
 Reported: 10/12/06

MACTEC, Inc.
 Project Reference: ARBA
 Client Sample ID : GW-MW1

Date Sampled : 09/28/06 09:30 Order #: 941069 Sample Matrix: WATER
 Date Received: 09/29/06 Submission #: R2633867 Analytical Run 135439

ANALYTE	PQL	RESULT	UNITS
DATE ANALYZED : 10/03/06			
ANALYTICAL DILUTION: 1.00			
ACETONE	20	3.1 μ	UG/L
BENZENE	5.0	5.0 U	UG/L
BROMODICHLOROMETHANE	5.0	5.0 U	UG/L
BROMOFORM	5.0	5.0 U	UG/L
BROMOMETHANE	5.0	5.0 U	UG/L
2-BUTANONE (MEK)	10	10 U	UG/L
CARBON DISULFIDE	10	10 U	UG/L
CARBON TETRACHLORIDE	5.0	5.0 U	UG/L
CHLOROBENZENE	5.0	5.0 U	UG/L
CHLOROETHANE	5.0	5.0 U	UG/L
CHLOROFORM	5.0	0.65 J	UG/L
CHLOROMETHANE	5.0	5.0 U	UG/L
DIBROMOCHLOROMETHANE	5.0	5.0 U	UG/L
1,1-DICHLOROETHANE	5.0	5.0 U	UG/L
1,2-DICHLOROETHANE	5.0	5.0 U	UG/L
1,1-DICHLOROETHENE	5.0	5.0 U	UG/L
CIS-1,2-DICHLOROETHENE	5.0	5.0 U	UG/L
TRANS-1,2-DICHLOROETHENE	5.0	5.0 U	UG/L
1,2-DICHLOROPROPANE	5.0	5.0 U	UG/L
CIS-1,3-DICHLOROPROPENE	5.0	5.0 U	UG/L
TRANS-1,3-DICHLOROPROPENE	5.0	5.0 U	UG/L
ETHYLBENZENE	5.0	5.0 U	UG/L
2-HEXANONE	10	10 U	UG/L
METHYLENE CHLORIDE	5.0	5.0 U	UG/L
4-METHYL-2-PENTANONE (MIBK)	10	10 U	UG/L
STYRENE	5.0	5.0 U	UG/L
1,1,2,2-TETRACHLOROETHANE	5.0	5.0 U	UG/L
TETRACHLOROETHENE	5.0	5.0 U	UG/L
TOLUENE	5.0	5.0 U	UG/L
1,1,1-TRICHLOROETHANE	5.0	5.0 U	UG/L
1,1,2-TRICHLOROETHANE	5.0	5.0 U	UG/L
TRICHLOROETHENE	5.0	5.0 U	UG/L
VINYL CHLORIDE	5.0	5.0 U	UG/L
O-XYLENE	5.0	5.0 U	UG/L
M+P-XYLENE	5.0	5.0 U	UG/L

SURROGATE RECOVERIES

QC LIMITS

4-BROMOFLUOROBENZENE	(80 - 123 %)	105	%
TOLUENE-D8	(88 - 124 %)	99	%
DIBROMOFLUOROMETHANE	(91 - 115 %)	98	%

COLUMBIA ANALYTICAL SERVICES

VOLATILE ORGANICS
METHOD 8260B TCL
Reported: 10/12/06

MACTEC, Inc.
Project Reference: ARBA
Client Sample ID : GW-MW3

Date Sampled : 09/28/06 15:35 Order #: 941070 Sample Matrix: WATER
Date Received: 09/29/06 Submission #: R2633867 Analytical Run 135439

ANALYTE	PQL	RESULT	UNITS
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DATE ANALYZED : 10/03/06
ANALYTICAL DILUTION: 1.00

ACETONE	20	20 U	UG/L
BENZENE	5.0	5.0 U	UG/L
BROMODICHLOROMETHANE	5.0	5.0 U	UG/L
BROMOFORM	5.0	5.0 U	UG/L
BROMOMETHANE	5.0	5.0 U	UG/L
2-BUTANONE (MEK)	10	10 U	UG/L
CARBON DISULFIDE	10	10 U	UG/L
CARBON TETRACHLORIDE	5.0	5.0 U	UG/L
CHLOROBENZENE	5.0	5.0 U	UG/L
CHLOROETHANE	5.0	5.0 U	UG/L
CHLOROFORM	5.0	5.0 U	UG/L
CHLOROMETHANE	5.0	5.0 U	UG/L
DIBROMOCHLOROMETHANE	5.0	5.0 U	UG/L
1,1-DICHLOROETHANE	5.0	5.0 U	UG/L
1,2-DICHLOROETHANE	5.0	5.0 U	UG/L
1,1-DICHLOROETHENE	5.0	5.0 U	UG/L
CIS-1,2-DICHLOROETHENE	5.0	8.2	UG/L
TRANS-1,2-DICHLOROETHENE	5.0	5.0 U	UG/L
1,2-DICHLOROPROPANE	5.0	5.0 U	UG/L
CIS-1,3-DICHLOROPROPENE	5.0	5.0 U	UG/L
TRANS-1,3-DICHLOROPROPENE	5.0	5.0 U	UG/L
ETHYLBENZENE	5.0	5.0 U	UG/L
2-HEXANONE	10	10 U	UG/L
METHYLENE CHLORIDE	5.0	5.0 U	UG/L
4-METHYL-2-PENTANONE (MIBK)	10	10 U	UG/L
STYRENE	5.0	5.0 U	UG/L
1,1,2,2-TETRACHLOROETHANE	5.0	5.0 U	UG/L
TETRACHLOROETHENE	5.0	6.7	UG/L
TOLUENE	5.0	5.0 U	UG/L
1,1,1-TRICHLOROETHANE	5.0	5.0 U	UG/L
1,1,2-TRICHLOROETHANE	5.0	5.0 U	UG/L
TRICHLOROETHENE	5.0	3.8 J	UG/L
VINYL CHLORIDE	5.0	5.0 U	UG/L
O-XYLENE	5.0	5.0 U	UG/L
M+P-XYLENE	5.0	5.0 U	UG/L

SURROGATE RECOVERIESQC LIMITS

4-BROMOFLUOROBENZENE	(80 - 123 %)	107	%
TOLUENE-D8	(88 - 124 %)	100	%
DIBROMOFLUOROMETHANE	(91 - 115 %)	98	%

COLUMBIA ANALYTICAL SERVICES

VOLATILE ORGANICS
METHOD 8260B TCL
Reported: 10/12/06

MACTEC, Inc.
Project Reference: ARBA
Client Sample ID : TRIP BLANK

Date Sampled : 09/28/06 17:38 Order #: 941074 Sample Matrix: WATER
Date Received: 09/29/06 Submission #: R2633867 Analytical Run 135439

ANALYTE	PQL	RESULT	UNITS
DATE ANALYZED : 10/03/06			
ANALYTICAL DILUTION: 1.00			
ACETONE	20	2.0 J	UG/L
BENZENE	5.0	5.0 U	UG/L
BROMODICHLOROMETHANE	5.0	5.0 U	UG/L
BROMOFORM	5.0	5.0 U	UG/L
BROMOMETHANE	5.0	5.0 U	UG/L
2-BUTANONE (MEK)	10	10 U	UG/L
CARBON DISULFIDE	10	10 U	UG/L
CARBON TETRACHLORIDE	5.0	5.0 U	UG/L
CHLOROBENZENE	5.0	5.0 U	UG/L
CHLOROETHANE	5.0	5.0 U	UG/L
CHLOROFORM	5.0	5.0 U	UG/L
CHLOROMETHANE	5.0	5.0 U	UG/L
DIBROMOCHLOROMETHANE	5.0	5.0 U	UG/L
1,1-DICHLOROETHANE	5.0	5.0 U	UG/L
1,2-DICHLOROETHANE	5.0	5.0 U	UG/L
1,1-DICHLOROETHENE	5.0	5.0 U	UG/L
CIS-1,2-DICHLOROETHENE	5.0	5.0 U	UG/L
TRANS-1,2-DICHLOROETHENE	5.0	5.0 U	UG/L
1,2-DICHLOROPROPANE	5.0	5.0 U	UG/L
CIS-1,3-DICHLOROPROPENE	5.0	5.0 U	UG/L
TRANS-1,3-DICHLOROPROPENE	5.0	5.0 U	UG/L
ETHYLBENZENE	5.0	5.0 U	UG/L
2-HEXANONE	10	10 U	UG/L
METHYLENE CHLORIDE	5.0	5.0 U	UG/L
4-METHYL-2-PENTANONE (MIBK)	10	10 U	UG/L
STYRENE	5.0	5.0 U	UG/L
1,1,2,2-TETRACHLOROETHANE	5.0	5.0 U	UG/L
TETRACHLOROETHENE	5.0	5.0 U	UG/L
TOLUENE	5.0	5.0 U	UG/L
1,1,1-TRICHLOROETHANE	5.0	5.0 U	UG/L
1,1,2-TRICHLOROETHANE	5.0	5.0 U	UG/L
TRICHLOROETHENE	5.0	5.0 U	UG/L
VINYL CHLORIDE	5.0	5.0 U	UG/L
O-XYLENE	5.0	5.0 U	UG/L
M+P-XYLENE	5.0	5.0 U	UG/L

SURROGATE RECOVERIES

QC LIMITS

4-BROMOFLUOROBENZENE	(80 - 123 %)	105	%
TOLUENE-D8	(88 - 124 %)	99	%
DIBROMOFLUOROMETHANE	(91 - 115 %)	103	%

COLUMBIA ANALYTICAL SERVICES

EXTRACTABLE ORGANICS
METHOD 8270C SEMIVOLATILES
Reported: 10/12/06

MACTEC, Inc.

Project Reference: ARBA

Client Sample ID : GW-MW2

Date Sampled : 09/27/06 13:50 Order #: 941066 Sample Matrix: WATER
Date Received: 09/29/06 Submission #: R2633867 Analytical Run 135591

ANALYTE	PQL	RESULT	UNITS
DATE EXTRACTED : 10/04/06			
DATE ANALYZED : 10/05/06			
ANALYTICAL DILUTION: 0.94			
ACENAPHTHENE	10	9.4 U	UG/L
ACENAPHTHYLENE	10	9.4 U	UG/L
ANTHRACENE	10	9.4 U	UG/L
BENZO (A) ANTHRACENE	10	9.4 U	UG/L
BENZO (A) PYRENE	10	9.4 U	UG/L
BENZO (B) FLUORANTHENE	10	9.4 U	UG/L
BENZO (G, H, I) PERYLENE	10	9.4 U	UG/L
BENZO (K) FLUORANTHENE	10	9.4 U	UG/L
BENZYL ALCOHOL	10	9.4 U	UG/L
BUTYL BENZYL PHTHALATE	10	9.4 U	UG/L
DI-N-BUTYLPHTHALATE	10	9.4 U	UG/L
CARBAZOLE	10	9.4 U	UG/L
INDENO (1, 2, 3-CD) PYRENE	10	9.4 U	UG/L
4-CHLOROANILINE	10	9.4 U	UG/L
BIS (-2-CHLOROETHOXY) METHANE	10	9.4 U	UG/L
BIS (2-CHLOROETHYL) ETHER	10	9.4 U	UG/L
2-CHLORONAPHTHALENE	10	9.4 U	UG/L
2-CHLOROPHENOL	10	9.4 U	UG/L
2, 2'-OXYBIS (1-CHLOROPROPANE)	10	9.4 U	UG/L
CHRYSENE	10	9.4 U	UG/L
DIBENZO (A, H) ANTHRACENE	10	9.4 U	UG/L
DIBENZOFURAN	10	9.4 U	UG/L
1, 3-DICHLOROBENZENE	10	9.4 U	UG/L
1, 2-DICHLOROBENZENE	10	9.4 U	UG/L
1, 4-DICHLOROBENZENE	10	9.4 U	UG/L
3, 3'-DICHLOROBENZIDINE	10	9.4 U	UG/L
2, 4-DICHLOROPHENOL	10	9.4 U	UG/L
DIETHYLPHTHALATE	10	9.4 U	UG/L
DIMETHYL PHTHALATE	10	9.4 U	UG/L
2, 4-DIMETHYLPHENOL	10	9.4 U	UG/L
2, 4-DINITROPHENOL	50	47 U	UG/L
2, 4-DINITROTOLUENE	10	9.4 U	UG/L
2, 6-DINITROTOLUENE	10	9.4 U	UG/L
BIS (2-ETHYLHEXYL) PHTHALATE	10	9.4 U	UG/L
FLUORANTHENE	10	9.4 U	UG/L
FLUORENE	10	9.4 U	UG/L
HEXACHLOROBENZENE	10	9.4 U	UG/L
HEXACHLOROBUTADIENE	10	9.4 U	UG/L
HEXACHLOROCYCLOPENTADIENE	10	9.4 U	UG/L
HEXACHLOROETHANE	10	9.4 U	UG/L
ISOPHORONE	10	9.4 U	UG/L
2-METHYLNAPHTHALENE	10	9.4 U	UG/L
4, 6-DINITRO-2-METHYLPHENOL	50	47 U	UG/L

COLUMBIA ANALYTICAL SERVICES

EXTRACTABLE ORGANICS
METHOD 8270C SEMIVOLATILES
Reported: 10/12/06

MACTEC, Inc.

Project Reference: ARBA

Client Sample ID : GW-MW2

Date Sampled : 09/27/06 13:50 Order #: 941066 Sample Matrix: WATER
Date Received: 09/29/06 Submission #: R2633867 Analytical Run 135591

ANALYTE	PQL	RESULT	UNITS
DATE EXTRACTED : 10/04/06			
DATE ANALYZED : 10/05/06			
ANALYTICAL DILUTION: 0.94			
4-CHLORO-3-METHYLPHENOL	10	9.4 U	UG/L
2-METHYLPHENOL	10	9.4 U	UG/L
3+4-METHYLPHENOL	10	9.4 U	UG/L
NAPHTHALENE	10	9.4 U	UG/L
2-NITROANILINE	50	47 U	UG/L
3-NITROANILINE	50	47 U	UG/L
4-NITROANILINE	50	47 U	UG/L
NITROBENZENE	10	9.4 U	UG/L
2-NITROPHENOL	10	9.4 U	UG/L
4-NITROPHENOL	50	47 U	UG/L
N-NITROSODIMETHYLAMINE	10	9.4 U	UG/L
N-NITROSODIPHENYLAMINE	10	9.4 U	UG/L
DI-N-OCTYL PHTHALATE	10	9.4 U	UG/L
PENTACHLOROPHENOL	50	47 U	UG/L
PHENANTHRENE	10	9.4 U	UG/L
PHENOL	10	9.4 U	UG/L
4-BROMOPHENYL-PHENYLEETHER	10	9.4 U	UG/L
4-CHLOROPHENYL-PHENYLEETHER	10	9.4 U	UG/L
N-NITROSO-DI-N-PROPYLAMINE	10	9.4 U	UG/L
PYRENE	10	9.4 U	UG/L
1,2,4-TRICHLOROBENZENE	10	9.4 U	UG/L
2,4,6-TRICHLOROPHENOL	10	9.4 U	UG/L
2,4,5-TRICHLOROPHENOL	10	9.4 U	UG/L

SURROGATE RECOVERIES

QC LIMITS

TERPHENYL-d14	(40 - 137 %)	107	%
NITROBENZENE-d5	(38 - 105 %)	85	%
PHENOL-d6	(10 - 69 %)	30	%
2-FLUOROBIPHENYL	(38 - 100 %)	84	%
2-FLUOROPHENOL	(17 - 74 %)	43	%
2,4,6-TRIBROMOPHENOL	(41 - 135 %)	74	%

COLUMBIA ANALYTICAL SERVICES

EXTRACTABLE ORGANICS
METHOD 8270C SEMIVOLATILES
Reported: 10/12/06

MACTEC, Inc.

Project Reference: ARBA

Client Sample ID : GW-MW3D

Date Sampled : 09/27/06 18:05 Order #: 941067 Sample Matrix: WATER
Date Received: 09/29/06 Submission #: R2633867 Analytical Run 135591

ANALYTE	PQL	RESULT	UNITS
DATE EXTRACTED : 10/04/06			
DATE ANALYZED : 10/05/06			
ANALYTICAL DILUTION: 0.94			
ACENAPHTHENE	10	9.4 U	UG/L
ACENAPHTHYLENE	10	9.4 U	UG/L
ANTHRACENE	10	9.4 U	UG/L
BENZO (A) ANTHRACENE	10	9.4 U	UG/L
BENZO (A) PYRENE	10	9.4 U	UG/L
BENZO (B) FLUORANTHENE	10	9.4 U	UG/L
BENZO (G, H, I) PERYLENE	10	9.4 U	UG/L
BENZO (K) FLUORANTHENE	10	9.4 U	UG/L
BENZYL ALCOHOL	10	9.4 U	UG/L
BUTYL BENZYL PHTHALATE	10	9.4 U	UG/L
DI-N-BUTYLPHTHALATE	10	9.4 U	UG/L
CARBAZOLE	10	9.4 U	UG/L
INDENO (1, 2, 3-CD) PYRENE	10	9.4 U	UG/L
4-CHLOROANILINE	10	9.4 U	UG/L
BIS (-2-CHLOROETHOXY) METHANE	10	9.4 U	UG/L
BIS (2-CHLOROETHYL) ETHER	10	9.4 U	UG/L
2-CHLORONAPHTHALENE	10	9.4 U	UG/L
2-CHLOROPHENOL	10	9.4 U	UG/L
2, 2' -OXYBIS (1-CHLOROPROPANE)	10	9.4 U	UG/L
CHRYSENE	10	9.4 U	UG/L
DIBENZO (A, H) ANTHRACENE	10	9.4 U	UG/L
DIBENZOFURAN	10	9.4 U	UG/L
1, 3-DICHLOROBENZENE	10	9.4 U	UG/L
1, 2-DICHLOROBENZENE	10	9.4 U	UG/L
1, 4-DICHLOROBENZENE	10	9.4 U	UG/L
3, 3' -DICHLOROBENZIDINE	10	9.4 U	UG/L
2, 4-DICHLOROPHENOL	10	9.4 U	UG/L
DIETHYLPHTHALATE	10	9.4 U	UG/L
DIMETHYL PHTHALATE	10	9.4 U	UG/L
2, 4-DIMETHYLPHENOL	10	9.4 U	UG/L
2, 4-DINITROPHENOL	50	47 U	UG/L
2, 4-DINITROTOLUENE	10	9.4 U	UG/L
2, 6-DINITROTOLUENE	10	9.4 U	UG/L
BIS (2-ETHYLHEXYL) PHTHALATE	10	11	UG/L
FLUORANTHENE	10	0.99 J	UG/L
FLUORENE	10	9.4 U	UG/L
HEXACHLOROBENZENE	10	9.4 U	UG/L
HEXACHLOROBUTADIENE	10	9.4 U	UG/L
HEXACHLOROCYCLOPENTADIENE	10	9.4 U	UG/L
HEXACHLOROETHANE	10	9.4 U	UG/L
ISOPHORONE	10	9.4 U	UG/L
2-METHYLNAPHTHALENE	10	9.4 U	UG/L
4, 6-DINITRO-2-METHYLPHENOL	50	47 U	UG/L

COLUMBIA ANALYTICAL SERVICES

EXTRACTABLE ORGANICS
METHOD 8270C SEMIVOLATILES
Reported: 10/12/06

MACTEC, Inc.
Project Reference: ARBA
Client Sample ID : GW-MW3D

Date Sampled : 09/27/06 18:05 Order #: 941067 Sample Matrix: WATER
Date Received: 09/29/06 Submission #: R2633867 Analytical Run 135591

ANALYTE	PQL	RESULT	UNITS
DATE EXTRACTED : 10/04/06			
DATE ANALYZED : 10/05/06			
ANALYTICAL DILUTION: 0.94			
4-CHLORO-3-METHYLPHENOL	10	9.4 U	UG/L
2-METHYLPHENOL	10	9.4 U	UG/L
3+4-METHYLPHENOL	10	9.4 U	UG/L
NAPHTHALENE	10	9.4 U	UG/L
2-NITROANILINE	50	47 U	UG/L
3-NITROANILINE	50	47 U	UG/L
4-NITROANILINE	50	47 U	UG/L
NITROBENZENE	10	9.4 U	UG/L
2-NITROPHENOL	10	9.4 U	UG/L
4-NITROPHENOL	50	47 U <i>u3</i>	UG/L
N-NITROSODIMETHYLAMINE	10	9.4 U	UG/L
N-NITROSODIPHENYLAMINE	10	9.4 U	UG/L
DI-N-OCTYL PHTHALATE	10	9.4 U	UG/L
PENTACHLOROPHENOL	50	47 U	UG/L
PHENANTHRENE	10	9.4 U	UG/L
PHENOL	10	9.4 U <i>u3</i>	UG/L
4-BROMOPHENYL-PHENYLETHER	10	9.4 U	UG/L
4-CHLOROPHENYL-PHENYLETHER	10	9.4 U	UG/L
N-NITROSO-DI-N-PROPYLAMINE	10	9.4 U	UG/L
PYRENE	10	9.4 U	UG/L
1,2,4-TRICHLOROBENZENE	10	9.4 U	UG/L
2,4,6-TRICHLOROPHENOL	10	9.4 U	UG/L
2,4,5-TRICHLOROPHENOL	10	9.4 U	UG/L

SURROGATE RECOVERIESQC LIMITS

TERPHENYL-d14	(40 - 137 %)	92	%
NITROBENZENE-d5	(38 - 105 %)	80	%
PHENOL-d6	(10 - 69 %)	31	%
2-FLUOROBIPHENYL	(38 - 100 %)	76	%
2-FLUOROPHENOL	(17 - 74 %)	43	%
2,4,6-TRIBROMOPHENOL	(41 - 135 %)	82	%

COLUMBIA ANALYTICAL SERVICES

EXTRACTABLE ORGANICS
 METHOD 8270C SEMIVOLATILES
 Reported: 10/12/06

MACTEC, Inc.
 Project Reference: ARBA
 Client Sample ID : GW-MW1

Date Sampled : 09/28/06 09:30 Order #: 941069 Sample Matrix: WATER
 Date Received: 09/29/06 Submission #: R2633867 Analytical Run 135591

ANALYTE	PQL	RESULT	UNITS
DATE EXTRACTED : 10/04/06			
DATE ANALYZED : 10/05/06			
ANALYTICAL DILUTION: 3.70			
ACENAPHTHENE	10	37 U	UG/L
ACENAPHTHYLENE	10	37 U	UG/L
ANTHRACENE	10	37 U	UG/L
BENZO (A) ANTHRACENE	10	37 U	UG/L
BENZO (A) PYRENE	10	37 U	UG/L
BENZO (B) FLUORANTHENE	10	3.9 J	UG/L
BENZO (G, H, I) PERYLENE	10	37 U	UG/L
BENZO (K) FLUORANTHENE	10	37 U	UG/L
BENZYL ALCOHOL	10	37 U	UG/L
BUTYL BENZYL PHTHALATE	10	4.0 J	UG/L
DI-N-BUTYLPHTHALATE	10	37 U	UG/L
CARBAZOLE	10	37 U	UG/L
INDENO (1, 2, 3-CD) PYRENE	10	37 U	UG/L
4-CHLOROANILINE	10	37 U	UG/L
BIS (-2-CHLOROETHOXY) METHANE	10	37 U	UG/L
BIS (2-CHLOROETHYL) ETHER	10	37 U	UG/L
2-CHLORONAPHTHALENE	10	37 U	UG/L
2-CHLOROPHENOL	10	37 U	UG/L
2, 2' -OXYBIS (1-CHLOROPROPANE)	10	37 U	UG/L
CHRYSENE	10	37 U	UG/L
DIBENZO (A, H) ANTHRACENE	10	37 U	UG/L
DIBENZOFURAN	10	37 U	UG/L
1, 3-DICHLOROBENZENE	10	37 U	UG/L
1, 2-DICHLOROBENZENE	10	37 U	UG/L
1, 4-DICHLOROBENZENE	10	37 U	UG/L
3, 3' -DICHLOROBENZIDINE	10	37 U	UG/L
2, 4-DICHLOROPHENOL	10	37 U	UG/L
DIETHYLPHTHALATE	10	37 U	UG/L
DIMETHYL PHTHALATE	10	37 U	UG/L
2, 4-DIMETHYLPHENOL	10	37 U	UG/L
2, 4-DINITROPHENOL	50	190 U	UG/L
2, 4-DINITROTOLUENE	10	37 U	UG/L
2, 6-DINITROTOLUENE	10	37 U	UG/L
BIS (2-ETHYLHEXYL) PHTHALATE	10	6.2 J	UG/L
FLUORANTHENE	10	37 U	UG/L
FLUORENE	10	37 U	UG/L
HEXACHLOROBENZENE	10	37 U	UG/L
HEXACHLOROBUTADIENE	10	37 U	UG/L
HEXACHLOROCYCLOPENTADIENE	10	37 U	UG/L
HEXACHLOROETHANE	10	37 U	UG/L
ISOPHORONE	10	37 U	UG/L
2-METHYLNAPHTHALENE	10	37 U	UG/L
4, 6-DINITRO-2-METHYLPHENOL	50	190 U	UG/L

COLUMBIA ANALYTICAL SERVICESEXTRACTABLE ORGANICS
METHOD 8270C SEMIVOLATILES
Reported: 10/12/06MACTEC, Inc.
Project Reference: ARBA
Client Sample ID : GW-MW1

Date Sampled : 09/28/06 09:30 Order #: 941069 Sample Matrix: WATER
Date Received: 09/29/06 Submission #: R2633867 Analytical Run 135591

ANALYTE	PQL	RESULT	UNITS
DATE EXTRACTED : 10/04/06			
DATE ANALYZED : 10/05/06			
ANALYTICAL DILUTION: 3.70			
4-CHLORO-3-METHYLPHENOL	10	37 U	UG/L
2-METHYLPHENOL	10	37 U	UG/L
3+4-METHYLPHENOL	10	37 U	UG/L
NAPHTHALENE	10	37 U	UG/L
2-NITROANILINE	50	190 U	UG/L
3-NITROANILINE	50	190 U	UG/L
4-NITROANILINE	50	190 U	UG/L
NITROBENZENE	10	37 U	UG/L
2-NITROPHENOL	10	37 U	UG/L
4-NITROPHENOL	50	190 U	UG/L
N-NITROSODIMETHYLAMINE	10	37 U	UG/L
N-NITROSODIPHENYLAMINE	10	37 U	UG/L
DI-N-OCTYL PHTHALATE	10	37 U	UG/L
PENTACHLOROPHENOL	50	190 U	UG/L
PHENANTHRENE	10	37 U	UG/L
PHENOL	10	37 U	UG/L
4-BROMOPHENYL-PHENYLETHER	10	37 U	UG/L
4-CHLOROPHENYL-PHENYLETHER	10	37 U	UG/L
N-NITROSO-DI-N-PROPYLAMINE	10	37 U	UG/L
PYRENE	10	37 U	UG/L
1,2,4-TRICHLOROBENZENE	10	37 U	UG/L
2,4,6-TRICHLOROPHENOL	10	37 U	UG/L
2,4,5-TRICHLOROPHENOL	10	37 U	UG/L

SURROGATE RECOVERIESQC LIMITS

TERPHENYL-d14	(40 - 137 %)	98	%
NITROBENZENE-d5	(38 - 105 %)	73	%
PHENOL-d6	(10 - 69 %)	35	%
2-FLUOROBIPHENYL	(38 - 100 %)	75	%
2-FLUOROPHENOL	(17 - 74 %)	46	%
2,4,6-TRIBROMOPHENOL	(41 - 135 %)	73	%

COLUMBIA ANALYTICAL SERVICES

EXTRACTABLE ORGANICS
METHOD 8270C SEMIVOLATILES
Reported: 10/12/06

MACTEC, Inc.
Project Reference: ARBA
Client Sample ID : GW-MW3

Date Sampled : 09/28/06 15:35 Order #: 941070 Sample Matrix: WATER
Date Received: 09/29/06 Submission #: R2633867 Analytical Run 135591

ANALYTE	PQL	RESULT	UNITS
DATE EXTRACTED : 10/04/06			
DATE ANALYZED : 10/05/06			
ANALYTICAL DILUTION: 0.94			
ACENAPHTHENE	10	9.4 U	UG/L
ACENAPHTHYLENE	10	9.4 U	UG/L
ANTHRACENE	10	9.4 U	UG/L
BENZO (A) ANTHRACENE	10	9.4 U	UG/L
BENZO (A) PYRENE	10	9.4 U	UG/L
BENZO (B) FLUORANTHENE	10	9.4 U	UG/L
BENZO (G, H, I) PERYLENE	10	9.4 U	UG/L
BENZO (K) FLUORANTHENE	10	9.4 U	UG/L
BENZYL ALCOHOL	10	9.4 U	UG/L
BUTYL BENZYL PHTHALATE	10	9.4 U	UG/L
DI-N-BUTYLPHTHALATE	10	9.4 U	UG/L
CARBAZOLE	10	9.4 U	UG/L
INDENO (1, 2, 3-CD) PYRENE	10	9.4 U	UG/L
4-CHLOROANILINE	10	9.4 U	UG/L
BIS (-2-CHLOROETHOXY) METHANE	10	9.4 U	UG/L
BIS (2-CHLOROETHYL) ETHER	10	9.4 U	UG/L
2-CHLORONAPHTHALENE	10	9.4 U	UG/L
2-CHLOROPHENOL	10	9.4 U	UG/L
2, 2'-OXYBIS (1-CHLOROPROPANE)	10	9.4 U	UG/L
CHRYSENE	10	9.4 U	UG/L
DIBENZO (A, H) ANTHRACENE	10	9.4 U	UG/L
DIBENZOFURAN	10	9.4 U	UG/L
1, 3-DICHLOROBENZENE	10	9.4 U	UG/L
1, 2-DICHLOROBENZENE	10	9.4 U	UG/L
1, 4-DICHLOROBENZENE	10	9.4 U	UG/L
3, 3'-DICHLOROBENZIDINE	10	9.4 U	UG/L
2, 4-DICHLOROPHENOL	10	9.4 U	UG/L
DIETHYLPHTHALATE	10	9.4 U	UG/L
DIMETHYL PHTHALATE	10	9.4 U	UG/L
2, 4-DIMETHYLPHENOL	10	9.4 U	UG/L
2, 4-DINITROPHENOL	50	47 U	UG/L
2, 4-DINITROTOLUENE	10	9.4 U	UG/L
2, 6-DINITROTOLUENE	10	9.4 U	UG/L
BIS (2-ETHYLHEXYL) PHTHALATE	10	9.4 U	UG/L
FLUORANTHENE	10	9.4 U	UG/L
FLUORENE	10	9.4 U	UG/L
HEXACHLOROBENZENE	10	9.4 U	UG/L
HEXACHLOROBUTADIENE	10	9.4 U	UG/L
HEXACHLOROCYCLOPENTADIENE	10	9.4 U	UG/L
HEXACHLOROETHANE	10	9.4 U	UG/L
ISOPHORONE	10	9.4 U	UG/L
2-METHYLNAPHTHALENE	10	9.4 U	UG/L
4, 6-DINITRO-2-METHYLPHENOL	50	47 U	UG/L

COLUMBIA ANALYTICAL SERVICES

EXTRACTABLE ORGANICS
METHOD 8270C SEMIVOLATILES
Reported: 10/12/06

MACTEC, Inc.
Project Reference: ARBA
Client Sample ID : GW-MW3

Date Sampled : 09/28/06 15:35 Order #: 941070 Sample Matrix: WATER
Date Received: 09/29/06 Submission #: R2633867 Analytical Run 135591

ANALYTE	PQL	RESULT	UNITS
DATE EXTRACTED : 10/04/06			
DATE ANALYZED : 10/05/06			
ANALYTICAL DILUTION: 0.94			
4-CHLORO-3-METHYLPHENOL	10	9.4 U	UG/L
2-METHYLPHENOL	10	9.4 U	UG/L
3+4-METHYLPHENOL	10	9.4 U	UG/L
NAPHTHALENE	10	9.4 U	UG/L
2-NITROANILINE	50	47 U	UG/L
3-NITROANILINE	50	47 U	UG/L
4-NITROANILINE	50	47 U	UG/L
NITROBENZENE	10	9.4 U	UG/L
2-NITROPHENOL	10	9.4 U	UG/L
4-NITROPHENOL	50	47 U	UG/L
N-NITROSODIMETHYLAMINE	10	9.4 U	UG/L
N-NITROSODIPHENYLAMINE	10	9.4 U	UG/L
DI-N-OCTYL PHTHALATE	10	9.4 U	UG/L
PENTACHLOROPHENOL	50	47 U	UG/L
PHENANTHRENE	10	9.4 U	UG/L
PHENOL	10	9.4 U	UG/L
4-BROMOPHENYL-PHENYLETHER	10	9.4 U	UG/L
4-CHLOROPHENYL-PHENYLETHER	10	9.4 U	UG/L
N-NITROSO-DI-N-PROPYLAMINE	10	9.4 U	UG/L
PYRENE	10	9.4 U	UG/L
1,2,4-TRICHLOROBENZENE	10	9.4 U	UG/L
2,4,6-TRICHLOROPHENOL	10	9.4 U	UG/L
2,4,5-TRICHLOROPHENOL	10	9.4 U	UG/L

SURROGATE RECOVERIES

QC LIMITS

TERPHENYL-d14	(40 - 137 %)	94	%
NITROBENZENE-d5	(38 - 105 %)	78	%
PHENOL-d6	(10 - 69 %)	27	%
2-FLUOROBIPHENYL	(38 - 100 %)	76	%
2-FLUOROPHENOL	(17 - 74 %)	39	%
2,4,6-TRIBROMOPHENOL	(41 - 135 %)	73	%

COLUMBIA ANALYTICAL SERVICES

EXTRACTABLE ORGANICS
 METHOD 8270C SEMIVOLATILES
 Reported: 10/12/06

Project Reference:

Client Sample ID : METHOD BLANK

Date Sampled :	Order #: 943008	Sample Matrix: WATER
Date Received:	Submission #:	Analytical Run 135591

ANALYTE	PQL	RESULT	UNITS
DATE EXTRACTED : 10/04/06			
DATE ANALYZED : 10/05/06			
ANALYTICAL DILUTION: 1.00			
ACENAPHTHENE	10	10 U	UG/L
ACENAPHTHYLENE	10	10 U	UG/L
ANTHRACENE	10	10 U	UG/L
BENZO (A) ANTHRACENE	10	10 U	UG/L
BENZO (A) PYRENE	10	10 U	UG/L
BENZO (B) FLUORANTHENE	10	10 U	UG/L
BENZO (G, H, I) PERYLENE	10	10 U	UG/L
BENZO (K) FLUORANTHENE	10	10 U	UG/L
BENZYL ALCOHOL	10	10 U	UG/L
BUTYL BENZYL PHTHALATE	10	10 U	UG/L
DI-N-BUTYLPHTHALATE	10	10 U	UG/L
CARBAZOLE	10	10 U	UG/L
INDENO (1, 2, 3-CD) PYRENE	10	10 U	UG/L
4-CHLOROANILINE	10	10 U	UG/L
BIS (-2-CHLOROETHOXY) METHANE	10	10 U	UG/L
BIS (2-CHLOROETHYL) ETHER	10	10 U	UG/L
2-CHLORONAPHTHALENE	10	10 U	UG/L
2-CHLOROPHENOL	10	10 U	UG/L
2, 2'-OXYBIS (1-CHLOROPROPANE)	10	10 U	UG/L
CHRYSENE	10	10 U	UG/L
DIBENZO (A, H) ANTHRACENE	10	10 U	UG/L
DIBENZOFURAN	10	10 U	UG/L
1, 3-DICHLOROBENZENE	10	10 U	UG/L
1, 2-DICHLOROBENZENE	10	10 U	UG/L
1, 4-DICHLOROBENZENE	10	10 U	UG/L
3, 3'-DICHLOROBENZIDINE	10	10 U	UG/L
2, 4-DICHLOROPHENOL	10	10 U	UG/L
DIETHYLPHTHALATE	10	10 U	UG/L
DIMETHYL PHTHALATE	10	10 U	UG/L
2, 4-DIMETHYLPHENOL	10	10 U	UG/L
2, 4-DINITROPHENOL	50	50 U	UG/L
2, 4-DINITROTOLUENE	10	10 U	UG/L
2, 6-DINITROTOLUENE	10	10 U	UG/L
BIS (2-ETHYLHEXYL) PHTHALATE	10	10 U	UG/L
FLUORANTHENE	10	10 U	UG/L
FLUORENE	10	10 U	UG/L
HEXACHLOROBENZENE	10	10 U	UG/L
HEXACHLOROBUTADIENE	10	10 U	UG/L
HEXACHLOROCYCLOPENTADIENE	10	10 U	UG/L
HEXACHLOROETHANE	10	10 U	UG/L
ISOPHORONE	10	10 U	UG/L
2-METHYLNAPHTHALENE	10	10 U	UG/L
4, 6-DINITRO-2-METHYLPHENOL	50	50 U	UG/L
4-CHLORO-3-METHYLPHENOL	10	10 U	UG/L

COLUMBIA ANALYTICAL SERVICES

EXTRACTABLE ORGANICS
METHOD 8270C SEMIVOLATILES
Reported: 10/12/06

Project Reference:
Client Sample ID : METHOD BLANK

Date Sampled :	Order #: 943008	Sample Matrix: WATER
Date Received:	Submission #:	Analytical Run 135591

ANALYTE	PQL	RESULT	UNITS
DATE EXTRACTED : 10/04/06			
DATE ANALYZED : 10/05/06			
ANALYTICAL DILUTION: 1.00			
2-METHYLPHENOL	10	10 U	UG/L
3+4-METHYLPHENOL	10	10 U	UG/L
NAPHTHALENE	10	10 U	UG/L
2-NITROANILINE	50	50 U	UG/L
3-NITROANILINE	50	50 U	UG/L
4-NITROANILINE	50	50 U	UG/L
NITROBENZENE	10	10 U	UG/L
2-NITROPHENOL	10	10 U	UG/L
4-NITROPHENOL	50	50 U	UG/L
N-NITROSODIMETHYLAMINE	10	10 U	UG/L
N-NITROSODIPHENYLAMINE	10	10 U	UG/L
DI-N-OCTYL PHTHALATE	10	10 U	UG/L
PENTACHLOROPHENOL	50	50 U	UG/L
PHENANTHRENE	10	10 U	UG/L
PHENOL	10	10 U	UG/L
4-BROMOPHENYL-PHENYLETHER	10	10 U	UG/L
4-CHLOROPHENYL-PHENYLETHER	10	10 U	UG/L
N-NITROSO-DI-N-PROPYLAMINE	10	10 U	UG/L
PYRENE	10	10 U	UG/L
1,2,4-TRICHLOROBENZENE	10	10 U	UG/L
2,4,6-TRICHLOROPHENOL	10	10 U	UG/L
2,4,5-TRICHLOROPHENOL	10	10 U	UG/L

SURROGATE RECOVERIESQC LIMITS

TERPHENYL-d14	(40 - 137 %)	107	%
NITROBENZENE-d5	(38 - 105 %)	84	%
PHENOL-d6	(10 - 69 %)	37	%
2-FLUOROBIPHENYL	(38 - 100 %)	82	%
2-FLUOROPHENOL	(17 - 74 %)	52	%
2,4,6-TRIBROMOPHENOL	(41 - 135 %)	74	%

MACTEC, Inc.

Project Reference: ARBA

Client Sample ID : SS-1

Date Sampled : 09/28/06 11:49 Order #: 941076 Sample Matrix: AIR
Date Received: 09/29/06 Submission #: R2633867 Analytical Run 135628

DATE ANALYZED : 10/02/06
ANALYTICAL DILUTION: 1.00
CAN DILUTION : 1.36 Pi= -0.5 Pf= 10.1

ANALYTE	MRL UG/M3	RESULT UG/M3	MRL PPBv	RESULT PPBv
ACETONE	1.1	<i>*2000</i> 270	0.46	<i>830</i> 73
BENZENE	1.6	2.2 U	0.51	0.69 U
BROMODICHLOROMETHANE	3.3	4.6 U	0.50	0.68 U
BROMOFORM	5.2	7.0 U	0.50	0.68 U
BROMOMETHANE	1.9	2.5 U	0.48	0.65 U
2-BUTANONE (MEK)	1.5	10	0.50	3.5
METHYL-TERT-BUTYL ETHER	1.7	2.4 U	0.48	0.65 U
CARBON DISULFIDE	1.5	5.6	0.49	1.8
CARBON TETRACHLORIDE	3.1	4.3 U	0.50	0.68 U
CHLOROBENZENE	2.3	3.1 U	0.50	0.68 U
CHLOROETHANE	1.3	1.7 U	0.48	0.65 U
CHLOROFORM	2.2	3.1 <i>J</i>	0.45	0.63 <i>J</i>
CHLOROMETHANE	0.97	1.3 U	0.47	0.64 U
DIBROMOCHLOROMETHANE	4.3	5.9 U	0.51	0.69 U
1,2-DIBROMOETHANE	3.8	5.2 U	0.50	0.68 U
1,3-DICHLOROBENZENE	2.9	4.0 U	0.49	0.67 U
1,4-DICHLOROBENZENE	2.9	4.0 U	0.49	0.67 U
1,2-DICHLOROBENZENE	2.9	4.0 U	0.49	0.67 U
1,1-DICHLOROETHANE	2.0	2.8 U	0.50	0.68 U
1,2-DICHLOROETHANE	2.1	2.8 U	0.51	0.69 U
1,1-DICHLOROETHENE	1.9	2.6 U	0.49	0.67 U
TRANS-1,2-DICHLOROETHENE	1.8	2.4 U	0.45	0.61 U
CIS-1,2-DICHLOROETHENE	2.0	54	0.50	14
1,2-DICHLOROPROPANE	2.3	3.1 U	0.50	0.68 U
CIS-1,3-DICHLOROPROPENE	2.3	3.1 U	0.51	0.69 U
TRANS-1,3-DICHLOROPROPENE	2.2	3.0 U	0.48	0.65 U
ETHYLBENZENE	2.2	3.0 U	0.50	0.68 U
2-HEXANONE	2.1	3.5	0.51	0.86
METHYLENE CHLORIDE	1.7	2.3 U	0.49	0.67 U
4-METHYL-2-PENTANONE	2.1	2.8	0.51	0.69
STYRENE	2.1	2.9 U	0.50	0.68 U
1,1,2,2-TETRACHLOROETHANE	3.4	4.7 U	0.50	0.68 U
TETRACHLOROETHENE	3.4	28 <i>J</i>	0.50	4.1 <i>J</i>
TOLUENE	1.9	14	0.51	3.7
1,1,1-TRICHLOROETHANE	2.8	3.8 U	0.51	0.69 U
1,1,2-TRICHLOROETHANE	2.8	3.8 U	0.51	0.69 U
TRICHLOROETHENE	2.7	6.9 <i>J</i>	0.50	1.3 <i>J</i>
TRICHLOROFLUOROMETHANE	2.6	3.5 U	0.46	0.63 U
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHA	3.8	5.1 U	0.49	0.67 U
VINYL ACETATE	1.9	4.8	0.53	1.4
VINYL CHLORIDE	1.2	1.7 U	0.48	0.65 U

35

**5X dilution*

VOLATILE ORGANICS
METHOD TO-15
Reported: 10/12/06

MACTEC, Inc.
Project Reference: ARBA
Client Sample ID : SS-1

Date Sampled : 09/28/06 11:49 Order #: 941076 Sample Matrix: AIR
Date Received: 09/29/06 Submission #: R2633867 Analytical Run 135628

DATE ANALYZED : 10/02/06
ANALYTICAL DILUTION: 1.00
CAN DILUTION : 1.36 Pi= -0.5 Pf= 10.1

ANALYTE	MRL UG/M3	RESULT UG/M3	MRL PPBv	RESULT PPBv
O-XYLENE	2.2	3.0 U	0.50	0.68 U
M+P-XYLENE	4.3	5.8 U	0.99	1.3 U

SURROGATE RECOVERIES	QC LIMITS
BROMOFLUOROBENZENE	(50 - 150 %) 99 %

COLUMBIA ANALYTICAL SERVICES

VOLATILE ORGANICS
METHOD TO-15
Reported: 10/12/06

MACTEC, Inc.
Project Reference: ARBA
Client Sample ID : SS-1

Date Sampled : 09/28/06 11:49 Order #: 941076 Sample Matrix: AIR
Date Received: 09/29/06 Submission #: R2633867 Analytical Run 135628

DATE ANALYZED : 10/02/06
ANALYTICAL DILUTION: 5.00
CAN DILUTION : 1.36 Pi= -0.5 Pf= 10.1

ANALYTE	MRL UG/M3	RESULT UG/M3	MRL PPBv	RESULT PPBv
ACETONE	1.1	200 D	0.46	83 D
BENZENE	1.6	11 U	0.51	3.5 U
BROMODICHLOROMETHANE	3.3	23 U	0.50	3.4 U
BROMOFORM	5.2	35 U	0.50	3.4 U
BROMOMETHANE	1.9	13 U	0.48	3.3 U
2-BUTANONE (MEK)	1.5	10 U	0.50	3.4 U
METHYL-TERT-BUTYL ETHER	1.7	12 U	0.48	3.3 U
CARBON DISULFIDE	1.5	10 U	0.49	3.3 U
CARBON TETRACHLORIDE	3.1	21 U	0.50	3.4 U
CHLOROBENZENE	2.3	16 U	0.50	3.4 U
CHLOROETHANE	1.3	8.6 U	0.48	3.3 U
CHLOROFORM	2.2	15 U	0.45	3.1 U
CHLOROMETHANE	0.97	6.6 U	0.47	3.2 U
DIBROMOCHLOROMETHANE	4.3	30 U	0.51	3.5 U
1,2-DIBROMOETHANE	3.8	26 U	0.50	3.4 U
1,3-DICHLOROBENZENE	2.9	20 U	0.49	3.3 U
1,4-DICHLOROBENZENE	2.9	20 U	0.49	3.3 U
1,2-DICHLOROBENZENE	2.9	20 U	0.49	3.3 U
1,1-DICHLOROETHANE	2.0	14 U	0.50	3.4 U
1,2-DICHLOROETHANE	2.1	14 U	0.51	3.5 U
1,1-DICHLOROETHENE	1.9	13 U	0.49	3.3 U
TRANS-1,2-DICHLOROETHENE	1.8	12 U	0.45	3.1 U
CIS-1,2-DICHLOROETHENE	2.0	48	0.50	12
1,2-DICHLOROPROPANE	2.3	16 U	0.50	3.4 U
CIS-1,3-DICHLOROPROPENE	2.3	16 U	0.51	3.5 U
TRANS-1,3-DICHLOROPROPENE	2.2	15 U	0.48	3.3 U
ETHYLBENZENE	2.2	15 U	0.50	3.4 U
2-HEXANONE	2.1	14 U	0.51	3.5 U
METHYLENE CHLORIDE	1.7	12 U	0.49	3.3 U
4-METHYL-2-PENTANONE	2.1	14 U	0.51	3.5 U
STYRENE	2.1	14 U	0.50	3.4 U
1,1,2,2-TETRACHLOROETHANE	3.4	23 U	0.50	3.4 U
TETRACHLOROETHENE	3.4	24	0.50	3.6
TOLUENE	1.9	13 U	0.51	3.5 U
1,1,1-TRICHLOROETHANE	2.8	19 U	0.51	3.5 U
1,1,2-TRICHLOROETHANE	2.8	19 U	0.51	3.5 U
TRICHLOROETHENE	2.7	18 U	0.50	3.4 U
TRICHLOROFLUOROMETHANE	2.6	18 U	0.46	3.1 U
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHA	3.8	26 U	0.49	3.3 U
VINYL ACETATE	1.9	13 U	0.53	3.6 U
VINYL CHLORIDE	1.2	8.3 U	0.48	3.3 U

COLUMBIA ANALYTICAL SERVICES

VOLATILE ORGANICS
METHOD TO-15
Reported: 10/12/06

MACTEC, Inc.
Project Reference: ARBA
Client Sample ID : SS-1

Date Sampled : 09/28/06 11:49 Order #: 941076 Sample Matrix: AIR
Date Received: 09/29/06 Submission #: R2633867 Analytical Run 135628

DATE ANALYZED : 10/02/06
ANALYTICAL DILUTION: 5.00
CAN DILUTION : 1.36 Pi= -0.5 Pf= 10.1

ANALYTE	MRL UG/M3	RESULT UG/M3	MRL PPBv	RESULT PPBv
O-XYLENE	2.2	15 U	0.50	3.4 U
M+P-XYLENE	4.3	29 U	0.99	6.7 U

<u>SURROGATE RECOVERIES</u>	<u>QC LIMITS</u>
BROMOFLUOROBENZENE	(50 - 150 %) 97 %

MACTEC, Inc.

Project Reference: ARBA

Client Sample ID : SS-2

Date Sampled : 09/28/06 11:54 Order #: 941077 Sample Matrix: AIR
Date Received: 09/29/06 Submission #: R2633867 Analytical Run 135628

DATE ANALYZED : 10/02/06
ANALYTICAL DILUTION: 1.00
CAN DILUTION : 1.56 Pi= -4.4 Pf= 10.0

ANALYTE	MRL UG/M3	RESULT UG/M3	MRL PPBv	RESULT PPBv
ACETONE	1.1	<i>*220.0</i> 210 E	0.46	<i>94.7</i> 94.7 E
BENZENE	1.6	2.9	0.51	0.92
BROMODICHLOROMETHANE	3.3	5.2 U	0.50	0.78 U
BROMOFORM	5.2	8.1 U	0.50	0.78 U
BROMOMETHANE	1.9	2.9 U	0.48	0.75 U
2-BUTANONE (MEK)	1.5	14	0.50	4.9
METHYL-TERT-BUTYL ETHER	1.7	2.7 U	0.48	0.75 U
CARBON DISULFIDE	1.5	42	0.49	14
CARBON TETRACHLORIDE	3.1	4.9 U	0.50	0.78 U
CHLOROBENZENE	2.3	3.6 U	0.50	0.78 U
CHLOROETHANE	1.3	2.0 U	0.48	0.75 U
CHLOROFORM	2.2	3.4 U	0.45	0.70 U
CHLOROMETHANE	0.97	1.5 U	0.47	0.73 U
DIBROMOCHLOROMETHANE	4.3	6.8 U	0.51	0.80 U
1,2-DIBROMOETHANE	3.8	6.0 U	0.50	0.78 U
1,3-DICHLOROBENZENE	2.9	4.6 U	0.49	0.76 U
1,4-DICHLOROBENZENE	2.9	4.6 U	0.49	0.76 U
1,2-DICHLOROBENZENE	2.9	4.6 U	0.49	0.76 U
1,1-DICHLOROETHANE	2.0	3.2 U	0.50	0.78 U
1,2-DICHLOROETHANE	2.1	3.2 U	0.51	0.80 U
1,1-DICHLOROETHENE	1.9	3.0 U	0.49	0.76 U
TRANS-1,2-DICHLOROETHENE	1.8	2.8 U	0.45	0.70 U
CIS-1,2-DICHLOROETHENE	2.0	3.1 U	0.50	0.78 U
1,2-DICHLOROPROPANE	2.3	3.6 U	0.50	0.78 U
CIS-1,3-DICHLOROPROPENE	2.3	3.6 U	0.51	0.80 U
TRANS-1,3-DICHLOROPROPENE	2.2	3.4 U	0.48	0.75 U
ETHYLBENZENE	2.2	3.5	0.50	0.80
2-HEXANONE	2.1	3.3 U	0.51	0.80 U
METHYLENE CHLORIDE	1.7	2.7 U	0.49	0.76 U
4-METHYL-2-PENTANONE	2.1	4.0	0.51	0.97
STYRENE	2.1	3.3 U	0.50	0.78 U
1,1,2,2-TETRACHLOROETHANE	3.4	5.4 U	0.50	0.78 U
TETRACHLOROETHENE	3.4	78	0.50	12
TOLUENE	1.9	20	0.51	5.3
1,1,1-TRICHLOROETHANE	2.8	4.3 U	0.51	0.80 U
1,1,2-TRICHLOROETHANE	2.8	4.3 U	0.51	0.80 U
TRICHLOROETHENE	2.7	4.2 U	0.50	0.78 U
TRICHLOROFLUOROMETHANE	2.6	14	0.46	2.5
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHA	3.8	5.9 U	0.49	0.76 U
VINYL ACETATE	1.9	7.5	0.53	2.1
VINYL CHLORIDE	1.2	1.9 U	0.48	0.75 U

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**5x dilution*

MACTEC, Inc.

Project Reference: ARBA

Client Sample ID : SS-2

Date Sampled : 09/28/06 11:54 Order #: 941077 Sample Matrix: AIR
Date Received: 09/29/06 Submission #: R2633867 Analytical Run 135628

DATE ANALYZED : 10/02/06
ANALYTICAL DILUTION: 1.00
CAN DILUTION : 1.56 Pi= -4.4 Pf= 10.0

ANALYTE	MRL UG/M3	RESULT UG/M3	MRL PPBv	RESULT PPBv
O-XYLENE	2.2	3.4 U	0.50	0.78 U
M+P-XYLENE	4.3	9.7	0.99	2.2

SURROGATE RECOVERIES	QC LIMITS	
BROMOFLUOROBENZENE	(50 - 150 %)	98 %

COLUMBIA ANALYTICAL SERVICES

VOLATILE ORGANICS

METHOD TO-15

Reported: 10/12/06

MACTEC, Inc.

Project Reference: ARBA

Client Sample ID : SS-2

Date Sampled : 09/28/06 11:54 Order #: 941077 Sample Matrix: AIR
Date Received: 09/29/06 Submission #: R2633867 Analytical Run 135628

DATE ANALYZED : 10/02/06
ANALYTICAL DILUTION: 5.00
CAN DILUTION : 1.56 Pi= -4.4 Pf= 10.0

ANALYTE	MRL UG/M3	RESULT UG/M3	MRL PPBv	RESULT PPBv
ACETONE	1.1	220 D	0.46	94 D
BENZENE	1.6	13 U	0.51	4.0 U
BROMODICHLOROMETHANE	3.3	26 U	0.50	3.9 U
BROMOFORM	5.2	40 U	0.50	3.9 U
BROMOMETHANE	1.9	15 U	0.48	3.7 U
2-BUTANONE (MEK)	1.5	13	0.50	4.4
METHYL-TERT-BUTYL ETHER	1.7	13 U	0.48	3.7 U
CARBON DISULFIDE	1.5	39	0.49	13
CARBON TETRACHLORIDE	3.1	25 U	0.50	3.9 U
CHLOROBENZENE	2.3	18 U	0.50	3.9 U
CHLOROETHANE	1.3	9.9 U	0.48	3.7 U
CHLOROFORM	2.2	17 U	0.45	3.5 U
CHLOROMETHANE	0.97	7.6 U	0.47	3.7 U
DIBROMOCHLOROMETHANE	4.3	34 U	0.51	4.0 U
1,2-DIBROMOETHANE	3.8	30 U	0.50	3.9 U
1,3-DICHLOROBENZENE	2.9	23 U	0.49	3.8 U
1,4-DICHLOROBENZENE	2.9	23 U	0.49	3.8 U
1,2-DICHLOROBENZENE	2.9	23 U	0.49	3.8 U
1,1-DICHLOROETHANE	2.0	16 U	0.50	3.9 U
1,2-DICHLOROETHANE	2.1	16 U	0.51	4.0 U
1,1-DICHLOROETHENE	1.9	15 U	0.49	3.8 U
TRANS-1,2-DICHLOROETHENE	1.8	14 U	0.45	3.5 U
CIS-1,2-DICHLOROETHENE	2.0	15 U	0.50	3.9 U
1,2-DICHLOROPROPANE	2.3	18 U	0.50	3.9 U
CIS-1,3-DICHLOROPROPENE	2.3	18 U	0.51	4.0 U
TRANS-1,3-DICHLOROPROPENE	2.2	17 U	0.48	3.7 U
ETHYLBENZENE	2.2	17 U	0.50	3.9 U
2-HEXANONE	2.1	16 U	0.51	4.0 U
METHYLENE CHLORIDE	1.7	13 U	0.49	3.8 U
4-METHYL-2-PENTANONE	2.1	16 U	0.51	4.0 U
STYRENE	2.1	17 U	0.50	3.9 U
1,1,2,2-TETRACHLOROETHANE	3.4	27 U	0.50	3.9 U
TETRACHLOROETHENE	3.4	61	0.50	9.0
TOLUENE	1.9	15	0.51	4.1
1,1,1-TRICHLOROETHANE	2.8	22 U	0.51	4.0 U
1,1,2-TRICHLOROETHANE	2.8	22 U	0.51	4.0 U
TRICHLOROETHENE	2.7	21 U	0.50	3.9 U
TRICHLOROFLUOROMETHANE	2.6	20 U	0.46	3.6 U
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHA	3.8	29 U	0.49	3.8 U
VINYL ACETATE	1.9	15 U	0.53	4.1 U
VINYL CHLORIDE	1.2	9.6 U	0.48	3.7 U

COLUMBIA ANALYTICAL SERVICES

VOLATILE ORGANICS
METHOD TO-15
Reported: 10/12/06

MACTEC, Inc.
Project Reference: ARBA
Client Sample ID : SS-2

Date Sampled : 09/28/06 11:54 Order #: 941077 Sample Matrix: AIR
Date Received: 09/29/06 Submission #: R2633867 Analytical Run 135628

DATE ANALYZED : 10/02/06
ANALYTICAL DILUTION: 5.00
CAN DILUTION : 1.56 Pi= -4.4 Pf= 10.0

ANALYTE	MRL UG/M3	RESULT UG/M3	MRL PPBv	RESULT PPBv
O-XYLENE	2.2	17 U	0.50	3.9 U
M+P-XYLENE	4.3	34 U	0.99	7.7 U

SURROGATE RECOVERIES	QC LIMITS		
BROMOFLUOROBENZENE	(50 - 150 %)	97	%

MACTEC, Inc.

Project Reference: ARBA

Client Sample ID : SS-1 DUP

Date Sampled : 09/28/06 12:10 Order #: 941078 Sample Matrix: AIR
Date Received: 09/29/06 Submission #: R2633867 Analytical Run 135628

DATE ANALYZED : 10/02/06
ANALYTICAL DILUTION: 1.00
CAN DILUTION : 1.44 Pi= -2.4 Pf= 9.8

ANALYTE	MRL UG/M3	RESULT UG/M3	MRL PPBv	RESULT PPBv
ACETONE	1.1	*120 D 120 E	0.46	50 D 49 E
BENZENE	1.6	2.3 U	0.51	0.73 U
BROMODICHLOROMETHANE	3.3	4.8 U	0.50	0.72 U
BROMOFORM	5.2	7.4 U	0.50	0.72 U
BROMOMETHANE	1.9	2.7 U	0.48	0.69 U
2-BUTANONE (MEK)	1.5	8.9	0.50	3.0
METHYL-TERT-BUTYL ETHER	1.7	2.5 U	0.48	0.69 U
CARBON DISULFIDE	1.5	2.2 U	0.49	0.71 U
CARBON TETRACHLORIDE	3.1	4.5 U	0.50	0.72 U
CHLOROBENZENE	2.3	3.3 U	0.50	0.72 U
CHLOROETHANE	1.3	1.8 U	0.48	0.69 U
CHLOROFORM	2.2	6.1 J	0.45	1.2 J
CHLOROMETHANE	0.97	1.4 U	0.47	0.68 U
DIBROMOCHLOROMETHANE	4.3	6.3 U	0.51	0.73 U
1,2-DIBROMOETHANE	3.8	5.5 U	0.50	0.72 U
1,3-DICHLOROBENZENE	2.9	4.2 U	0.49	0.71 U
1,4-DICHLOROBENZENE	2.9	4.2 U	0.49	0.71 U
1,2-DICHLOROBENZENE	2.9	4.2 U	0.49	0.71 U
1,1-DICHLOROETHANE	2.0	2.9 U	0.50	0.72 U
1,2-DICHLOROETHANE	2.1	3.0 U	0.51	0.73 U
1,1-DICHLOROETHENE	1.9	2.8 U	0.49	0.71 U
TRANS-1,2-DICHLOROETHENE	1.8	2.6 U	0.45	0.65 U
CIS-1,2-DICHLOROETHENE	2.0	*110 D 110 E	0.50	*27 D 27 E
1,2-DICHLOROPROPANE	2.3	3.3 U	0.50	0.72 U
CIS-1,3-DICHLOROPROPENE	2.3	3.3 U	0.51	0.73 U
TRANS-1,3-DICHLOROPROPENE	2.2	3.1 U	0.48	0.69 U
ETHYLBENZENE	2.2	3.1 U	0.50	0.72 U
2-HEXANONE	2.1	3.0 U	0.51	0.73 U
METHYLENE CHLORIDE	1.7	2.4 U	0.49	0.71 U
4-METHYL-2-PENTANONE	2.1	3.0 U	0.51	0.73 U
STYRENE	2.1	3.1 U	0.50	0.72 U
1,1,2,2-TETRACHLOROETHANE	3.4	4.9 U	0.50	0.72 U
TETRACHLOROETHENE	3.4	86 J	0.50	13 J
TOLUENE	1.9	17	0.51	4.5
1,1,1-TRICHLOROETHANE	2.8	4.0 U	0.51	0.73 U
1,1,2-TRICHLOROETHANE	2.8	4.0 U	0.51	0.73 U
TRICHLOROETHENE	2.7	29 J	0.50	5.4 J
TRICHLOROFLUOROMETHANE	2.6	3.7 U	0.46	0.66 U
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHA	3.8	5.4 U	0.49	0.71 U
VINYL ACETATE	1.9	4.8	0.53	1.4
VINYL CHLORIDE	1.2	1.8 U	0.48	0.69 U

*2.5X dilution

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VOLATILE ORGANICS
METHOD TO-15
Reported: 10/12/06

MACTEC, Inc.
Project Reference: ARBA
Client Sample ID : SS-1 DUP

Date Sampled : 09/28/06 12:10 Order #: 941078 Sample Matrix: AIR
Date Received: 09/29/06 Submission #: R2633867 Analytical Run 135628

DATE ANALYZED : 10/02/06
ANALYTICAL DILUTION: 1.00
CAN DILUTION : 1.44 Pi= -2.4 Pf= 9.8

ANALYTE	MRL UG/M3	RESULT UG/M3	MRL PPBv	RESULT PPBv
O-XYLENE	2.2	3.1 U	0.50	0.72 U
M+P-XYLENE	4.3	6.2 U	0.99	1.4 U

SURROGATE RECOVERIES	QC LIMITS
BROMOFLUOROBENZENE	(50 - 150 %) 97 %

COLUMBIA ANALYTICAL SERVICES

VOLATILE ORGANICS
METHOD TO-15
Reported: 10/12/06

MACTEC, Inc.

Project Reference: ARBA

Client Sample ID : SS-1 DUP

Date Sampled : 09/28/06 12:10 Order #: 941078 Sample Matrix: AIR
Date Received: 09/29/06 Submission #: R2633867 Analytical Run 135628

DATE ANALYZED : 10/03/06
ANALYTICAL DILUTION: 2.50
CAN DILUTION : 1.44 Pi= -2.4 Pf= 9.8

ANALYTE	MRL UG/M3	RESULT UG/M3	MRL PPBv	RESULT PPBv
ACETONE	1.1	120 D	0.46	50 D
BENZENE	1.6	5.9 U	0.51	1.8 U
BROMODICHLOROMETHANE	3.3	12 U	0.50	1.8 U
BROMOFORM	5.2	19 U	0.50	1.8 U
BROMOMETHANE	1.9	6.7 U	0.48	1.7 U
2-BUTANONE (MEK)	1.5	8.2	0.50	2.8
METHYL-TERT-BUTYL ETHER	1.7	6.2 U	0.48	1.7 U
CARBON DISULFIDE	1.5	5.5 U	0.49	1.8 U
CARBON TETRACHLORIDE	3.1	11 U	0.50	1.8 U
CHLOROBENZENE	2.3	8.3 U	0.50	1.8 U
CHLOROETHANE	1.3	4.6 U	0.48	1.7 U
CHLOROFORM	2.2	7.9 U	0.45	1.6 U
CHLOROMETHANE	0.97	3.5 U	0.47	1.7 U
DIBROMOCHLOROMETHANE	4.3	16 U	0.51	1.8 U
1,2-DIBROMOETHANE	3.8	14 U	0.50	1.8 U
1,3-DICHLOROBENZENE	2.9	11 U	0.49	1.8 U
1,4-DICHLOROBENZENE	2.9	11 U	0.49	1.8 U
1,2-DICHLOROBENZENE	2.9	11 U	0.49	1.8 U
1,1-DICHLOROETHANE	2.0	7.3 U	0.50	1.8 U
1,2-DICHLOROETHANE	2.1	7.4 U	0.51	1.8 U
1,1-DICHLOROETHENE	1.9	7.0 U	0.49	1.8 U
TRANS-1,2-DICHLOROETHENE	1.8	6.4 U	0.45	1.6 U
CIS-1,2-DICHLOROETHENE	2.0	110 D	0.50	27 D
1,2-DICHLOROPROPANE	2.3	8.3 U	0.50	1.8 U
CIS-1,3-DICHLOROPROPENE	2.3	8.3 U	0.51	1.8 U
TRANS-1,3-DICHLOROPROPENE	2.2	7.8 U	0.48	1.7 U
ETHYLBENZENE	2.2	7.8 U	0.50	1.8 U
2-HEXANONE	2.1	7.5 U	0.51	1.8 U
METHYLENE CHLORIDE	1.7	6.1 U	0.49	1.8 U
4-METHYL-2-PENTANONE	2.1	7.5 U	0.51	1.8 U
STYRENE	2.1	7.7 U	0.50	1.8 U
1,1,2,2-TETRACHLOROETHANE	3.4	12 U	0.50	1.8 U
TETRACHLOROETHENE	3.4	78	0.50	12
TOLUENE	1.9	15	0.51	3.9
1,1,1-TRICHLOROETHANE	2.8	10 U	0.51	1.8 U
1,1,2-TRICHLOROETHANE	2.8	10 U	0.51	1.8 U
TRICHLOROETHENE	2.7	26	0.50	4.9
TRICHLOROFLUOROMETHANE	2.6	9.3 U	0.46	1.7 U
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHA	3.8	14 U	0.49	1.8 U
VINYL ACETATE	1.9	6.7 U	0.53	1.9 U
VINYL CHLORIDE	1.2	4.4 U	0.48	1.7 U

COLUMBIA ANALYTICAL SERVICES

VOLATILE ORGANICS
METHOD TO-15
Reported: 10/12/06

MACTEC, Inc.
Project Reference: ARBA
Client Sample ID : SS-1 DUP

Date Sampled : 09/28/06 12:10 Order #: 941078 Sample Matrix: AIR
Date Received: 09/29/06 Submission #: R2633867 Analytical Run 135628

DATE ANALYZED : 10/03/06
ANALYTICAL DILUTION: 2.50
CAN DILUTION : 1.44 Pi= -2.4 Pf= 9.8

ANALYTE	MRL UG/M3	RESULT UG/M3	MRL PPBv	RESULT PPBv
O-XYLENE	2.2	7.8 U	0.50	1.8 U
M+P-XYLENE	4.3	15 U	0.99	3.6 U
SURROGATE RECOVERIES		QC LIMITS		
BROMOFLUOROBENZENE	(50 - 150 %)	98	%	

COLUMBIA ANALYTICAL SERVICES

VOLATILE ORGANICS
METHOD TO-15
Reported: 10/12/06

MACTEC, Inc.

Project Reference: ARBA

Client Sample ID : OA-1

Date Sampled : 09/28/06 13:05 Order #: 941079 Sample Matrix: AIR
Date Received: 09/29/06 Submission #: R2633867 Analytical Run 135628

DATE ANALYZED : 10/02/06
ANALYTICAL DILUTION: 1.00
CAN DILUTION : 1.67 Pi= -6.1 Pf= 9.8

ANALYTE	MRL UG/M3	RESULT UG/M3	MRL PPBv	RESULT PPBv
*ACETONE	1.1	18	0.46	7.8
BENZENE	1.6	2.7 U	0.51	0.85 U
BROMODICHLOROMETHANE	3.3	5.6 U	0.50	0.84 U
BROMOFORM	5.2	8.6 U	0.50	0.84 U
BROMOMETHANE	1.9	3.1 U	0.48	0.80 U
*2-BUTANONE (MEK)	1.5	3.0	0.50	1.0
METHYL-TERT-BUTYL ETHER	1.7	2.9 U	0.48	0.80 U
CARBON DISULFIDE	1.5	2.5 U	0.49	0.82 U
CARBON TETRACHLORIDE	3.1	5.3 U	0.50	0.84 U
CHLOROBENZENE	2.3	3.8 U	0.50	0.84 U
CHLOROETHANE	1.3	2.1 U	0.48	0.80 U
CHLOROFORM	2.2	3.7 U	0.45	0.75 U
CHLOROMETHANE	0.97	1.6 U	0.47	0.78 U
DIBROMOCHLOROMETHANE	4.3	7.3 U	0.51	0.85 U
1,2-DIBROMOETHANE	3.8	6.4 U	0.50	0.84 U
1,3-DICHLOROBENZENE	2.9	4.9 U	0.49	0.82 U
1,4-DICHLOROBENZENE	2.9	4.9 U	0.49	0.82 U
1,2-DICHLOROBENZENE	2.9	4.9 U	0.49	0.82 U
1,1-DICHLOROETHANE	2.0	3.4 U	0.50	0.84 U
1,2-DICHLOROETHANE	2.1	3.4 U	0.51	0.85 U
1,1-DICHLOROETHENE	1.9	3.2 U	0.49	0.82 U
TRANS-1,2-DICHLOROETHENE	1.8	3.0 U	0.45	0.75 U
CIS-1,2-DICHLOROETHENE	2.0	3.3 U	0.50	0.84 U
1,2-DICHLOROPROPANE	2.3	3.9 U	0.50	0.84 U
CIS-1,3-DICHLOROPROPENE	2.3	3.9 U	0.51	0.85 U
TRANS-1,3-DICHLOROPROPENE	2.2	3.6 U	0.48	0.80 U
ETHYLBENZENE	2.2	3.6 U	0.50	0.84 U
2-HEXANONE	2.1	3.5 U	0.51	0.85 U
METHYLENE CHLORIDE	1.7	2.8 U	0.49	0.82 U
4-METHYL-2-PENTANONE	2.1	3.5 U	0.51	0.85 U
STYRENE	2.1	3.6 U	0.50	0.84 U
1,1,2,2-TETRACHLOROETHANE	3.4	5.7 U	0.50	0.84 U
*TETRACHLOROETHENE	3.4	40	0.50	5.9
TOLUENE	1.9	3.2 U	0.51	0.85 U
1,1,1-TRICHLOROETHANE	2.8	4.6 U	0.51	0.85 U
1,1,2-TRICHLOROETHANE	2.8	4.6 U	0.51	0.85 U
TRICHLOROETHENE	2.7	4.5 U	0.50	0.84 U
TRICHLOROFLUOROMETHANE	2.6	4.3 U	0.46	0.77 U
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHA	3.8	6.3 U	0.49	0.82 U
VINYL ACETATE	1.9	3.1 U	0.53	0.89 U
VINYL CHLORIDE	1.2	2.0 U	0.48	0.80 U

COLUMBIA ANALYTICAL SERVICES

VOLATILE ORGANICS
METHOD TO-15
Reported: 10/12/06

MACTEC, Inc.
Project Reference: ARBA
Client Sample ID : OA-1

Date Sampled : 09/28/06 13:05 Order #: 941079 Sample Matrix: AIR
Date Received: 09/29/06 Submission #: R2633867 Analytical Run 135628

DATE ANALYZED : 10/02/06
ANALYTICAL DILUTION: 1.00
CAN DILUTION : 1.67 Pi= -6.1 Pf= 9.8

ANALYTE	MRL UG/M3	RESULT UG/M3	MRL PPBv	RESULT PPBv
O-XYLENE	2.2	3.6 U	0.50	0.84 U
M+P-XYLENE	4.3	7.2 U	0.99	1.7 U

<u>SURROGATE RECOVERIES</u>	<u>QC LIMITS</u>		
BROMOFLUOROBENZENE	(50 - 150 %)	97	%

METALS
COVER PAGE - INORGANIC ANALYSES DATA PACKAGEContract: R2633867SDG No.: GW-MW2

Lab Code:

Case No.:

SAS No.:

SOW No.: SW846 CLP-MClient: MACTEC, Inc.Sample No.Lab Sample ID.GW-MW2941066GW-MW3D941067GW-MW3DD941067DGW-MW3DS941067SGW-MW1941069GW-MW3941070

Were ICP interelement corrections applied?

Yes/No YES

Were ICP background corrections applied?

Yes/No YESIf yes-were raw data generated before
application of background corrections?Yes/No NOComments: See Attached Case Narrative

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature:

Michael K. Perry

Name:

Michael K. Perry

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Date:

10/12/06

Title:

Laboratory Manager

METALS

-1-

INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

GW-MW1

Contract: R2633867

Lab Code:

Case No.:

SAS No.:

SDG NO.: GW-MW2

Matrix (soil/water): WATER

Lab Sample ID: 941069

Level (low/med): LOW

Date Received: 09/29/06

Concentration Units (ug/L or mg/kg dry weight): µg/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	1380			P
7440-36-0	Antimony	60.0	U		P
7440-38-2	Arsenic	19.3			P
7440-39-3	Barium	48.5			P
7440-41-7	Beryllium	5.0	U		P
7440-43-9	Cadmium	5.0	U		P
7440-70-2	Calcium	48800			P
7440-47-3	Chromium	32.5			P
7440-48-4	Cobalt	50.0	U		P
7440-50-8	Copper	20.0	U		P
7439-89-6	Iron	1520			P
7439-92-1	Lead	17.2			P
7439-95-4	Magnesium	4630			P
7439-96-5	Manganese	46.4			P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	40.0	U		P
7440-09-7	Potassium	114000			P
7782-49-2	Selenium	10.0	U		P
7440-22-4	Silver	10.0	U		P
7440-23-5	Sodium	174000			P
7440-28-0	Thallium	10.0	U		P
7440-62-2	Vanadium	50.0	U		P
7440-66-6	Zinc	39.3			P

Color Before: COLORLESS

Clarity Before: CLEAR

Texture:

Color After: COLORLESS

Clarity After: CLEAR

Artifacts:

Comments:

53

METALS

-1-

INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

GW-MW2

Contract: R2633867

Lab Code:

Case No.:

SAS No.:

SDG NO.: GW-MW2

Matrix (soil/water): WATER

Lab Sample ID: 941066

Level (low/med): LOW

Date Received: 09/29/06

Concentration Units (ug/L or mg/kg dry weight): µG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	166			P
7440-36-0	Antimony	60.0	U		P
7440-38-2	Arsenic	10.0	U		P
7440-39-3	Barium	90.7			P
7440-41-7	Beryllium	5.0	U		P
7440-43-9	Cadmium	5.0	U		P
7440-70-2	Calcium	31000			P
7440-47-3	Chromium	10.0	U		P
7440-48-4	Cobalt	50.0	U		P
7440-50-8	Copper	20.0	U		P
7439-89-6	Iron	247			P
7439-92-1	Lead	5.0	U		P
7439-95-4	Magnesium	6380			P
7439-96-5	Manganese	10.0	U		P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	40.0	U		P
7440-09-7	Potassium	4360			P
7782-49-2	Selenium	10.0	U		P
7440-22-4	Silver	10.0	U		P
7440-23-5	Sodium	55100			P
7440-28-0	Thallium	10.0	U		P
7440-62-2	Vanadium	50.0	U		P
7440-66-6	Zinc	20.2			P

Color Before: COLORLESS

Clarity Before: CLEAR

Texture:

Color After: COLORLESS

Clarity After: CLEAR

Artifacts:

Comments:

54

METALS

-1-

INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

GW-MW3

Contract: R2633867

Lab Code:

Case No.:

SAS No.:

SDG NO.: GW-MW2

Matrix (soil/water): WATER

Lab Sample ID: 941070

Level (low/med): LOW

Date Received: 09/29/06

Concentration Units (ug/L or mg/kg dry weight): µG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	100	U		P
7440-36-0	Antimony	60.0	U		P
7440-38-2	Arsenic	10.0	U		P
7440-39-3	Barium	120			P
7440-41-7	Beryllium	5.0	U		P
7440-43-9	Cadmium	5.0	U		P
7440-70-2	Calcium	14500			P
7440-47-3	Chromium	10.0	U		P
7440-48-4	Cobalt	50.0	U		P
7440-50-8	Copper	20.0	U		P
7439-89-6	Iron	184			P
7439-92-1	Lead	5.0	U		P
7439-95-4	Magnesium	1000	U		P
7439-96-5	Manganese	15.8			P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	40.0	U		P
7440-09-7	Potassium	4290			P
7782-49-2	Selenium	10.0	U		P
7440-22-4	Silver	10.0	U		P
7440-23-5	Sodium	60600			P
7440-28-0	Thallium	10.0	U		P
7440-62-2	Vanadium	50.0	U		P
7440-66-6	Zinc	20.0	U		P

Color Before: COLORLESS

Clarity Before: CLEAR

Texture:

Color After: COLORLESS

Clarity After: CLEAR

Artifacts:

Comments:

7440-22-4	Silver	10.0	U		P
7440-23-5	Sodium	60600			P

METALS

-1-

INORGANIC ANALYSIS DATA SHEET

SAMPLE NO.

GW-MW3D

Contract: R2633867

Lab Code:

Case No.:

SAS No.:

SDG NO.: GW-MW2

Matrix (soil/water): WATER

Lab Sample ID: 941067

Level (low/med): LOW

Date Received: 09/29/06

Concentration Units (ug/L or mg/kg dry weight): µG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	365			P
7440-36-0	Antimony	60.0	U		P
7440-38-2	Arsenic	10.0	U		P
7440-39-3	Barium	56.4			P
7440-41-7	Beryllium	5.0	U		P
7440-43-9	Cadmium	5.0	U		P
7440-70-2	Calcium	17700			P
7440-47-3	Chromium	10.0	U		P
7440-48-4	Cobalt	50.0	U		P
7440-50-8	Copper	20.0	U		P
7439-89-6	Iron	8450			P
7439-92-1	Lead	7.9			P
7439-95-4	Magnesium	2960			P
7439-96-5	Manganese	270			P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	40.0	U		P
7440-09-7	Potassium	4230			P
7782-49-2	Selenium	10.0	U		P
7440-22-4	Silver	10.0	U		P
7440-23-5	Sodium	33400			P
7440-28-0	Thallium	10.0	U		P
7440-62-2	Vanadium	50.0	U		P
7440-66-6	Zinc	197			P

Color Before: COLORLESS

Clarity Before: CLEAR

Texture:

Color After: COLORLESS

Clarity After: CLEAR

Artifacts:

Comments:

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ATTACHMENT B

CASE NARRATIVE AND CHAIN OF CUSTODY

CASE NARRATIVE

COMPANY: MACTEC, Inc.
PROJECT: ARBA
SUBMISSION #: R2633867

MACTEC samples were collected on 09/28/06 and received at CAS on 09/29/06 in good condition at a cooler temperature of 5 °C. An ASP-B validation report has been prepared.

VOLATILE ORGANICS - 8260

Five water samples and a Trip Blank were analyzed for the TCL list of Volatile Organics by method 8260B from SW-846. Values detected between the MDL and PQL have been flagged with a "J" as estimated.

All Tuning criteria for BFB were and Internal Standard Areas within QC limits.

All the initial and continuing calibration criteria were met for all analytes.

All surrogate standard recoveries were within acceptance limits for all samples.

The Blank Spike (Reference Check) recoveries were all acceptable. The Matrix Spike/Matrix Spike Duplicate Recoveries was performed on sample GW-MW3D. All recoveries were within QC limits. The RPD results were all with QC limits.

The Method Blanks associated with these samples were free of contamination.

No other analytical or QC problems were encountered.

SEMIVOLATILE ORGANICS

Four water samples were analyzed for the TCL list of SVOAS by method 8270C from SW-846. Values detected between the MDL and PQL have been flagged with a "J" as estimated.

All the initial and continuing calibration criteria were met for all analytes.

All internal standard areas were within QC limits.

All surrogate standard recoveries were within limits.

Site specific QC was performed on sample GW-MW3D. All MS/MSD and Blank spike/Blank spike duplicate recoveries were within limits. All RPD's were within limits except 4-Nitro Phenol and Phenol on the BS/BSD.

The Laboratory Blanks associated with these analyses were free of contamination.

All samples were extracted and analyzed within holding times.

No other analytical or QC problems were encountered.

METALS ANALYSIS

Four water samples were analyzed for the TAL list of Metals by SW-846 methods 6010C/7470.

Site specific QC was performed on sample GW-MW3D. All MS recoveries were within limits of 75 – 125%. The MS recovery for Calcium and Iron could not be accurately determined due to the amount present in the sample being greater than four times the amount added as spike. All Blank spike recoveries were within limits. All RPD's were within the 20 % limits.

No other analytical or QC problems were encountered.

SOIL VAPOR ANALYSIS

Four soil vapor samples were analyzed for Volatile Organics by EPA method TO-15.

All initial and continuing calibrations were compliant.

The Blank Spike (Reference Check) recoveries were all within QC limits.

No other analytical or QC problems were encountered with these analyses.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the details conditioned above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager or his designee, as verified by the following signature. 